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FEATURES

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An enlarging grain and soya trade

Several positive influences supporting commodity import demand around the world are noticeable, but elsewhere volumes are likely to encounter downwards pressures during 2024. Consequently global seaborne dry bulk trade's growth rate this year may be limited.

Expectations of a favourable impact derived from improving trends in world economic activity are still restrained. Accumulating evidence of diminishing inflation in many countries could soon be reflected in policy interest rates beginning a downwards trend. Nevertheless, despite these benefits, clear signs of a strengthening of global economic growth are awaited and there is particular uncertainty about the trajectory of China's economy.

GRAIN & SOYA

Recent estimates continue to suggest that a broadly based expansion of world trade in grain and soya is unfolding. Although wheat trade may be flat in the current year, movements of corn and other coarse grains as well as soyabeans and meal are expected to increase, contributing to substantially higher volumes in 2023/24.

Prospects for soyabeans and meal trade are shown in table 1. According to the latest calculations by the US Department of Agriculture, this segment could see growth of 7mt (million tonnes) or 3% in the 2023/24 marketing year ending September 2024. As a result, the total could increase to 238mt,

following a rise of 4% to 231mt in the previous twelve months. During the current year higher import demand in a number of Asian countries is envisaged as the main positive influence.

COAL

The outlook for world coal trade in 2024 is overshadowed by uncertainty about whether the huge expansion of China's coal imports seen last year is sustainable. A reduction in this major component of trade seems quite likely. There is an absence of firm signs indicating how increases among other countries could provide a full offset.

At the end of March the Australian Government Department of Industry, Science and Resources quarterly forecast displayed doubts. Based on these calculations, world steam coal trade (including some land movements but mostly seaborne), comprising over three quarters of the coal trade total, could fall by 24mt or 2% to 1096mt in 2024. The main negative element envisaged is a 66mt (18%) reduction in China's imports to 306mt, accompanied by mixed changes elsewhere.

IRON ORE

Some predictions of steel production among the main raw materials importing countries suggest that increased volumes may be achievable during 2024. Higher crude steel output in the European Union, Japan and South Korea is predicted while in India (a major coking coal buyer) brisk further growth

appears attainable.

Analysts at AGDISR point to rising iron ore imports into the EU, Japan and Korea, accompanied by additional volumes into several smaller Asian importing countries. These together could contribute an additional 16mt in 2024, raising the group's total to 351mt, compared with last year's 335mt. But a predicted 62mt (5%) decline in China's import volume to 1,118mt, comprising over 70% of global iron ore imports, could act as a restraint on growth in the wider trend.

MINOR BULKS

Several elements of the minor bulk segment seem to have potential for enlargement. In the current year positive signs have emerged among those commodities related to industrial (construction and manufacturing) activity, such as steel and forest products, bauxite/alumina and cement, possibly resulting in sizeable increases.

BULK CARRIER FLEET

The Panamax (70-99,999 deadweight tonnes) size group including Kamsarmax vessels, comprises a quarter of the world bulk carrier fleet. As shown in table 2, this segment grew by 3-4% annually in the past two years and a similar growth rate is envisaged in 2024. Orderbook schedules at shipbuilders suggest higher newbuilding deliveries this year, and these may be accompanied by higher sales to recycling yards, although prospects for these demolition sales remain hazy.

TABLE 1: WORLD SOYABEANS AND SOYAMEAL IMPORTS (MILLION TONNES)

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24*
European Union	31.6	31.4	31.3	31.1	29.2	29.6
China	82.6	98.6	99.8	90.4	104.5	105.1
Other Asia	35.9	38.0	38.4	38.4	33.0	40.0
Others	59.7	59.9	61.4	62.7	64.1	63.1
World total	209.8	227.9	230.9	222.6	230.8	237.8
% change from previous year	-3.5	+8.7	+1.0	-3.6	+3.7	+3.0

source: US Dept of Agriculture, 08 March 2024

October/September marketing years

* forecast

TABLE 2: PANAMAX (70-99,999DWT) BULK CARRIER FLEET (MILLION DEADWEIGHT TONNES)

	2018	2019	2020	2021	2022	2023*
Newbuilding deliveries	5.6	11.4	12.0	8.6	9.8	10.9
Scrapping	0.1	0.4	1.0	0.7	0.6	2.3
Losses	0.1	0.1	0.0	0.0	0.0	0.0
Plus/minus adjustments	-0.1	0.0	0.0	0.1	-0.1	0.0
World fleet at end of year	206.7	217.6	228.6	236.6	245.7	254.2
% change from previous year-end	+2.7	+5.3	+5.1	+3.5	+3.8	3.5

source: Clarksons (historical data) & BSA

*BSA March 2024 forecast

by Richard Scott, Bulk Shipping Analysis, Tel: +44 (0)12 7722 5784; Fax: +44 (0)12 7722 5784; e-mail: bulkshipan@aol.com

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Potential restraints on Asia's coal imports



Coal handling operations with the Bulk Celebes transhipper (courtesy: Shi.E.L.D. Services S.r.l.).

Richard Scott, Bulk Shipping Analysis

Coal imports into Asian countries continue to attract attention because this part of the world market comprises four-fifths of the total. The trend is watched especially closely due to its fluctuating performance in recent years, when annual seaborne volumes varied greatly. Rises and falls resulted in an inconsistent pattern of unpredicted outcomes. Among individual importers, contrasting changes are likely to occur during 2024.

Strong growth in the Asia region's imports was seen in 2023, when China's surging purchases more than offset lower volumes into several other countries. This expansion followed a downturn in the previous year when a mixed array of changes unfolded, including lower imports by China but a higher quantity by India. During the year ahead, tentative indications point to a flat or possibly lower regional total although prospects for some importers are unclear.

While Asia's role as an importer of coal is often the most prominent focus, this region's contribution as an export supplier

is also a feature of the global coal market. Top exporters Indonesia and Australia together supply two-thirds of the world market and both countries saw growth in volumes last year.

In some of the region's importing countries economic and commercial influences on coal purchases are accompanied by political influences reflected in government policy changes. Such policy alterations are not always predictable either in timing or magnitude, resulting in forecasts having a large speculative element.

Steam coal comprises about 80% of Asia's coal imports, with the remainder comprised of coking coal. The largest individual importing countries are China, India and Japan, while South Korea and Taiwan are also major buyers. In recent years a group of smaller south and southeast Asian importers has become more prominent.

ENERGY IMPULSES

Usage of coal in Asia, and requirements for

imported volumes, are affected by broader trends in energy demand and how it is influenced by patterns in economic activity. Coal continues to assist economic progress and enable rising energy use. Among energy sources, coal is often still accorded a high priority — frequently supplied wholly or substantially by imports — despite growing emphasis on 'cleaner' power sources. In several larger Asian economies, environmental policy is aiming to reduce coal consumption, imposing a shift towards alternative energy supplies.

According to early provisional estimates by the International Monetary Fund, economic growth strengthened across Asia last year, a trend supporting energy consumption. Gross domestic product in the emerging and developing Asia region increased by 5.4% in 2023, after 4.5% in the previous twelve months.

This outcome was assisted by a recovery in China's GDP to 5.2% from the preceding year's depressed 3% growth rate. By contrast, India's GDP expansion appears to have moderated slightly last years by

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about a half percentage point, while still expanding strongly, to an estimated 6.7%. In some other major Asian coal consuming countries the trend was positive. Japan's GDP growth rate improved to 1.9% in 2023, from 1.0% in the preceding year.

These broad changes in economic activity were reflected in energy consumption and more specifically in coal usage by power stations, steel mills, cement manufacturers and other industries. The general trend of economic activity, reflecting consumer, business and government spending patterns, provides indications of ongoing demand for the products of coal-consuming industries. Import demand for coal was also affected by domestic production of coal and coal stock changes in individual countries.

The outlook for 2024 varies, with some countries expected to slow while others gain momentum. Amid its major impact on regional as well as world growth, China's economic progress is especially consequential and there is great uncertainty about how the recovery process will evolve over the next twelve months and further ahead. A recent

(February) analysis by the OECD organization stated that "China continues to struggle with real estate problems", suggesting that it may be difficult to maintain GDP growth at last year's pace, and could see a half percentage point slowing in 2024 to 4.7%.

Patterns of economic activity, and their effects on energy- and coal-consuming industries in Asia are likely to be reflected in energy consumption, and in coal usage and imports. Yet in 2024 as seen in the recent past, two other influential factors probably will modify the coal import demand outcome. These are the shift albeit sometimes not entirely consistent away from coal in power generation in some countries, combined with the drive for self-sufficiency in coal supplies where this is achievable. Energy security also has become a bigger focus after the events of the past couple of years, implying further modifications to energy market strategies.

COAL IMPORTS TRENDS

Asia's upturn in seaborne coal imports in 2023 more than reversed both the previous year's decrease and the larger

reduction seen four years ago in 2020, raising the regional total back up to exceed the 2019 record high level. As shown by the table derived from Clarksons Research data, the annual total fell by 6% in 2020 from the previous year's level to 1,005mt, before rising by 2% to 1,029mt and then decreasing by 2% to 1,010mt in the two following years. Last year's huge 100mt or 10% upsurge is estimated to have raised the volume to around 1,110mt.

Longer trends and patterns in the table reveal that imports into Japan and Taiwan have been relatively stable albeit with a tendency to decline over recent years. South Korea has experienced a weakening trend. China and India, the two biggest importers, have seen large annual changes both upwards and downwards. The 'other importers' category — including Malaysia, Pakistan, Philippines, Thailand and Vietnam — grew strongly up to 2020 since when volumes below the peak have been seen.

The dominant component is steam (also known as thermal) coal grades used mainly for electricity generation, comprising about four-fifths of Asia's coal imports. Other significant consumers are cement

ASIA COAL TRADE — MAIN IMPORTERS (MILLION TONNES)

	2018	2019	2020	2021	2022	2023*	% change**
China	238	258	238	281	234	361	+54
Japan	183	180	168	176	178	164	-8
India	237	255	227	204	243	239	-2
South Korea	141	135	117	119	120	115	-4
Taiwan	69	71	67	69	63	54	-14
other importers	149	174	188	180	172	176	+2
Total	1,017	1,073	1,005	1,029	1,010	1,109	+10
% change	7.1	5.5	-6.3	2.4	-1.8	9.8	

* estimate ** 2023 compared with previous year

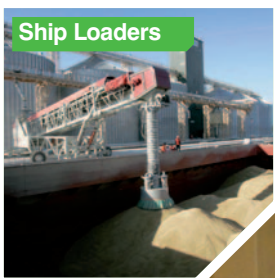
source: Clarksons Research, Bulk Shipping Analysis

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producers and various manufacturing industries. The balance of 20% is coking (or metallurgical) coal, used in the steel industry by mills employing blast furnace technology to make pig iron as the intermediate product for conversion into steel.

Reflecting features of individual domestic markets, many Asian buyers need both coal types, in varying proportions. An absence of domestic supplies, or domestic mines' inability to supply sufficient quantities of the required grades, results in foreign purchases. Variations in domestic supplies (where these occur) from year to year affect import volumes, which also may reflect changing prices for domestic or foreign supplies. In India and China domestic coal production is extensive, satisfying a large part of the national market, while Japan, Korea and Taiwan rely solely or mostly on imported supplies.

Variations in electricity generation and steel production are large influences affecting coal imports flows into Asia, while changing output volumes of other energy consuming industries also have an impact. An additional variable increasingly visible is alternative energy supplies — hydro-power, natural gas, renewable power from wind or solar energy, and nuclear power — contributing to electricity generation in many countries.

But hydro and wind generation are dependent on unpredictable weather patterns that often cause substantial and unexpected changes in power output, with implications for coal and other energy imports.

IMPORTS CHANGES IN 2023

Last year's changes in coal volumes imported by Asian buyers included one dramatic increase, and a number of decreases of various sizes. Imports into China jumped by 127mt or 54% from the previous year, raising the country's total to a record high 361mt. This expansion more than offset the reductions elsewhere. India's volume weakened slightly (based on provisional figures) by 2%, to 239mt, and Japan's volume was 8% lower at 164mt. South Korea's and Taiwan's imports declined by 4% and 14%, to 115mt and 54mt respectively. Other importers as a group, mainly in south and southeast Asia, saw a 2% increase to 176mt.

Higher seaborne coal imports into China (a total excluding the impact of variations in overland purchases from neighbouring Mongolia, a sizeable supplier) during 2023 is explained by several changes affecting the vast Chinese domestic coal market. A recovery in economic activity occurred after the coronavirus pandemic controls were lifted at the end of 2022, and coal supply shortages were experienced leading to additional foreign purchases.

Among direct influences on coal usage, overall power consumption in China reportedly rose by 7% in 2023, providing a strong impetus for electricity generation. Production of crude steel was flat at 1,019mt. A substantial further benefit for coal consumption was derived from much lower hydro-power output, as a result of low rainfall and river levels in some southern provinces. Higher domestic coal production, rising by 3% to reach 4.66

billion tonnes, proved insufficient to satisfy expanding demand and foreign supplies were available at attractive prices.

India appears to have experienced flattening coal imports during 2023, although estimates of the total vary, awaiting confirmation from official data. Major coal users and importers are the electricity generation, steel and cement industries. Output of crude steel, increasing rapidly by 12% to 140mt last year, is dependent on imported coal because high quality coking grades for this industry are not available in adequate volumes from domestic mines. Despite rising domestic steam coal output and rail transport capacity, amid government policy aiming to increase reliance on domestic coal producers, large imports remain an essential input.

The third largest Asian coal buyer, Japan, is entirely dependent on imports. Energy consumption in 2023 reflected the pickup in economic activity. More directly, a 3% decrease in steel production to 87mt had negative effects on coking coal use.

Another factor was increased nuclear power generation, amid this sector's gradual revival based on power plant reopenings after most were closed down semi-permanently well over a decade ago as a result of the Fukushima power station disaster.

In South Korea coal imports have been lower during the past few years than seen in the preceding period. Environmental improvement, especially air pollution reduction, has been prioritized by government policy that now emphasizes

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greenhouse gas reduction. Shifting towards cleaner alternative energy sources, including nuclear power, involves cutting dependence on coal. Taiwan's coal imports also declined last year, with the government aiming to reduce coal's share of electricity generation.

Over the past three years the 'other importers' group of countries has experienced lower volumes than seen in the 2020 peak. Steam coal imports into Malaysia, Pakistan, Philippines, Thailand and Vietnam — mainly for power generation — are a large sub-category comprising about 80% of the entire group's volume. The pattern among individual countries has been mixed but Vietnam's imports returned to their highest level, 45mt, in 2023 after diminishing in the previous two years.

OUTLOOK FOR COAL IMPORTS

After last year's strong upturn in coal imports, potential for a flattening or perhaps more likely a reduction in the Asia regional volume during 2024 is visible. Uncertainty surrounding China's requirements, now comprising a third of the Asian total following the 2023 abrupt surge, is especially intense. Prospects for several countries including India are hard to assess and in some cases forecasts are largely speculative, awaiting further clarification of the main influences.

Recent estimates of economic activity in Asia suggest limited benefits from foreseeable changes in the trend over the next twelve months. A slackening tendency in China's economy, expected by several although not all forecasters, is unlikely to boost energy demand growth. In other countries, including India and Japan, signs of economic growth trends that could strengthen enough to accelerate energy use have not yet emerged.

Specific factors in individual countries are likely to be greater influences on coal consumption and imports than the broad regional trends in economic activity, although changes in this pattern could still have an impact. Direct drivers, with varying relevance in individual countries include evolving commercial competition for coal from other energy sources, reflecting price and availability aspects, and the effects of governments' environmental policies especially those designed to reduce carbon emissions. In several countries, changes in domestic coal production — particularly in India and China where domestic mines supply by far the largest part of the market — are a prominent influence on imports.

Looking at longer term prospects, an upwards trend in Asia's coal imports seems



implausible because of the restricting pressures clearly visible. Many governments across Asia are taking steps to tackle environmental problems and are shaping energy policies accordingly, which typically results in an emphasis on cutting coal consumption. Consequently purely commercial influences determining coal use and imports are not always at the forefront.

Governments' interventions in the energy market frequently result in greater uncertainty and unpredictability. Cutting greenhouse gas emissions in the longer term, and reducing air pollution to acceptable levels in the more immediate future, are central issues considered by policymakers in many Asian countries. But the effects of changing policies are sometimes not foreseen. While changes in policy affecting coal consumption and imports are envisaged as broad possibilities, the extent and timing of modifications and what effects these may have on volumes are not easily predictable. This aspect complicates analysis of the outlook for Asia's coal markets.

During recent years in both China and India, political decisions having a major actual or potential impact on coal focused attention. These two buyers together imported 525mt last year, almost half of the Asia regional coal imports total. Although some aspects of broad government policies are widely known, the future impact of changes is difficult to predict but potential for a restraining influence on coal imports is apparent.

An official target of substantially reducing or entirely eliminating coal imports into India over the next few years is occasionally repeated. This aim may prove difficult to achieve, but gradual progress could weaken seaborne coal movements. An earlier unofficial ceiling on annual coal imports into China appears to have been relaxed last year when shortages occurred. Various government policy

measures affect Chinese coal consumption, domestic production and market performance, complicating predictions.

ASSEMBLING A FORECAST

A cautiously positive view of Asia's coal imports in 2024 has been adopted by some forecasters, but others are not convinced that the result will be further growth. Signs pointing towards a reduced volume after last year's strong performance are perhaps more plausible than expectations of a sustained upwards trend.

At the end of March the Australian Government Department of Industry, Science and Resources published an updated forecast indicating that world coal trade may be weaker during 2024, compared with last year's 1,469mt. This total includes land movements but is mostly seaborne trade. Although Asia's overall coal imports are not specified, a forecast for the region's steam coal imports (about four-fifths of the total) indicates a 41mt or 4% decrease from 968mt to 927mt.

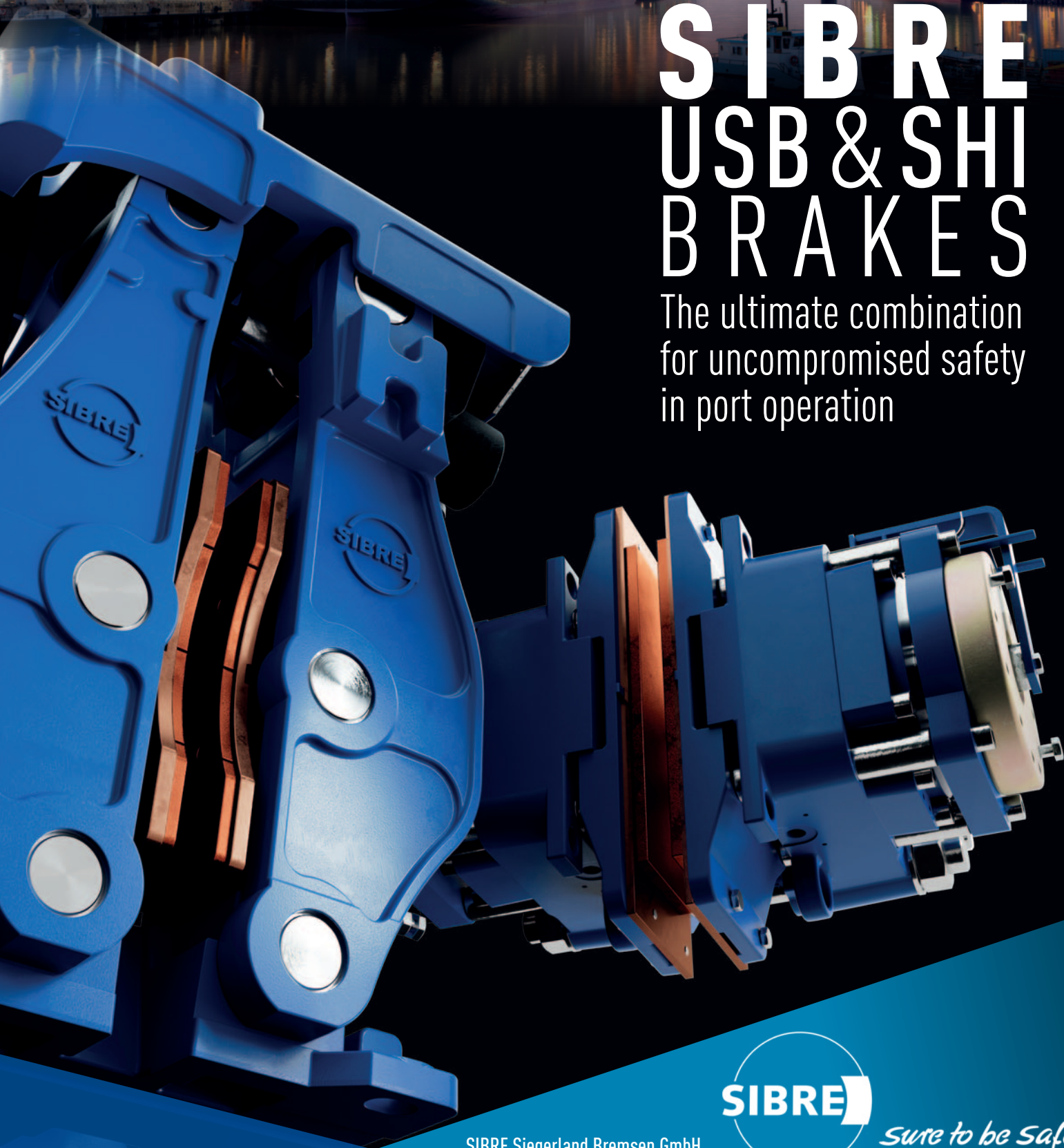
Within this Asian regional steam coal imports volume, the main change envisaged is a reduction of 66mt or 18% in China's quantity to 306mt. An increase envisaged in India, up by 8mt (4%) to 186mt, and some growth elsewhere in the region, is not expected to offset the reduction in Chinese purchases.

One possible consequence of changes in trade volumes envisaged is that some ports in Asia where coal is discharged could experience reduced activity during 2024, partly offset by additional activity in other ports. Nevertheless even though current signs arguably suggest that this is the most likely outcome, much uncertainty remains. Potential for a large change in China's imports is clear but especially hard to predict. Forecasts typically are at least partly speculative, awaiting unpredictable events and consequences.



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China's large imports...

... stoking global food inflation



Kunal Bose

Having experienced many famines since imperial times, China vigorously pursues food security, including large grain imports, to avoid domestic unrest. But such imports cause distress to the rest of the world by way of food price inflation.

There are contrasting tales of food inflation in the two Asian countries that host more than 1.4bn people each and between them have more than a third of the global population of close to 8.1bn. Notwithstanding their impressive economic progress in the past two and a half decades, both China and India still have significant numbers of people living below the poverty line (BPL). To its credit, China has moved 700m poor rural people out of poverty. Even then the country has over 50m people under the national poverty line of RMB 2,300 (\$317.88) annual net income *per capita* for rural residency. All these are confirmed by UNDP findings. As for India, the Hindu nationalist BJP-led government

claims that it has in the last ten years lifted 600m people out of poverty. This claim is, however, contested by the opposition and many economists. Whatever that is, India remains home to millions of BPL people and it has large pockets of poverty, particularly in rural areas.



Agriculture expert
Om Prakash
Dhanuka.

This being the situation, the authorities both in China and India are acutely aware that shortages of food and their high prices are sure to fuel popular discontent to the extent of threatening government stability, says agriculture expert Om Prakash Dhanuka. In India, agriculture and allied sectors being provider of employment to nearly 55% of the total national workforce the government there comes under constant pressure to ensure remunerative prices for farm produce. Not only the poor but also the middle class are smarting under high overall inflation in which the contribution of food (all items without exception) was maximum. (In stark contrast to China, India has experienced double digit inflation in food.) The Indian central bank's attempt to rein in prices by pegging interest rate high has not worked effectively because of supply side issues. Below normal rains during last year's peak monsoon season from June to September and occurrences of floods and extreme

dryness in different parts of the country affected production of rice, vegetables and sugarcane and this has had a major impact on consumer price index, says Dhanuka.

Take onion, an essential item in common man's diet. Following production collapse of onion in India to an expected 25.47mt (million tonnes) in 2023/24 from 30.22mt in 2022/23 and 31.69mt in 2021/22, prices went through the roof causing popular unrest. In response, New Delhi first started charging an export duty of 40%, then put a ban on exports up to March end, which has been extended till further orders. But considering politically sensitive Bangladesh, Sri Lanka and UAE are perennially dependent on supplies of onion from India, a caveat is there in the order that exports will be granted on requests from importing countries. Of far greater consequence for world trade in agri-commodities, is India's decision in July last to stop exports of non-basmati white rice as a domestic counter-inflationary measure. Being the world's second largest producer of the cereal after China and by far the most dominant exporter — Indian shipments are two and a half times more than that of Thailand, the next in the league of exporters — such an action by India, no doubt prompted by consideration to contain local cost of living, caused world rice prices to climb to their highest levels at one point in 15 years, according to the UN Food & Agriculture Organization (FAO).

IN A BIND

India's trade action, though not totally unexpected has put importing countries in south and south-east Asia and sub-Saharan countries in a bind. This is because drying up of Indian white rice exports coincided with fall in export surpluses of other major Asian suppliers such as Thailand, Vietnam, Pakistan and Myanmar, all having suffered the impact of occurrence of *El Niño* and climate change for the worse. According to official sources, Indian rice production is likely to fall for the first time in eight years in 2023/24 crop year ending June to 123.8mt from the year before 135.76mt. As a shield against shortages in a season leading to price spikes, New Delhi has remained steadfast in maintaining buffer stock of rice and wheat, procured by government agencies in step with progress of harvests. Supplies to the market are made from such stocks when prices rise and these also support the extensive public distribution system of food.

India has two rice crops — summer, the big one and winter. What naturally follows is focus of official procurement on summer

rice harvest. Official sources say, rice procurement this time was 44.15mt as of March 5, against 47.55mt previous year or 7% lower. Since the current season rice procurement is already more than 40% of output, more government buying is not in order as it may lead to shortages in the open market. As for wheat, the procurement target is 31mt. Under India's PDS around 67% of people are given wheat, rice, sugar and kerosene at highly subsidized rates. Furthermore, at the intervention of prime minister Narendra Modi, the country also runs a massive free foodgrains programme. Because of all this, any surplus for exports has shrunk in a difficult crop year.

Trade officials have, however, started seeing light at tunnel end following weatherman announcement that in the forthcoming peak monsoon season, India will experience "above normal precipitation" to be caused by likely smooth transition from *El Niño* to *La Niña* condition. Will the disappointment with rice production now extend to wheat in the current agriculture year? As for wheat production, the assessment of agriculture ministry and private agencies do not converge, points out Dhanuka. The official target is 114mt against 2022/23 production of 110.55mt. But an S&P Global Commodity Insights survey of 13 analysts and traders points to lower output year on year in a range of 107mt and 108mt. The slight setback will be due to fall in yields though acreage remained steady. Poor monsoon precipitation in wheat growing regions left poor soil moisture and the problem was compounded by insufficient winter rains that are crucial for crop growth and productivity.

Trade officials say even while wheat production will like last year be lower than the official target, New Delhi is expected to be aggressive in procurement of because of the expanded food relief programme. The expected high levels of government procurement can only lead to supply tightness in the wholesale market to the concern of trade. Will New Delhi in this situation respond positively to the trade asking for a cut in import duty on wheat, now at 40%? Farmers are a major constituency for the government and they remain in protest mode asking for a better deal from the state. In this situation it will not be in order to expect import duty to be lowered, until at least parliamentary elections are over and a new government is formed in June. At the same time, the government being engaged in taming food inflation is unlikely to signal resumption of wheat exports, a ban on which was put in May 2022. Wheat exports in 2021/22 (April to March) exceeded the target of 7mt by 850,000 tonnes. Soon thereafter came the ban.

CROP ESTIMATE CONUNDRUM

Deficiencies in crop estimates — in the present case it is over wheat crop of the 2023/24 season, the harvesting of which has begun — make taking decisions about food related trade policies difficult, says Dhanuka. This, however, should not be the case any longer with monitoring of crops from sowing to their different stages of growth being possible using satellites and drones. For the same reason of data related confusion, India's neighbour Bangladesh with a population of 174.25m was not sure for a long time whether the production of rice this season has been



enough to take care of domestic demand. The question remains if the country is harvesting a lot more rice than local requirements then why should the cereal price be on an upswing, specially during the Ramadan month when most Muslims observe strict fasting from dawn to sunset.

Bangladesh Rice Research Institute (BRRI), an agriculture ministry outfit, has forecast a total of 41.2mt of rice is likely to be produced this year, including 20.9mt of boro, 3mt of aush and 17mt of aman. Such a level of production should leave a surplus of 5m to 6mt after meeting domestic demand of around 35mt. The United States Department of Agriculture (USDA), however, says Bangladesh rice production of 36.3mt will fall short of likely local consumption of 37.6mt, leaving a deficit of 1.3mt. Without going into the merits of which of the two agencies, BRRI or USDA, has done a better job of estimating 2023-24 rice output, the worrying development is rising rice prices. What is to be said in favour of Dhaka is that it has been quick in reworking the import duty and asking private agencies to import the sanctioned volume of grain. Moreover, it has begun a dialogue with New Delhi for import of rice and wheat and also three other commodities, namely, onion, ginger and garlic that hopefully will soon lead to the signing of memorandum of understanding. Though there is a ban on export of rice and wheat, New Delhi has supplied rice, wheat and onion to countries in the neighbourhood and also to 'key partners' such as the UAE, Indonesia and Vietnam on a case to case basis.

The unusual dry weather is making Bangladesh, which is the world's third largest producer of rice after China and India, harvest a crop that will fall short of local demand. Imports, therefore, is unavoidable. Recent price inflation notwithstanding, the country highly vulnerable to flooding has moved from recurrent food shortages to self-sufficiency. The flooding risk is because of its location in the Bengal delta and its low-lying flat topography, which is further compounded by several factors linked to climate change. Rising frequency of extreme precipitation events more erratic rainfall has made Bangladesh's pursuit of green revolution highly challenging.

The country's agricultural research organizations have, however, been able to develop high-yielding varieties of rice that will grow in conditions of salinity, submergence and extreme temperature. Observers of Bangladeshi economy attribute breakthroughs to other factors



like availability of locally produced quality seeds and nutrients and an efficient extension programme designed to arm farmers, almost entirely small owning less than three hectares with ideal farming practices. The country in the meantime has graduated from 'green revolution to gene revolution'. Once again thanks to research successes in developing HYV seeds, Bangladesh is also producing over a million tonnes of wheat.

WORLD RICE OUTLOOK

FAO says in a report that in spite of the 2023/24 season having suffered *La Niña*-related weather setbacks, "improvements in the relative profitability of rice cultivation have stimulated expansions in main-crop plantings in Asia, Africa and Northern America should help offset the negative impacts of the weather disruptions." Based on this premise, the FAO has forecast world rice production to rise 0.8% from the 2022/23 reduced harvest to 523.9mt in

2023/24 season on a milled basis. However, price rises both in domestic and international prices that will keep in check use of the grain both for animal feed and human consumption is to arrest rice use at 522mt. International trade in rice in 2024 is forecast to remain close to the 2023 reduced level at 52.8mt. Till there is a new government in June, India will not consider lifting ban on rice exports. But according to FAO: "Apart from Brazil, Uruguay and Viet Nam, most exporters are expected to raise their shipments" compensating for squeeze in supplies from India. Global rice stocks will be up to a record high of 198.9mt. Thailand, a major producer and exporter of rice, is, however, to see fall in milled production to 20mt in the 2023-24 marketing year from 20.909mt a year earlier.

In the family of rice consisting of quite a few varieties, the long slender-grain aromatic basmati is the niche one that is sold at a high premium over the normal



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grain. Basmati rice too comes in several varieties. Grown principally in India and Pakistan and sold in the world market by them, basmati has got geographical indication (GI) tag, speaking for its exclusivity and integrity. Grown in the Indian subcontinent's Himalayan region benefiting from its unique climatic and soil condition, distinctive qualities of the aromatic rice are gained by finely tuned cultivation and processing practices.

It is only likely that India and Pakistan will stay perennially engaged in a competition to sell their basmati rice in West Asian countries, the UAE, the US and the UK. Helped by restricted supplies from Pakistan and stock building by most importing countries, India could lift basmati rice exports by 11.5% to 4.9mt in 2023, almost equalling the record high of 5mt in 2020. But revenue from exports was a record \$5.4bn, 21% up on 2022, thanks to high prices. A Reuters report, however, says: "India's basmati rice exports are likely to fall in 2024... as rival Pakistan is offering the grain at competitive prices amid a rebound in production." In the meantime, in order to put a check on suspected trade malpractices, New Delhi first laid down minimum export price (MEP) of basmati rice at \$1,200 a tonne in August. Expectedly, the move provoked an outcry from the trade since the MEP was found to be higher than market price prevailing then. Subsequently in October it was brought down to \$950 a tonne.

CHINA FOOD SECURITY CAMPAIGN

No other country or group of countries in Asia will ever have the same kind of bearing on global food economy like that of China. The world's second largest nearly \$18.5 trillion economy with less than 10% of the planet's arable land is the producer of one-fourth of the world's grain but has the onerous task of feeding one-fifth of the earth's population. No wonder then a major concern of the Xi Jinping led administration is to ensure that there are no disruptions to food supply triggering domestic unrest. What haunts the Chinese leaders all the time are the memories of the Great Famine of 1959–61 that claimed 30m lives and caused nearly the same number of lost or postponed births. No surprise since taking charge of the country in 2013, President Xi had many occasions to say: "The rice bowls of the Chinese people must always be held firmly in our own hand and filled mainly with Chinese grain."

Mark the word 'mainly'. According to the ministry of agriculture and rural affairs,

China produced a record amount of 695.4mt of grain in 2023, a year on year rise of 8.8mt over 2022. Incidentally, this was the ninth year in a row that the country, which is the world's largest producer of cereals such as corn, wheat and rice, harvested over 650mt of grain. China's *per capita* grain output exceeding the globally recognized security level of 400kg by over 90kg is, however, of little comfort to the authorities for several reasons. First, the country still continues to lose arable land because of neglect and use of excess fertilizers. What further aggravates land loss situation is the country being subject to extreme weather, environmental issues and water scarcity.

FARMLAND PRESERVATION

Mercifully, China has introduced a 'farmland red line' policy that sets a preservation target of at least 120m hectares of arable land for growing crops. Moreover, there is a target for very high quality 66.7m hectares of farm land. (Loss of farmland and its progressive deterioration is also a major problem for India and many other countries in south and south-east Asia.) Second, since the beginning of the millennium, China's food self-reliance is down to around 65% from 93.6%. Why is this so in spite of high grain and dairy products output? The fear of disruptions in food supply has led Beijing to build stockpiles of food, mainly corn, rice, wheat and pork, mostly by way of imports. China's large imports of soybeans, corn, wheat, rice have invited criticism from many quarters. This way of seeking insurance against domestic food supply problem at any point leads to rises in food prices throughout the world as it may create shortages outside China.

Third, despite improvements in national food safety standards brought about in 2022, the urbanites with sufficient buying

capacity being scared of local food not safe and toxic will opt for imported stuff. Concern about food safety is also a booster for imports. USDA says in a report: "As incomes rose, the average Chinese diet changed to include more meat, dairy and processed foods. In the past 20 years, *per capita* consumption of poultry meat increased 32%, soybean oil consumption more than quadrupled and fluid milk intake more than tripled." The country is close to 70% import dependent on edible oils. Fourth, in a number of farm products, the Chinese cost of production is higher and productivity lower than from the countries, including the US and Brazil from where imports are made. Take soybeans for instance, the cost of its growing in China is 1.3 times more than in the US. The yield too is 60% less.

For many years, the US remained the largest supplier of farm products to China. But then the two countries got locked in a trade war in 2018. This and also Beijing's good relations with Brasilia are the reasons for China buying more and more from Brazil leading finally the South American country replacing the US as China's largest agricultural supplier. Being highly sensitive to any food supply disorders, since heightened by geopolitical crisis in Europe and West Asia, Beijing is actively pursuing diversification of supply sources. Its Belt & Road Initiative (BRI) is primarily a massive China led infrastructure development programme. But Beijing is taking advantage of it to promote agricultural cooperation with BRI participants in all continents. As it has done with minerals, China continues to encourage its investors to buy farmland in foreign countries.

According to USDA, Chinese investors had by 2021 owned 383,935 acres of farmland in the US. Africa is the principal target of China for owning land to grow crops.

DCi



Safety is a driver of quality and sustainable dry bulk shipping

SAFETY LIES AT THE HEART OF INTERCARGO'S WORK EXPLAINS ITS SECRETARY GENERAL KOSTAS GKONIS

INTERCARGO is currently publishing its first-ever report on ESG, reviewing key highlights of our Association's activities and initiatives in the ESG sphere. It demonstrates our Association's commitment to quality dry bulk shipping through protecting the environment, safeguarding seafarers' health and safety, and supporting economies and societies. INTERCARGO and its members take high pride in this work.

When reflecting on ESG, we should not forget that safety is a cornerstone and key driver of sustainability for dry bulk shipping.

Safety lies at the heart of all INTERCARGO does: safe operation of ships, safety of crew, and decarbonization with safety.

INTERCARGO actively supports crew safety initiatives and improved bulk carrier management practices to achieve our zero-loss goal and will always be a strong supporter of decarbonization with safety.

INTERCARGO recently welcomed the launch of the Golden Safety Rules by the Together in Safety coalition, of which our Association is an active member.

Safety is paramount, both for ships and for seafarers, and we welcome these helpful Golden Safety Rules which will raise awareness of key safety measures.

Dry bulk shipping has come a long way since the 'dark days' of the 1980s and 1990s when casualty levels and losses of ships and crew were high.

Safety performance in the sector has steadily improved. This is an impressive achievement especially when considering the considerable rise in the number of bulk carriers in the world fleet. Over the past decade the bulk carrier fleet has grown from 10,000 vessels in 2013 to around 13,000 by Jan 2024. It is worth mentioning that the dry bulk sector, the world's largest fleet segment, according to industry statistics now surpasses 1000 million DWT (1 trillion) with today's bulk fleet representing more than 40% of world tonnage.

*Kostas Gkonis, Secretary General
INTERCARGO.*



As depicted in our upcoming, and annually updated, *Bulk Carrier Casualty Report*, statistics from 2014 to 2023 suggest a clear trend of improvement in terms of the rolling 10-year average of ship losses. The average number of ships lost within the bulk carrier industry continues to reduce, showing positive signs of improvement in safety performance.

However, there is no room for complacency and INTERCARGO has set a course towards zero casualties. With safety firmly in mind we have worked with RightShip to establish the new Dry Bulk Centre of Excellence which will oversee the operation of the DryBMS quality standard for the dry bulk sector.

DryBMS is an independent and straightforward set of best practices and key performance indicators purely focused on vessels carrying dry cargo in bulk at sea and which raise the bar on



INTERCARGO SPEAKS

safety, environmental and operational excellence. Safety, environmental and operational excellence are also promoted through confidential company self-assessment with optional third-party verification.

Although an important barometer, the score achieved from the self-assessment is not the most important factor. What matters most is that companies use the self-assessment process to identify areas of reduced performance and to then drive improvement forward.

This is an exciting development for dry bulk shipping companies. By assessing their management systems and carrying out continual improvement to meet the higher stages of the DryBMS Framework, companies can help improve their safety and operational performance — and by doing so collectively we all raise the standards of our industry as a whole.

At this present time, ships are still very much at the mercy of world events and geopolitical conflicts. We continue to keep under review the safety of ships in the Red Sea and Gulf of Aden, as well as the Black Sea, and in piracy hotspots, such as the Gulf of Guinea, and to keep members apprised of latest guidance. We strongly condemn attacks on merchant ships and innocent seafarers and actively support the IMO's international efforts to secure safe passage for all commercial ships across the globe.

INTERCARGO's membership continues to increase and currently stands at almost 160 Full Members with about 3,300 bulkers entered with the Association of a total capacity in excess of 325 million dwt, together with some 95 Associate Members. We look forward to informative and productive spring Semi Annual Meetings in Tokyo in May when our Technical and Executive Committees will come together to assess progress and discuss key industry matters. In the meantime, our work at IMO and in industry groups continues at full speed and always with safety in mind.

*Kostas Gkonis, Secretary General
INTERCARGO.*

INTERCARGO and RightShip launch Dry Bulk Centre of Excellence

On 3 April this year, INTERCARGO, the International Association of Dry Cargo Shipowners, and RightShip, the respected global ESG-focused digital maritime platform, proudly launched the Dry Bulk Centre of Excellence (DBCE), an independent, not-for-profit industry organization dedicated to the administration of the Dry Bulk Management Standard (DryBMS) framework.

DryBMS was developed by INTERCARGO and RightShip, with input from experts and stakeholders across the sector, as an industry tool to raise standards and best practices across safety, security, environmental performance, and social welfare in the dry shipping sector. INTERCARGO and RightShip have worked closely to establish the DBCE to further evolve and disseminate the DryBMS framework.

An independent, not-for-profit organization entirely separate from its founding organizations, DBCE will be run by an independent management team and will adopt a governance model convened from ship owners, managers, and charterers. This will foster greater co-operation and collaboration between key stakeholders and achieve the common purpose of improving standards and driving operational excellence via active industry participation.

The DBCE Board of Directors will be chaired alternatively by representatives from the community of ship owners/ship managers and charterers and will have representation from RightShip, INTERCARGO and other industry stakeholders creating a truly collaborative industry initiative.

The DryBMS framework will continue to be accessible to the industry, and, from May 2024, DBCE will maintain a secure portal where ship owners and managers can complete digital self-assessment against the DryBMS framework. Ship owners and managers will then have the optional ability to share the results of their self-assessments with their charterer customers. In addition, DBCE will establish an independent self-assessment audit verification process for evaluating and verifying actual performance against self-assessments. DBCE will

*Dimitris Fafalios,
Chairman of
INTERCARGO:
"The scheme will
administer a truly
robust standard."*



accredit independent auditors to its defined standard, whom companies may engage to perform audits of their self-assessments in their respective ship management offices.

DBCE will be led by a newly appointed managing director, Ian McLeod, who commented: "I am delighted to be driving this new initiative. The launch of the DBCE is the next step for the industry in going beyond compliance and achieving excellence, with the support of the DryBMS framework. The welfare of crew, protection of the environment, and sustainable operation of assets form the bedrock of this initiative, all of which encourage companies towards better operational practices. This benefits not just ship owners, but all in the industry. We urge ship owners, managers, and other stakeholders across the sector, to use this tool and to join us on this transformative journey to make dry bulk shipping stronger, safer, and more sustainable."

Steen Lund, RightShip's CEO, stated: "It is exciting to be part of a such an important

endeavour in lifting standards across dry bulk shipping. DBCE is more than just an administrator for the DryBMS standard; it is a catalyst for collaboration and proactive engagement across the sector. This launch can't come at a more crucial time — ship owners and managers must be given the resources they need to achieve excellence and strive for zero harm."

Dimitris Fafalios, Chairman of INTERCARGO, said: "We are collaborating in a scheme that is being developed by the industry and for the industry, which will

administer a truly robust standard with the help and expertise of those that the industry relies upon to implement and support it. DBCE's independence is crucial, ensuring the organization always works for the benefit of the dry bulk industry as a whole."

ABOUT INTERCARGO:

The International Association of Dry Cargo Shipowners (INTERCARGO), formed in 1980, unites and promotes quality dry bulk shipping, bringing together 250 forward-thinking companies from 30 countries. INTERCARGO convened for the first time in 1980 in London and has been participating with consultative status at the International Maritime Organization (IMO) since 1993. INTERCARGO provides the forum where dry bulk shipowners, managers and operators are informed about, discuss, and share concerns on key topics and regulatory challenges, especially in relation to safety, the environment, and operational excellence. The Association takes forward its members' positions to IMO, as well as to other shipping and international industry fora, having free and fair competition as a principle.

ABOUT RIGHTSHIP:

Established in 2001, RightShip is a prominent global ESG focused digital maritime platform, providing expertise in global safety, sustainability and social responsibility practices. Founded with the mission to drive operational improvements in the global shipping industry, more than 800 customers use RightShip's due diligence, environmental and inspections services to help them manage risk and improve overall maritime safety standards.

*Steen Lund,
RightShip CEO:
"It is exciting to
be part of a such
an important
endeavour in
lifting standards
across dry bulk
shipping."*



Oldendorff Carriers contracts with Harbor Lab to provide global transparency in port transactions and revolutionize disbursement accounting

- ❖ Harbor Lab's software platform is deployed across Oldendorff Carriers fleet.
- ❖ Oldendorff Carriers is an industry expert in using technology to streamline processes to save money through accurate invoicing and bring transparency to disbursement costs.
- ❖ Appointment of Harbor Lab was made after proof of concept demonstrated that efficiencies and cost savings could be achieved in Port Disbursement Accounts (PDAs) submitted by agents to the Harbor Lab platform.

Harbor Lab, a global specialist in maritime technology for centralizing and simplifying port disbursement costs is today announcing a new contract with one of the world's largest dry bulk shipping companies — Oldendorff Carriers.

Harbor Lab's software-as-a-service (SaaS) platform provides real-time, accurate information on disbursements that brings clarity and efficiency to port transactions for all parties. By deploying this software platform, Oldendorff will be embracing a technology-first approach to solving three core challenges that impact every company in the maritime shipping industry:

- ❖ **Streamlining processes for all involved:** the Harbor Lab platform streamlines disbursement accounting processes and ensures timely payments, to the benefit of shipping companies, port agents and vendors. It also enhances the handling capacity of disbursement accounts. Harbor Lab's technology calculates and evaluates port expenses — down to the individual terminal and berth — against the real-time port tariffs published by port authorities.
- ❖ **Saving money through accurate invoicing:** Harbor Lab automatically identifies discrepancies and incorrect invoices, instantly saving money for Oldendorff. The technology of the platform highlights discrepancies and



makes it easier to identify differences between estimated disbursement costs and actual invoices.

- ❖ **Bringing transparency to shipping:** the platform establishes a single source of truth for disbursement costs. This removes the lack of transparency that is time-consuming and facilitates quicker decision-making giving easy access to information on costs that can be shared with internal stakeholders.

Oldendorff's decision to contract with Harbor Lab underscores Harbor Lab's scalability, adaptability, and flexibility. Oldendorff's dry bulk business includes 21 offices around the world and a workforce of over 4,500 employees. Harbor Lab's SaaS solution can easily accommodate evolving needs and scale alongside client growth.

"We are beyond thrilled to embark on this journey with a titan in the maritime industry, Oldendorff Carriers," remarked Antonis Malaxianakis, founder & CEO of Harbor Lab. "To have one of the largest bulk shipping companies in the world decide to contract with us is a testament to the strength, and global nature of our platform. We extend our heartfelt gratitude to Oldendorff Carriers for

choosing Harbor Lab as their technology partner. Together, we look forward to charting new territories and improving our SaaS solution together."

Sven Möller, Managing Director Operations of Oldendorff Carriers, comments: "Whilst a lot of Shipping Companies are watching and waiting, Oldendorff has always been embracing change and efficiency at all levels. Digitalization and platforms such as Harbor Lab who are offering automated solutions/processes will continue to change how our industry will operate in future.

"It will reduce operational cost, improve efficiency, data quality and give our employees more time to concentrate on Oldendorff's core business."

Known as 'disbursements accounts', DAs are the costs that arise to a cargo ship during its time in port and it's the second largest annual expense for a ship management company. By pre-planning the costs that will be incurred during a port visit, DAs allow the charterer or operator to ensure that the vessel is not incurring any unnecessary charges. These DAs are highly irregular, varying from port to port depending on local factors as well as global economic trends. These payments are largely still handled through manual processes which lack transparency. Harbor Lab's SaaS platform reduces the administrative burden for shipping companies and improves the transparency and cost evaluation for settling DAs.

Harbor Lab centralizes and simplifies the management of port fees and related costs, providing real-time, accurate information on disbursements that brings clarity and efficiency to port transactions for all parties.



Houlder develops new tool for analysing ship performance and efficiency

MODELLING ENVIRONMENT USED TO VERIFY ENERGY EFFICIENCY TECHNOLOGY PERFORMANCE DATA INDEPENDENTLY

Houlder, the design and engineering consultancy with sustainability at its core, has developed a new tool for analysing ship performance and evaluating efficiency options, including energy efficiency technologies – also known as energy-saving devices or clean technologies.

The Houlder Optimisation & Modelling Environment, HOME™, uses the latest digital twin technology to create a virtual world which can be used to analyse tweaks to the operations of existing ships, to design brand new vessels, or to outline various ways to save fuel and cut associated greenhouse gas (GHG) emissions on specific voyages or across all operations.

Using HOME™, shipowners are able to analyse the emissions performance of efficiency technologies for their specific vessel and its unique operating profile. Fundamentally, each ship has different efficiency requirements impacted by route, cargo, design and so on, and will benefit from a different technology or blend of technologies. The key is to start with the ship, not the technology being offered.

Rupert Hare, CEO of Houlder, commented, “The vessel efficiency opportunity is well understood; if you save fuel, you save money and GHG emissions. If you save emissions, you save the planet. It’s a virtuous circle in that regard. However, uncertainty about the performance of efficiency technologies remains a barrier to final investment decisions and wider uptake. Clear data from an independent and objective source on the specific fuel and emissions savings of green solutions can help build the commercial case required. Good decisions need good data and it’s always a smart idea to get a second opinion.”

Jonathan Strachan, CTO of Houlder, said, “This isn’t just about looking at how ships do what they do; it’s about making them do it better. Depending on what a client needs, HOME™ can dial the detail up or down. For those at the drawing-board stage, basic-fidelity simulations offer a quick peek at what’s possible. For more in-depth analysis, like weighing up different modifications or getting into the nitty-gritty of business planning, mid-fidelity and high-fidelity simulations provide richer, more detailed insights through Houlder’s computational fluid dynamics (CFD) and hydrodynamics capabilities and



expertise.”

Operational modelling is an emerging field of study for the maritime industry – advances in processing power, AI, and big data are leading to the development of new and smarter tools. When real-world data from ships is available, it can be fed into HOME™ to make the modelling even more accurate. The system can also calculate carbon intensity indicator (CII) and energy efficiency existing ship index (EEXI) ratings, plus hull forms can be recreated from 2D drawings, removing the need for expensive 3D scanning.

Verified and accurate emissions performance data is in the best interest of technology providers as well as ship owners and operators. It’s a win-win, as technology companies need case studies of their solutions performing well on a suitable vessel and route to build trust with other shipowners, and clearly shipowners want the best return on investment – both in terms of cash and carbon.

Energy efficiency technologies come in various shapes, sizes, and guises, all promising answers to shipowners’ decarbonization headaches. They include rigid wing sails, Flettner rotors, kite sails, suction wings, waste heat recovery solutions, Mewis ducts, propeller boss cap fins, rudder bulbs, pre-swirl stators, wake equalizing ducts, air lubrication, bow enhancement, hull fins, hull antifouling technologies, hull form optimizations, propeller optimizations, engine optimizations, and so on.

With more and more efficiency technologies available — and regulatory, economic, technical, and financial drivers for their adoption evolving — it is time to evaluate technologies in combination, analyse real-world performance data, identify fleet-wide trends, take

opportunities for incremental gains, calculate payback periods in-detail, and delve into technology readiness levels. Find out more about operational and vessel efficiency here.

ABOUT HOULDER LIMITED

Houlder has been a wholly independent provider of design, engineering services and equipment for over thirty years. The company has built on its marine and oil & gas pedigree to proactively engage with emerging markets such as offshore renewable energy, LNG distribution, new gas carrier design, specialist vessel design, and vessel efficiency. Houlder employs 80 professionals across the UK, supporting a network of global projects across the North Sea, Gulf of Mexico, West Africa, North America, South Korea, and Singapore. Its project managers, naval architects, marine engineers, and consultants, support ship owners and operators across the industry, as well as banks, investors and business advisers, with a full range of advisory, design, engineering, analysis and project implementation services.

Houlder’s diverse client base includes such organizations as the UK Government (2017 National Shipbuilding Strategy), Oil & Gas Majors, the Society of Gas as Marine Fuel (SGMF), Eon Climate & Renewables, Siemens Wind Power, Technip, Subsea 7, Shell, BP Exploration, MPI Offshore, Aquatic, Transocean, Dolphin Drilling, and Schlumberger & Ensco. Houlder’s corporate affiliations include Subsea UK, NOF-Energy, The British Rig Owners Association and the Royal Institution of Naval Architects, and the company holds numerous business and industry awards for its innovation, design and business success.

Methanol engine from MAN Energy Solutions secures bulker orders



Japan's Tsuneishi Shipbuilding Co., Ltd. recently ordered three MAN B&W 7G50ME-C9.6-LGIM (Liquid Gas Injection Methanol) main engines in connection with the building of three 81,200dwt bulk carriers for Danish shipping company, J. Lauritzen. Each engine will feature MAN Energy Solutions' proprietary EGRBP (Exhaust Gas Recirculation ByPass) emissions-reduction technology. MITSUI E&S will build the engines in Japan.

Bjarne Foldager, Head of Two-Stroke Business, MAN Energy Solutions, said: "We are currently experiencing a wave of ME-LGIM orders and it is great to see such a respected company as J. Lauritzen joining the decarbonization journey. While car carriers have been to the fore recently, we

ultimately expect methanol to figure prominently as a future fuel across all vessel segments and these newbuildings will be capable of trading carbon-neutrally when powered by green methanol and bio-fuel oils. We value this collaboration with J. Lauritzen and appreciate the trust it has placed in us."

The Kamsarmax vessels will be among the very first methanol-capable bulk carriers in the world and will be fully owned by Lauritzen NexGen Shipping, which J. Lauritzen and Lauritzen Bulkers A/S reportedly will use as a platform for further investments in zero-carbon emission and future-proof assets for the shipping industry. The vessels have been ordered in co-operation with Cargill, the

American global food corporation, who will operate the vessels for a minimum period of seven years.

Thomas S. Hansen, Head of Promotion and Customer Support, MAN Energy Solutions, said: "With more than 160 orders and 500,000 running hours accumulated on methanol, the ME-LGIM engine is proven technology and the defacto industry standard for the methanol propulsion of large merchant-marine vessels. As the engines are readily available and methanol dual-fuel types have a lower capital outlay compared to other, alternative fuel-propulsion solutions for ships, we expect to win further orders within the bulk-carrier segment over the coming months and years."

DP World & Rumo to build new grain and fertilizer terminal at Brazil's Santos



DP World port terminal in Santos.

DP World has joined forces with Brazilian railway operator Rumo to build a new terminal at the Port of Santos, to handle 12.5mt (million tonnes) a year of grains and fertilizers, positioning the port as Brazil's primary trade gateway and a key hub for South America.

Rumo estimates the total investment for the construction of this state-of-the-art facility at BRL 2.5 billion (US\$500 million), which will be financed through a combination of Rumo's resources, loans, and potential strategic partnerships.

This is in addition to recent investments in DP World container handling facilities increasing capacity from 1.2 million TEUs to 1.4 million TEUs, while expanding the size of the quay from 1,100m to 1,300m.

Once complete the new terminal will handle 9mt of grains and 3.5mt of fertilizers a year. With construction expected to take 30 months, all other services including container handling at Santos will continue, with no impact to

container handling operations.

Under the 30-year agreement, DP World will provide the terminal area located on the left bank of Brazil's Port of Santos to Rumo and assume responsibility for operations and port services. The port is one of the largest and most modern private multi-purpose port terminals in the country. The collaboration solidifies DP World's position as the country's leading multipurpose port operator, capable of simultaneously handling containers, cellulose, grains and fertilizers.

The new terminal marks DP World's fourth round of investment since operations began in Brazil in 2013. It comes at a crucial time with the port achieving record cargo movements in January, handling 11.9mt of cargo. Bulk solids, such as sugar and soy, accounted for 5 million tonnes, up 13.9% compared to the same period in 2023, according to the Port of Santos.

Commenting on the agreement, Fabio

Siccherino, CEO of DP World Santos, said: "We are thrilled to partner with Rumo on this transformative project, which underscores our commitment to driving growth and innovation in Brazil's logistics sector. This new terminal will not only bolster trade capabilities but also create long-term value for our customers and stakeholders."

In line with DP World's global decarbonization strategy, the new terminal will be equipped with 21 new pieces of equipment, featuring advanced technology to reduce consumption and emissions of polluting gases. DP World began the process of electrifying its Rubber-Tired Gantry Cranes (RTGs) at the Port of Santos in 2023.

DP World already invested US\$35 million in 2023 to expand and modernize its facilities at the Port of Santos. The terminal currently inhabits 845,000m², with an additional 130,000m² available for expansion.

Sines handles historic iron ore transshipment consignment

Portsines, which is the concessionaire of the Portuguese Port of Sines' Multipurpose Terminal, has reported handling a historic shipment of iron ore.

The consignment consisted of 75,000 tonnes of iron ore, all of which was handled using a single crane, generating productivity of 860 tonnes per hour.

The iron ore was imported from North America, although sent to Sines for subsequent onward shipment to the Port of Amsterdam.

The move is a significant one, since both the port authority and Portsines have been promoting the Multipurpose Terminal across markets in Latin America as a potential hub for European markets for various cargo types.

The terminal has two quays: an external one of 645 metres and an internal one of 296 metres, as well as a dedicated quay for dry bulk and a ro-ro ramp. The deepest draught available is of 18 metres, meaning it can accommodate vessels of up to 190,000dwt. In addition, it is equipped with both warehouses and silos, and is also rail connected. Portsines, which is part of the ETE Group, became concessionaire following a port authority tender launched in 2021.

Barry Cross

Antaq looking into possible fertilizer terminal at Itaqui

Representatives from the National Secretariat of Ports and Waterway Transport (Antaq) in Brazil, are assessing the entire Itaqui Port Complex as part of a technical, economic and environmental feasibility study for the construction of a new fertilizer terminal.

The move has been driven both by the growing global demand for fertilizer and as a means to strengthen Brazil's position as one of the main players in the international market. The Maranhense Port Administration Company (EMAP), which manages the Port of Itaqui, has

made presentations to Antaq, as have fertilizer concessionaires COPI, Transpetro and Vidra, giving an overview of demand and the market overall.

"The new terminal, once completed, will bring a significant boost to the development of the Port of Itaqui; [which is] already in high demand, mainly for the transport of grain and dry bulk commodities such as fertilizer. The new terminal will further strengthen the position of the Port of Itaqui as one of the main logistics hubs in Brazil," said Ellen Brissac, Contracts and Leasing

Manager at the Port of Itaqui.

According to Bruno Neri, director of the Department of New Grants and Port Regulatory Policies at Antaq, "The Port of Itaqui plays a strategic role in the flow of production, and in commodities, such as corn and soybeans, being crucial for the Brazilian economy. It is also important for its connection with the international market and the Arco Norte region."

In 2023, the Port of Itaqui handled more than three million tonnes of fertilizer, an increase of more than 22% compared with 2022. *Barry Cross*

Argentina to build new dry bulk river port

Terminales y Servicios S.A. is to build a new agro-industrial port at the town of Timbúes in the Argentinian province of Santa Fe. This will require investment in the region of \$550 million. Work commenced at the end of March this year. According to the company its construction will consolidate the area as "one of the largest agro-industrial export hubs in the world".

It is located at the mouth of the Carcarañá River, which connects with the Paraná River. The land, all of which has already been acquired, has all the appropriate municipal and provincial authorizations as well as having the blessing of the central government.

The above mentioned investment encompasses construction of quays, storage silos and associated works. Once in operation, the port will handle fertilizer as well as shipments of grains and other value-added by-products.

Juan Manuel Ondarcuhu, owner of Terminales y Servicios S.A., highlighted the importance of the current economic and political environment as providing the impetus to go ahead with the investment. A government representative also noted that, "On a unique scale in the country, this project consolidates Timbúes as one of the largest agro-industrial production and export clusters in the world."

Terminales y Servicios Portuarios SA, already operates three ports in San Nicolás, San Pedro and Rosario, all in Argentina. *Barry Cross*



PORT AGENCY STEVEDORING TRANSPORT CHARTERING SEATOWAGE BULK CARGO CREWING

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Hat-trick for the Port of Blyth following third consecutive record financial results

The UK Port of Blyth announced record financial performance for the third consecutive year at its recent Annual Public Meeting.

The port was delighted to share that overall group turnover grew to £31.5 million which translated into record profitability, with operating profit and profit before tax increasing to £3.9 million and £3.6 million respectively. The core port operating business remains the main contributor to group performance but is strengthened by the port's logistics, forwarding, export packing subsidiary and in-house training services.

In 2023, the port continued to excel as a leading offshore energy support base, mobilizing two of the world's largest offshore windfarms and providing significant vessel and onshore handling activity. Other offshore energy activities ranged from the handling of specialist subsea equipment, heavy project lifts and significant support for the decommissioning sector. This included the decommissioning of the largest oil and gas topsides and jackets handled to date at the expanding facility at Battleship Wharf. The port also remained an important hub for the movement of a range of project, containerized, dry bulk and breakbulk cargoes.

Forwarding and logistics subsidiary, Transped, continued to provide a high-

quality, door-to-door worldwide service to its growing customer base throughout 2023, maintaining the twice-weekly container service between the Ports of Moerdijk and Blyth. Meanwhile, Port Training Services (PTS) had a successful year, offering training in heavy industry, offshore renewables, and the port sector. As the leading provider of the Port Operative apprenticeship in the UK, PTS expanded its programme nationwide, training 78 apprentices in 2023 to support the future workforce of the port industry.

Additionally, the group made considerable progress in delivering more sustainable port operations, which led to an overall reduction of 26.4% in carbon emissions generated from port activities with the aim of becoming carbon neutral by 2040.

Martin Lawlor, Chief Executive of Port of Blyth, said: "I am delighted to announce yet another record year, re-enforcing the Port's status as one of the UK's leading offshore energy bases. The hard work and commitment of our team has been instrumental in achieving this success, and I am proud to see the port thriving and growing year on year."

Chair of the Board of Commissioners, Catherine Young, added: "As I embark on my new role as Chair, I am thrilled to oversee such positive performance for the third consecutive year. With a strong

foundation and a clear vision for the future, I am confident that the port will continue to expand and prosper for the benefit of the regional economy and its communities."

The port's performance was reported at its Annual Public Meeting which was recently held both in-person and online. This important event forms a significant part of the Port of Blyth's commitment to its stakeholders as a leading UK statutory Trust Port. During the event, the Port launched its Annual Review 2023.

ABOUT PORT OF BLYTH

Port of Blyth is the port operating division of Blyth Harbour Commission, an independent statutory trust established in 1882. It is one of the largest Trust Port's in the UK handling cargo across four terminals based around the River Blyth.

Together with major logistics and training divisions, the port group has a growing turnover exceeding £30 million, driven by growth across a variety of sectors but particularly offshore energy, with the port is now recognized as a major strategic east coast base supporting the sector. Other trade handled includes containers, dry bulks (coal, aggregates, cement etc.) and marine fuels.

As a Trust Port, all profits are re-invested back into the Port to improve facilities and to provide benefits for its wider stakeholders.



Great Lakes–St Lawrence Seaway System



Louise Dodds-Ely

66th Seaway navigation season opens, dry bulk markets remain strong in North America

The Europe-North America trade route is a vital transportation link and is a long standing and vital link for continental trade. Vessel traffic between the European continent and North America via the St. Lawrence River and Seaway System serves as one of the world's foremost two-way trade.

On 22 March, Terence Bowles, President and CEO of the St. Lawrence Seaway Management Corporation (SLSMC), and Adam Tindall-Schlicht, Administrator of the Great Lakes St. Lawrence Seaway Development

Corporation (GLS), kicked off the 66th navigation season on the St. Lawrence Seaway. The prospects for 2024 are solid, with continued movements of commodities in the dry and liquid bulk, breakbulk and project sectors. Potash, grains (in particular soybeans and by-products) and aggregates used in construction, along with steel are the lifeblood of tonnage and ensure a range of industries, manufacturers and processors keep needed inventories to meet demands.

"We are thrilled to have a renewed

QUICK FACTS

- ❖ Cargo shipments on the Great Lakes-Seaway system generate \$45 billion of economic activity and 238,000 jobs in Canada and the US.
- ❖ The binational St. Lawrence Seaway serves as the linchpin within the broader waterway, connecting the lower St. Lawrence River to the Great Lakes. Beginning in Montreal and extending to points west, the Seaway's 15 locks (13 Canadian and two US) enable ships to climb a total of 168 metres from sea level up to Lake Erie.



Management Operations and Maintenance Agreement with the Government of Canada. This long-term contract brings stability and predictability for the Corporation and customers alike,” said SLSMC President and CEO Terence Bowles. “It allows the SLSMC to continue its mission of maintaining a safe, secure, reliable, environmentally-friendly, and cost-effective system.” The Agreement extends management for 20 years, until 2044. Bowles added, “Dry bulk continued to perform with highlights including cement, potash, gypsum, stone and ore.”

Looking ahead for dry bulk movement

on the System, Administrator Adam Tindall-Schlicht, Great Lakes St. Lawrence Seaway Development Corporation shared, “The 2024 season began on a strong note, setting a promising trajectory for continued success and resiliency as a key component of an ever-changing global supply chain.”

The 2023 shipping season saw some positive results, with total tonnage at 37,563,000, up just over 3% from the previous year. The 2023 shipping season was also the longest on record for the Seaway. Of note, dry bulk cargoes saw a gain of 5% over 2022; with top

commodities inbound cement, outbound potash, gypsum and stone, along with ore and concentrates all increased by double digit growth in 2023. There’s great optimism that many of these trends will continue this year. The crucial grain market, always impacted by weather conditions and patterns throughout the year, saw growth of 5% in 2023 over the previous year and continues to be an area of focus in the US Midwest and throughout Great Lakes ports.

The inaugural vessel of the 2024 season was the *Algoma Sault*, an Equinox class self-unloading bulk carrier brought into service



NORTH AMERICA'S LARGEST IRON ORE HANDLING PORT



SEPT-ÎLES . QUEBEC . CANADA

in 2018 with new technology to increase fuel efficiency and reduce environmental impact. Algoma Central Corporation, owner of the vessel, is celebrating its 125th anniversary in 2024, and was represented at the event by President and CEO Gregg Ruhl.

“The St. Lawrence Seaway is not just a passage for vessels but an essential conduit for Canada’s economic and environmental prosperity,” said Ruhl. “Ship owners and operators, shippers, ports, shipyards, suppliers, and the Seaway are all part of this vital bi-national network.”

Given the fuel efficiency of new vessels, and the recently announced plan by the Canadian and US governments to establish a Green Shipping Corridor, the St. Lawrence Seaway is poised to be part of Canada’s solution to the challenges of climate change in the transportation sector. Through the use of innovative technologies and hydro-electricity generation, SLSMC has already reduced greenhouse gas emissions by 58% from 2005 levels.

The Great Lakes–St. Lawrence Seaway System is a deep draught waterway extending 3,700km (2,340 miles) from the Atlantic Ocean to the head of the Great Lakes, in the heart of North America. The St. Lawrence Seaway portion of the System extends from Montreal to mid-Lake Erie.

Ranked as one of the outstanding engineering feats of the twentieth century, the St. Lawrence Seaway includes 13 Canadian and two US locks.

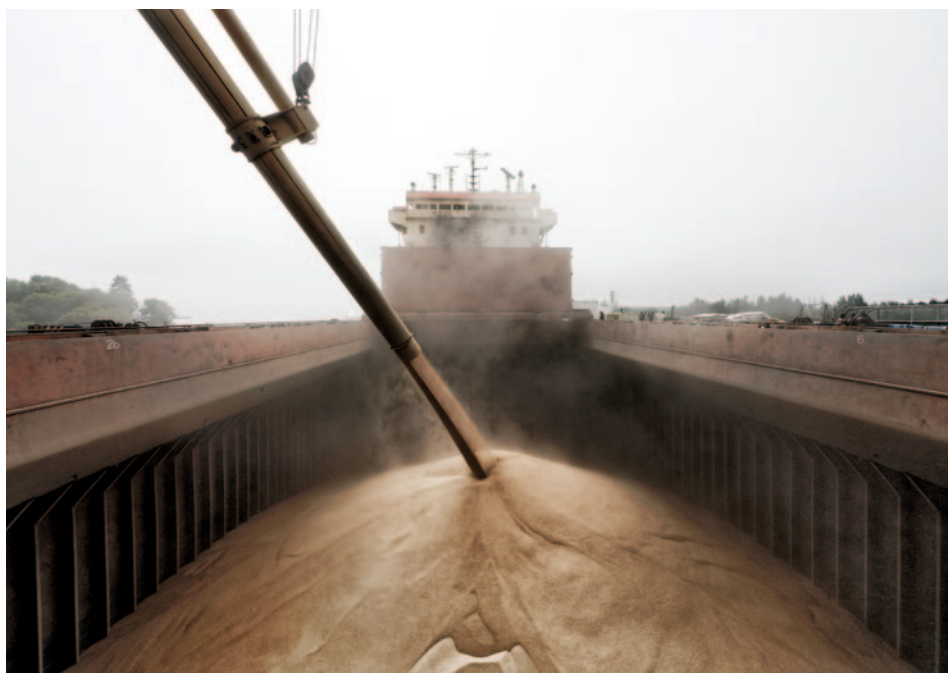
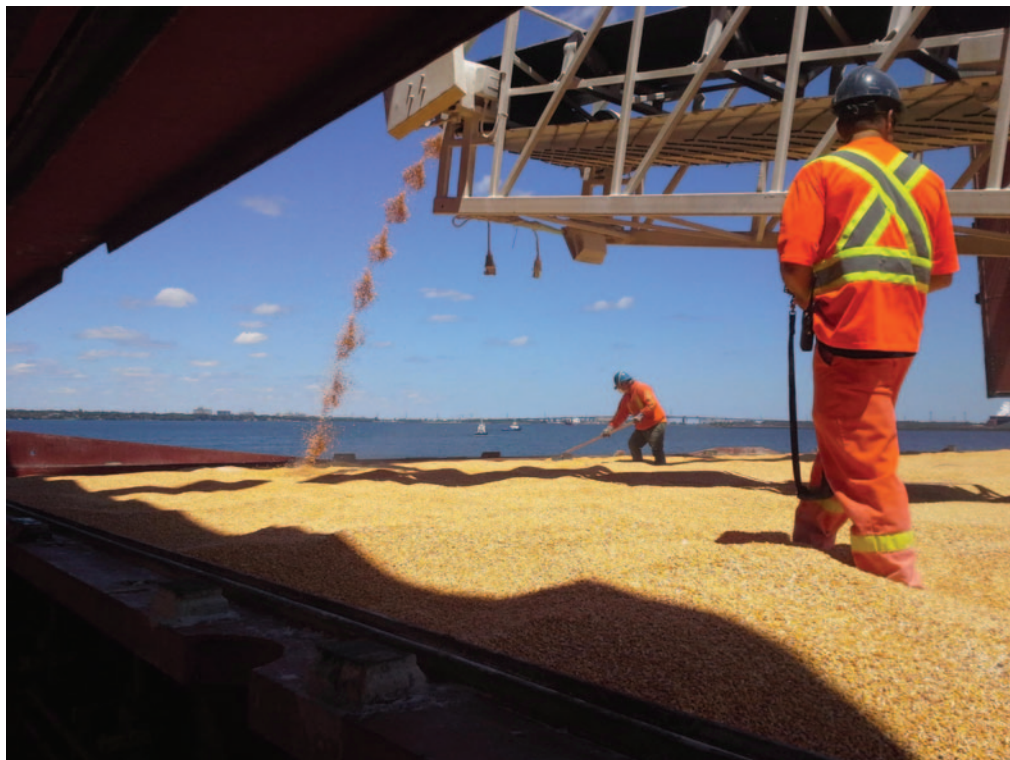
The Great Lakes and St. Lawrence River have been major North American trade arteries since long before the US or Canada achieved nationhood. Today, this integrated navigation system serves miners, farmers, factory workers and commercial interests from the western prairies to the eastern seaboard.

With economic output estimated at \$6 trillion, the provinces and states bordering the Great Lakes–St. Lawrence Seaway System account for 30% of combined

Canadian and US economic activity and employment. The region would rank as the third largest economy in the world if it were a country. Positioned at the core of this economic powerhouse, the Great Lakes–St. Lawrence Seaway System serves as a vital supply chain.

The Great Lakes/St. Lawrence Seaway was built as a binational partnership between the US and Canada, and continues to operate as such. Administration of the system is shared by two entities, the Great Lakes St. Lawrence Seaway Development Corporation (GLS) in the US, a federal agency within the US Department of Transportation, and the St. Lawrence Seaway Management Corporation in Canada, a not-for-profit corporation (ownership of the Canadian portion of the Seaway remains with the Canadian federal government.)

Since opening in late March, the Seaway is off to a strong start to the 2024 season, with vessel transits already totalling ten more ocean going vessels in the system than this time last year). “Moving more goods that drive our economy by water will help optimize supply chains and realize the potential of the Great Lakes St. Lawrence Seaway Green Shipping Corridor,” commented Bowles. “We’re optimistic about a strong navigation season and, with our renewed long-term agreement with the Government of Canada (with SLSMC), assured of a bright future for our system.”



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Port of Toronto moves 2.3 million metric tonnes of cargo in 2023



The Federal Niagara, carrying sugar.

Another strong year in marine imports and cruise ship activity highlights the important role the port plays in Toronto's economy for tourism, trade and construction.

The Port of Toronto moved more than 2.3mt (million metric tonnes) of cargo and welcomed a record 45 cruise ships and nearly 18,000 visitors to its Cruise Ship Terminal in 2023.

COMMERCIAL TONNAGE

The number of cargo ships visiting the Port of Toronto remained consistent in 2023, with 189 ships visiting the Port of Toronto and delivering a range of bulk, project and general cargo products totalling 2,311,616 metric tonnes.

In addition to importing 606,060 metric tonnes of sugar from Central and South America to support Toronto's food and beverage industry, the port moved more than 685,661 metric tonnes of salt, much of which is used for Toronto's roads during the winter months. With construction in Toronto showing no signs of slowing down, the port also moved 796,644 metric tonnes of cement (an 11% increase over 2022), 97,016 metric tonnes of aggregate, and 123,234 metric tonnes of steel products, including coil, pipe, and rebar,

which transited through the Port to construction sites throughout the Greater Toronto Area.

ECONOMIC IMPACT

COMMERCIAL CARGO

An independent report entitled *Economic Impacts of Marine Shipping in the Port of Toronto* — published in September 2023 by Martin Associates confirms that marine cargo handled at the Port of Toronto generated \$463.5 million in economic activity and 1,989 jobs in Ontario in 2022. This study focuses exclusively on the cargo component of the Port of Toronto's operation and does not reflect the port's full diversity of uses, which includes its Cruise Ship Terminal and Marine Terminals.

THE PRESIDENT AND CEO SPEAKS

"The Port of Toronto is part of an environmentally sustainable, marine transportation corridor through the Great Lakes – St. Lawrence Seaway and facilitates the movement of goods and people through Canada's largest city and most populous region," said RJ Steenstra, President and CEO, PortsToronto. "Over and above the Port of Toronto's significant economic impact, generating more than \$460 million in economic activity in Ontario, the 2.3 million metric tonnes of

cargo delivered to the port by ship last year took approximately 57,000, 40-tonne trucks off Toronto's congested roads and highways.

"The Port of Toronto is a reliable, sustainable trade gateway that imports millions of tonnes of goods each year that our city needs to continue to thrive. From the cement needed to supply our construction industry — one of the busiest in North America — to the sugar we use to sweeten our morning coffee," continued Steenstra.

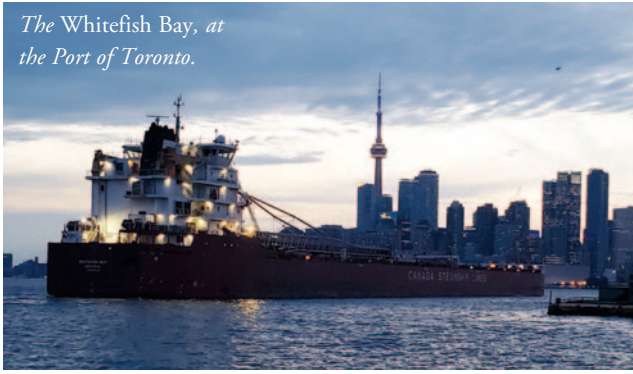
BY THE NUMBERS

- ❖ 189 cargo ships delivered 2,311,616 million metric tonnes of goods to the Port of Toronto in 2023, including:
 - ❑ 796,644 metric tonnes of cement (an 11% increase over 2022);
 - ❑ 606,060 metric tonnes of sugar;
 - ❑ 685,661 metric tonnes of salt;
 - ❑ 97,016 metric tonnes of aggregate; and,
 - ❑ 123,234 metric tonnes of steel products, including coil, pipe, and rebar.
- ❖ The 2.3mt of cargo delivered to the Port by ship last year took approximately 57,000, 40-tonne trucks off Toronto's congested roads and highways.



The Puma, carrying sugar.

*The Whitefish Bay, at
the Port of Toronto.*



- ❖ \$463.5 million in economic activity generated by marine cargo at the Port in 2022.
- ❖ \$79.1 million in taxes generated by cargo and vessel activity at the Port in 2022.
- ❖ 673 jobs directly generated by marine cargo and vessel activity at the Port of Toronto.
- ❖ 18,000 passengers welcomed to Toronto on 45 cruise ships in 2023.
- ❖ US\$200 million in economic value expected to be generated by cruising in the Great Lakes in 2024.
- ❖ \$2 billion film industry thriving in Toronto.

ABOUT THE PORT OF TORONTO

Since 1793, the Port of Toronto has served as Toronto's gateway to the St. Lawrence Seaway and to marine ports around the world. Serving primarily as a bulk cargo destination, the port boasts a unique location minutes from Toronto's downtown and moves goods from countries as far away as Germany, South Korea, China, Brazil, Australia, South America and the United States. In addition to managing the movement of ships through the harbour, PortsToronto is the owner and operator of Marine Terminals 51, 52 and the Cruise Ship Terminal within the Port of Toronto.

The Port of Toronto is one of Canada's inland Ports and is situated on the northwest shore of Lake Ontario. Located minutes from Toronto's downtown core, the port provides a seamless network of cost-effective intermodal links to road, rail and air transportation, serving as a unique and crucial piece of economic infrastructure. Marine cargo arriving and managed at the Port of Toronto generated \$460 million in economic activity and 1,989 jobs in Ontario in 2022. The port also welcomes cruise ships and passengers from around the globe through the Cruise Ship Terminal.

ABOUT PORTSTORONTO

For more than 100 years PortsToronto has worked with its partners at the federal, provincial and municipal levels to enhance the economic growth of the City of Toronto and the Greater Toronto Area. PortsToronto owns and operates Billy Bishop Toronto City Airport, which welcomed approximately 2.8 million passengers in 2019; the Outer Harbour Marina, one of Canada's largest freshwater marinas; and the marine Port of Toronto that includes businesses in a variety of sectors including marine shipping, cargo services, media production and passenger cruises. PortsToronto is committed to fostering strong, healthy and sustainable communities and has invested more than \$14 million since 2009 in charitable initiatives and environmental programmes that benefit communities along Toronto's waterfront and beyond. PortsToronto operates in accordance with the Canada Marine Act and is guided by a board with representation from all three levels of government.

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Eureka Shipping announces construction of new cutting-edge cement carrier for Great Lakes trade

Eureka Shipping, a prominent provider of sustainable, high-efficiency cement carrier services jointly owned by SMT Shipping and The CSL Group, has announced the construction of a state-of-art mechanical/pneumatic cement ship destined for operation in the Great Lakes. The cutting-edge vessel with a deadweight of 12,500 metric tonnes, is designed to replace two older vessels, while maintaining the same cargo capacity.

“Building a ship aligned with eco-friendly principles is a top priority for both Eureka Shipping and our customer,” said Kai Grotterud, Managing Director of Eureka Shipping. “Our new cement carrier is expected to contribute significantly to decarbonization by drastically reducing the emissions per metric tonne of cargo carried.

From its propulsion system to its onboard amenities, every aspect of the new vessel’s design reflects a dedication to safety, environmental stewardship and operational efficiency. Key features include:

- ❖ a diesel-electric propulsion system consisting of four generator sets, providing redundancy for both navigation and cargo operation;
- ❖ modern, fuel-efficient engines capable of operating on HVO biofuel, to enhance performance and reduce emissions;
- ❖ two rudder propellers with 360° thrust, plus a powerful bow-thruster, for superior manoeuvrability and optimized navigation safety;
- ❖ energy-saving measures to minimize power consumption, including LED lighting throughout;
- ❖ state-of-the-art cargo handling equipment to reduce power usage during loading and unloading operations;
- ❖ extensive noise insulations and silencers on machinery and cargo



handling equipment;

- ❖ prepared for operation on shore power when such power becomes available; and
- ❖ high-quality accommodations for officers and crew, prioritizing comfort and well-being.

The new vessel, currently under construction by the Holland Shipyard Group in the Netherlands, is scheduled for delivery in 2025 and will commence operations in the Great Lakes region.

In the interim, prior to the new vessel’s arrival in Canada, *Sunnanvik*, an 8,600dwt mechanical/pneumatic cement carrier previously operating in Europe, will service its trade routes starting in early April 2024. Equipped with modified discharge equipment tailored to the customer’s receiving terminals, the vessel will discharge cargo at rates of up to 1,000 tonnes per hour.

As part of Eureka’s commitment to decarbonization, *Sunnanvik* was fitted with two flexible, vertical ‘Ventofoil’ ‘wing’ sails from Econowind in 2023. These innovative sails harness wind energy to provide additional thrust, contributing to lower emissions. Conditions permitting, they will be tested on the Great Lakes, enhancing the vessel’s speed in favourable wind conditions.

Sunnanvik holds the distinction of being the first sail-equipped vessel to

operate in the Great Lakes.

ABOUT EUREKA SHIPPING LTD

Eureka Shipping Ltd. is a leading provider of logistical services within the specialized segment of pneumatic and mechanical cement carriers. Eureka owns and commercially operates a fleet of self-unloading cement carriers ranging in size from 3,000dwt to 23,000dwt in the Baltic Sea, the Atlantic Ocean, the Mediterranean Sea, the Caribbean and the Great Lakes.

ABOUT SMT SHIPPING

SMT Shipping has, over the past 30 years, grown to a fleet of about 72 vessels through a number of joint venture companies operating in various bulk commodities markets, focusing on highly efficient geared bulk carriers, floating storage/transshipment terminals and belt-unloaders.

ABOUT CSL

The CSL Group is a world class provider of complex marine solutions and the largest owner/operator of self-unloading ships in the world. Headquartered in Montreal with operations throughout the Americas, Australia, Europe and Africa, CSL provides a broad range of shipping and handling services, CSL delivers millions of tonnes of cargo annually for customers in the construction, steel, energy and agri-food sectors.”

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By combining state-of-the-art cargo-handling technology with over 100 years of operating experience, CSL offers customised solutions that feature the highest standards in operational and energy efficiency, reliability, safety and environmental protection.



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How action, adaptability and collaboration create opportunities in Cleveland



For Clevelanders, the winding Cuyahoga River is a constant. It is dependable, it is always present, it braves all four seasons including frozen winters, on its way to Lake Erie. Like many urban rivers, it has served as a transportation route, a boundary, a power source, and a pleasure craft destination for scenic trips. The Cuyahoga River region also has another claim to fame as the birthplace of the modern steel industry.

HEADING UPRIVER TO STEEL COUNTRY

About four hours upriver is LOGISTEC's customer, one of North America's top flat-rolled steel manufacturing companies and a leading supplier of automotive-grade steel. Its mill is strategically located on the river for its excellent access to the Port of Cleveland and Great Lakes shipping, as well as direct connections to highway and railroad transport.

For decades, mined raw materials including iron ore, moved by vessel from the mines in Minnesota, into Lake Superior

to Lake Erie and up the Cuyahoga River where the vessels were unloaded and turned into steel products and then shipped to automakers and other steel consuming industries. As the years passed and transportation technology advanced, new larger bulk vessels with much greater capacity were being built to increase efficiency and drive production to meet growing demand, but the problem was that these new vessels were too big to navigate the winding Cuyahoga.

MEETING THE CHALLENGE OF BIG VESSELS AND SMALLER RIVERS

The challenge became, how does one handle this significant increase in volume of iron ore and other raw materials arriving on vessels too big and heavy for the river? This is where action and adaptability, in partnership with the Port of Cleveland, the customer, the shipping companies and LOGISTEC, created a great solution.

Enter the Bulk Terminal at the Port of Cleveland, located on the outer harbor

west of the mouth of the Cuyahoga River. The terminal, in operation since the 1800s, handled mostly dry bulk commodities, principally iron ore pellets. In 1997, the Port Authority took over the 45-acre facility and LOGISTEC began operating it in 2017.

Originally, the ore conveyance tunnel, which moves the ore to the river-class vessels, was 360 feet long. It became apparent that a longer tunnel would significantly improve efficiency so, in 2021, the Port of Cleveland and LOGISTEC partnered in a project to more than double the tunnel length to 800 feet and installed a multiple scale system to allow for blending different grades of iron ore during loading.

CREATING THE SOLUTION FROM BIG VESSEL TO STOCKPILE TO SMALLER VESSEL

The solution: iron ore arrives at the Cleveland Bulk Terminal from mines in Minnesota along Lake Superior typically on 1,000ft-long self-unloading vessels with up





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Our system provides a safe and reliable transit for your bulk, break-bulk, and project-specific cargo. Highway H₂O provides the dependability you need to keep your products moving and your clients happy. A fresh clean approach to your transportation needs.

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to 63,000 tonnes per shipment. Once safely docked, the iron ore is unloaded directly to the appropriate stockpile according to the grade being unloaded. From there, the iron ore is reloaded back onto smaller, self-unloading vessels for the four-hour voyage up the Cuyahoga River to the customer's mill.

The smaller vessels take up to 17,000 tonnes per load. In this phase of the operation, two grades of iron ore are blended according to the customer's specifications. Blend ratios are easily adjustable through LOGISTEC's system, ensuring consistency, quality, and customer satisfaction.

ACTION, ADAPTABILITY AND COLLABORATION AT WORK

Since 2017, LOGISTEC has moved over

19.2 million long tonnes of iron ore into the terminal and the same amount has then been transferred to river-class vessels for delivery upriver to the mill, and all this despite Cleveland's weather and seasonal challenges; during the winter months between January and the beginning of March the Soo locks between Lake Superior and Lake Huron are closed while the seaway is frozen. None of this would be possible without the tight collaboration with LOGISTEC's customer, the Port of Cleveland and other key supply chain partners.

A WORD FROM THE PEOPLE MAKING THIS HAPPEN IN CLEVELAND

"The Port of Cleveland is pleased to partner with LOGISTEC USA as the operator at our bulk terminal," said Dave

Gutheil, Chief Commercial Officer, Port of Cleveland. "LOGISTEC has played a key role in increasing the efficiency of the movement of the ore, which has greatly benefited our mutual client. The upgrades that have been implemented through this partnership will ensure that our client will benefit from these improvements well into the future."

Rodney Corrigan, President of LOGISTEC USA stated, "Our solid partnership with the Port of Cleveland has allowed us to come up with innovative solutions that benefit all our supply chain stakeholders, from our lake and river-class vessel partners, the port, and to our customer. The key is having the right teams in place, with a problem-solving mindset and partners who are open to making it work."

Going from strength to strength: Picton Terminals by Doornekamp

Picton Terminals by Doornekamp provides logistics solutions and diverse port services which provide better, more efficient shipping throughout the St. Lawrence Seaway & Great Lakes region. Picton Terminals offers stevedoring and unique storage options, innovative solutions and proximity to large markets.

In 2023, Picton Terminals handled steel, sugar, aggregates, gypsum, slag and bauxite, and achieved a total throughput of 220,000 metric tonnes.

RECENT DEVELOPMENTS

Picton Terminals continues to develop. Recent news at the terminals includes:

NEW GUVEN RADIO REMOTE CONTROL GRAB

Picton Terminals received a new grab for offloading bulk products. The 15m³ grab from Guven Grabs is mechanically operated and can be used by the ship or shore cranes. It is a tight-fitting bucket, suitable for small granular or fine materials.

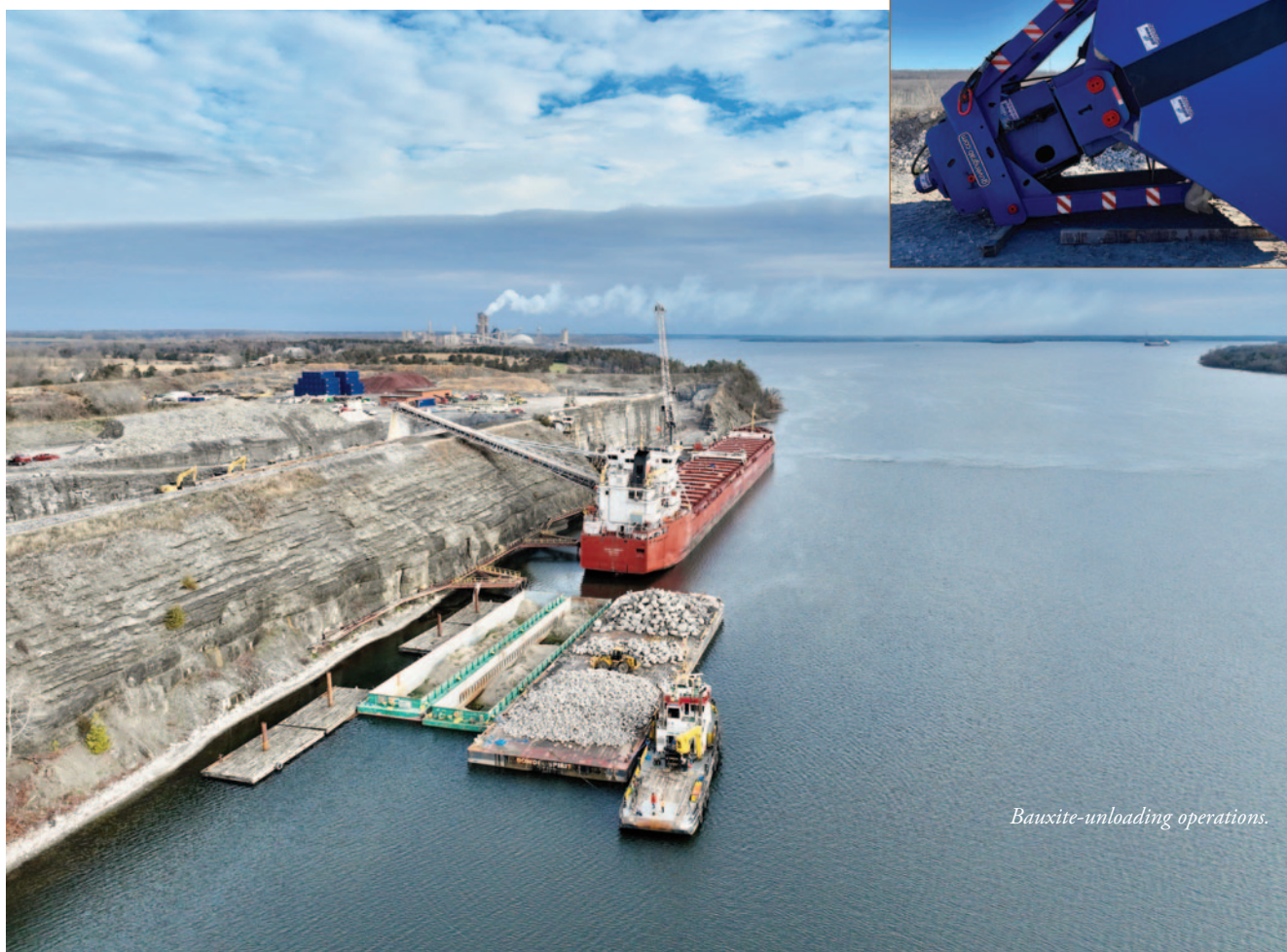
Guven is known for exceptional quality and has been previously used by the Picton

Terminals team, with great success.

DOORNEKAMP-DESIGNED REBAR LIFT DEVICE

Doornekamp Construction designed and built a rebar lift device which attaches to Picton Terminals' forklifts. The device has 'pockets' designed at widths to accept the

Guven Grabs' 15m³ clamshell grabs delivered to Picton Terminals.



Bauxite-unloading operations.

various sizes of cargo. The new lift device was used in offloading operations last autumn.

DOORNEKAMP CELEBRATES 45TH BIRTHDAY

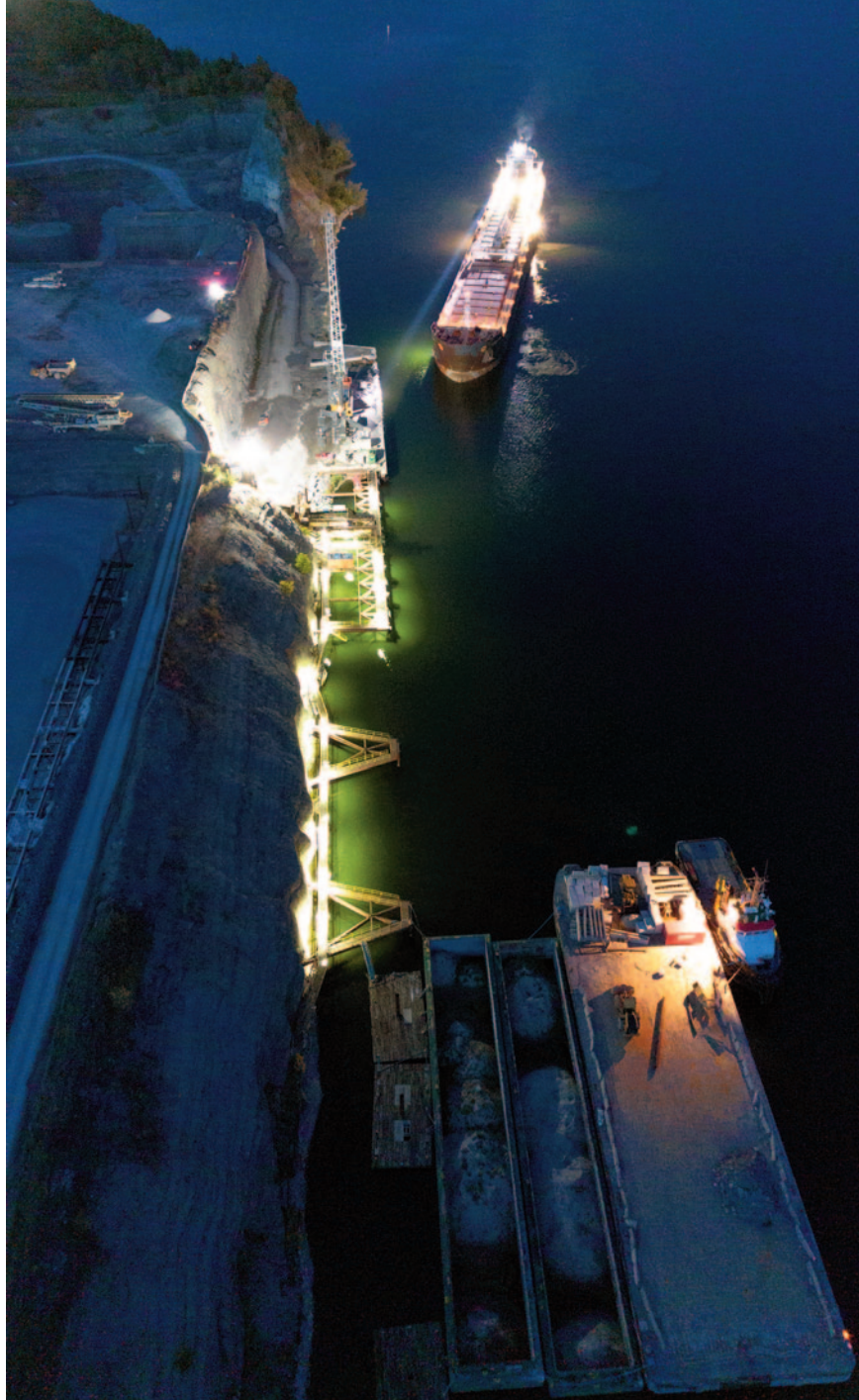
In January this year, H. R. Doornekamp Construction Ltd. celebrated 45 years of construction and engineering excellence built by the dedication and talent of its extraordinary team. Doornekamp's family and team are grateful to be a part of the eastern Ontario community and are committed to being a part of its story of growth and diversity. Doornekamp celebrated this milestone, and thanked the unwavering commitment of its team, many of whom have been with the group for decades.

HISTORY

The Picton port was brought back to life when it was purchased by Doornekamp in 2015. The port can trace its roots back to 1948, when Bethlehem Steel Mills of New York discovered a magnetite ore body in Marmora, Ontario, in 1948 via a government aeromagnetic survey.

The mine site was developed between 1951 and 1953 which included the stripping of 120 feet of limestone overburden. The first shipment of iron ore pellets commenced in 1955.

The iron ore containing magnetite was crushed and ground, and magnetically separated to produce 65% iron concentrate and roasted at 2,400F. Each day, one ore train of 30–35 cars delivered iron ore pellets to the Picton port for loading into 25,000dwt ore ships destined for the Bethlehem Steel Company plant in Lackawanna NY via the Welland Canal.



Doornekamp-designed rebar lift device in use.



Annual plant production was 520,000 metric tonnes.

The Marmora mine was expected to operate for over 50 years. However, in the late 1970s, iron production significantly decreased due to a sluggish economy, runaway inflation and a decrease in world demand for steel. In March 1978, the Marmora Mine closure was finalized resulting in the loss of over 300 jobs in the mine and at the Picton loading dock.

MODERN MARVEL

When Doornekamp purchased the disused port, it immediately began redevelopment of the site to diversify port services and products — including the refurbishment of the existing 1950s shiploader.

Picton Terminals by Doornekamp now works with clients and utilizes creative engineering, economic strategies and

sustainable products to accomplish challenging projects.

Products that can be handled at Picton Terminals by Doornekamp include: road salt; aggregates; farming products; heavy lift cargo; containers; dry bulk; new steel products; and recycled scrap steel.

DOCKING AND SERVICES

- ❖ dock depth: 31' (9.44m);
- ❖ dock length: 300m;
- ❖ no general restrictions of any sort;
- ❖ tugs are not required by Picton Terminals;
- ❖ 24/7 loading and unloading facilities;
- ❖ shore crane 30 metric tonne lift capabilities, reach capabilities 28m;
- ❖ top loading/unloading gearless vessels via clam — discharge upon request;
- ❖ conveyor loading system 2,000tph (metric tonnes per hour);

- ❖ MARSEC level I site;
- ❖ material/product conveyor loading 2,000tph various sizes 6" minus and smaller;
- ❖ covered/dry stockpile, numerous volume options — long-term storage options;
- ❖ gearless vessel discharging via port crane 300tph;
- ❖ crushing/processing of aggregate materials on site;
- ❖ custom packaged options available;
- ❖ truck hauling of all materials; and
- ❖ crane loading and unloading.

DOORNEKAMP VALUES

Doornekamp is known for its dedication to core values: commitment to customers, team and family; quality of products and services; resourcefulness in achieving its mission.



Port Milwaukee specializes in bulk materials

Port Milwaukee, positioned on the western shores of Lake Michigan, allows for direct access to global markets via the St. Lawrence Seaway. As the northernmost approved port on the Great Lakes with access to the inland river system, Port Milwaukee also has access to Gulf Coast ports.

The port offers several facilities and over 50 acres dedicated to dry bulk storage handling, including four storage domes totalling 50,000 tonnes of storage capacity.

In 2023, Port Milwaukee's overall tonnage was 2.55 million metric tonnes.

Port Milwaukee specializes in bulk materials, project and breakbulk commodities. Dry bulk commodities make up a majority of the port's throughput. The port's experienced dry bulk stevedore offers ample storage capacity and equipment to manage various dry bulk commodities.



Dry bulk commodities include a wide variety of materials, such as salt, cement, ash, grain, limestone, aggregates, and fertilizers. The port's dry bulk handling services include storage, stockpiling, direct transfer service to trucks, rails, and barges;

vessel loading and unloading; packaging; palletizing; and processing.

The port's new state-of-the-art DeLong Agricultural Maritime Export Facility officially opened in the summer of 2023. The initial shipments transported animal



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feed, dried distillers grains with solubles, and soybean meal to northern Europe by way of the St. Lawrence Seaway. The DeLong facility consists of a receiving building with a pit for truck and rail access,

a flat fabric storage building with a capacity of 32,000 metric tonnes, and a shiploader.

Through the support of a Port Infrastructure Development Program grant, additional investments are being

made for an expansion to the terminal. These expansion plans include additional silos for increased grain storage capacity, electrical service upgrades, and additional handling equipment.

Peak and CSL join forces in Europe as Peak CSL Group

NEW PARTNERSHIP TO DELIVER ADVANCED COASTAL & OFFSHORE MARINE LOGISTICS SOLUTIONS IN EUROPE

Peak Group and CSL are pleased to announce the launch of their new partnership, Peak CSL Group, following CSL's acquisition of 50% of Peak.

This new strategic alliance consolidates Peak and CSL's short sea shipping operations in Northern Europe and leverages their collective expertise, resources, and capabilities within the coastal and offshore shipping sectors. With a shared commitment to excellence, the partnership aims to deliver comprehensive marine logistics solutions tailored to meet the diverse needs of industrial clients across Europe.

Under the Peak CSL Group banner, the company is positioned to provide an expanded suite of services, particularly catering to the fast-growing offshore renewable energy sector. This encompasses rock and ballast logistics support for offshore wind farms, turnkey material transfer solutions and a fleet of project carriers that includes low-to-zero emission vessels, all facilitated by in-house engineering capabilities.

A cornerstone of the Peak CSL Group philosophy is a proactive stance in driving



forward decarbonization in the shipping industry. Through innovation and investment in energy-efficient vessels, the partnership aims to spearhead the transition towards zero-emission shipping and help customers meet their decarbonization targets.

"Through the Peak CSL Group, we create a strong alliance, grounded in our strategy for the next coming years. Teaming up with a robust partner enables us to broaden our service offerings towards the renewable, oil & gas and infrastructure markets, and set a solid groundwork for future expansion. Our accomplishments over nearly two decades within the Peak Group fill us with pride, and this partnership represents a significant step forward in our strategy for future growth," said Jan-Petter Slethaug, CEO, Peak Group.

"This partnership signals an exciting

new chapter of growth and collaboration at CSL," added Louis Martel, President and CEO of the CSL Group. "By joining forces with Peak, we're enhancing our ability to offer innovative and sustainable marine logistics solutions in coastal and offshore markets. With Peak CSL Group, we're expanding our portfolio of products and services to meet the needs of both our current and prospective customers."

ABOUT PEAK GROUP

Peak Group is an innovative and hands-on provider of shipping, logistics and engineering services to various industry segments in the European market. Established in 2005, Peak is headquartered in Bergen, Norway.

ABOUT CSL

The CSL Group is a world class provider of complex marine solutions and the largest owner/operator of self-unloading ships in the world. Headquartered in Montreal with operations throughout the Americas, Australia, Europe and Africa, CSL provides a broad range of shipping and handling services, CSL delivers millions of tonnes of cargo annually for customers in the construction, steel, energy and agri-food sectors."

Ports of Indiana welcomes ‘Jamno’ as first ocean vessel of the 2024 international shipping season

Ports of Indiana-Burns Harbor opened the 2024 international shipping season with the arrival of the *Jamno*. The bulk carrier sailed from Port of Ijmuiden, Netherlands, on 21 March, travelling through the St. Lawrence Seaway, and will unload cargo today at Indiana’s Lake Michigan port.

To celebrate the first ocean vessel of 2024, Port Director Ryan McCoy presented the ‘Steel Stein’ to Captain Dariusz Buczek on board the Bahamas-flagged ship. The stein commemorates Northwest Indiana’s identity as ‘The Steel Capital of North America’.

“We look forward to the first ocean vessel in Burns Harbor as a sign that spring is upon us and our port’s international connection to the world is now open,” McCoy said. “The arrival of ocean vessels creates jobs for our dockworkers and crane operators, and access to world markets for Indiana businesses.”

Owned and operated by Polish marine line Polsteam, the *Jamno* is a general cargo vessel built in 2018 with a length of 656 feet and width of 78 feet. The ship delivered more than 6,200 tonnes of specialized steel products to Burns Harbor that will be used by local manufacturers.

The steel was unloaded by port stevedore Logistec with local workers from the International Longshoremen’s Association and the International Union of Operating Engineers.

The port handles more than three million tonnes of cargo each year, and steel-related materials represent more than 50% of throughput. The port handles finished steel for various manufacturers and raw materials for steel production such as limestone, coking coal and iron ore pellets.

The St. Lawrence Seaway opened 22 March for the 2024 international shipping season — the 66th year of operations on the marine superhighway. The Seaway closes during winter for routine maintenance on the system’s 15 locks. Ports of Indiana-Burns Harbor is open year-round to handle cargo via river barge, lake vessels, rail and truck.

ABOUT PORTS OF INDIANA

Ports of Indiana is a statewide port authority operating three ports on the Ohio River and Lake Michigan. Established in 1961, Ports of Indiana is a self-funded enterprise dedicated to growing Indiana’s economy by developing and maintaining a world-class port system, and by serving as a statewide resource for maritime issues, international trade, and multimodal logistics.



No foolin': 'Barbro G' is season's first saltie at the Port of Duluth-Superior



On 1 April this year, the first oceangoing vessel of the 2024 maritime shipping season entered the Port of Duluth-Superior.

Barbro G, a 623-foot bulk carrier operated by Sweden's Brochart KB, earned 2024 First Ship honours, completing the season's first full transit of the St. Lawrence Seaway en route to the Great Lakes' westernmost port. By tradition, this first full transit from the Atlantic Ocean marks the annual opening of the Duluth-Superior Harbor, although the interlake navigation season began with the Poe Lock opening on 22 March.

After arriving under Duluth's Aerial Lift Bridge at 11:44 a.m., *Barbro G* sailed to the Ceres/Riverland Ag terminal on Rice's Point to load approximately 22,000 short tons of durum wheat destined for Algeria.

Colley Motorships (Montréal) and Guthrie-Hubner Inc. (Duluth-Superior) are the vessel agents for *Barbro G*, which is captained by Borys Smyrnov of Ukraine. The vessel is sailing under the flag of Portugal.

"Despite our recent snowstorm,

arrival of the season's first full Seaway transit is a true sign of spring and a reminder of the economic impact these great ships help deliver to our region," said Deb DeLuca, executive director of the Duluth Seaway Port Authority. "We're excited to welcome *Barbro G* and share our Midwestern wheat cargo with the world via the Great Lakes-St. Lawrence Seaway System."

The Port Authority's annual First Ship welcoming event took place on 2 April. A fixture of the celebration — the 41st annual First Ship contest, co-sponsored by Visit Duluth and the Duluth Seaway Port Authority — crowned the winner from nearly 8,000 entries based on the official *Barbro G* arrival time.

ABOUT THE CERES/RIVERLAND AG DULUTH STORAGE TERMINAL

Built in 1978, the terminal is the Twin Ports' most-automated grain facility. It has a capacity of more than 12.2 million bushels and a horseshoe rail loop that can accommodate 220 railcars. The facility last hosted Duluth-Superior's first oceangoing ship in 2020. Riverland Ag, owned by Minnesota-based Ceres

Global Ag Corp., is an agricultural grain storage and supply business. Ceres is headquartered in Golden Valley, Minnesota, and together with its affiliated companies, operates 11 locations across Saskatchewan, Manitoba, Ontario and Minnesota.

HISTORICAL NOTE

The latest arrival of the port's first saltie was 7 May 2014 (*Diana*). The earliest was 28 March 2023 (*Federal Dart*). Only once previously has the season's first saltie arrived on April Fools' Day: 1 April 1995 (*Argosy*). It was, at the time, the port's earliest-arriving oceangoing vessel ever.

ABOUT THE PORT OF DULUTH-SUPERIOR

More than 700 vessels and 30 million short tons of cargo move through the Port of Duluth-Superior each year, making it the Great Lakes' largest tonnage port and one of the nation's top 20. The port supports more than 7,000 jobs and contributes \$1.3 billion in business revenue to the regional economy.

HOPA Ports infrastructure investments driving cargo trends

HOPA welcomed 11mt (million metric tonnes) of cargo in 2023 through its expanding port network.

- ❖ In 2023, a total of 11,293,179 metric tonnes moved through the Ports of Hamilton and Oshawa.
- ❖ Steel commodities increased by 13% over 2022.
- ❖ Agri-food grew by 5%; now representing 31% of total cargo.
- ❖ HOPA named 2023 Bulk Port of the Year.

HOPA Ports (Hamilton-Oshawa Port Authority) has released results for the 2023 navigation season, reporting a combined total cargo of 11,293,179 metric tonnes through the ports of Hamilton and Oshawa. The 2023 total was a 9% increase from 2022, marking the second-highest volume in the past decade. The season saw a total of 665 vessels, with 603 in Hamilton and 62 in Oshawa, taking advantage of the longest-ever Seaway shipping season.

Commodities transiting the Ports of Hamilton and Oshawa represent approximately 30% of total cargoes transiting the Canada-US Great-Lakes Seaway system. HOPA's cargo totals rose by 9% in 2023 versus a 3.38% increase in system cargo as a whole.

"Commodities fluctuate year-to-year driven by market and other external forces that are often beyond our control; that's why we are focused on future trends. Our investments in trade-enabling infrastructure, and those of our tenants and partners are the engines of longer-term performance," said Ian Hamilton, President & CEO of HOPA Ports.

Over the past 15 years, HOPA and

partners have invested close to \$1 billion in transportation infrastructure and terminals that have enabled the steady growth of key commodities. This trend continues with the recent announcements of a \$135 million sugar refinery, a new rail container facility, a new flour mill, and HOPA capital works for 2024 exceeding \$40 million.

AGRI-FOOD

In 2023, agri-food commodities through the Ports of Hamilton and Oshawa reached a combined total of 3.5mt, an increase of 5% over 2022. Agri-food represented 31% of total HOPA cargo in 2023, compared to an agri-food total of 18% in 2013, and just 10% in 2009. This growth has been driven by major investments in agricultural-related terminal infrastructure. Over the past 15 years, the port has attracted \$500 million in new investments by agri-food companies, including grain handling terminals, fertilizer terminals, and Ontario's leading mid-size brewery. HOPA kicked off 2024 by announcing even more agri-food investment, in the form of a new flour mill, to be constructed by Parrish & Heimbecker, and a new sugar refinery, to be constructed by SucroCan.

"Food processing is a \$4.8 billion sector in Ontario, and we're delighted to be providing the key ingredients to grow this sector further, in the form of the location and logistics solutions that food manufacturers need," said Hamilton.

At the Port of Oshawa, plans for a new grain export terminal are now under way. "We hope to have shovels in the ground in the coming months to enhance export capacity for grain grown in Durham,

2023 TONNAGE – HAMILTON & OSHAWA

Commodity(metric tonnes)

Steel products	819,280
Ore	3,369,249
Grain (including soybeans)	2,766,068
Fertilizer	560,287
General cargo + containers	2,368
Coal	1,725,213
Coke	308,792
Salt	280,446
Aggregates	917,542
Liquid & petroleum products	382,107
Sugar	144,000
Other	17,828
Total	11,293,180

Kawartha and other GTA-east grain producing regions. The new export terminal is expected to be ready for the fall 2024 harvest," said Hamilton.

STEEL & CONSTRUCTION MATERIALS

Steel and steel-making commodities had a stellar year in 2023, exceeding 6.2mt, a 13% increase compared to the previous year.

HOPA continues to invest in capacity for the value-added steel-related manufacturing supply chain. In 2023, construction of a \$10 million, 60,000ft² rail transload facility for steel products proceeded on-track. This facility, to be operated by NSD Warehouse & Distribution and supported in part by the National Trade Corridors Fund, will make new connections between transportation modes and add more than 100,000 metric tonnes of new steel handling capacity at the Port of Hamilton.

Cement, asphalt and aggregates led the





cargo mix at the Port of Oshawa in 2023. “These commodities are critical to infrastructure, housing and manufacturing — everything we need to keep our regional economy humming,” said Hamilton. “It is our job to make sure we have the supply chains in place to move these essential goods reliably and efficiently.”

NIAGARA PORTS

HOPA continued to advance its Niagara Ports strategy, which now encompasses more than 600 acres of industrial space in Niagara. In 2023, three new parcels of land were transferred by Transport Canada to

HOPA management: two at the Thorold Multimodal Hub and one in Port Colborne, creating more opportunities for businesses to locate and grow as part of HOPA’s Great Lakes port network. The Thorold Multimodal Hub welcomed its 20th tenant in 2023, and the Hub was awarded a Canadian Urban Institute ‘Brownie’ Brownfield Redevelopment Award for its innovative approach to repurposing a legacy industrial site for modern uses.

HOPA was also thrilled to be recognized in 2023 as Bulk Port of the Year by industry magazine *International Bulk Journal*. “Our ports are essential trade gateways to Canada’s largest and most

dynamic economic region,” said Ian Hamilton. “Through expanded industrial lands and a comprehensive range of multimodal services, we contribute to economic prosperity and a resilient, future-ready supply chain.”

HOPA PORTS CELEBRATES EXPANSION OF P&H MILLING GROUP/PARRISH & HEIMBECKER LTD. FACILITY AT THE PORT OF HAMILTON

- ❖ P&H Milling Group and Parrish & Heimbecker Limited, expands flour milling and grain storage at Port of Hamilton.
- ❖ Expansion includes two new storage



silos and the construction of a third flour mill, making P&H the single largest user of Ontario wheat.

- ❖ P&H investment helping to feed \$48 billion Ontario food processing sector.
- ❖ Port's agrifood cluster now accounts for 31% of all cargo.

HOPA Ports congratulates P&H Milling Group and Parrish & Heimbecker Limited (P&H), a long-time port partner, on the announcement of a significant expansion of the company's facility at the Port of Hamilton. This expansion underscores P&H's commitment to serving Canadian agriculture producers and the needs of a booming Ontario baking industry.

The expansion will see P&H's existing facility on Pier 10 in Hamilton grow with the construction of a new flour mill, the third mill at this location, with shovels in the ground this spring. Two new storage silos will also be added, dedicated to handling essential ingredients such as soymeal and distillers dried grains, as well as wheat for milling.

"Our ongoing commitment to the Canadian agricultural landscape is exemplified through this expansion in Hamilton," said John Heimbecker, Parrish & Heimbecker CEO. "We are not just expanding our infrastructure; we are investing in the future of Canadian agriculture and the baking industry. This strategic move reaffirms our dedication to meeting the needs of both our valued agricultural partners and our business partners."

When the first flour mill was built at Pier 10 in 1917, it was the first new-build flour mill in Ontario in 75 years. Since then, P&H doubled its capacity in 2020 with the addition of a second mill and

increased storage, significantly contributing to the company's ability to receive and process wheat efficiently. The new addition will solidify P&H's position as the single-largest user of Ontario wheat.

"This expansion marks a significant milestone in the 15-year partnership between P&H and HOPA Ports," said Ian Hamilton, HOPA's President and CEO. "We applaud P&H's growth at the Port of Hamilton, and their success in increasing grain exports along with value-added food processing. We are committed to continuing to invest in the very best transportation and supply chain infrastructure to enable companies to invest and grow. Together, we are supporting farmers and food manufacturers across Ontario."

HOPA has been growing a leading agri-food cluster at the Port of Hamilton, anchored by companies like P&H. There are now 14 agri-food companies located at the Port, and agrifood has grown to represent 31% of the port's overall cargo mix.

"We are absolutely thrilled to see P&H continue its success with plans to build its third flour mill, along with additional storage capacity," said Norm Schleeahn, Director, Economic Development at the City of Hamilton. "With this expansion, Hamilton continues to demonstrate why food ingredient companies like P&H choose to invest and expand right here. P&H and HOPA Ports are strategic assets of the City's agri-food and food & beverage processing sector, and we look forward to working with both of them on this significant expansion."

The city of Hamilton is home to a growing food processing sector, with more than 120 food ingredients companies located in the city. The sector is connected

to 105,000 jobs and \$48 billion in economic activity in the province of Ontario.

ABOUT P&H MILLING GROUP

P&H Milling Group, a division of Parrish & Heimbecker, Limited, is a leading Canadian agribusiness that specializes in flour milling and pea processing. Committed to quality and sustainability, P&H Milling Group plays a crucial role in supporting Canadian agriculture and meeting the demands of the growing food industry.

ABOUT PARRISH & HEIMBECKER, LIMITED

Parrish & Heimbecker, Limited (P&H) is a Canadian, family-owned agri-business, with roots in the agriculture industry dating back to 1909. P&H is growth-oriented, diversified, and vertically integrated with operations including grain merchandising, flour milling, as well as crop inputs and feed mills. With over 70 locations from coast to coast, and trade links around the globe, P&H leverages its well-established network of assets, strong business relationships with customers and suppliers and ongoing infrastructure development to support Canadian agricultural producers.

ABOUT HAMILTON-OSHAWA PORT AUTHORITY

As an integrated port network, the Hamilton Oshawa Port Authority (HOPA) offers port and marine assets in Hamilton, Oshawa and Niagara, to support Ontario industries and facilitate trade. By investing in high-quality infrastructure and prioritizing sustainability, HOPA helps build prosperous working waterfronts in Ontario communities. Overseeing more than 1,400 acres and more than 180 tenant companies, 40,000 Ontario jobs are connected to the cargo that passes through HOPA's integrated ports. 



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Smart Port is the key to speeding up the quay



Question: is a loading shovel a lifting device or a transport tool? The usual answer is 'both' but this is a response that does not fully take into account the mechanics of the equipment. Of course, it can both lift and travel, but the distances involved are the real driver on the efficiencies of the equipment. Fully laden from ship to shed, the transmission is running hot and unladen on the return to the vessel, the load is absent from the front and maximum weight is over the steer axle, punishing the king pins and accelerating tyre wear. So, distance will eventually degrade machines and besides, if distance from the vessel to the shed is significant, this really isn't the most effective way in terms of cost, labour, maintenance and the environment.

This is where Cooper Specialised Handling's Smart Port ideology becomes paramount as it brings real differences into the methodology of landside operations in order it can both maintain the discharge speed and yet, at the same time discharge into store in the most cost-effective manner. It reduces CO₂ emissions and ensures expensive equipment is not being over-used or punished thus reducing maintenance costs.

The introduction of high-speed hydraulic cranes, whilst delivering huge productivity, brings challenges in the need to discharge from the quay at the same rate as that of the crane. Rope cranes have traditionally discharged at a rate of 300tph (tonnes per hour) and landside has been able to comfortably match that, but new hydraulic cranes can typically discharge at

800 to 1,400tph, so an imbalance occurs and invariably, the very quick crane needs to idle to allow landside to catch up.

The ideology of Cooper Smart Port therefore aligns the speed of landside with that of the crane which involves some technological and some process changes. One example of technological advancement is an accurate crane-mounted weigh scale that interfaces with the customer's own CRM software and recorded via the on-board telematics system. This eliminates the bottleneck associated with weigh bridges and it can be done accumulatively using the handling equipment thus removing a process in the chain and speeding productivity by driving straight to the store.

As David Cooper of Coopers explains "We are noticing the cranes are having to wait for landside operations to catch-up. We need an intermediate system that the crane can continue discharging even if landside transiting equipment is not present. This intermediate holding or buffer will consist of 80t tipping trailers mounted on translifters. Tractors then shuttle the translifters whilst the crane continues unloading into a parked tipping trailer, without transliifter, which keeps the unloading process moving".

However, is not only speed that is the benefit here. Studies suggest there are cost benefits too and, as the process is not burning as much fuel as traditional methods, carbon output is significantly cut. According to mathematical studies carried out by Cooper, they believe discharge of

bulk can be completed in half the time at one-quarter of the cost with less than one-third of the carbon emissions. Importantly, it ensures equipment is working comfortably within their operational capabilities and not being overstretched which will enhance equipment longevity. Transport equipment is thus undertaking the transport and lifting equipment is doing the lifting. Maintenance costs are reduced and as Cooper points out "One tipping trailer will transport the equivalent of 16 loading shovels. That is one journey versus 16 journeys. One operator, not four operators and one quarter of the CO₂ emissions for the same unit volume"

Carbon can be further reduced by the whole process being fully electric and yet more savings can be made if the distance can be covered by link-conveyors to the storage hall. Link conveyors are cost effective and require minimal labour to operate them. Conveyors bring added advantages in loading the stack from the top thus eliminating the need for the loading shovel to adopt a 10m long 'pusher' blade whereby 30% of what is pushed settles back. This is a waste of resource, energy, cost and, eventually degrades the commodity.

As David Cooper points out, there is a simple rule in materials handling, "Each time the product is handled it costs money and wastes time — handling needs to be minimized and with it speed of throughput will increase and costs reduce — Cooper Smart Port is simply implementing these basic principles."

Remote-controlled rail loading in Finland

The seaport operators in Pori, Finland, rely on a radio-controlled shunting solution from Vollert for the rail loading of iron sulphate as bulk goods. A Tandem DER 150 shunting robot provides and moves freight trains weighing up to 2,000 tonnes. The coupling system is compatible with both Eastern and Central European systems.

The iron sulphate is stored and loaded in the port of Pori, protected from the weather. For loading by wheel loader, the freight trains are moved into a loading hall and later made available again for further transportation outside. This task is performed by an economical shunting solution from Vollert — the Tandem robot DER 150. The radio-controlled vehicle unit allows the wheel loader driver to operate the entire 500m-long track section. The necessary thrust is provided by a stage V diesel-electric drive, which powers the four electric motors on the four axles of the tandem machine. The DER 150 has a total weight of 100 tonnes on the rails. The tensile load of 150kN allows the reliable pulling of up to 2,000 tonnes of weight at a speed of 0.5m/s.

AUTOMATIC ROOF SYSTEM AND FLEXIBLE COUPLING

The iron sulphate is also protected from rain and weather in the freight wagons. For this purpose, the open-top wagons are fitted with lockable roofs. These can be opened and closed hydraulically by radio by the shunting robot. A corresponding hydraulic unit with 22kW provides the necessary pressure.

In addition, the robot in the Port of Pori offers the option of shunting both wagons with Eastern and Central European couplings. This means that both couplings with central buffers (SA3) and the outer buffers commonly used in Central Europe can be coupled and moved with the shunting solution from Vollert. The SA3-compatible wagons are also coupled and uncoupled automatically. The DER 150 has



Olmar Management B.V uses robust technology from Germany for rail loading of bulk goods in Pori, Finland: the radio-controlled shunting robot Tandem DER 150 from Vollert has a flexible coupling for Eastern and Central European wagon systems as well as a hydraulic unit for opening the wagon roofs. Source: Vollert

its own compressed air compressor to release the wagon brakes.

ROBUST TECHNOLOGY FOR HARSH CONDITIONS

Vollert installed several repeaters along the 500m radio link to ensure reliable transmission of the control data inside and outside the track system. The system ensures automatic switching between the stations for optimum control of the transmission and reception power. Another automatic sanding system uses a measuring wheel to record the actual speed of the robot and increases the friction of the four drive axles in the event of slippage. This ensures reliable shunting even in adverse

weather conditions such as rain, snow and ice. Remote maintenance access also enables remote control of the shunting robot and therefore fast and direct support from the Vollert service team in Germany at any time. All of the robot's performance data, such as operating hours and consumption, can be evaluated over longer periods of time in the dashboard.

ABOUT VOLLERT ANLAGENBAU GMBH

As an innovator, Vollert Anlagenbau develops economical shunting systems for branch lines and connecting lines. Since the 1950s, stationary, rope-bound shunting systems from Vollert have been used worldwide for the shunting of railroad cars and trains. In addition, as a technology leader, Vollert offers self-sufficient shunting vehicles (shunting robot), heavy-duty transport trolleys and transfer cars for reliable and efficient operations in refineries, mines, ports, steel and cement plants, in explosion protection areas, train washing plants and maintenance operations.

Vollert's plant and machine solutions are used in over 80 countries worldwide, and the company's own subsidiaries in Asia, North and South America also strengthen its sales activities.

Source: Porin Satama Oy



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Martin Engineering celebrates 50 years



Martin Engineering Business Development Manager Mike Masterson and Product Manager Sid Dev working at the Air Cannon test stand at the company's industry-leading Center for Innovation (all pictures: ©2024 Martin Engineering).

Bulk handling solution provider, Martin Engineering, is marking the 50th anniversary of its invention of the world's first low-pressure air cannon.

Air cannons have transformed material flows in bulk processing systems, eliminating problematic internal buildups and blockages. After five decades of continuous innovation, Martin Engineering remains at the forefront of air cannon advancements, enabling industrial plants to run more profitably, efficiently and safely than ever.

The company launched the world's first low-pressure pneumatic air cannon — its legendary Big Blaster® — in 1974. It was devised and developed by Carl Matson, a member of Martin's senior team and cousin of the firm's founder Edwin F. Peterson.

The patented technology was designed to dislodge stubborn material stuck to the inside walls of hoppers and silos by firing precisely timed bursts of compressed air to keep bulk material flowing and preventing the growth of serious build-ups and blockages.

The air cannon was originally aimed at the same quarrying applications as the

legendary Vibrolator®, the Martin-patented industrial ball vibrator on which the company's success had been built since its inception in 1944.

By the 1980s, as Martin Engineering expanded its global presence, the Big Blaster was already being reimaged for use in high-temperature industrial applications to maintain the flow of sticky materials through the process and minimize unscheduled downtime.

Martin air cannons soon proved to be a game-changer for sectors such as cement, for the first time signalling an end to workers having to access the interior of preheater vessels to manually break off hefty material build-ups using a high pressure water jet — one of the most unpleasant and hazardous jobs on a cement plant.

By the 1990s Martin Engineering had developed an extreme heat and velocity version of the Big Blaster, the XHV, with an all-metal construction capable of withstanding the harshest of conditions. In the 2000s Martin became the first to introduce safer positive-pressure firing valve with its Tornado air cannon —

technology that prevents unintentional firing if there's a drop in system pressure, and also allows solenoid valves to be positioned up to 60m (200ft) from the air cannon for easier access and maintenance. Designed with safety in mind, the positive firing valve also delivers a more powerful blast.

Soon after that came the introduction of the Hurricane valve, located in the rear of the air cannon tank rather at the tank and nozzle junction, greatly improving safety and ease of maintenance. The exterior-facing design eliminates the need for removal of the tank so maintenance is a simple one-worker operation requiring only minutes for replacement.

In 2008, Martin Engineering opened its industry-leading Center for Innovation, which accelerated the company's air cannon technology advancements including:

SMART™ Series Nozzles with multiple nozzle tips, one of which features a retractable design that extends the 360° nozzle head into the material stream only when firing, protecting it from repeated abrasions and extreme temperatures. Its

of air cannon technology

clever Y-shaped assembly means the nozzle can be installed, accessed and serviced without removing the air cannon or further disruption to the vessel structure and refractory.

The Martin® Thermo Safety Shield acts as a safety barrier to allow timely and safe maintenance of air cannon systems. It protects workers from exposure to severe temperatures so that maintenance can take place safely and production stays on schedule.

Martin Engineering's current ground-breaking air cannon designs are the result of the research and development in the Center for Innovation, located at the company's headquarters in Neponset, Illinois. The centre will open its doors to visitors in the summer of 2024 as part of the 50th anniversary celebrations.

Brad Pronschinske, Martin Engineering's Global Air Cannon Product Manager, said: "From the very beginning our air cannons were specifically designed to produce a quiet but powerful, high-velocity discharge of plant-compressed air to dislodge buildups and enhance material flow. They were developed to be capable of handling

Air Cannons like Martin's Hurricane are in widespread use around the world in industries such as cement, steel, lime, coal, biomass, fertilizer and more.



the high temperatures, harsh gases and abrasive, corrosive materials associated with heavy industries, and yet have low maintenance requirements and low costs. Since the launch of the Big Blaster 50 years ago we have continued to innovate, introducing smarter and ever more

powerful air cannon systems that improve efficiency, productivity and safety.

"We're especially proud that Martin air cannons have become so important in reducing the health and safety risks associated with clearing blockages manually — such as working in confined spaces, working at height, falling materials, and working in hot and dusty environments. Our team is always working on new developments and we're looking forward to bringing the next generation of air cannon technologies to our customers all over the world."

ABOUT MARTIN ENGINEERING

Martin Engineering has been a global leader in bulk material handling for more than 80 years, continuously developing new solutions to make high-volume conveyors cleaner, safer and more productive. The company's series of *Foundations™* books is an internationally recognized resource for safety, maintenance and operations training — with more than 22,000 print copies in circulation around the world. The 500+ page reference books are available in several languages and have been downloaded thousands of times as free PDFs from the Martin website. Martin Engineering products, sales, service and training are available from 17 factory-owned facilities worldwide, with wholly-owned business units in Australia, Brazil, China, Colombia, France, Germany, India, Indonesia, Italy, Malaysia, Mexico, Peru, Spain, South Africa, Turkey, the USA and UK. The firm employs more than 1,000 people, approximately 400 of whom hold advanced degrees.

An original display ad for Martin's Big Blaster air cannon.

Keep materials moving with Martin's BIG BLASTER®



Martin's Big Blaster air cannons dislodge clinging materials and keep them flowing smoothly. In most bulk material handling systems — whatever the materials — wherever they stick — the Big Blaster system works quietly and efficiently when other methods are too expensive, too noisy, or ineffective. It's simple. One or more Big Blasters mounted on a structure send an abrupt burst of compressed air inside, breaking up bridged or ratholed material immediately without structural damage.

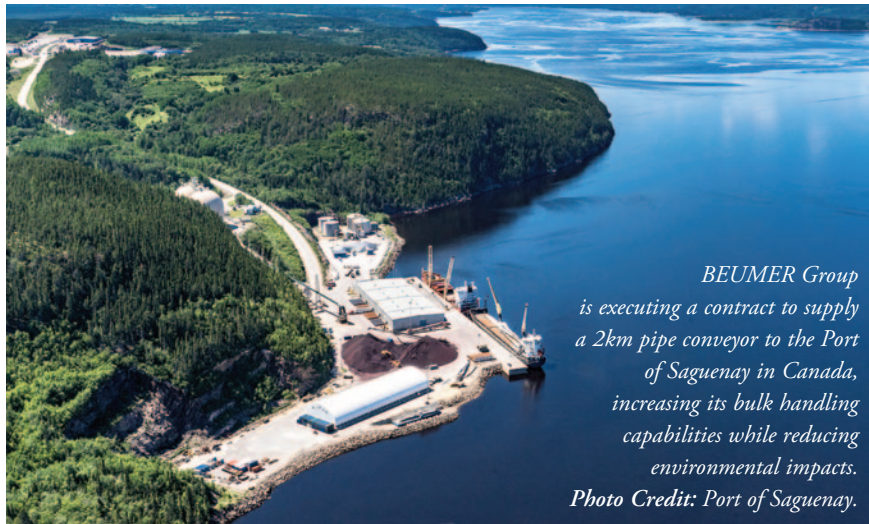
Initial cost is low, compared with other systems; and because the Big Blaster uses plant air (and just a little of it), operating costs are low, too.



MARTIN ENGINEERING COMPANY

Tell us about your material flow problem and we'll put together a Big Blaster system to get things moving again.

BEUMER Group secures contract to supply 2km pipe conveyor to Port of Saguenay, Canada



BEUMER Group is executing a contract to supply a 2km pipe conveyor to the Port of Saguenay in Canada, increasing its bulk handling capabilities while reducing environmental impacts.

Photo Credit: Port of Saguenay.

BEUMER Group announced on the 18th of April 2024, that it has secured a contract to supply a large 2-way pipe conveyor system for a strategic development project at the Port of Saguenay in Quebec, Canada. The conveyor will connect the port with customers in the new industrial port zone, boosting economic growth and supporting the region's commitment to a more sustainable maritime supply chain.

The Port of Saguenay is located 500km north of Montreal. The BEUMER Pipe Conveyor is central to the port's new Multi-User Bulk Transport System, which will increase the port's ability to both import and export iron ore, pellets, wood chips, salt, aggregates and other ores. It will attract further investment in the region of Saguenay-Lac-Saint-Jean. On awarding BEUMER Group the contract, the Port of

Saguenay Authority commented that they were particularly impressed with the company's "engagement, commitment, and flexibility in understanding our requirements, especially regarding the importance to work with the community."

The pipe conveyor will be roughly two km long with a downhill (export) capacity of 4,150tph (tonnes per hour) and an uphill (import) rate of 2,750tph. It runs along an existing steep and curvy road, reducing the need for truck transport and any associated carbon, dust and noise emissions. Because the pipe conveyor is fully enclosed, it reduces any environmental impacts and protects bulk materials from the sun, rain, snow, and wind. The scope of the contract includes all mechanical, structural and electrical equipment including prefabricated electrical buildings

and the control system.

Markus Schmidt, CEO BEUMER Group North America, says: "The Saguenay pipe conveyor project represents a very important milestone, both for this region of Canada and for BEUMER Group's Minerals & Mining business. The expertise inherent in our global team enables us to deliver a conveyor solution on this scale, meeting the client's criteria for improving capacity in bulk handling while reducing environmental impacts."

The pipe conveyor is expected to be fully operational in 2025.

ABOUT BEUMER GROUP

BEUMER Group is a global manufacturer of material handling solutions. As a third-generation family-owned business, the company offers high-quality system solutions and comprehensive customer support worldwide and is a "Partner of Choice" for the mining, cement, building materials, petrochemical, consumer goods, postal, e-commerce, fashion, and baggage handling industries. With 5,500 employees worldwide, BEUMER Group generates an annual order intake of around 1,25 billion euros. In line with the company motto "made different", BEUMER commits to the highest standards of quality, innovation and sustainability. In 2022, the group acquired FAM Minerals & Mining, an international supplier for bulk materials, process supplier for bulk materials, processing and conveying systems for open-cast mining, stockyards, and ports.

BEUMER Group is supplying a 4,150 t/h bi-directional pipe conveyor to the Port of Saguenay. The system will be installed inside an enclosed gallery structure for ease of maintenance during the winter months.

Photo Credit: BEUMER Group GmbH & Co. KG.



Marcor Stevedoring receives new LHM 800



The LHM 800, the flagship model of Liebherr's mobile harbour crane portfolio, is loaded onto the MV Bravewind via RoRo method for its delivery to the Marcor Hartel Terminal.

The new LHM 800 fits into the strategic growth of the terminal's expansion, with its focus on more sustainable operations by using more renewable energy and cleaner drive concepts. A second LHM 800 has also been ordered and is scheduled to be shipped to Marcor later this year. The Hartel Terminal has a 130,000m² terminal and a 600-metre quay with a 16-metre draft alongside. It has vessel handling options from barges up to 120,000dwt baby-cape vessels, both for board-to-board transshipment and discharge to/from the terminal.

Rostock (Germany), March 2024 – Contributing to a greener bulk industry. And no Diesel engine is needed. The LHM 800 will do its work without generating additional local emissions and will also feature a quieter noise profile. Under ideal operating conditions, upwards of 2,000 tonnes of dry bulk capacity can be achieved. A boom length of 64 metres and eye-level height of 30.8 metres help ensure that the crane can optimally load cargo between the quay and storage facilities.



A milestone for Marcor and Liebherr: This LHM 800 is the first crane of its kind to operate with an all-electric drive system. With its 64-metre reach and peak dry bulk operating capacity exceeding 2,000 tonnes per hour, it perfectly aligns with Marcor's bulk, bagged and containerized stevedoring operations.

Further technical innovations help meet the terminal's present and future needs. The crane's electric drive unit, ergonomic cabin, and more digital features like touch panel pave the way for future assistance and partial automation systems. These advantages make the crane's operation more efficient, saving time and money for the operator.

The LHM 800 will be used for handling dry bulk commodities such as agri-bulk, biomass, fertilizers, and mineral bulk cargoes. The crane will increase the throughput and efficiency of the terminal, which is expected to reach 10 million tonnes per year by 2025.

GROWING NEED FOR LOGISTICAL CAPACITY

Growth in the green infrastructure sector also requires growth in logistics capacities. Marcor operates primarily in the discharge, loading, storage, and treatment of dry bulk commodities including agri-bulk, biomass, concentrates and ores, industrial minerals, jumbo bags, and other bulk. Ship-to-ship operations are also part of their services. And the market size and growth are significant both in the region and globally.

In 2023, the throughput of dry bulk cargo at the Port of Rotterdam reached approximately 64 million metric tonnes. In 2022, the EU consumed a total of nearly 14.83 metric tonnes per capita of raw materials including biomass, metal ores, non-metallic minerals, and fossil energy materials. According to a report of the World Bank, the European mineral raw materials industry demonstrated a considerable increase in the production of minerals needed for clean energy technologies. A wide range of minerals and metals for implementing renewable energy strategies and their related infrastructure are part of what is driving this growth.

These include copper, lithium, nickel, cobalt, graphite, and more.

The LHM 800 is part of this growth strategy. The floating terminal in Rotterdam is supported by the expansion of the dry bulk terminal at the Hartel Terminal. This expansion has required redevelopment and construction of new and high-end storage facilities. Sustainable and efficient storage and stevedoring operations are being phased in at the site.

"With the LHM 800, we have gained a competitive edge in the dry bulk market," comments Danny Swart, Director of Marcor Stevedoring. "It is a versatile and powerful machine that can handle any type of cargo, from ore to grains and fertilizers. It also reduces our fuel consumption and emissions, which is in line with our sustainability goals."

SMARTER BULK HANDLING

One of the assistance systems that aids in optimal bulk operation is Liebherr's in-house-developed SmartGrip technology. The system optimizes the grab entry angle and adapts to the bulk material in use without the need to change the grab. When used, SmartGrip also fills the grab based on an optimum load graph, which reduces overload and its effects on the crane's structure. In the end, these features help save time and required energy for the operations.

Marcor Stevedoring and Liebherr are partners in progress, moving the dry bulk industry forward with their innovative and sustainable solutions.

ABOUT LIEBHERR-MCCTEC ROSTOCK GMBH

Liebherr-MCCTec Rostock GmbH is one of the leading European manufacturers of maritime handling solutions. The product range includes ship, mobile harbour and offshore cranes. Reach stackers and components for container cranes are also included in the product portfolio.

ABOUT THE LIEBHERR GROUP

The Liebherr Group is a family-run technology company with a highly diversified product portfolio. The company is one of the largest construction equipment manufacturers in the world. It also provides high-quality and user-oriented products and services in a wide range of other areas. The Liebherr Group includes over 140 companies across all continents. In 2022, it employed more than 50,000 staff and achieved combined revenues of over 12.5 billion euros.

High-quality weighing systems and calibration services, for when accuracy and reliability matters

Control Systems Technology (CST) has designed and built its own precision belt weighing products and supported them throughout Australia for over 35 years, working tirelessly to provide customers with the best possible weighing system experience.

Proudly manufacturing all components of its weighers, including electronics and weighframes, CST provides accuracy guarantees on its weighers and calibration services.

With continuous development and improvement of its own rugged and reliable equipment, CST has earned an enviable reputation in the field of in-motion weighing and maintained a solid, enduring presence in the market. With well over 3,000 active installations worldwide, CST has become a major presence in the Australian and export markets.

CST has now developed a number of world firsts in belt weigher design, creating belt weighers of the highest accuracy $\pm 0.1\%$, self-checking, and internet-accessible weighers

The company offers a wide range of products and services, including:

- ❖ trade-certified belt scales, certified in Europe, Canada, the USA and Australia;
- ❖ belt scales for process control;
- ❖ belt scales for inventory transfer;
- ❖ weigh feeders;
- ❖ volumetric scanners;
- ❖ belt scale maintenance and upgrade; and
- ❖ belt scale certification services

What distinguishes CST from its competitors, is its commitment to research and advancements, constantly pushing the boundaries of performance not only in isolated factory environments, but amongst the harsh conditions that can be encountered on Australia's mine sites.

This continued focus on product development means that CST boasts many unique products with outstanding performance.

MAVIS-ARM (MASS AND VOLUME INFORMATION SYSTEM)

The MaVIS is one of the most advanced multifunctional weighing electronics in the world.

Export each ship load of cargo with confidence when using the CST Mass and



CST's Volumetric laser scanner system allows real time monitoring of surcharge angles, material volume and material edge margins.



CST's IntelliRoll is a wireless autonomous weigh roll unit, which interfaces to the CST IntelliRoll smartphone app or the CST Intelligent Cargo Scale Panel.

Volume Information System. Knowing the mass, volume and bulk density means you can be assured cargo fits before loading to avoid overfilling and material spills. With multiple options for viewing bulk density — real time, average per hold and average for the total ship — each ship load can now be completed in the minimum of time with precise results. The laser scanner gathers the cross-sectional area as well as centre of load, centre of belt, surcharge angle and more.

VOLUMETRIC LASER SCANNER

Volumetric laser scanner system with CST's MaVIS integrator allows real time monitoring of surcharge angles, material volume and material edge margins. System can be stand alone or integrated over weightometer for a total mass and volume information solution.

INTELLIROLL PROCESS SCALE

The IntelliRoll is a wireless weighing roller,

a complete belt scale totally contained within a roller.

This wireless autonomous weigh roll unit is CST's latest innovation. IntelliRoll interfaces to the CST IntelliRoll smartphone app or the CST Intelligent Cargo Scale Panel.

Users can download all data to their device when within Wi-Fi range of an IntelliRoll set. Alternatively, a PC computer or a CST weigher interface panel can be used to constantly monitor the weigher output and communicate to a PLC or perform control functions for the conveyor systems.

REMOTE CALIBRATION SERVICE

The costs of calling out a service technician can be alleviated through the CST Remote Calibration Service. Sites will still need to provide one of their own staff members during calibration, but this is quicker and more efficient than waiting for a service technician to travel there.

The costs of calling out a service technician can be alleviated through the CST Remote Calibration Service.



What the Remote Calibration Service offers:

1. ROUTINE CALIBRATION CHECKS VIA REMOTE PRESENCE

- ❖ Adjustments after belt change;
- ❖ Minor service (Typically 3 monthly).

2. EMERGENCY ASSISTANCE AND TROUBLE SHOOTING VIA REMOTE PRESENCE

- ❖ Inspection of current condition;
- ❖ Remotely supervised remedial work.

3. REMOTE INSPECTION OF EQUIPMENT HEALTH. (FOR PERMANENTLY INSTALLED MODEMS)

- ❖ Regular reports on condition without sending staff into the field;
- ❖ Autonomous advice of Alarm conditions via email.

Many customers have formed long term relationships with CST, regularly purchasing CST equipment for each new expansion.

A key feature of CST's weighers is their robust design and durability. Many CST weighers have remained in operation for over 20 years. A typical example is the PFS4-2 two idler four loadcell with special overload protection supplied to Tahmoor Colliery in 1989. In 2014, after 25 years of operation underground, it was brought back to the CST factory, refurbished, and reinstalled where it remains in operation

for more than 33 years.

CST's electronics sets also have many unique features, including a built-in linearity check, and the ability to test and calibrate PLC I/O without having to load the weigh frame with weights.

As well as continual product development, CST invests heavily in building and training an extensive, readily available service and maintenance team. This ensures the ongoing high performance that its equipment is capable of. There are many good reasons for using the manufacturer's own specialist trained team, with backup and resources to handle everything from routine maintenance to troubleshooting 'mystery' problems. The CST team includes many employees who have chosen to stay with CST for more than ten years and several for over 20 years.

This has been invaluable in assisting and maintaining its relationships with customers, many of whom have been faithful customers for the life of the business. CST's wealth of industry experience means the service team can help any make of weigher perform to its best possible capacity.

Due to CST's contributions in the field of high accuracy belt weighing, CST has become involved in committee work with various government standards institutes.



CST took part in the Australian National Measurement Institutes' development of NMIV7, the Uniform Test Procedure standard for trade approved belt weighers. CST has also been invited to sit on committees in the USA facilitated by the US National Institute of Standards and Technology, working on modifying and improving the current Handbook 44. CST are working to increase respect for and knowledge about belt weighing, with the aim to improve the standard of belt weighing worldwide.

CST has a 3,200m² fully equipped factory space based in Sydney, NSW, with a team of specialists with a range of skills and expertise. It also has smaller workshops for weigher repair and installation work in QLD and WA, together with a worldwide network of agents and resellers. The size of the company's facility allows it to handle projects of any scale.

DSM Shipbrokers

- floating bulk handling cranes
- new floating lemniscate cranes

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Lemniscate cranes for bulk transshipments
new and used.

High output at low costs, built for proven
long lifecycle and 24/7/365 operations.

NETHERLANDS



Weba Chute Systems: revolutionizing performance with scientific precision

In the competitive and demanding world of mining and bulk cargo handling, efficiency and sustainability are paramount. Mines are constantly seeking solutions that not only enhance operational effectiveness but also ensure environmental compliance and safety. Weba Chute Systems has emerged at the forefront of this market, offering a scientifically backed approach to measuring the performance improvements of their custom-engineered chute systems, ensuring customers can witness first-hand the reduction in total cost of ownership.

Weba Chute Systems stands out in the industry for its commitment to scientific accuracy and the tangible results it delivers. According to Izak Potgieter, Systems Manager at Weba Chute Systems, the



Izak Potgieter, Systems Manager at Weba Chute Systems, inspecting a transfer chute at a coal mine.



Environmental conditions being inspected and tested by Izak Potgieter, Systems Manager at Weba Chute Systems.

company undertakes comprehensive product measurements to ascertain and validate the performance of its solutions. “Our team’s dedication to precision is unwavering,” Potgieter says. “We meticulously evaluate everything from dust levels to the wear and tear on essential components, ensuring we deliver comprehensive value.”

One of the key areas of focus is dust management — a critical concern in mining operations. Weba Chute Systems employs a detailed dust analysis programme that benchmarks its custom-engineered products against conventional chutes, offering end-users a clear picture of the improvements in terms of occupational health and safety standards. The meticulous measurement of



Site meeting to discuss the environmental conditions.



Environmental conditions being inspected and tested by Izak Potgieter, Systems Manager at Weba Chute Systems.

dust particles, particularly those below 0.3 microns, underscores Weba's ability to enhance workplace safety and environmental care.

The benefits of Weba Chute Systems extend beyond installation. The company has invested in extensive research and development to devise reliable calculation methods for maintenance planning. "Our model enables us to predict the lifespan of components with remarkable accuracy," Potgieter notes. "This not only provides our customers with factual proof of our products' durability but also empowers them with the knowledge they need to plan proactive maintenance, ensuring uninterrupted productivity."

This scientific approach to both the performance measurement and maintenance planning of their chute systems sets Weba Chute Systems apart. It assures customers not only of a



Transfer chutes sizes being checked on site at a coal mine.



Conveyor belt speed being tested.

product that will enhance operational efficiency but also of a partnership aimed at maximizing uptime and extending the life of their investment.

Potgieter says that the company's dedication to scientific methods offers a clear message: investments by our customers in Weba chute solutions are validated by rigorous, unbiased analysis and backed by a commitment to excellence.

"For mines looking to improve performance while adhering to the highest standards of health, safety, and environmental stewardship, we believe that Weba Chute Systems presents a compelling proposition. By reducing the total cost of ownership and guaranteeing the longevity and efficiency of transfer points, we are not just a supplier but a strategic partner in the mining industry's quest for sustainable productivity," Potgieter concludes.

A Friend for Life – Fenner Dunlop upgrades its Belt Buddy App

CONVEYING
ADVICE

In today's ruthless commercial and industrial world, it seems that product and service providers who are making a genuine effort to provide 'no strings' technical support and guidance are something of a dying breed. The announcement by Fenner Dunlop EMEA, previously known as Dunlop Conveyor Belting, that it has released a newly updated version of its hugely popular mobile application, 'Belt Buddy', therefore restores some much-needed belief in that old-fashioned phrase, 'customer service'.

For the benefit of those who may not be aware, Fenner Dunlop Conveyor Belting has been manufacturing industrial conveyor

belts for over 100 years. During that time, the company has established itself not only as one of the conveyor belt industry's leading innovators but also a genuine leader in the provision of technical support of its customers. As its sales & marketing director, Andries Smilda, famously once said, "When you buy Dunlop you get more than just conveyor belts".

The 'Belt Buddy' App is a good example of both innovation and customer support. Launched in 2020 and a genuine 'first' in the industry, the app was specifically designed, regardless of time or location, to enable users of conveyor belts to make numerous on-the-spot calculations including belt thickness and weight, roll size and belt length (from a coiled roll), transition distance, convex curve layout, motor power, capacity and much more besides. The app also contains comprehensive details about the Fenner Dunlop product range and boasts a huge library of useful reference documents, including technical bulletins and splice manuals. Available in four languages — English, French, German, and Spanish, 'Belt Buddy' has been described by one delighted conveyor engineer as being "The best thing Dunlop have ever done!"

Somewhat surprisingly, none of Fenner Dunlop's competitors have so far attempted to launch their own version. Belt Buddy remains unique and has become an invaluable tool for a growing number of conveyor professionals seeking information and guidance on a wide range of technical subjects. Encouraged by its popularity and constructive feedback from its users, the newly updated version includes new features such as calculating the capacity of piece goods, such as parcels and packages; elevator

motor power and capacity calculations for bucket elevators including the ability to calculate bucket volume.

Rob van Oijen, Application Engineering Manager at Fenner Dunlop EMEA, has played an integral role in its development. "Since its launch, 'Belt Buddy' has become a trusted tool for industry professionals. It's designed to be very easy to use and allows them to make critical calculations on the spot without needing to be an IT wizard. The new features we have added have increased the range of practical calculations and guidance that its users have instant access to wherever they may be."

The new version of 'Belt Buddy' is now available for download on [App Store/Google Play]. Existing users are encouraged to update to the latest version to take advantage of these latest enhancements.



A leader in the provision of technical support of its customers.



Belt Buddy users can make numerous on-the-spot calculations.

Grappling with the bulk problem

Grab Manufacturers



The new GMZ 180B is Liebherr's largest clamshell to date.

Jay Venter

XXL Attachment: GMZ 180B is Liebherr's largest clamshell

Liebherr presents the new GMZ 180B, its largest clamshell to date. The 8.5-tonne attachment is specially designed for coal handling applications. With a capacity of 16m³, fast loading and unloading processes are guaranteed.

Development of the GMZ 180B clamshell was triggered by an order from a customer in Indonesia for four new Liebherr LH 150 C Port Litronic handling machines. In order to manage the high handling volume in its coal mine, the customer was looking for a larger attachment compatible with the LH 150 C Port Litronic handling machines. The new, powerful combination from Liebherr, will enable the customer to load around 200 tonnes of coal into trucks equipped with large dump trailers in just 14 minutes.

NEW LIEBHERR CLAMSHELL IN XXL FORMAT

The GMZ 180B grab is specially designed for fast handling of bulk materials. In terms of its dimensions, it is the largest clamshell ever manufactured by Liebherr, with a total weight of 8.5 tonnes and an overall height of 4.7 metres. The bulk shells themselves have a width of 3.2 metres. The capacity of the GMZ 180B is 16m³ with an opening

width of 4.8 metres. In just one loading cycle, large quantities of coal can thus be handled and incoming trucks can be loaded and unloaded more quickly.

GMZ 180B FOR EXTRA HANDLING CAPACITY IN PORT OPERATIONS

The GMZ 180B is equipped with large and powerful cylinders that ensure fast opening and closing of the bulk shells and thus fast working speeds. Due to the pump summation of the LH 150 C Port Litronic, the GMZ 180B was given a flow rate of 570 l/min to ensure the cylinders can always be supplied with sufficient hydraulic oil.

Thanks to sealed bearings on the cylinders, work is also possible in dirty environments and underwater. To reduce friction in the bearing points, floating bearings were installed. An optional piston rod guard for the hydraulic cylinders is available in addition to the grab itself.

ROBUST CONSTRUCTION AND EASY MAINTENANCE

The bulk shells on the new GMZ 180B are made of solid wear-resistant steel. Thanks to the use of high-quality materials throughout, the grab is extremely stable,

durable and thus designed for a long service life. Perfect tolerances and generously dimensioned bearing surfaces result in gentle interactions between the individual components. Regular, automatic lubrication of all lubrication points is carried out by means of an optional central lubrication system.

ABOUT THE LIEBHERR GROUP

The Liebherr Group is a family-run technology company with a widely diversified product range. The company is one of the largest manufacturers of construction machines in the world. However, it also supplies high quality, user-focused products and services in many other sectors.

The group currently comprises more than 140 companies based in every continent of the world. In 2022, it had a workforce of over 50,000 and recorded a consolidated total turnover of more than €12.5 billion.

The company was founded in 1949 in Kirchdorf an der Iller in southern Germany. Since then, its aim has been to win customers by supplying high quality solutions and to contribute to technological progress.

Grapple power: the imperative of bulk handling grabs

“As technical consultants specializing in transshipment operations, we excel in devising optimal solutions to ensure peak performance. Our expertise extends to a wide array of dry bulk commodities transshipped across different global locations. Driven by our experiential and logical selection of equipment and machinery, we commit to offering our clients lucrative outcomes,” says Luca Bagnasco, Operations Manager at Shi.E.L.D. Services.

Transshippers are equipped with equipment and machinery chosen to suit the specific properties of the handled cargo, desired loading rate, environmental factors, etc. Cranes and grabs, usually adopted on transshippers, are important in initiating operations, facilitating the transfer of cargo to its destination, which could be a conveyor system, the hold of a bulk carrier, a stockpile, or a receiving hopper on the jetty. Thus, the grabbing of cargo must be at optimal capacity to achieve and maintain the highest loading rate throughout the entire operation.

“Grabs can be a very efficient tool for seamless handling of various dry bulk commodities, provided that their selection is based on various important factors such as the ones listed below,” adds Bagnasco.

Crane SWL and layout: the Safe Working Load (SWL) of the crane used in conjunction with the grab is a fundamental factor for the grab selection. The grab's overall weight (self-weight and payload) must align with the lifting capacity of the crane to avoid overloading as the crane SWL cannot be exceeded whatsoever. Furthermore, the grab must be selected to match the crane rope layout which can typically be of the single-rope, two-ropes, or four-ropes type.

Type of cargo: strictly interconnected with the crane SWL, the specific gravity of the cargo dictates the grab volume and therefore the grab self-weight. Different types of cargo, varying their specific gravity require a suitable grab for their handling. In some cases where specific gravity of the cargo falls in the same range or varies very minimally, it is possible to use the same grab. In best practice, using a dedicated grab for each type of cargo is optimal.

Grab design: grabs are designed to withstand specific loads and operating conditions. Hence, their design influences their capacity. Grabs come in different design layouts and construction solutions, thus providing versatility for the client's requirements. For example, a grab made of



Grab feeding the receiving hoppers.

high tensile steel in lieu of standard steel has a lower self-weight and a greater capacity. All in all, a grab design must assure efficiency, ease of use, minimal environmental impact by eliminating cargo spillage, and a low failure rate.

Type of grabs: the two most commonly used grab types for dry bulk are clamshell and scissor and the choice between them depends on the application. Clamshell grabs are lighter and less expensive but with longer rope withdrawal length which influences their productivity. Whereas scissors grabs have a bigger grabbing area and shorter rope withdrawal length which increase their productivity. On the other hand, they are heavier and more expensive.

Operating conditions: environmental factors such as wind speed and sea conditions, and operating factors such as the points where the cargo is picked-up by the grab and discharged also influence the grab selection. In some situations, such as

discharging cargo from/to small holds or hoppers, opting for a smaller grab than that the crane SWL would allow, could be preferable. Even though a smaller grab carries less cargo, it is easier to manoeuvre, and the reduced capacity is offset by the smoother operation and increased efficiency of the whole crane cycle.

“In addition to all the above,” continues Bagnasco, “the ongoing focus on sustainability and environmental impact can also benefit from the grab selection. By using grabs with less deadweight and higher capacity the overall loading cycle is reduced, which entails fuel savings and reduced emissions. Our history holds many successful clients who benefited from our keen and precise selections for their production goals and cost savings.”

Once the grab selection is done right, maintenance and service are reliable practices in the due course of its lifetime. Due to the high frequency of use, grabs

often might need to be repaired. It is therefore crucial to have spares available onboard in case of breakdowns and maintenance to ensure the grab is brought to working condition in the shortest time possible.

The optimal performance of bulk handling grabs relies on regular maintenance and proper operator training. Routine inspections, usually carried out after each operation, and servicing are essential to ensure the continued reliability and efficiency of grab systems, minimizing downtime costs and maximizing operational uptime. Likewise, comprehensive operator training programs ensure safe and efficient grab operation, reducing the risk of accidents and equipment damage. By adhering to planned maintenance and training, one can cut down the overall additional costs for extra repairs and the probability of human errors.

"In conclusion, bulk handling grabs stand as primary components in the transshipment process, offering most efficiency, adaptability, and safety in transshipment scenarios. As global trade continues to expand and evolve, the significance of grabs in facilitating seamless cargo flow and augmenting operational efficiency is bound to increase, solidifying their status as indispensable assets in the maritime industry's toolkit. Technological advancements such as automation and remote monitoring are poised to further enhance the capabilities of bulk handling grabs. By artificial intelligence and sensor-based technologies, grabs are becoming smarter and more adaptive, optimizing transshipment processes, and improving overall operational efficiency," concludes Bagnasco.

ABOUT SHI.E.L.D. SERVICES SRL

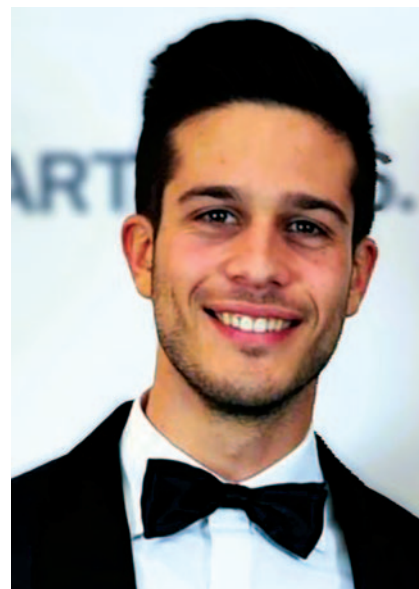
Shi.E.L.D. Services is a logistics management consulting services company that helps commodity traders, bulk shipping companies, port owners/operators, and other stakeholders in the dry bulk logistics sector. The company enables companies to streamline their supply chain workflows, reduce operating costs, and maximize profitability. Shi.E.L.D. Services specializes in designing innovative and bespoke dry bulk logistics solutions and comprehensive technical consultancy that help unlock new opportunities.

Its expertise in logistics consulting services is deeply rooted in the dry bulk shipping sector. The company's team of dry bulk shipping leaders and professionals has served in the core leadership at Coeclerici, one of the world's leading

industry players. They have, since then, built a reputation for excellence, reliability, and efficiency in the maritime logistics and shipping sectors.

As trusted partners in the operation of bulk carriers and transshippers, Shi.E.L.D. Services ensures the continuity of the logistics chain in challenging environments, providing critical first and last-mile connectivity with its fleet of custom-built transshipment vessels and feeder barges. It has worked on several groundbreaking projects in Asia, Africa, and the Middle East, including the world's first transshipment of granulated sulphur in the Black Sea.

Shi.E.L.D. Services is the consecutive winner in the 'Bulk Logistics Excellence' category at the IBJ awards 2019 and 2022, followed by the 'Lifetime Achievement Award' won by the CEO in 2023.



Mr Luca Bagnasco, Operations Manager at Shi.E.L.D. Services.



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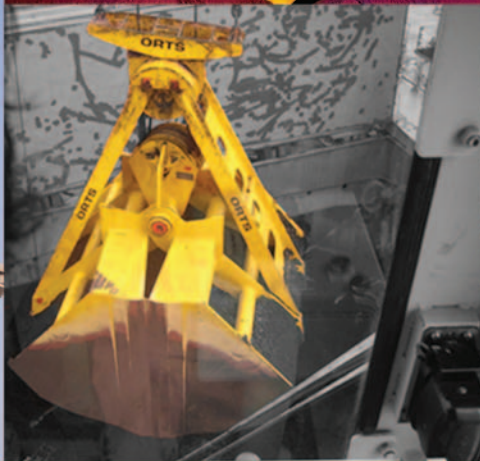
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Shi.E.L.D. Services specializes in onshore and offshore logistics of dry bulk materials. We offer a complete suite of services including feasibility studies, definition and development of optimal logistics solutions, vessel design, supervision of new-building construction and vessel conversion, technical, crew and operational management of a diverse range of offshore assets.

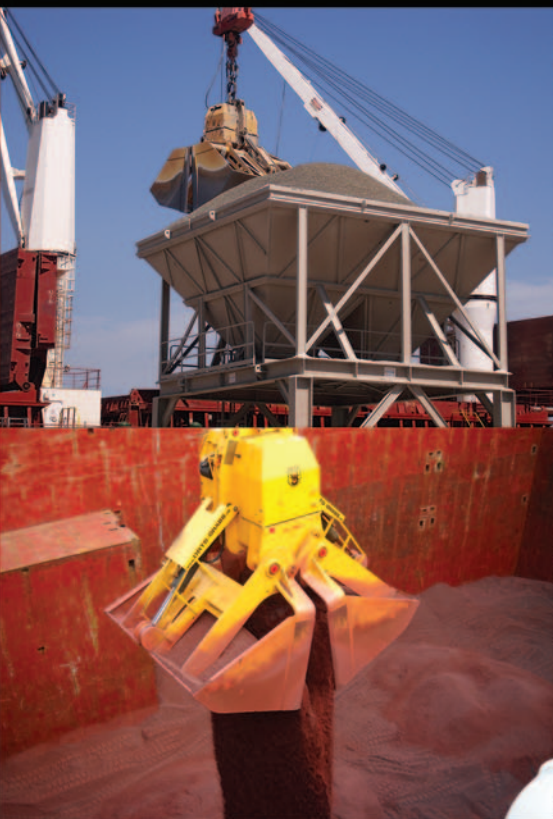
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ORTS Grabs 

Latvian port equipment manufacturer Bleste unveils new bulk handling 'bucket'

New type of grab, simple design, more capacity, less waste

Bleste Sia introduces its new 'Bleste Bucket' bulk handling solution. The Bleste Bucket is a modern iteration of the traditional bulk grab container; however, this innovative yet simple product improves dry bulk handling for companies looking for efficiency, cost and speed gains.

SIMPLE TECHNOLOGY SAVES TIME & MONEY

According to Dinis Hruscovs, Managing Director of the Latvian company, the Bleste Bucket speeds up bulk cargo logistics, especially for terminals, and in a durable way: the bucket is manufactured of a very sturdy quality and with dimensions that suit terminals, trucks, vessels, and (mobile) cranes. "Dump trucks can drive right into the bucket, a unique feature. This means no spill-over onto the pier, reducing waste, dirt and dust in addition to less time and cost spent on cleaning up afterwards. The crane operator then lifts the bucket from the pier onto the vessel to discharge, again with less dust than caused by, for example, orange-peel grabs."

As MPP vessels often have 30t cranes and the bucket container weighs 10t; its carrying capacity is kept to 20t standard. The Bleste Bucket comes standard with links and chains for immediate hook-up with a crane. However, as the bucket can actually take up 30t of bulk, stronger links



and chains can be installed if clients wish to use it at that capacity.

Due to its smart design, there is no need for extra employees or equipment when using the Bleste Bucket — only a crane operator and dump truck driver are needed, perfect for environments where infrastructure or port handling equipment is scarce. Traditionally a bulk grab would need to make multiple rounds to move cargo from a dump truck to a container. Also, when loading a vessel hold, the crane capacity is not fully used. Per cubic metre,

the Bleste Bucket provides savings on time spent on loading and discharging, clean-up time and cost, and use of personnel.

PARALLEL LOADING

The Bleste Bucket is especially useful for scarcely or non-equipped piers, as the Bucket can be handled on a vessel that already has a boom crane which makes for easier handling in those circumstances. In fact, multiple cranes can be used for parallel loading, making it even more cost and time efficient.

HIGH LOAD CAPACITY DUE TO HARDOX® STEEL

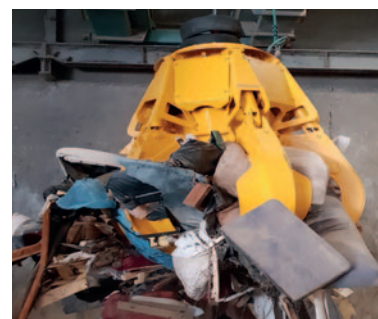
This easy to clean container is made from Hardox® steel, a high-quality abrasion and impact resistant material sourced in Sweden and known for its strength and resilience. The steel and its structural properties give the Bleste Bucket excellent strength and durability.

POSITIVE IMPACT ON AFRICAN PORTS AND TERMINALS

In the African market where many piers and quaysides tend to not be equipped with a crane, the Bleste Bucket is an excellent solution. As the crane and bucket are already on the vessel, all that is needed is for the crane to move the Bleste Bucket on the pier for loading. It's simple, efficient and fills a need in an emerging market.

After testing, the first Bleste Buckets have already been delivered to launching customers. The company is now ready to ship them to customers worldwide. Bleste Buckets can be produced on demand within one month.





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Nemag case study: more than 20% productivity increase for Brazilian logistics company with the NemaX grab



ABOUT VLI PECEM

VLI is one of Brazil's largest logistics companies. VLI's interconnecting railways, terminals and ports provide the best conditions to efficiently serve Brazil's main regions that produce steel, agricultural and mineral products. Through innovation, VLI always seeks to serve its customers best.

The customized logistics solution at the VLI Portos PECEM site connects the primary steel-producing states — from the harbour to the factory.

Paulo Sérgio Ribeiro Conceição has been working for VLI for 20 years and currently holds the position of Specialized Port Operations Technician at the Pecem site. He specializes in bulk material handling. He is responsible for team training, maintenance and operations.

INTRODUCTION

Years ago, the Pecem harbour operated two continuous ship unloaders — one for each pier. When VLI took over the logistics from the steel mill nearby, it realized that it would not be able to meet the productivity needed to serve the customer best. Therefore VLI decided to work with mobile harbour cranes and grabs in combination with hoppers.

Paulo Ribeiro, Specialized Port Operations Technician says: "We changed the whole concept of the harbour. And because we weren't just looking for a product but a complete solution, we did a lot of market research. We understood that to achieve the highest productivity, we needed to look for a high-quality grab solution that enabled us to use the cranes at their full capacity. With a poorly



performing grab, the crane's potential is lost".

In VLI's research for the best references in the local and European markets, Nemag was one of the suppliers that came out well.

THE CHALLENGE: LOOKING FOR THAT PERFECT COMBINATION OF OPTIMAL PRODUCTIVITY, REDUCED COSTS & SAFETY

The first purchase was not a Nemag grab but a grab made by a competitor. After realizing that this grab did not meet VLI's requirements, it purchased the Nemag Clamshell. The Clamshell exceeded the other grab's productivity by 15%.

Nonetheless, the cranes still did not reach their full unloading potential. In addition, maintenance costs were high, and changeover times were long. Changing from ore to coal could take up to two hours — not to mention the additional workforce and lifting platforms needed to adhere to safety regulations.

After two years, VLI decided to optimize its unloading process further and

look for a different grab solution.

Ribeiro: "Because we had already seen a massive increase in productivity with the Nemag Clamshell and experienced Nemag's expert support first-hand, we were confident they would be able to help us further along."

THE SOLUTION; THE NEMA X GRAB

VLI had three main requirements for the new grab:

1. Productivity should increase more than 15% compared to the competitor's grab.
2. Changing the grab should be faster & easier.
3. The grab should provide safer working conditions.

VLI decided on the highly innovative NemaX grab based on these three conditions.

"Choosing the NemaX was a no-brainer," says Ribeiro, "References from contacts in the European and Asian markets showed that the NemaX's productivity is higher than any



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

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conventional grab.

"Secondly, changing the NemaX grab is made 100% easier and faster as the grab opens up completely and lays flat on the ground. Consequently, changing and maintaining the grab is low-risk as there is no need for workers to be working up high on lifting platforms.

"So at first glance, the NemaX checked all our boxes."

THE RESULTS: OVER 20% PRODUCTIVITY INCREASE, MASSIVE COST SAVINGS AND SAFER WORKING CONDITIONS

PRODUCTIVITY & COST SAVINGS

Compared to the first grab, the NemaX delivers a 20% increase in productivity. When handling iron pellets, the NemaX exceeds the 20% productivity increase. Without the NemaX, VLI could move 800tph on average. With the NemaX, it can move a 1,000tph (tonnes per hour) on average.

Ribeiro states: "We are already pleased with these results. The thing is, though, we are still in a learning cycle. For example, we still sometimes need to adjust the configuration of the ropes. And the operators need some more time to get used to the grab. I strongly believe we can reach an even better performance after unloading our 20th ship with the NemaX! I'm looking towards an average of 1,100tph."

The NemaX can reach a staggering 1,400tph during free digging. This is 300tph more compared to the competitor's grab and 200tph more than the NemaX clamshell grab during the free digging stage.

Ribeiro adds: "In addition, it used to take up to 5 days to unload a ship. With the NemaX Clamshell and the NemaX side by side, we manage to unload the ships within four days! The savings in demurrage costs are considerable, to say the least".

SAVING TIME CLEANING THE HATCH

Because the NemaX has a far greater reach than conventional grabs, cleaning out the ship's hatch becomes less hassle. "Regarding cleaning out the hatch, the operators will tell me that when the situation is the worst, that's when the NemaX works the best!" says Ribeiro.

SAVING MAINTENANCE COSTS

The NemaX ensures 'clean' work: the grab closes entirely and only starts opening — with zero rocking — when perfectly above the hopper. The relubrication time is reduced by 50%. And any consumable costs such as steel cables have been reduced by 30%.



SAFETY

"Especially in Brazil, safety regulations are stringent, and with reason of course," explains Ribeiro. "No doubt, the NemaX also brings a massive safety advantage. Because the grab can be placed open and flat on the ground, maintenance can easily be done at ground level. Because maintenance of the NemaX is very low-risk, we no longer have to deploy extra resources (staffing, lifting platform etc.), which is a (cost)advantage in itself!"

The NemaX also clearly affects Ribeiro's team. Says Ribeiro, "I think it's important to mention that working with the NemaX has brought the team a lot of joy. They're happy that they can work under safe conditions, their job is made easier, and of course, the massive increase in productivity positively impacts us all!"

FUTURE PLANS: (Ne)MAXING IT UP TO BETTER SERVE CUSTOMERS

The first grab purchased by VLI at the Pecem site is expected to last another two years. By then, this grab will be replaced by a new NemaX grab.

Ribeiro: "Given the outstanding results, it's the most logical step. With both cranes operating a NemaX grab, we expect to fully clear a ship in as little as 3.5 days. This will reduce costs immensely. Furthermore, we will be able to service our customers even better. At the moment, we can unload 50 ships per year on average. With both cranes operating with a NemaX grab, we can significantly increase the number of ships."

COLLABORATION: FIRST-CLASS EQUIPMENT & RELIABLE SUPPORT

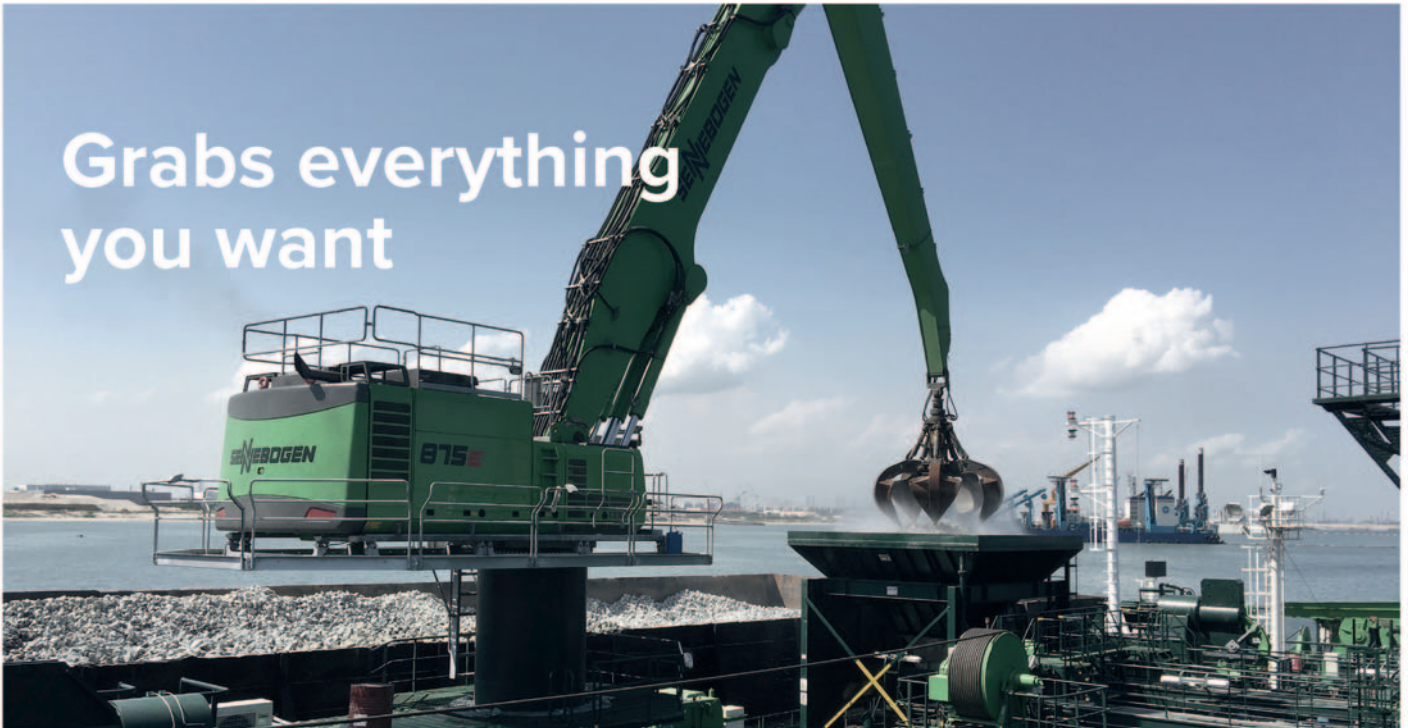
VLI Pecem is looking forward to prolonging its partnership with NemaX.

"NemaX provides first-class equipment with little wear and tear, even in extreme conditions," says Ribeiro. "But perhaps more importantly, NemaX always offers reliable support."

"The openness to discuss technical improvements showcases their commitment to being a trusted supplier, putting their customers' needs first."

"I can't help but say that I am very satisfied."

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Port terminal of Auhafen Muttentz Basel (Switzerland) uses new system for biomass unloading and storage in large silos

STEMM's clamshell grabs 4CH-16000-1,1 type, with a capacity of 16m³, are designed to handle all kinds of bulk commodities and biomass, up to a density of 1.1 tonnes per cubic metre.

The start-up of the installation was carried out by STEMM's technical team in collaboration with engineers from STEPHAN, a Swiss company from Freiburg, which specializes in all types of lifting equipment, bridge cranes and special equipment for the combustion of wood and biomass sectors, wood burners and boilers feed, silos.

The traffic of biomass in the Rhine and other big European rivers has considerably increased in the last few years, which is linked to the rising consumption and production of combustibles resources in all developed countries.

Several techniques and processes in handling these combustibles have been carried out, but especially, the download of biomass with river boats, the operation and subsequent storage in silos of great height and capacity, requires the application of modern equipment, components and above all up-to-dated criteria, contrasted with a high degree of technology, knowledge and experience required in carrying out such works and features.



On this occasion, the Spanish company STEMM installed an electrohydraulic clamshell grab, powered by four hydraulic double acting cylinders, which work directly on the grab's shells, applying a very powerful, uniform and constant penetration strength.

The stroke of the shells, has a very special kinematics, which ensures full filling,

especially when handling these types of materials, which are sometimes so irregular in shape and grain size.

These grabs can work in any position within the ship, admitting even sloping working positions, in almost a horizontal position. STEMM's grabs work for 24 hours non-stop and continuously transmits various signs to the general automaton unit, such as position of the valves, closed or open, incline, operation pressure, temperatures of oil and electric motor etc.

For boats carrying very compacted materials, due to their hold conditions or weather circumstances, STEMM grabs have their own system called Scratching, which operates automatically and performs a previous and/or simultaneous scratch when handling the product inside of the hold. That way they obtain filling factors superior to most other types of clamshell grabs.





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

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



KINSHOFER re-handling attachments for delicate goods

Equipped with a 360° hydraulic rotator for easy positioning with a loader crane: the KM 602 and KM 622 re-handling clamshell buckets.



Grain feeds the world — that is a truth that cannot be denied. More than one-third of the earth's population depends on wheat as a staple of its diet. When milled into flour, the grain accounts for almost 20% of calories and protein consumed by humans, more than any other single food source. Wheat is grown all over the world and of course, not necessarily consumed where grown. The crops are transported from one continent to another, coming through the local harbours.

And here is where Kinshofer comes into play. For more than 50 years now,

Kinshofer has been a major manufacturer of high-quality attachments for truck mounted cranes and excavators. Especially in the last two decades, Kinshofer has become more and more interesting for the re-handling business, producing large re-handling clamshell buckets (C-Series) for excavators and carriers with an operating weight from 18 tonnes of up to 100 tonnes as well as smaller ones for loader cranes.

If you want to handle bulk material on industrial or harbour sites or transshipment stations in large amounts, it highly depends on the kind of 'mass' you want to

grab when choosing the right attachment for the job. Wherever giant cranes, pneumatic vacuum elevators (grain blowers) or conveyors are not available or possible, the classical grabbing devices will always be first choice. Attached to an excavator, their mobility makes them extra attractive. And as grain is perishable, especially under humid conditions, it must often be unloaded fast and cannot wait for special unloading devices to arrive.

The sturdy Kinshofer re-handling clamshell buckets of the C-VHD-series are an all-round solution, not only for grain, but

The Kinshofer C-VHD is often seen working on Dutch harbours. Here it is the largest version C100VHD for up to 100t operating weight.





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LET'S MOVE MOUNTAINS

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For excavators and re-handling carrier machines up to 40t operating weight: the C40VHD with vertical cylinders – also available for excavators with up to 65t operating weight.

for many different materials that are handled at harbours. They have been developed especially for the loading and unloading of bulk materials in large amounts.

They feature high volume, torsion-resistant shells and thanks to the integrated 360° rotation, the grab can always be positioned precisely. Bearing points have been equipped with specially coated bushings and hardened pins. For especially delicate cargo like grain, there is also the option of closed shells. The shells of the C-VHD-series is driven by vertical hydraulic cylinders with piston rod protection.

To protect the handled goods even more, the C40VHD is also available with closed shells.

With a truck, it is easy to bring material to a designated spot — may it be a harbour or railway station. And even easier to load or unload a barge or wagon there with the Kinshofer re-handling grapples for loader cranes. Thanks to the dedicated shell design of the KM622 and KM602 grapples, there are practically no 'leftovers' of the material to be picked up, as the working edges are vertical when the buckets are open. This also allows a deep plunge into the pile of material.

The low self-weight of the clamshell bucket guarantees a maximum load and due to the flat closing curve, the base of the wagon or barge will not be damaged during unloading.

The Kinshofer department for special solutions is frequently developing attach-

ments for excavators and loader cranes for re-handling tasks, as this field of industry is getting bigger and more important every day. More dedicated tools for specific tasks or materials are needed and this is where the Kinshofer special developments come into action. Not only the tasks and materials might vary, but also the carrier machines. So Kinshofer can e.g. also equip portal cranes, which require especially designed grabs.

Kinshofer sticks strictly to innovation and quality. Thomas Friedrich, President & CEO of the Kinshofer Group, says: "Kinshofer continues its strategy to provide the industry with a 'one-stop-shop' solution of outstandingly engineered products to increase efficiency and, more importantly, profitability of our customers." 

Mobility issues



flexible and portable bulk
handling equipment

*E-Cranes discharging trailing
suction hopper dredge at
North American Aggregates.*

Louise Dodds-Ely

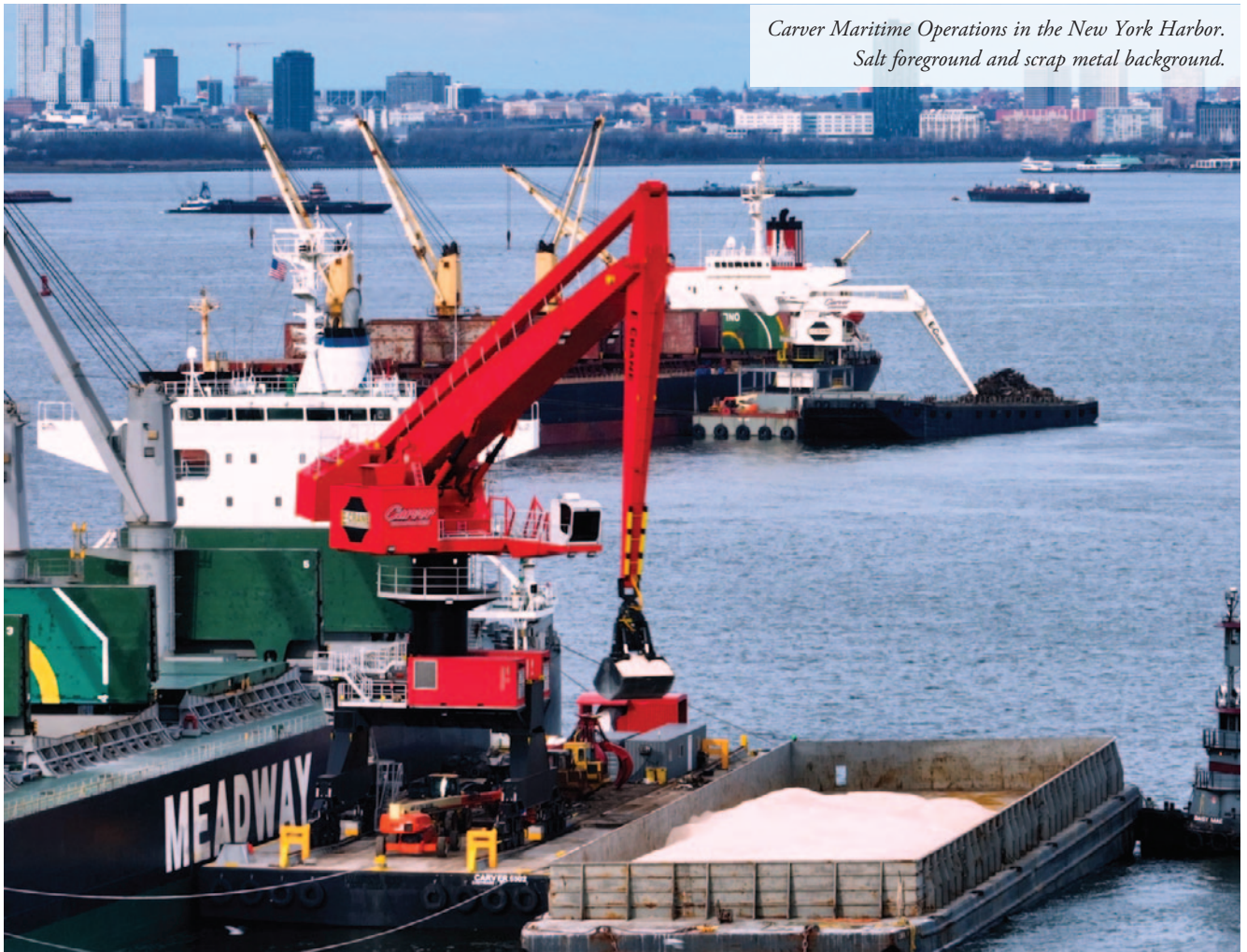
E-Crane revolutionizes maritime operations on the East Coast

When it comes to marine operations, E-Crane has consistently proven itself as a leading solutions provider worldwide, as well as in many other industries. On the East Coast of the United States in particular, E-Crane has seen a drastic increase in the number of E-Cranes put into operation in the last several years — a significant achievement in the company's global success story.

Weeks Marine Inc, now a subsidiary of Keiwi Corporation, is a prominent player in marine services, construction, and dredging industries. Efficiency, performance, and reliability are critical when deploying equipment, and Weeks has found a machine capable of handling its mission

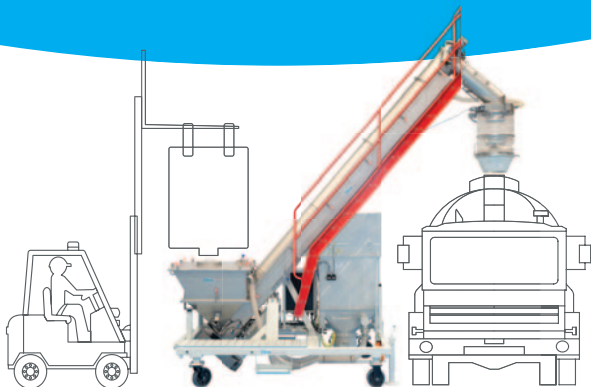


*E-Crane is the centrepiece equipment for
Weeks Marine at Living Breakwaters.*



*Carver Maritime Operations in the New York Harbor.
Salt foreground and scrap metal background.*

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critical activities with E-Crane. In 2020, it installed two 1500 Series E-Cranes at its North American Aggregates facility in Perth Amboy, NJ. The two E-Cranes work in concert with each other to discharge a dredge. Quick and efficient offloads mean faster turnarounds for the dredge, ultimately leading to more throughput for the facility.

In 2021, Weeks added a 3000 Series E-Crane to its fleet and quickly deployed the asset to the Living Breakwaters project in Staten Island NY. The barge-mounted E-Crane with rail undercarriage, a first for both Weeks and E-Crane, has proven to be a very versatile setup that has handled all aspects of the breakwater construction. Everything from base mattresses on the seafloor to decorative capstones to promote a thriving marine ecosystem. The E-Crane and barge can quickly be configured for general cargo handling and stevedoring operations, a valuable bit



*Carver Maritime lightering operations for vessels in
New York Harbor bound for Port of Coeymans NY.*



*Carver Maritime
Operations in New
York Harbor.*

of flexibility for the dynamic marine services market.

Another leader in the maritime industry has also built up a fleet of E-Cranes for the same types of operations. Carver Maritime, a division of Carver Companies, currently operates two similar 3000 Series rails on barge configurations. One unit works between its home base of operations at Port of Coeymans NY and New York harbour. The second unit has a

dedicated operation in the Port of Charleston SC. It also commissioned a 2000 Series stationary E-Crane on barge for general purpose material handling for scrap, aggregates, or small clamshell dredging jobs.

Recently, Carver has also invested in an additional crawler mount E-Crane, which is currently in production. This E-Crane will be a 3000 Series, mounted on a tripod lower, and will be equipped with E-Crane's

unique 'True Steering' system, allowing the E-Crane to turn on a smaller radius.

The rise of E-Crane installations on the East Coast is a testament to the productivity and efficiency of the E-Crane, as well as the innovation and forward thinking of the teams at both Weeks Marine and Carver Companies. E-Crane hopes to continue expanding in the maritime industry, with Weeks and Carver leading the way.

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Telestack: 40 years at the forefront of the industry with customized material handling solutions

*DEME — AP D3-1500
feeder — TB-52 view.*



At the very heart of the Telestack Ports and Terminals business is its understanding and experience in the industry. Having generated decades of experience in the aggregates, mining and ports and terminals businesses, Telestack is one of the primary stalwarts of bulk material handling equipment. Telestack's All Wheel Travel (AWT) technology has challenged and enabled port-based companies to change

the way they handle their materials. The AWT functionality offers unrivalled mobility, flexibility and ease of use, making this feature one of the most exciting developments in the bulk handling industry in recent years and promises to revolutionize shiploading. The increasing interest in this technology reflects a growing trend among companies seeking to understand and implement the benefits that

it could bring to their port.

Telestack was delighted to recently announce a new contract for the supply of two mobile shiploading systems for one of the world's leading dredging, land marine engineering and off-shore energy companies — DEME Group.

The system will consist of two wheel-mounted apron steel feeders and two TB 52 (170ft) radial telescopic shiploaders



*DEME — AP D3-1500 feeder —
TB-52 — feeder view.*



KONECRANES



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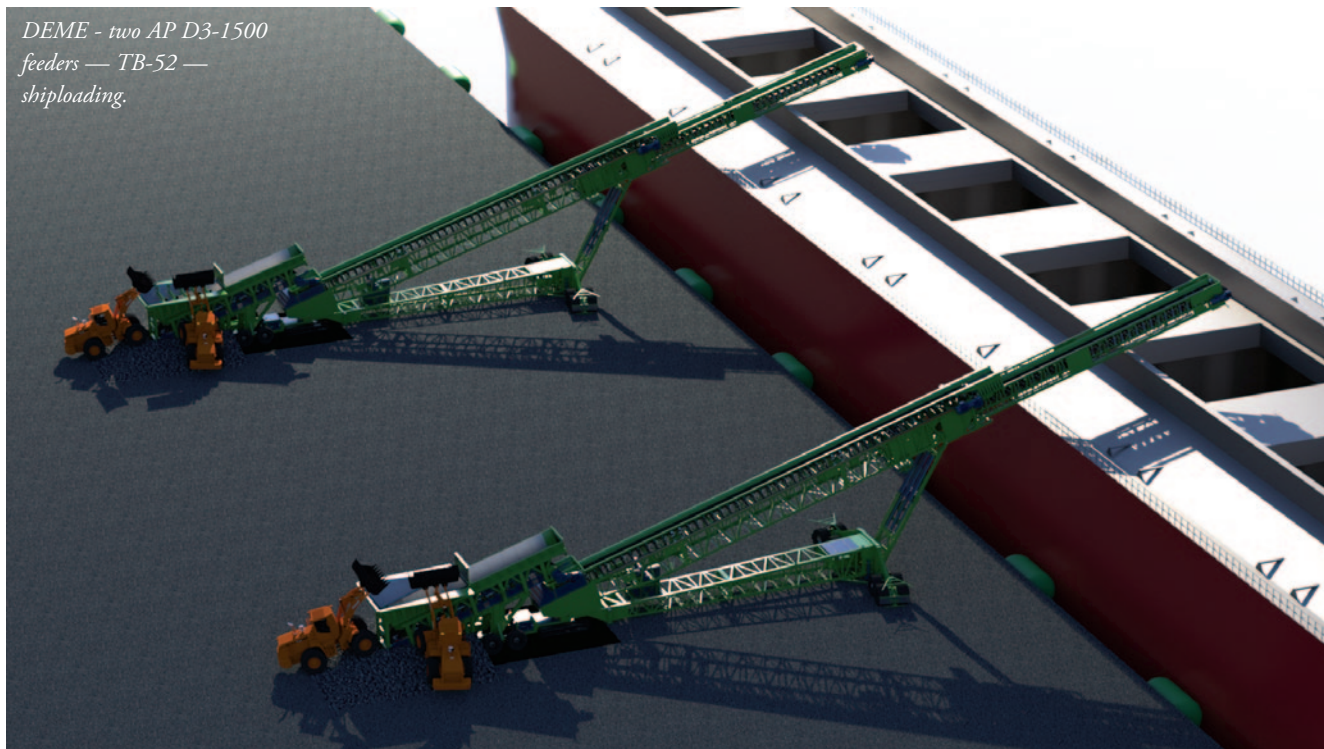
Proven performance on any terrain

Rely on proven Konecranes mobile harbor crane technology for high-performance cargo handling at any kind of terminal. On any kind of terrain.

For nearly seven decades, Konecranes Gottwald mobile harbor cranes have been known for reliability

and versatility. On rubber-tired chassis, on rail-mounted portals and on barges to work on rivers or even the open sea.

Discover our latest Generation 6 to find the right crane model for your application and terrain.



DEME - two AP D3-1500 feeders — TB-52 — shiploading.

for handling rock material to DEME specialized rock installation vessels.

The rocks are used in coastal engineering and shoreline protection projects. The purpose of using offshore

rocks is to dissipate wave energy, reduce erosion, and protect coastal structures from the damaging effects of waves and currents. These rocks act as a barrier, absorbing and reflecting wave energy, which

helps to prevent further erosion of the shoreline and maintain the stability of the surrounding areas.

The Telestack mobile system will form a key part of the material handling process in



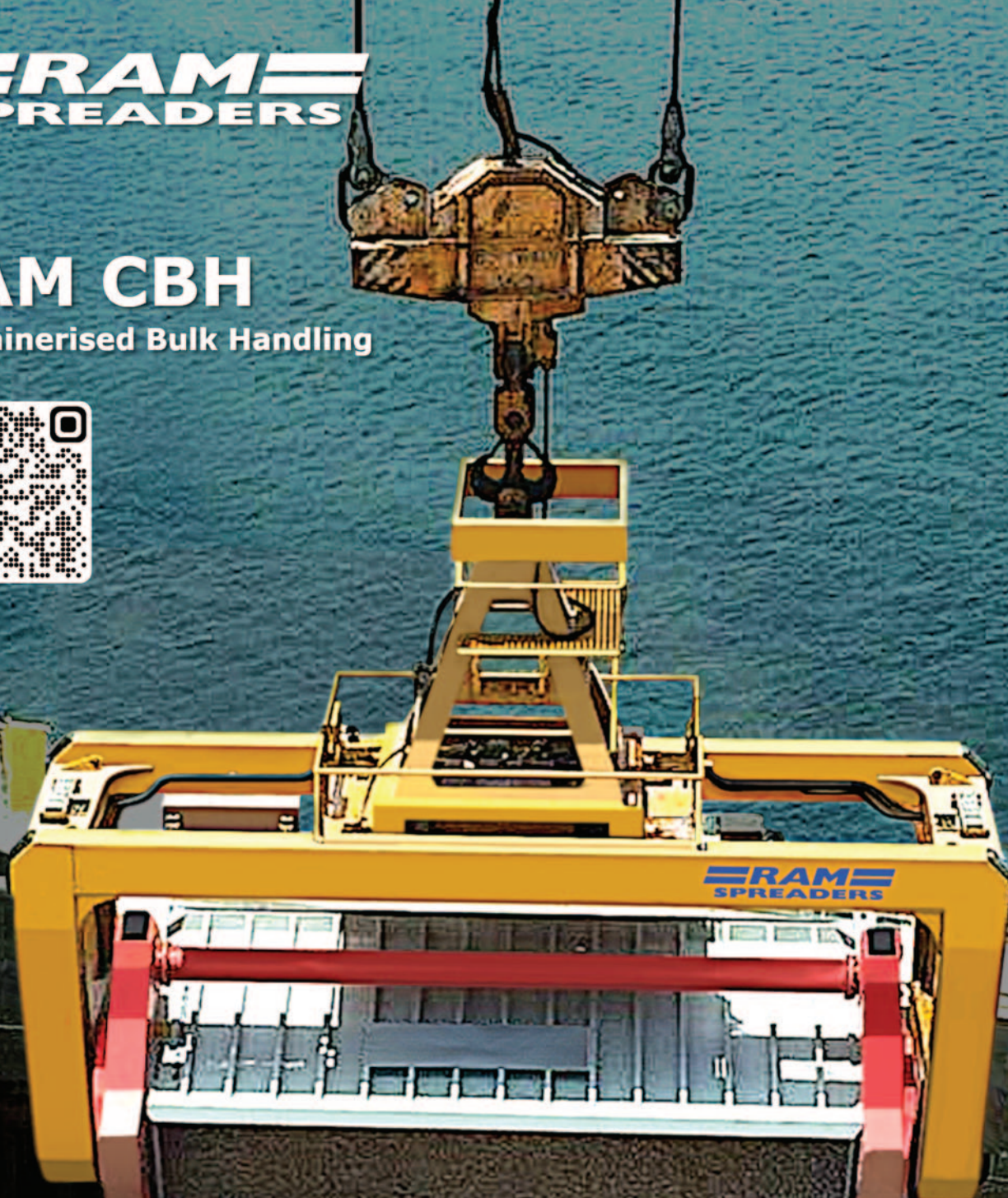
The innovative TB 42 high rise AWT — shiploader.



RAM
SPREADERS

RAM CBH

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Containerising Bulk Commodities

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*Overall layout – a TB 42 high rise AWT
shiploader — two Titan dual feed AWT 800s
— six bulk reception feeders.*



loading this material to the specialized DEMA rock installation vessels.

This contract reinforces Telestack's stance in the mobile bulk material handling sector, showcasing its expertise in manufacturing tailored solutions that precisely addresses DEMA's requirements for handling larger rock materials.

Another example of Telestack paving the way in customized material handling solutions is the introduction of the 'High Rise' All Wheel Travel (AWT) solution. Before the development of the 'high-rise' system, mobile solutions would not be a viable option for those operations in a restricted jetty loading Handymax/Panamax type vessels.

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

These AWT high-rise mobile shiploading systems represent a new generation of mobile solutions, offering the performance

of traditional systems but with the added benefits of mobility, flexibility, and ultimately a lower cost per tonne achieved by increased production rates, reduced cycle times, and reduced labour costs — now within a restricted jetty.

Carl Donnelly, International Sales Manager with Telestack explains, "the All-Wheel Travel offers a range of steering modes available to tailor the manoeuvrability of the unit in accordance with the varying needs of the application, infrastructure and operator. For the customer, the customized nature of Telestack's system was critical both in mobility and the environmental measures implemented when handling the hazardous material, this system proved to be the ultimate solution in this multi-purpose port."

Telestack, a global expert in material handling solutions, is thrilled to announce its participation in TOC Europe 2024, one of the most anticipated events in the ports and terminal industry. The event will take place in Rotterdam from 11–13 June bringing together professionals and innovators from across the sector.

Donnelly and Philip Waddell will attend TOC Europe as representatives of

Telestack. Telestack will demonstrate how Telestack's #MovingToMobile solutions are #TriedAndTrusted. "We are excited to be a part of TOC Europe 2024 and to showcase Telestack's latest innovations in material handling technology," said Donnelly. "Our participation underscores our commitment to driving material handling excellence in ports and terminal with the overarching goal of supporting our customers in their pursuit of success."

Telestack, specialist 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 & 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 to plant. Telestack has 40 years of experience and a global list of application references and its enviable client list is ever growing.

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SENNEBOGEN 885 G Hybrid – the flexible material handling giant with long reach and maximum efficiency

SENNEBOGEN, a renowned manufacturer of customized material handlers, has been setting standards in the demanding port segment for decades. The 885 G Hybrid once again emphasizes the company's innovative strength and presents itself as a pioneering solution for the requirements of port operations. The material handler sets new standards in terms of flexibility and performance in port operations. Its versatility and efficiency make it a convincing choice for port operators worldwide.

State-of-the-art technology in the port — with an operating weight of 320 tonnes and a reach of up to 38 metres — the material handler impresses particularly in inland ports with maximum precision and speed when handling general cargo and bulk goods.

With its impressive performance data, the 885 G Hybrid represents an optimum balance between power and efficiency and fits perfectly into the gap between the existing 875 E and the world's largest material handler, the 895 E. Equipped with the Green Hybrid energy recovery system,



the machine works particularly efficiently and economically even in the most demanding port applications and achieves equally high-power savings.

The integration of hybrid technologies also underlines SENNEBOGEN's commitment to resource and environmentally friendly solutions.

SENNEBOGEN GREEN HYBRID ENERGY RECOVERY SYSTEM

The efficient Green Hybrid energy recovery system is the most modern recuperation technology on the market and combines high handling performance with low energy and operating costs. The interaction of two components ensures



efficient operation of the machine: a diesel or electric engine combined with sophisticated accumulator technology. Thanks to the additional hydraulic cylinder in the middle of the boom and a separate hydraulic circuit, stored energy can be used during the lifting process. As the boom is lowered, the hydraulic oil flows back into the accumulator modules and compresses the nitrogen it contains. The energy temporarily stored in the piston accumulator is returned to the hydraulic system to relieve the load the next time the boom is raised. As a result, the engine is almost completely unloaded during energy-intensive lifting tasks, so that a more fuel-efficient engine is sufficient to perform the same tasks. As a result, this means savings of up to 55% in operating costs due to the significant reduction in energy consumption. Due to the large system volume in the piston accumulators, the pressure and therefore the force remains almost constant. This also reduces heat generation in the system and the service life of individual components is particularly long. The Green Hybrid is therefore easy to handle, maintenance-free and

particularly effective — SENNEBOGEN is once again proving its pioneering role in increasing the efficiency of material handlers, and this solution has since been implemented in many new product launches.

THE BEST WORKPLACE AT THE PORT: THE SENNEBOGEN PORTCAB

The redesigned SENNEBOGEN Portcab is also particularly noteworthy. Specially developed for use in ports, it offers the best all-round visibility, a sophisticated heating/air conditioning concept and ergonomic seats and controls. The large glass surfaces to the front and sides as well

as floor panes made of safety glass provide the driver with an optimum view of the entire working area and into the ship. Intelligent control systems such as the modern Safety Boom Lift and a comprehensive camera system provide additional support for the driver. The automatic grab protects the ship's hull, port areas and equipment by automatically lifting the grab when the attachment is closed.

UNIQUE VARIETY OF MACHINES — TAILORED TO EVERY PORT REQUIREMENT

SENNEBOGEN not only demonstrates flexibility in the selection of large machines, but also in the variety of equipment options. From the drive (diesel or electric) to the undercarriage type to flexibly adjustable Skylift cab elevations, the company offers customized solutions that meet the individual requirements of customers.

With the 885 G Hybrid and the advanced SENNEBOGEN Portcab, the company continues to set standards in port handling. Innovation, efficiency and environmental awareness are the cornerstones of SENNEBOGEN's products and solutions.



Revolutionizing material handling: introducing Bateman's innovative skip pan solutions

In the fast-paced world of material handling, efficiency is paramount. Whether it's construction sites, mining operations, or industrial facilities, the need for reliable and effective equipment is undeniable. At Bateman Manufacturing, the company understands the challenges faced by industries relying on seamless material transfer. That's why Bateman Manufacturing is thrilled to introduce its latest game-changing innovation: the revolutionary material handling skip pan.

"Imagine a skip pan that not only meets but exceeds your expectations in every aspect of performance," explains Jason McNeil, Division Director of Bateman Manufacturing. "Our skip pan boasts a host of cutting-edge features designed to streamline operations, enhance productivity, and elevate safety standards."

Versatility is at the core of Bateman's skip pan design. With a 360° continuous rotation capability, our skip pan empowers operators with unprecedented manoeuvrability. Gone are the days of restricted movement and cumbersome handling. Whether it's navigating tight





spaces or accessing hard-to-reach areas, our skip pan offers unparalleled flexibility, ensuring optimal efficiency in every operation.

“But versatility alone is not enough without reliability,” adds McNeil, “That’s why we equipped our skip pan with a dual motor rotator, ensuring smooth and seamless rotation under any conditions. This robust design not only enhances durability but also minimizes downtime, keeping operations running smoothly and efficiently.

“Furthermore, safety is a top priority in every aspect of our skip pan’s design. With a 45-degree dumping angle, operators can unload materials with utmost precision and control, minimizing the risk of accidents or spillage.” Additionally, the company’s skip

pan is equipped with a 4 ½” cylinder, providing the necessary power and stability to handle heavy loads with ease.

“Durability is another key consideration, particularly in demanding environments. Our skip pan is constructed from abrasive-resistant material, ensuring long-lasting performance even in the harshest conditions. From abrasive materials to extreme temperatures, the skip pan is built to withstand whatever challenges come its way, ensuring years of reliable service.” says McNeil.

But perhaps one of the most innovative features of Bateman’s skip pan is its unique ability to accommodate trucks for direct unloading. With the capability for trucks to drive inside the pan for material unloading, we’ve eliminated the need for additional

handling equipment, streamlining operations and maximizing efficiency like never before.

Moreover, Bateman Manufacturing recently announced that it is the exclusive supplier of skip pans for SENNEBOGEN, further solidifying its commitment to excellence and innovation in material handling solutions. In addition to its convenience, the design of its skip pan also eliminates the need to dump material on piers, thus averting pier damage and reducing the overall weight burden on them.

The implications of Bateman’s skip pan’s features are far-reaching. By optimizing material handling processes, businesses can significantly reduce operational costs, minimize downtime, and improve overall productivity. Moreover, the enhanced safety features mitigate the risk of accidents and injuries, safeguarding both personnel and assets.

In conclusion, Bateman’s material handling skip pan represents a paradigm shift in the industry. With its unparalleled versatility, reliability, safety, and durability, it’s poised to revolutionize the way materials are handled across various sectors.

At Bateman, the company is committed to pushing the boundaries of innovation and delivering solutions that empower businesses to thrive in today’s dynamic landscape.



Professional value creation – GENMA shiploader assists sand & gravel bulk material loading and unloading



Recently, RHM received a letter of praise from a customer in Taizhou. In the letter, the client company praised the GENMA project team for adhering to the customer-oriented service philosophy, overcoming difficulties, and completing project delivery with quality and quantity during the project promotion process.

In this project, RHM provided the customer with a complete set of sand and gravel handling, conveying, and loading solutions, including two GENMA mobile shiploaders, one GENMA gantry crane, and one GENMA belt conveyor.

Among them, a single GENMA loader has a rated operating efficiency of up to 3,000tph (tonnes per hour), suitable for loading bulk carriers ranging in size from 5,000–10,000dwt. During the work process, the tail truck of the equipment is connected to the rear belt conveyor system. The sand and gravel bulk materials in the yard can be continuously transported through: the belt conveyor; the tail truck of the loading machine; the relay belt conveyor; the boom belt conveyor; and the telescopic chute — finally loaded into

the cargo hold, which means completing the entire loading operation process.

To ensure the efficiency and environmental friendliness of the entire loading process, GENMA shiploaders are

carefully designed in terms of product structure and functionality to improve the loading efficiency and provide professional solutions for on-site environmental protection operations.





FLEXIBLE STRUCTURE DESIGN ENSURES EFFICIENT OPERATION

In terms of external structure, GENMA shiploaders are equipped with functions such as gantry travel, boom rotation, cantilever pitch, and extension, enabling them to adapt to a variety of loading and unloading scenarios and requirements. The integration of these flexible functions enables the shiploader to move freely within the working area, adjust the position and angle of various working components flexibly, cover a wider loading range, and improve the efficiency of loading operations.

In addition, in practice, to meet the needs of ships with large differences in depth and cabin height, as well as the loading of bulk materials under different tides, and to improve the efficiency of loading operations, the GENMA shiploader adopts a multi section sleeve form for the telescopic chute, and the telescopic distance of the chute can reach 12 metres. The chute can be adjusted for expansion and contraction according to different water levels and tank filling levels, in order to load the ship more accurately and efficiently.

The chute is an important feeding device for shiploaders. In order to protect the chute and maintain production stability, the GENMA shiploader is equipped with a recoverable anti-collision device on the outside of the chute. Its unique design can flexibly restore the chute to its original state after collision, ensuring the durability and stability of the device during long-term use. At the same time, the anti-collision

device also adopts a sensing system, which can timely provide feedback to the driver about the surrounding environment of the chute. During loading operations, it plays an important protective role in the chute, thereby ensuring the smooth progress of the operation process.

MULTIPLE DUST SUPPRESSION DESIGNS TO ENSURE ENVIRONMENTAL PROTECTION

In order to improve the environmental friendliness of on-site operations, GENMA attaches great importance to dust control at all stages of the bulk loading process.

The GENMA shiploader is equipped with multiple dust removal points at multiple connection points of the tail car, relay belt conveyor, and boom belt conveyor, as well as at the equipment chute, telescopic arm frame, and fixed arm frame. Dust is controlled by multiple dust

suppression designs. At the same time, a sealing device is designed and installed at the joint of the telescopic chute section, which can effectively prevent dust leakage, improve the environmental protection of the operation, and improve the quality of bulk material loading.

GENMA has good flexibility, strong adaptability, and can suppress dust, making it a preferred solution for efficient and environmentally friendly transportation of bulk materials.

Against the backdrop of global green and low-carbon development and transformation, RHM will continue to pay attention to market demands such as efficient production and environmental protection. With customized solutions, it will inject more vitality into the field of bulk material transportation and provide customers with better quality services. 



Scrutinizing stockyard systems

TAKRAF's 62m Curved Boom Stacker ready for operation at a bulk terminal in Australia.



Louise Dodds-Ely

TAKRAF: stacking and reclaiming solutions tailored to specific needs

TAKRAF stockyard systems and machines ensure that machines efficiently operate at their desired performance levels and are sufficiently robust for a long service life.

While stackers and reclaimers are essential for bulk material handling and stockpiling, they present various challenges, such as the need for good co-ordination between machines, material flow and pile geometry, and the ability to withstand harsh weather and abrasive materials. As a result, TAKRAF Group, with its exceptional expertise in high capacity and complex bulk handling operations, is seeing ongoing strong demand for its stockyard solutions and machines that are custom-designed to the client's unique application and site conditions.

Operating across the globe, TAKRAF's track record covers industries from mining and general industry through to power generation and port handling, with services comprising the supply of complete integrated systems or of individual machines.

MINING SECTOR

Recent projects range from supply of a 1,993tph (tonnes per hour) radial stacker for stockpiling crushed platinum ore, delivered in under eight months to Ivanplats' Platreef Project in South Africa, to a complete stockyard system for a Guinean iron ore complex. The stockyard system is part of a contract from Rio Tinto for delivery of an integrated In Pit Crushing & Conveying (IPCC) and material handling system for the Simandou complex, one of the world's largest unexploited high-grade iron ore deposits. The stockyard comprises two stackers and two reclaimers, a complex conveyor system with transfer stations linking all parts of the system and two wagon loading stations with buffer silos. All stockyard equipment is designed with scalability in mind, laying the foundation for future expansions.

Other projects for the mining industry include a contract for a 7,200tph bucketwheel reclaimer from a repeat customer in South America, and an 8mtpa (million tonnes per annum) integrated crushing and washing plant for the

Khondbond iron ore mine in India. The contract for the plant, which produces both lumps and fines from run-of-mine iron ore, included the supply of machines for the final stacking and transfer sections.

PORT HANDLING SECTOR

TAKRAF replaced an existing stacker at a bulk terminal on Australia's East Coast. The rail-mounted stacker boasts an initial stacking capacity of 6,300tph and was designed from the outset to accommodate a peak volumetric rate of up to 10,700m³/h (equal to 9,600tph) for a scheduled future upgrade. This is ensured by unique design features that make it one of the most technically advanced, including a 2m-wide boom conveyor designed for a drive upgrade and a tripper car able to accommodate a wider stockyard conveyor. The massive 62m-long curved boom is one of the largest ever delivered.

TAKRAF has also recently supplied four full portal scraper reclaimers, in addition to three rail-mounted grab ship-unloaders, in a contract awarded by Bharat Heavy Electricals Limited (BHEL) for the Maitree

TAKRAF Portal Scraper Reclaimers under construction at the Maitree project in Bangladesh.



TAKRAF's 6,000tph Rail-mounted Stacker assembled on site in Mexico.



super thermal power project in Bangladesh. In Mexico, a 6,000tph rail-mounted stacker was replaced within the contractually required three days. Disassembly on site was able to be completed in just 2.5 days due to TAKRAF's technical experience, work planning and execution competencies.

POWER GENERATION SECTOR

Four portal reclaimers supplied to a new multi-commodity power plant in Japan are some of the largest built. Due to the redundancy required — two reclaimers are required to work on the same rail in the same warehouse — a dedicated safety and anti-collision system was implemented.

Each machine has a dedicated platform to carry a small bulldozer, which it can drop off at any location along the stockpile for cleaning purposes.



A bucket-wheel reclaimer ordered by a client in South America boasts a similar design, but a higher capacity, to a machine previously supplied by TAKRAF to a client in Australia (shown above).

INDUSTRIAL SECTOR

A urea bulk handling system for a mega fertilizer plant being established in Nigeria built upon the success of a previous handling system also supplied by TAKRAF for the project. The contract covered the handling of urea from receipt of the material from the granulation plant through to the storage yard, from where it is reclaimed for feeding a truck loading station. Handling urea in bulk storage poses unique challenges requiring special design considerations, such as completely sealing all conveyor galleries and transfer towers to avoid any moisture entry or exposure of the product to the outside environment. In addition, the portal



*TAKRAF Radial Stacker
in South Africa.*

scraper is provided with a 'de-lumper' to break the lumps that are formed during storage.

AFTERMARKET SUPPORT

As one of the largest and most experienced full-service suppliers of mining industry equipment, TAKRAF supports not only its

own machines over their full product lifecycle, but also those supplied by other OEMs. Specialized maintenance services are provided from across all the locations in which TAKRAF Group operates.

Particularly noteworthy are its refurbishments and upgrades of bulk material handling equipment such as stackers and

reclaimers (in all various forms). Based upon a thorough assessment of the existing status of the machine, TAKRAF teams develop an engineered solution to extend the lifetime, upgrade to the latest standards and/or increase capacity.

Innovation out of tradition — it pays to talk to a specialist.

Stretching the limits – conveyor belt elongation

Elongation is a commonly used but often misunderstood technical term applied to rubber conveyor belts, writes Rob van Oijen. The elongation (stretch properties) of a carcass is a more important influence on performance and longevity than many people may realize. Conveyor belt elongation properties are critical in determining how belts will react when subjected to varying stress levels. These stresses change along the length of the conveyor and across the width of the belt due to system influences such as tension, transitions, vertical and horizontal curves, turnovers, and crowned pulleys.

ELONGATION – WHAT IS IT AND WHY IS IT IMPORTANT?

Elongation is best defined as the change in length (stretch) of a belt when subjected to tensile stress. A distinction is made between elastic elongation, permanent elongation, and elongation at break. With each tensile stress below break load, the belt is subject to an elongation which, when the stress is relieved, partly recovers (elastic elongation) and partly remains (permanent elongation). The elongation at break is the amount of elongation at the



moment the belt breaks.

Using test method ISO 283, the amount of elongation is measured by placing a test piece under increasing tension. Elongation at the equivalent of 10% of the belt's stated tensile strength is measured, as well as the elongation at breaking load. Another test per ISO 9856 places a belt sample under a sinusoidal cyclic load that varies from 2 to 10% of the belt's nominal breaking strength. This tension range is a typical operating range for conveyor belts. After 200 cycles,

the amount of permanent elongation and the amount of elastic elongation produced by the force can be established.

It is important that a balance is achieved because the belt needs to be able to accommodate geometric changes such as pulleys and transitions. Provided that it is not excessive, a limited amount of elastic elongation is a requirement to accommodate strain differences. Permanent elongation is often unavoidable due to the nature of the reinforcement materials being

used and the type of weave. Higher tensile yarns and weaves will need to 'settle' more than low tensile variants, and therefore typically elongation values increase with increasing tensile ratings.

On multi-ply belts, insufficient elongation is mostly an issue in areas where the belt needs to stretch, such as troughing and bending round pulleys for example. It can cause local tension build-up, which can have an especially negative effect on the splice joint. In addition, low elongation can lead to shear stresses that may in turn cause delamination (ply separation) issues. However, too much elongation can result in insufficient tension, which can lead to premature wear and tear, which is why quality control during the production process is essential in achieving a consistent balance.

According to DIN 22102, the maximum elongation (at maximum operational tension, being 10% of the nominal belt breaking strength) for multi-ply belts is 1.5% for tensile belts up to 500N/mm, a maximum of 2.5% for strengths of 630 to 1,250N/mm and 3% for very high-tension belts of 1,600N/mm and above. However, in my experience, I would not expect to see much more than 1% in the lower range and 2% in the high-tension classes.

All three forms of elongation are effectively determined by the properties engineered into the belt during its manufacture. The primary influence on those properties is the quality, type and weave design of the fabric plies used within the carcass and secondly, the elongation characteristics of the rubber outer covers. The most popular type of fabric used in



Elongation is measured by placing a test piece under increasing tension.



Low elongation can cause stress that leads to delamination.



Performance delivered

Groundbreaking Solutions

KOCH Solutions stands at the vanguard of material handling, driving progress with over three centuries of combined expertise and a global portfolio boasting 10,000 projects. At KOCH Solutions, we are redefining material handling excellence with our advanced stockyard systems. Meticulously engineered to cater to the dynamic demands of high-capacity operations, our solutions stand out for their modular innovation and seamless integration into existing workflows. Crafted from a blend of tried-and-tested components, each system we devise is a testament to our commitment to tailor-made efficiency. We don't just provide equipment; we deliver comprehensive, turnkey solutions that resonate with your unique specifications, ensuring operational effectiveness paired with economical investment and operating costs. Our ethos is to forge a path of progress in material handling that aligns with your vision of growth and efficiency.

Comprehensive Planning | Precision Manufacturing | Streamlined Delivery | Dedicated Service

multi-ply belts is a mix of polyester and nylon fabric (EP). This is because it has the best balance of mechanical properties including allowing a conveyor belt to stay central and stable when running, to trough, flex round pulleys and drums, stretch, provide sufficient transversal rigidity, longitudinal strength and much more besides.

There can, however, be huge differences in the quality of the fabric plies between one belt and another. This is because cheaper, lower quality fabrics are used to make so-called 'economy' belts where the more costly nylon transversal weft material is kept to a minimum. Although the required longitudinal tensile strength may be achieved, rip and tear resistance are noticeably reduced and the elongation (elasticity) is too low. Sadly, in an effort to reduce costs, some manufacturers, especially those in Southeast Asia, use inadequate totally polyester (EE) fabric ply carcass in a belt that they claim to have an EP carcass construction.

Although the use of fabric plies made entirely of polyester does have its place in certain belt types and constructions, such as single-ply constructions for example, for most applications its use compromises a range of essential mechanical properties. The biggest danger is that a polyester weft can cause low transverse elongation, which reduces both the troughability and impact resistance of the belt as well as causing



Running straight and true - polyester and nylon fabric (EP) in multi-ply belts usually has the best balance of mechanical properties.

tracking issues. This is often compensated by eliminating a fair share of weft material in the weave. This leads to very flat fabrics, reducing the required longitudinal elongation properties. In addition, less weft in the belt can also reduce rip resistance, fastener strength and the ability to cope with smaller pulley sizes.

SIGNIFICANT INFLUENCE

Despite its significant influence on conveyor belt behaviour, performance and longevity, it is hard to find any manufacturer or supplier making anything more than a

passing mention of elongation. As with so many aspects of conveyor belting where awkward questions seem to be avoided, the subject seems to be ignored. Ozone and ultraviolet resistance, rip & tear resistance, longevity and REACH compliance all fit into the same category. Elongation is important so it is worth asking a potential supplier to provide a technical datasheet that shows the levels of expected elongation.

ABOUT THE AUTHOR

Rob van Oijen is Manager Application Engineering for Fenner Dunlop Conveyor Belting in The Netherlands. He has specialized in conveyors for over 15 years, supporting businesses throughout Europe, Africa, the Middle East and South America and is one of the most highly respected application engineers in the industry.



Not what they seem — the use of totally polyester (EE) fabric instead of polyester/nylon mix (EP) to reduce costs can cause significant problems.



Superior's Chevron® pulley upgraded further for more performance

Superior Industries, Inc., a US-based manufacturer and global supplier of bulk material processing and handling systems, reports its newly redesigned Chevron Pulley is now available in abrasion-resistant (AR) steel.

According to the conveyor components manufacturer, the use of abrasion resistant steel in manufacturing of conveyor pulleys enhances their durability, especially in applications handling aggressively wearing bulk materials. This reduces maintenance costs, improves operational efficiency, and ensures consistent performance in demanding environments.

In another recent design update, Superior removed the rounded cap on the wings for standard CEMA and Mine Duty models. Now, the entire wing is a wearable feature, which significantly increases the lifespan of the Chevron Pulley in all applications. The rounded wing caps are still

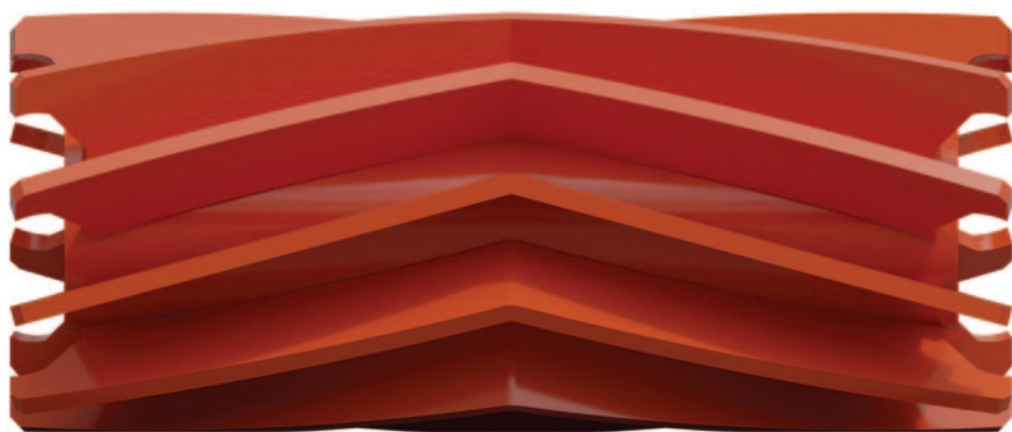
optional for Mine Duty Models.

Superior's 2007 invention of the v-shaped Chevron Pulley revolutionized wing performance, offering benefits such as material deflection, reducing trapped material, minimizing belting damage, lowering noise, and being gentler on belt splices and clips compared to traditional straight wing pulleys.

ABOUT SUPERIOR INDUSTRIES, INC.

From Rock Face to Load Out®, Superior

Industries engineers and manufactures groundbreaking bulk material processing and handling equipment plus cutting-edge components. The 50-year-old manufacturer supplies bulk crushing, screening, washing and conveying systems plus all related parts and services for industries like aggregates and mining. In addition to manufacturing from its hometown in Morris, Minnesota, USA, Superior operates three additional U.S. facilities, plus international factories in Brazil and China.



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SAMMI offers wide-ranging expertise in stockyard applications



*Stockpile feeding and recovery for end-user
SA Compagnie Des Ciments Belges C.C.B.*

Italian company SAMMI has considerable expertise in the bulk handling equipment industry, boasting over 50 years of experience in a range of industrial applications.

The company, located across its two production sites in Umbria, the green heart of Italy, has a team of approximately 70 direct collaborators. It has a consolidated turnover exceeding €15 million, and provides comprehensive support, from engineering and construction to the commissioning of turnkey bulk material

handling installations.

SAMMI specializes in developing tailor-made solutions, both for the construction of new plants and the revamping of existing ones.

Its goal is to ensure that its clients achieve the maximum return on investment in the shortest possible time, minimizing plant downtime and impacts on maintenance and spare parts activities.

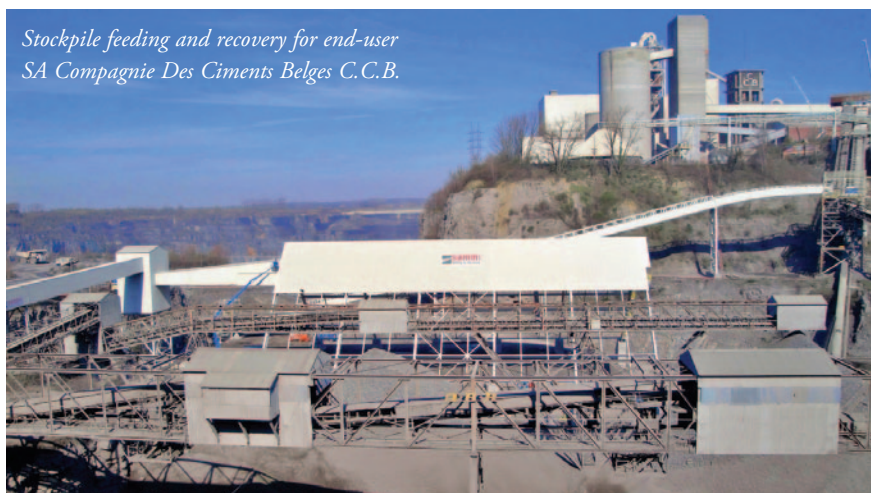
SAMMI aims to be recognized as a leader in industrial engineering, delivering high-value solutions and services while

striving to be a beacon of excellence, passion, and social responsibility.

The company is committed to building a sustainable and customer-oriented Group, which is currently composed of SAMMI S.r.l. and CCM Engineering S.r.l.u., based on innovation, integrity, and respect for people.

SAMMI's focus is on creating long-term value for customers, collaborators, business partners, and the communities in which we operate.

Below are details of just a few of SAMMI's projects in the stockyard field.



*Stockpile feeding and recovery for end-user
SA Compagnie Des Ciments Belges C.C.B.*

STOCKPILE FEEDING AND RECOVERY

End-user: Compagnie des Ciments Belges (CCB)

(now part of Cementir Holding N.V. – ex Italcementi [Heidelberg Materials])

Sector: Mines and quarries/construction materials industry (cement)

Location: Belgium

Year: 2009–2011

Solution: Bulk materials, stockyard, belt conveyors, tripper cars

Details: feasibility study, supply, erection and commissioning for conveyor belts from



Cement crushing mill feeding project at Ciments Calcia.

biggest quarry in Europe with capacity of 2,500tph (tonnes per hour) of limestone of size up to 300mm and stockpile capacity of 50,000m³ feeding line.

SAMMI was awarded a contract for a cement plant in Belgium for a complete handling and storage system to be installed at the quarry of the cement factory. The project includes the design, manufacture,

supply and installation of:

- ❖ two transport lines complete with towers and tunnels including one tripper car, with a nominal capacity of 2,500tph;
- ❖ stockpile building for limestone storage, with a total capacity of 50,000 tonnes; and
- ❖ two transport lines complete with towers and tunnels for the recovery

and feeding of the cement factory, with a nominal capacity of 750tph.

CEMENT CRUSHING MILL FEEDING

End-user: Heidelberg Materials France – Usine de Couvrot

Sector: Cement

Location: France

Year: 2011–2012

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COALSCAN



Cement crushing mill feeding project at Ciments Calcia.

Solution: Bulk materials, stockyard, belt conveyors, spillage chain, hoppers and belt feeders.

Details: design, supply, erection, start up and commissioning of feeding system for a coal mill. The aim of the project is to create storage areas for different products and extend the storage capacity up to 12,000m³. This installation meets the requirements of the Atex directives for

reducing dust emissions

- ❖ belt conveyor capacity 250tph; and
- ❖ material receiving, classification, sizing and transport to mill.

At the end of 2001, SAMMI committed to the complete design, supply, erection and commissioning services for a coal handling and storage system for Heidelberg Materials France (Ciment Calcia) to be installed in Couvrot, France.

The new installation can be divided in two main parts:

- ❖ **coal storage facilities:** which includes truck unloading station, receiving hopper, one 50m-long (250tph [tonnes per hour]) belt conveyor to transport the coal to a transfer and sieving station. From this station, coal can be either transported to a storage area or diverted to another conveyor



Marti Technik tunnelling project.

Marti Technik
tunnelling project.



if over-sized;

feed the crusher.

- ❖ **coal recovery facilities:** which includes one 250m-long belt conveyor with an altitude variation of 25m (100tph) to transport coal from storage to the existing crusher feeding facility which will be revamped with a new 110m³-capacity hopper and a set of Redler mass conveyor to

**RADIAL STACKER FOR MUCK/SPOIL
REMOVAL STORAGE ON OPEN AREA AND
BARGE LOADING SYSTEM**

Customer: Marti Technics Ltd

Sector: Stockyard equipment/tunnelling

Location: Hong Kong

Year: 2014

Solution: Radial stacker for muck/spoil removal storage on open area and barge loading system

- ❖ **Stacker:** design and supply of one tunnelling muck radial stacker RS1400 x 26.75 for stockpile and barge loading, slurry muck conveyor capacity 1,800tph, able to withstand typhoon wind limit 250km/h (storm-locked).



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The benefits of integrated weighbridge and traffic management systems at ports and terminals



INTRODUCTION

In the bustling environment of ports and terminals, where goods from around the world converge, efficiency, accuracy and security are of paramount importance. Weighbridges play an essential role in these operations, acting as critical control points at entry and exit points. The integration and automation of weighbridge operations not only maintains a smoother flow of goods, but also enhances overall port management, streamlining processes and maintaining regulatory weight compliance. (It is important to note that so-called automated weighbridges legally require physical intervention by the driver to ensure they are classified as non-automatic weighing machines [NAWIs] for legal for trade weighing.)

Weighbridges and associated systems now provide much more than the straightforward weighing of vehicles and are indispensable components of port operations, ensuring compliance, safety, and fair trade practices. Port and terminal efficiencies can be directly linked to effective vehicle management, starting at the time vehicles arrive, onwards to loading and unloading processes and then through to departure.

Weighbridges play a crucial role in

ensuring compliance with weight regulations imposed by national and international authorities. Overloaded trucks or containers can pose safety hazards on roads and ships, leading to accidents and damage to infrastructure.

Overloaded vehicles not only compromise road safety but also accelerate wear and tear on infrastructure such as roads, bridges, and port facilities. By accurately measuring loads, weighbridges contribute to preserving infrastructure integrity and enhancing overall safety standards.

Weighbridges can also help prevent revenue loss by ensuring that the appropriate tariffs and fees are applied, based on the accurate weight of goods being transported. This safeguards the financial interests of port authorities and other stakeholders involved in port operations.

Whilst the weighbridges continue to capture accurate and essential weight data for vehicles entering and leaving sites, the associated peripheral control equipment improves site security and facilitates vehicle throughput.

VEHICLE RECOGNITION TECHNOLOGY

A key part of this peripheral control is

accurate automatic vehicle recognition, typical using either Radio Frequency Identification (RFID), Automatic Number Plate Recognition (ANPR) or a combination of both technologies. PDAs (personal digital assistants) and barcode scanners can also be integrated with the overall system management. The pre-registering of vehicle details speeds up vehicle throughput. In parallel, driver-operated weighbridge terminals with associated control equipment are removing the need for fully manned weighbridge offices. These technologies, combined with remote entry-exit capabilities using traffic lights and barriers, allow controlled access for delivery and collection vehicles to specific port areas, providing advanced site security.

DRIVER-OPERATED WEIGHBRIDGE TERMINALS

These versatile instruments are proving to be invaluable at busy or remote sites, speeding up the weighing process and extending operating hours. Interlinked terminals can also be used to control non-weighed vehicles entering or leaving site via dedicated control points or weighbridge bypass lanes. Weightron's latest DD2060 driver terminals come with a Software



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Development Kit (SDK) that allows external developers to interface their own applications with the terminal's metrology services. Based on Windows Communication Foundation (WCF) interfaces, the SDK is compatible with applications developed on NET platforms.

The latest terminals provide drivers with a clear and easy-to-use touch control

interface, accessible directly from their cab. This facility removes the need for drivers to leave their cabs, thereby further improving site safety. Integral intercoms within the terminals allow drivers to communicate with site personnel should the need arise. Where required, dual height arrangements can be installed to accommodate different types of vehicles.

The on-screen prompts take the driver through the weighing process and the use of pictograms can further facilitate ease of use. Intercoms fitted to the terminals allow direct communication between drivers and site-based or remote personnel if issues arise. Twin installations, one at each end of the weighbridge allow bi-directional use.

Such driver-operated systems can also





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be part of a wider vehicle management system to ensure smooth vehicle flow, starting when vehicles arrive at site through to loading or unloading and finally to vehicle departure. Large LED screens can be linked into the system to provide drivers with key information including where to park and which area to go to.

WEIGHTRON BILANCIAI AND TBA GROUP

TBA has collaborated on a number of port projects with Weightron Bilanciai, based in Chesterfield, UK. A key part of the success of this working relationship is the seamless integration of TBA's powerful CommTrac software with Weightron's versatile weighbridge and traffic management system.

CommTrac from TBA Group is a leading

bulk terminal operating system (TOS), managing operations at over 35 ports and terminals around the world. Throughout its 20-year history, integration with weighbridges has been a key feature, allowing users to incorporate essential weighbridge data into every aspect of the system.

Weightron has been designing and producing weighbridges and weighbridge systems for over 45 years and has built an enviable reputation for reliability, versatility and innovation. The company has been at the forefront of weighbridge traffic management system development, especially in the area of third party software integration. In parallel with this, Weightron continues to ensure the fundamental robustness and reliability of its

weighbridge structures and all-important loadcells. The latter are of stainless steel welded construction, sealed to IP69K and available in analogue and digital versions. Where expedient, Weightron can carry out cost-effective partial or full upgrades to existing port weighbridges. The company has the manufacturing versatility to design and build weighbridge decks that can be fitted into existing civil foundations. This not only saves money but also minimizes operational downtime.

All critical measuring chain components and instrumentation are designed and manufactured within the Bilanciai Group, ensuring optimum compatibility, integration and reliability. Where required, weighbridge systems can be supplied for dedicated ATEX certified hazardous area applications.



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iStockyard: full visibility of your stockyard

Stockyard management presents several challenges, particularly in inventory control and blending operations. One significant hurdle lies in accurately tracking inventory levels caused by dynamic material movements and varying storage conditions. Achieving precise inventory management requires robust systems capable of real-time monitoring and data integration. Additionally, ensuring optimal blending requires detailed control over material composition to meet specific quality requirements while minimizing off-spec material. Factors such as particle size distribution, moisture content, and chemical composition must be carefully balanced to achieve desired product characteristics.

Overcoming these challenges necessitates implementing advanced technologies, including 3D scanning for volumetric measurements, automated stacking and reclaiming systems, and sophisticated software solutions for data analysis and optimization. Integrating these tools not only enhances operational efficiency but also ensures consistent product quality, driving competitiveness in the industry.

indurad combines its existing radar-based solutions — iStacker, iReclaimer, and iStockpile — into the tailored iStockyard solution. Through this integration, indurad offers a comprehensive approach to stockyard management, enhancing productivity, expanding capacity, and improving safety standards while meeting blending specifications. This unified solution employs cutting-edge radar scanners, advanced data analytics, and live visualizations to deliver exceptional results, empowering organizations to streamline stockyard operations and foster sustainable development. Unlike other technologies like LIDAR and cameras, indurad's radar

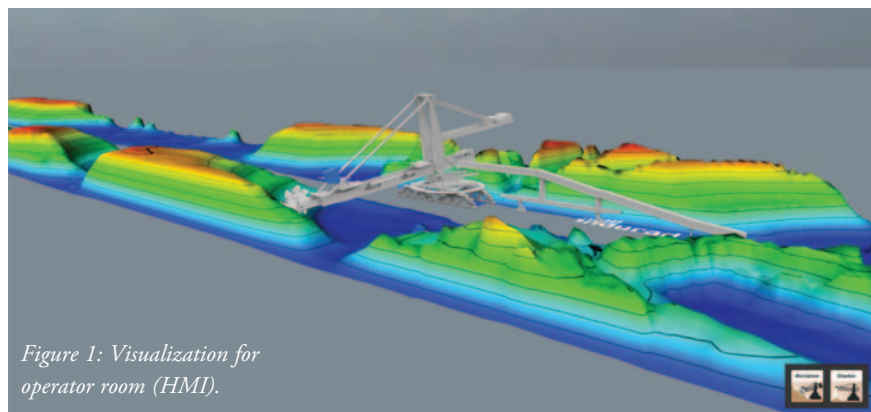


Figure 1: Visualization for operator room (HMI).

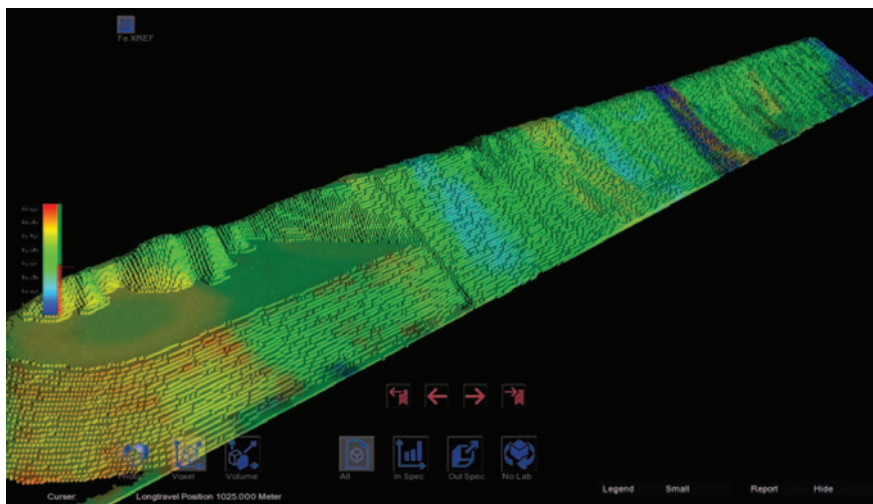


scanners remain unaffected by dust, water spray, fog, and other harsh environmental conditions, making them the optimal choice for stockyard applications.

The integration of the following iSolutions empowers iStockyard with unparalleled capabilities. iStacker serves as the cornerstone of the stockyard management system, leveraging the capabilities of 2D and 3D radars for stacking automation. By precisely monitoring the angle of repose and employing zone-based material distribut-

ion, along with boom-to-pile height measurements and pile footprint control, iStacker optimizes stockyard capacity efficiently. Complementing this, iReclaimer empowers machine operators with enhanced sensory data based on indurad's radar technology. Its cutting assistance features streamline daily reclaiming operations, paving the way for eventual machine automation while mitigating air digging and unnecessary slewing and luffing motions, thus driving up production levels and minimizing maintenance efforts. Both iStacker and iReclaimer benefit from an integrative collision avoidance feature, reinforcing safety measures and preventing unplanned downtime due to collisions and subsequent maintenance tasks.

Adding to this comprehensive suite, iStockpile delivers real-time 3D scans of various stockyard piles, enabling volumetric and gravimetric measurements when combined with density inputs, thereby functioning as an effective inventory control system. Moreover, recent technological advancements have enabled the seamless integration of advanced functionalities like quality control with time tracking into iStockyard. By leveraging





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new-generation radar-sensors and sophisticated software, these functionalities allow for the visualization and monitoring of chemical and physical attributes such as ore grade and moisture content within the stockyard piles. Additionally, the positioning of current machines is achieved through indurad's GNSS or RTLS technologies.

Currently, iStockyard operates across multiple import/export ports, plants, and mines, offering comprehensive oversight of stockyards handling materials such as iron ore, fertilizer, and more. A prominent iron ore producer in South Africa has experienced ongoing operational enhancements through the implementation of the solution. By leveraging indurad's systems, the client successfully decreased off-spec lumpy product by up to 80%, leading to the creation of highly optimized blended shipments for train loading. Beyond the functionalities of reclaiming and stacking, indurad's integrated material quality meta-data within the time-stamped voxel stockpile model facilitated further optimization of blending operations. Furthermore, the implementation of indurad's solution is yielding additional benefits for the end user, including



increased stockyard capacity and clean and properly shaped piles, resulting in reduced dust emissions.

Remaining at the forefront of the industry, indurad upholds its competitiveness through a commitment to innovation in both commercial and technical realms. indurad's DNA includes continuous software and radar sensor development, ensuring our solutions stay at the cutting edge. The company is currently working on modular add-ons and advanced features, which can be easily integrated into the existing system without the need for

additional hardware or physical modifications. indurad is evolving with industry demands by introducing new business models such as Software as a Service and OPEX models. Its flexible offering aligns with the growing needs of the mining and bulk material handling sector who wants to benefit from indurad's solutions without waiting for long tendering phases.

Furthermore, this strategic approach reflects the company's commitment to sustainability and the pursuit of efficient production practices.

igus products in stackers and reclaimers for dry bulk handling

igus is a highly respected manufacturer of high-performance polymers based in Cologne, Germany. The company's innovative products made of lubrication-free plastics, so called motion plastics, are used in a wide range of applications, including stackers and reclaimers for dry bulk handling.

Stacker reclaimers usually are a combination of two different machines,

where the stacker transports the dry bulk, such as coal, to a heap and the reclaimer sends it to a different part of the plant as required.

E-CHAIN SYSTEMS AS AN ALTERNATIVE TO SLIP RINGS, CABLE REELS AND FESTOON SYSTEMS

To travel flexibly to different positions during dismantling, most stacker reclaimers

constantly travel along a rail route. The moving cable guide of the machines and thus the power supply has traditionally been ensured by a cable reeling drum (CRD) or festoon. Since the energy supply system is connected via various individual components, e.g. motor, gearbox, switch, slip ring and bearings, repeated maintenance measures have been indispensable for the operator. Due to





different inherent characteristics of the traditional systems, such as the high weight, they must be maintained constantly to operate reliably.

These traditionally used systems for transmitting energy can often be replaced by e-chain systems for both new equipment and for the retrofit of existing stackers and

reclaimers. Here, possible benefits are:

- ❖ simultaneous transmission of different media;
- ❖ continuous connection of fibre optic cables or wire-bound data connections;
- ❖ minimum maintenance;
- ❖ shorter cable lengths;

- ❖ less space required (no loop stations); and
- ❖ resistance to weathering effects.

Furthermore, igus products can be equipped with sensors that aid in the safe operation of stacker reclaimers and other bulk handling equipment.





iSense modules ensure continuous condition monitoring measuring the prevailing push/pull forces along the chain. These data are evaluated via a module in the switch cabinet and can perform actions, such as shutting down the system, if a limit value is exceeded. Damage to the cable guide can thus be prevented before it occurs.

Overall, the interplay of energy chain, cables and sensors can offer substantial improvements in terms of plant availability, durability, and safety during operation. Polymer energy chains save weight, simplify cable guidance, and reduce maintenance and costs.

Systems that combine these advantages have already proven in practice that they function faultlessly for more than ten years. In the very near future, igus will realize a new record project with 955 metres of travel. Until then, the record stands at two times 670 metres of travel and

uninterrupted operation since its initial installation in 2020.

“Since we luckily came across energy chains as cable guides, the problems with the cable drum have become history. With the energy chain for long travels, the movement speed of the stacker reclaimer and thus productivity could be significantly

increased,” Satyam Badala, Talwandi Sabo Power Limited

The stacker piles the coal into a heap. This is supplied with energy, data and media via cables and hoses, which are safely guided by a plastic energy chain.

ROTATING ENERGY SUPPLY IN STACKERS AND RECLAIMERS

Similar positive effects can be achieved by using e-chain systems in the rotation axis of stackers and reclaimers. igus rotating energy supply systems achieve a wide range of circular movements with rotation angles of up to 900°. Although a stacker reclaimer typically only requires a maximum rotation angle of 330°, up to 1,800° can be realized with special Triflex solutions.

In difficult environments and outdoor use steel chains tend to show considerable defects after a relatively short amount of time, which can manifest themselves in damage to the rollers, spacers and chain links.

These defects usually lead to a considerable expenditure of time. The design of the steel chain can lead to additional difficulties when a damaged component needs to be replaced quickly.

To summarize, the introduction of e-chain systems

not only solves long-standing problems associated with conventional cable management solutions, but also leads to significant increases in efficiency, durability, and safety across diverse operational environments, as exemplified by the success stories of industry leaders like Talwandi Sabo Power Limited.



MDG Handling Solutions dozer feeder

MDG Handling Solutions Srl was founded in 2017 on the initiative of Davide Gambarotta, who is a member and sole director.

The company operates in the field of bespoke design and production of bulk solids handling systems, in which Davide Gambarotta has gained considerable experience thanks to his 15 years of experience working in the family business, which has been operating in the same sector since 1919. MDG Handling Solutions Srl was created with the aim of distinguishing itself on the international scene, by adopting a highly innovative approach and identifying the best technological solutions for the customer specific needs for production, development and assistance systems.

DOZER FEEDER — DF MADE BY MDG HANDLING SOLUTIONS

MDG Handling Solutions's Dozer Feeder is a heavy duty item of equipment for stockpilers storage and reclaim.

It is an efficient piece of equipment that is suitable to work with clinker, coal, clay, alternative fuels and every type of material that can be dumped on the ground.

The Dozer Feeder guarantees high and reliable performance with a modular structure, which leads to a shorter installation process, and can be tailor-made to meet the needs of any customer.

The design itself is noteworthy. The lack of a hopper allows the material being



Dozer Feeder, frontal view.



Dozer Feeder, inside view.

handled to be moved directly onto the conveyor section.

The material builds its own storage, thus avoiding expensive fabricated upper hoppers and structures.

The horizontal section is designed to be submerged by the stockpiles and the front loader can run over the structure without any damage.

The idle head is equipped with a chain tensioning system, which allows sledges to move within a settled range. Should the head be completely submerged, the tensioning system is accessible as well, since the setting can be performed from the free area after the metallic walls

that hold the material.

The metallic wing walls confine the receiving as well as the reclaiming parts which have also the purpose of bearing the pile thrust and allowing material extraction.

On these walls there is a manual layer limiter to be set during the equipment commissioning.

In case of large grain-sized material, a roller crusher can be installed here in order to reduce the material granulometry.

The conveying system is composed of two strong pin and bush chains linked by bolted scrapers in charge of carrying the material forward: extraction happens on the chain top branch, where material lies onto anti-wear shields.

To understand the strength of the scrapers: the weight of one scraper of the Dozer Feeder DF 1500 (1,500mm is the nominal width of the feeder) weighs 50kg.

Several reclaiming casings convey the extracted material onto an inclined path to reach downstream machines, usually a belt conveyor which collects the material from multiple reclaimers.

The drive head is equipped with reduction gear-box, torque limiting device, electric motor and is supplied with VFD to meet changing requirements.

It can move a large amount of material, at a speed of up to 2,000 tonnes per hour.

Idle and drive wheels are in sectors for quick and easy maintenance.

The speed of the chain is low (normally between 0.05 and 0.3m/s); for this reason the lifetime of chain and scrapers is long



Dozer Feeder, loading.

and there is no need for a dedusting system.

The Dozer Feeder does not need any expensive civil works and site preparation and what is more is that it is mobile: if the customer's layout changes after time, the feeder can easily be moved to a different position.

A single unit can be used to feed one belt conveyor, but if the conveyor system has higher capacity needs, it is possible to add extra Dozer Feeders to maximize the

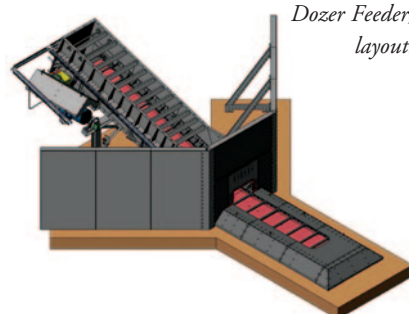
belt conveyor capacity.

In case of multi-material handling, different materials can be reclaimed and blended onto the main conveyor belt, by using several dozer feeders, each one extracting its own material from its stockpile.

By setting the speed of each feeder, customers can create the mix of material they need.

Key benefits include:

- ❖ suitable for any type of material;
- ❖ heavy duty design for low run and maintenance costs;
- ❖ no need for dedicated and expensive civil works;
- ❖ no need for dedusting systems;
- ❖ can be easily moved following the customer's future projects; and
- ❖ suitable for different industries:
 - mining and minerals;
 - power plants;
 - cement and lime factories.



Dozer Feeder, layout.



Dozer Feeder, frontal view.

Elastomer screen linings: sustainable solution for bulk material processing

TIP TOP Jörns, a REMA TIP TOP AG company, offers customers throughout Europe sustainable solutions for their screening media requirements with products from the REMASCREEN range. In this interview, Managing Director Matthias Klem explains the advantages of the customer-specific production of screen media made of elastomer materials.

Question: *TIP TOP Jörns positions itself on the screening media market through its handcrafted character. This clearly sets you apart from standard products. What characterizes your strategy?*

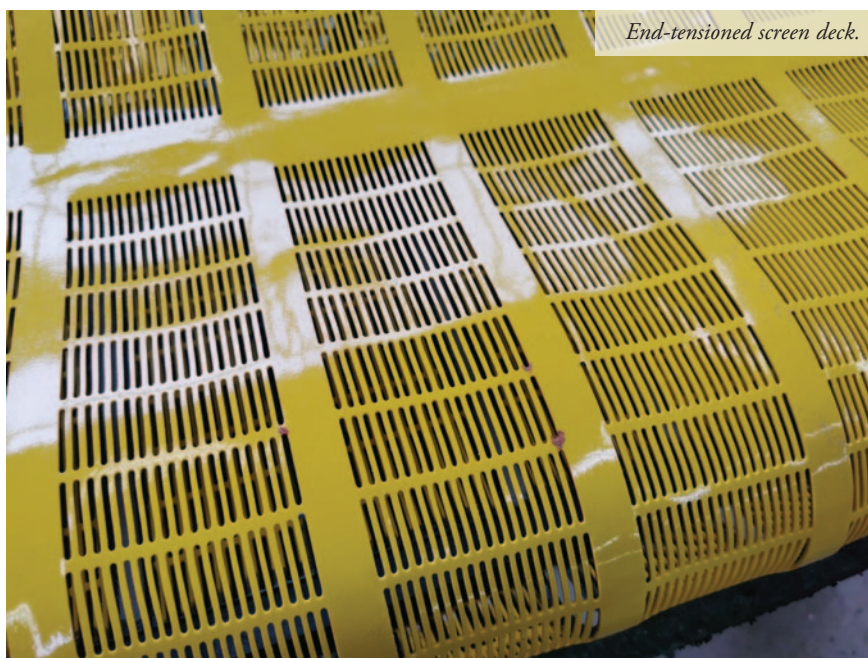
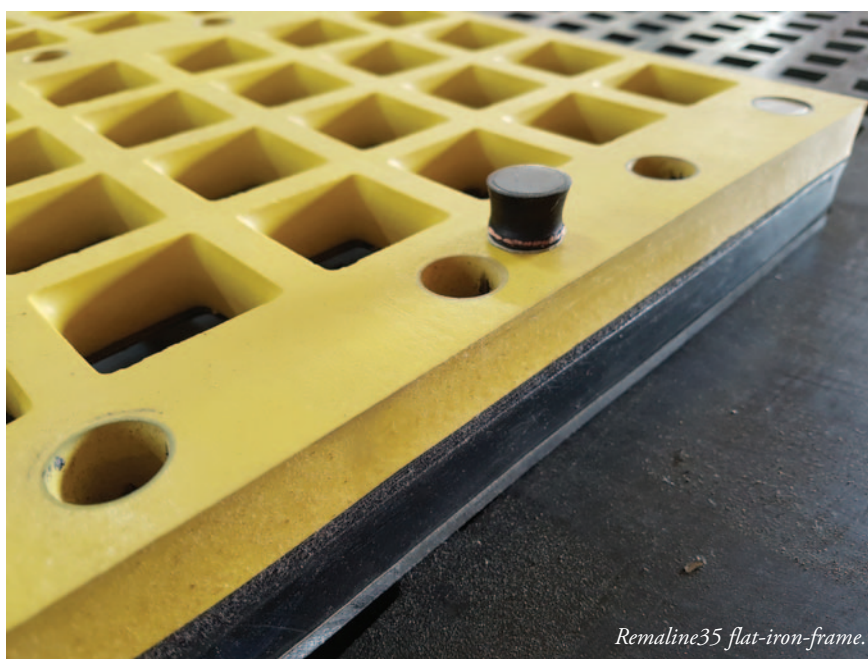
Matthias Klem: The very specific know-how of our experts is the reason why REMASCREEN is known and valued in the market as a real problem solver for screening technology requirements. For us, the handcrafted character means competent advice and, above all, the customized production of screen linings in conjunction with our comprehensive services.

Q: *Screen linings are at the heart of many industrial processes. In this highly competitive environment, customers are quality-conscious but at the same time cost-sensitive. Can the longer service life and process optimization offered by REMASCREEN screen linings compensate for the higher cost of the individualized product?*

MK: In today's world, decision-makers are looking for a solution that is both economical and sustainable in the long term. This is exactly where we excel. With precision, efficiency and reliability, REMASCREEN proves to be a particularly advantageous alternative to standard products made of steel or cast polyurethane. And that is just what our customers expect. Steel products often have a number of material-related disadvantages, such as short service life, blockages and high cleaning and maintenance costs. Customers can avoid all of these problems by using customized REMASCREEN screen linings.

Q: *You claim that elastomer screen linings offer cost benefits for the company. How quickly does a switch to REMASCREEN pay for itself? Can you provide best practices that make these benefits tangible in a nutshell?*

MK: In a cement factory in Denmark, the investment in REMASCREEN screen linings has paid for itself in just seven months thanks to significantly reduced maintenance costs. Chalk slurry is screened there using



crushed flint. Wire screens only had a service life of three to four days with this extremely demanding material. In addition, up to 65% of the material was clogging the work process. So far, 417 working hours per year have been spent on screen changes alone. We have optimized new custom-made screen frames and fitted them with longitudinal tensioners made of highly hydrolysis-resistant PU. The result is an almost 100% permanently open screen surface and a service life of more than one year. This reduces the time required for screen changes to just 36 hours per year.

Q: You produce a wide range of screening media for the heavy and hard rock industry, the sand and gravel sector, recycling, slag processing and the food industry. Which internal processes do you employ to ensure that you meet the needs of such different industries and their specific requirements?

MK: This business is still a niche, but one in which we are a technological leader and very successful. The in-depth analysis and advice provided by our experts, combined with our high level of material and manufacturing expertise, creates a tailor-made, individual solution. We deliver what the customer really needs in a quality that a standard screen cannot offer. We work together with our customers to define the effect they want to achieve. We then plan and implement the individual solution that best reflects all of the relevant parameters. We are convinced of the high quality of the results, which is why we offer our customers guarantees as well as trial use and return policies for our screen linings.

Q: Industrial production processes are highly sensitive. Failures of individual components such as screening machines have to be avoided because they jeopardize the smooth operation of the entire system. How fast and flexible can TIP TOP Jörns respond to customer requests with the individualized production?

MK: We maintain a very large stock and have the right material for every task in the form of rolls or sheets. In production, we have around 2,000 punching tools for over 550 different hole sizes and shapes — from 0.4 to 200 millimetres in size. All this enables minimized delivery times of three to four weeks for new products, and even less in emergency cases. In general, our screens have a long service life with reliably predictable replacement intervals, which largely prevents short-term downtime.

Q: REMA TIP TOP is a traditional rubber manufacturer. The comprehensive materials expertise within the Group is therefore



Remaline35 flat-iron-frame.

combined with the know-how in the planning and production of screening media that TIP TOP Jörns has built up over decades. Is this the decisive advantage that ensures the superior performance of REMASCREEN?

MK: First of all, we can confirm that our highly wear-resistant elastomeric materials have a better service life and grain separation when screened because they are particularly resistant to abrasion and have very good additional properties, such as high tear resistance. Hardness grades of 30, 50 and 60 Shore A are possible for rubber and up to 90 Shore A for polyurethane. The special structure with different fabrics is designed for low elongation. At the same time, the high level of vibration of the flexible material with optimum hole shapes leads to a pronounced self-cleaning effect and measurably increased screening efficiency. In addition, there is a noise reduction of up to 20 dB compared to steel screens, which reduces noise protection costs. The ease of installation and maintenance also reduces maintenance costs. We deliberately use these strengths of the material in our tailor-made solutions for excellent performance.

Q: You started your career at TIP TOP Jörns in Allendorf-Somplar in 1991 and have since experienced the development of the screen media market first-hand. After holding various

positions, you took over responsibility as Managing Director four years ago. In your opinion, which criterion is decisive for the success of REMASCREEN?

MK: Our company in Somplar has been around for over 50 years. At the end of the 1960s, rubber was still quite exotic as a screening material. I am proud that our team has been able to establish itself as a supplier of individual screening solutions for the bulk goods industry for decades. With our unique expertise and experience in screening media made of elastomer materials, we have succeeded in continuously optimizing solutions for our customers.



Matthias Klem.

ABOUT REMA TIP TOP

REMA TIP TOP is a globally operating system provider of services and products in the field of conveying and treatment technology as well as tyre repair. The company has a global service network and offers a wide range of rubber products, linings and coatings for both the industrial and automotive sectors. Over almost a hundred years, the company has built up unique expertise in materials development and industrial services and is active in the belting, material processing, surface protection and automotive sectors. At the end of the 2022 financial year, REMA TIP TOP generated sales of about more than €1.3 billion. Worldwide the company employs 8,000 employees and has more than 190 subsidiaries and associated companies — including well-known brands such as Dunlop Belting Products South Africa and Asplit.

Spain & Portugal

in focus

Iberian ports experience slight fall in throughput



Unloading sodium sulphate.

Barry Cross

Spanish ports report variances in performance against a background of an overall decline in 2023

Spain reported something of a downturn in dry bulk traffic volumes handled in 2023. Overall, there was a decrease of 3.7%, albeit with wide variances at the top ten ports, where traffic rose in five and dropped in the other five. Gijón, Tarragona and Cartagena continue to lead the way, although upcoming Castellón de la Plana had a nightmare year, dropping from third to fourth place.

The Port of Cartagena remains Spain's third most important in terms of dry bulk traffic. In 2023, it handled 8,689,819 tonnes, up 17.9% when compared to 2022's 7,367,619 tonnes. According to Business Development Manager, Jaime Vindel García, the main increases were in petroleum coke, cement, non-metallic minerals and construction materials.

"The increase in production at the Escombreras refinery makes by-products

of petroleum coke and sulphur more readily available. The reactivation of the construction sector has additionally allowed an improvement in our figures for

construction products," he explains.

Nevertheless, 2024 is expected to register a slight downturn. Ironically, a good cereal harvest forecast in the Iberian

DRY BULK TONNAGE HANDLED AT 10 LEADING SPANISH PORTS

Ranking	Port	2022	2023	% diff
1.	Gijón	16,938,911	16,111,830	-4.9
2.	Tarragona	9,332,310	10,161,373	+8.9
3.	Cartagena	7,367,619	8,689,819	+17.9
4.	Castellón	9,156,395	6,477,575	-29.3
5.	Huelva	5,711,619	5,701,002	-0.2
6.	A Coruña	5,392,263	5,183,353	-3.9
7.	Barcelona	4,539,863	4,794,906	+5.6
8.	Bilbao	3,752,884	3,918,705	+4.4
9.	Almería	3,914,006	3,903,275	-0.3
10.	Santander	3,410,484	3,832,666	+12.4
Total all Spanish ports		93,967,441	90,448,050	-3.7

Source: Puertos del Estado

Peninsula will reduce cereal import volumes at Cartagena. In addition, at the Escombreras refinery, forecasts are for a slight drop in production in respect of 2023, which will also result in a concomitant drop in the amount of by-products shipped via the port.

In terms of structural improvements, Vindel notes, “In recent years, concessions have been granted for the construction of new warehouses for dry bulk foodstuffs. These warehouses, in turn, allow the Port of Cartagena to position itself as one of the main entry points for cereal imports in the Iberian Peninsula.”

There have been equipment upgrades too. A new conveyor belt for transporting cereals from the South Quay to storage warehouses has recently been inaugurated. This has considerably boosted unloading times of docked vessels.

The port’s Escombreras dock can handle the largest bulk carriers currently operating. The South Quay, where cereals are unloaded, has a draught of 25 metres, served by 600 metres of berthing line, so imposes zero restrictions on vessels. In 2023, the largest bulk carrier to call at Cartagena was the *Maran Excelence*, which draws 18 metres of water. In other dimensions, it registers 94,594 GT and 180,940dwt.

“In recent years,” observes Vindel, “the Port of Cartagena has consolidated its position as a hub port for bulk agri-foodstuffs, as well as attracting new commodities, such as common salt, among others. Today, the range of dry bulk handled is therefore very broad.”



Ership unloading soya cargoes.

Cartagena does not currently generate any inland rail traffic, although a new project for a dry bulk terminal at Algodor is in the final project phase. This would allow the port to use the rail terminal located at South Quay to move dry bulk shipments to the centre of the peninsula. Currently, dry bulk from the port already does reach this area, albeit by road. Cereals, mainly used for the production of compound animal feed, are moved the most extensively of all commodities. An important part of this production, and therefore destination for inland movements, is located in Toledo, Madrid and in neighbouring provinces.

Like all Spanish ports, Cartagena has moved to introduce environmental protection measures when handling bulk solids.

“The Port Authority of Cartagena offers ecological hoppers, which allow an almost total reduction of particle contamination when unloading dry bulk,” says Vindel. “In addition, the recent incorporation of the conveyor belt for unloading cereals allows us to further improve the good air quality data from our docks.”

Last year, the Mediterranean Port of Castellón, which is located some 75km north of Valencia, handled a total of 6.5mt (million tonnes) of dry bulk, ranking it fourth out of 28 port authorities in Spain. However, traffic actually decreased by 29%, compared to the 9.2mt handled in 2022.

According to the port’s communications director, Elena Rincón, the reason for this decline can be attributed to several factors. On the one hand, the war in Ukraine had a negative impact, since that



Port of Castellón.



Don Juan, vessel owned by Ership
at A Coruña Outer Harbour.

country is one of Castellón's main suppliers of clay, an essential raw material for the important local ceramics industry. On the other hand, the crisis within the ceramics industry sector itself also had a downward impact on trade, since the Port of Castellón handles significant quantities of export tiles and ceramic products.

"Although these factors did exert pressure on our activities, the port is working closely with stakeholders to address the associated challenges and seek opportunities for sustainable growth in the future," says Ms Rincón.

Above all, the port is seeking new opportunities to generate additional business, which will involve market and cargo diversification, with a special focus on innovation, adaptability, and collaboration.

In spite of recent difficulties in the dry bulk market, the Port of Castellón has continued to add new infrastructure as part of an ambitious investment plan, designed to enhance the overall competitiveness and operational capacity of the port.

Among the most notable additions will be the new southern railway connection and a linked intermodal terminal, both of which are scheduled to enter service in 2026. This strategic connection will link the Port of Castellón to the Mediterranean rail corridor, thereby strengthening its position as a key logistics hub in the region.

New quay space is also being added. An additional 42 hectares of operating area are to be recovered from the sea, including a whole kilometre of berthing line. This

could prove particularly attractive to the burgeoning offshore wind sector.

Along with new infrastructure, existing terminal operators have a rolling programme of equipment upgrades and staff training to both boost productivity and increase service quality. Overall, says Rincón, this should increase Castellón's competitiveness in the ports sector.

At present, Castellón has three terminals that routinely handle dry bulk, between them already offering alongside draught of between 14 to 16 metres. However, with the expected draught at the South Basin due to ultimately reach 21 metres, future possibilities for the port are endless, since this will enable it to handle the largest vessels sailing into the Mediterranean.

Currently, in the South Basin of the port, Portsur Castellón operates a dedicated dry bulk terminal. This covers an area of 131,526m² and is served via a 500-metre-long quay, with additional covered warehousing provided.

At the North Basin, there are two specialist terminals. On Section I of the Ceramic Dock, Terminal Marítima del Grao operates a 16,500m² area, which has 210 metres of quay. Storage and handling areas for this concession are undergoing planning approval. On Section II, there is Noatum Terminal Castellón, S.A. Its concession covers an area of 16,425 m² and also has 210 metres of quay, as well as a dedicated operations area.

"We are not complacent," stresses Rincón. "The port authority is actively working to attract new dry bulk traffic

whilst simultaneously seeking to diversify its overall port activity to ensure sustainable and resilient growth in the future."

One area of interest is the cereals market, which is viewed as a promising option given a growing demand for cereals nationally and internationally. The port is therefore actively evaluating the possibility of expanding its participation in this market, leveraging its strategic location and improved infrastructure to facilitate the transport and storage of cereals both efficiently and profitably.

As for terrestrial transport to and from the port, there is a northern railway connection that is currently out of use. This has definitely limited the port's ability to fully utilize rail transport to move dry bulk consignments, says Rincón. However, with the opening of the new southern railway access in 2026, significant changes are expected. This will have mixed gauge (Iberian broad and international) and also capacity to accommodate trailing loads of up to 750 metres, thereby allowing a greater incentive to transport dry bulk consignments by rail.

"This improved railway connection will not only facilitate the transport of goods within the port, but will also offer a connection to the Mediterranean corridor. This will expand the possibilities to use rail transport to serve other markets further afield, in both Spain and Europe," says Rincón.

At present, the hinterland served by the Port of Castellón encompasses a wide geographical area mainly including the local



Valencian Community, as well as neighbouring Aragón, Catalonia, and Madrid. Furthermore, that hinterland additionally extends to other regions of southern Europe, as the port acts as an important distribution and connection centre for maritime trade in the Mediterranean and North Africa.

Finally, the Port of Castellón has been particularly active in implementing new environmental protection measures. One of these includes the installation of five dust trap screens strategically located in different areas of the port and designed to protect the neighbouring residential areas from the drift of particles produced by dry bulk handling in the port. These screens have a height of 12 metres and represent a significant investment, in excess of €680,000.

Another important measure has been the installation of wheel washers located at the entrances and exits of the port and designed to prevent the dispersion of particles from trucks servicing the port. This contributes to the reduction of air pollution and helps to improve air quality in the port area and its surroundings.

In terms of its dry bulk traffic, fifth rated Huelva port had a fairly stable 2023, reporting a slight drop of 0.2%. For the year, it handled 5.7mt.

Its dedicated dry bulk terminals reported traffic of 1.76mt, which was a drop of 13.35%, while that handled in non-dedicated terminals grew by 7.12% to 3.933mt.

According to the port authority, there was notable growth in five areas: common salt (+170%), cereals/flour (+44.5%),

construction materials (+38.4%), steel products (+22.6%), and fertilizer (+16.6%).

In recent years, the Galician Port of A* Coruña has managed to consolidate its position as one of Spain's leading dry bulk handling ports, mostly due to the construction and development of a new Outer Harbour. However, despite serving both north-western Spain and Northern Portugal, dry bulk traffic in 2023 registered a 3.82% decline, dropping from 5.39mt in 2022 to 5.18mt.

A spokesperson, speaking exclusively to DCI, notes that this was due to exceptional circumstances, notably the invasion of Ukraine. Early on, this resulted in the cutting off of gas supplies from Russia to both Germany and Poland, which initially benefited the Outer Port at A Coruña since this functioned as an effective hub for coal consignments en route to both countries, inbound from suppliers in Asia and Africa. However, last year, demand for coal fell, hence the drop in the port's operations. Nevertheless, other dry bulk commodities, especially phosphates, increased, thereby compensating, to some extent, for the loss of other traffic.

"For 2024, we are expecting similar traffic figures to those posted in the past two years," noted the spokesperson, who said that this would be in the region of 5mt.

Significantly, the geography of the Port of A Coruña has changed quite dramatically in recent times. The so-called Inner

Harbour has existed for centuries, but has now been joined by the new Outer Harbour development at Punta Langosteira, which is located in the municipality of Arteixo, bordering A Coruña.

"This new harbour came into service in 2012, after seven years of construction work. It is a large, deep water facility, with a draught of more than 22 metres, and covers an area of two million square metres of land surface," observes the spokesperson, who adds that this new development has led directly to a significant growth in port activities, especially those of dry bulk.

Currently, the main traffic flow is oil and agri-foodstuffs, such as maize, wheat, flour and barley. These cereals are eventually used to feed livestock in northwestern Spain and northern Portugal. As such, in 2023, 2.5mt of agri-foodstuffs were handled across the port's two harbours.

"The Port of A Coruña is nowadays the leader in this traffic in the north of Spain, where it has become the great agrifood hub for the region."

The spokesperson adds that, such is the importance of agribulk traffic in the port, investment in dry bulk handling equipment by the various cereals terminal operators has been considerable, amounting to €130 million in recent years. These terminals are all located in the Outer Harbour, where state-of-the-art mechanical handling equipment has been introduced, as have large covered warehouses to store consignments.

The importance of the Outer Harbour development cannot be overstated. Given

**Nowadays the port tends to market itself under its Galician name of A Coruña rather than the better known Spanish rendition of La Coruña.*

its deep draught, it can handle the largest bulk carriers currently deployed in global trade. To date, the biggest vessel to call has been some 230 metres in length, conveying a cargo of 70,000 tonnes of cereals.

“Given the large capacity of A Coruña’s Outer Harbour, the port has been able to attract new, dry bulk traffic too,” confirms the spokesperson. “In addition to a significant increase in the movement of cereals, we have added other commodities, such as clinker, phosphates, cement, aggregates and the aforementioned consignments of transshipment coal.”

In overall terms, the percentage of dry bulk moved from the port by rail to the interior is currently very low, being less than two percent. However, this figure will increase significantly in the short term, since a brand new rail access to the Outer Harbour is under construction, which will connect the Harbour to the general rail network as of 2026. This is absorbing investment in excess of €150 million, financed entirely by the EU’s Next Generation funds.

“When operations start in 2026, a significant part of dry bulk traffic handled in

the Outer Harbour will be shipped by rail. Moreover, in the near future, all dry bulk handled by terminals in the Inner Harbour will migrate to the Outer Harbour, thereby boosting rail’s market share even further.”

Finally, in terms of environment protection, the spokesperson notes that the terminal operating companies are making an important effort in this respect. Most significantly, they have installed closed-circuit unloading systems in the Outer Harbour, which link moored vessels to warehouses by means of automatic conveyor belts.

Ership Grupo offers strong expertise in agri-products at Iberian ports

Ership Grupo operates in more than 25 ports spread throughout the Iberian Peninsula, having a presence in both Spain and Portugal. However, its three largest operations are to be found in the Spanish ports of Gijón, Tarragona and Cartagena. This extensive network of ports allows it to offer its clients a comprehensive logistics service through all its companies and associates: Alvargonzalez S.A, Pérez Torres Marítima, Ership, Ronco, Marship, Beship, Compas, Comship and PortShip.

In 2023, Ership Grupo handled around 31mt (million tonnes) of dry bulk at its port operations, with agri-food commodities being the most important. Last year’s growth of 2% is unlikely to be matched in 2024, with the company predicting similar traffic levels as in 2023. Indeed, given better harvests within Spain, which would result in fewer imports, there is even the possibility of a slight drop in overall tonnage handled.

In the last three years, Ership has allocated approximately €90 million to improvements in port infrastructure and equipment. One of the most notable projects has been the agri-food terminal in Cartagena, which now functions as the nerve centre for the unloading of agri-food products in the Iberian Peninsula. The investment in this facility includes two ecological hoppers with a capacity of 150m³ each. These are capable of unloading at a rate of 1,000m³ per hour per hopper, whilst also being connected to a conveyor belt network with a sealed anti-dust system. This belt, which extends 1.5 kilometres from the dock to the weighing and distribution tower, enables the distribution of cargo across four different warehouses, and can operate at a maximum unloading rate of 2,000 tonnes per hour.

Ership Grupo has invested heavily in boosting its port storage capacity. At Cartagena, for example, this now amounts to 600,000 tonnes for agri-food

commodities.

In the northern Spanish port of Avilés, a 6,500m² warehouse has been built for the storage of both bulk and bagged cargo, with an overall capacity for 60,000 tonnes. It is also equipped to handle hazardous cargo. This particular warehouse has direct access to the national rail network and is strategically located just a few metres away from the quay, which reduces the need for HGV movement and thereby reduces atmospheric emissions during handling.

Just 30 kilometres away, in Gijón, where the demand for grain has experienced a notable increase, Ership Grupo has decided to double its storage capacity to 20,000m². Equivalent to 120,000 tonnes of agri-food products. In addition, this warehousing is equipped with an enclosed conveyor belt that allows the direct loading of trains.

In Tarragona, Ership offers up to 750,000 tonnes of agri-food storage within the port. This impressive capacity is, in part, explained by the acquisition of a clinker mill concession, whose buildings were demolished and replaced by two grain warehouses, increasing storage by more

than 16,000m², equivalent to 90,000 tonnes of agri-food products.

“We also intend to continue with our space optimization policy to increase storage capacity at the port of Tarragona,” noted Jorge Alvargonzález, the General Manager of Ership Grupo.

In the southern Spanish Port of Huelva, new warehouses have been built, adding 12,000m² of storage space, which can hold up to 60,000 tonnes of agri-food products. Overall storage available to Ership has now reached 200,000 tonnes.

At Lisbon, in Portugal, the Ership Grupo acquired the entire Beato multi-purpose terminal in 2022, which is now trading as Ership Lisboa. It is a terminal dedicated to bulk operations, general cargo and project cargo, with a 500-metre quay, offering the deepest draught in the inner port of 8.5 metres. On dock storage consists of 37,500m² of warehousing, while handling is undertaken by two mobile harbour cranes and two cargo conveyor belts. The terminal also has two rail sidings, which are connected to the country’s main railway system.



Ership's silos in Tarragona.



Ership at the Spanish Port of Gijón.

“We aim to maintain our investment momentum during 2024, thereby consolidating not only our commitment to constantly improving customer service, but also to innovation and sustainability,” said Alvargonzález.

Ership Grupo remains a major MHC operator in the Peninsula, and has recently added five new units, at Gijón, Tarragona, Cartagena and Cádiz. These encompass two Liebherr LHM 550s, two Gottwald ESP 8Bs and one Gottwald ESP9B.

“These MHCs allow the company to improve and increase both the performance and handling capacity across

all types of loads,” says Alvargonzález. “We have the power and precision to operate both bulk and steel products as well as project cargo.”

For 2024, the aim is to acquire additional MHCs. Otherwise, in 2023, three loading belts, with varying capacities, were purchased, along with various other auxiliary equipment for bulk collection and transfer operations.

Significantly, the Ership Grupo is also a bulk carrier operator in its own right, although also has strategic alliances with clients in terms of sizes and vessel types. Currently, it has five bulk carriers of its

own: one of 13,000dwt and four of between 22,000dwt and 25,000dwt, all equipped with cranes and grabs. The *Elena* is currently its largest vessel.

“Our fleet operates in Europe, the Mediterranean and along the West Coast of Africa. We have specialized in a certain size of vessels due to the history of our company and client, but we are open to analyse all types of opportunities using other sizes of vessel. Throughout our 135-year history we have handled VLCCs, Panamaxs, Supramaxes, Handys, coasters, pneumatic carriers and so on,” says Alvargonzález.



Ership unloads at the Port of Cartagena.

He adds that, the dry bulk import-export trade in Spain is already highly consolidated, with the three main sectors being agri-food, energy and mineral. However, by leveraging Ership's existing commercial network, it is constantly able to offer customers services to attract both new traffic and find innovative logistics solutions.

"We try to rethink traffic operations and look for possibilities beyond what is usually available. Currently, the company is committed to growing in the fertilizer, general cargo and breakbulk markets."

As for rail haulage within the Iberian Peninsula, this currently accounts for only 5% of the tonnage handled by Ership Grupo, which the company concedes is "a very low figure". This is explained by the highly competitive nature of the haulage industry. However, the company, alongside its port authority partners, remains committed to developing this sector. Problems, nevertheless, remain:

"Spain is a country with a very extensive port system, so most inland transport is comparatively short. Rail must, therefore, be very competitive to beat out other modes. Furthermore, the lack of rail sidings at many of our customers' facilities implies double handling of dry bulk consignments, which makes rail even more expensive."

Environmental improvements are being made on other fronts, though. According to Alvargonzález, "One of Ership's main objectives is to improve processes in terms of sustainability, which is why we constantly search for innovative solutions to improve the circular economy and thereby reduce our overall footprint on the planet."

The Ership-owned vessel Souselas.



He re-emphasizes the importance of the investment made at the Cartagena agri-food terminal, where there is no longer air pollution thanks to the sealed systems now in place. The new conveyors also eliminate about 37,000 HGV movements a year.

In 2024, Ership acquired four Green Magnum Force tubular slings, being the first Spanish company to use this highly innovative lifting system. It is made with a technologically advanced and highly resistant material that uses a smaller amount of fabric for the same load capacity and thereby reduces CO₂ emissions up to seven times more than with traditional slings.

100% of the electrical energy supplied to the Ership's port operations also comes from certificated renewable sources, leaving no carbon footprint. Provision has additionally been made for new

warehouses to be built incorporating low-consumption LED lighting. Likewise, a plan is in place to gradually replace conventional lighting with LED lighting in the company's offices and facilities, which not only results in less pollution, but also cuts electricity consumption by more than 40%.

Finally, in accordance with the MARPOL 73/78 initiative developed by the International Maritime Organization, Ership Grupo measures and records the fuel consumption of each vessel operated to ensure both the correct management of refuelling operations and the guarantee that no accidental spills of fuel or other harmful substances occur. All activities within the company that can be electrified, will be electrified. Where that is not possible, Ership is developing pilot projects to use alternative power sources, such as bio-fuels, to reduce the carbon footprint by up to 80%.

Portugal posts slight decline in 2023 dry bulk traffic

In 2023, Portuguese mainland ports handled a combined 83.4mt, a drop of 2.2%. Dry bulk traffic, at 14.32mt, accounts for around 17.2% of this, and fell by 1.5% last year, equivalent to 223,000 fewer tonnes. However, the most sober fact in respect of maritime dry bulk traffic in Portugal is that the eight leading mainland ports between them handle less tonnage than does Spain's leading dry bulk port, Gijón, which reported dry bulk traffic in 2023 of in excess of 16mt.

For traffic purposes, the Transports and Mobility Authority (AMT), which collates port statistics, organizes traffic into just three categories: Agribulk, Minerals and Others bulks. This last category, at 7.2mt last year, was by far the largest, despite having dropped 13.9% compared to the

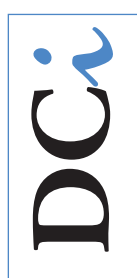
DRY BULK TONNAGE HANDLED AT PORTUGUESE MAINLAND PORTS				
Ranking	Port	2022	2023	% diff
1	Lisbon	5,292,000	5,127,000	-3.1
2	Setúbal	2,542,000	2,816,000	+10.8
3	Leixões	2,836,000	2,496,000	-12
4	Aveiro	2,265,000	2,329,000	+3.6
5	Figueira da Foz	1,141,000	916,000	-12.8
6	Sines	327,00	436,000	+33.5
7	Viana do Castelo	160,000	125,000	-28
8	Faro	73,000	75,000	+2.6
Total all Portuguese ports		14,637,000	14,320,00	-1.5
Source: Autoridade da Mobilidade e dos Transportes				

previous year. The other two categories — agribulk and minerals — both increased in 2023, by 14.8% and 26.8% respectively to 5.5mt and 1.4mt.

Significantly, coal, which is handled exclusively by the Port of Setúbal, registered the single biggest decrease, down 26.9% to just 181,000 tonnes. 

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