DCi DRY CARGO international

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FEATURES

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- Bulker Safety
- Mobile Harbour Eqpt
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SEPTEMBER 2012 issue

featuring...

Dry bulk trade's blurred signs

Annual figures for many elements of global seaborne dry bulk trade are likely to show solid increases in 2012 as a whole. But recently there were signs suggesting that much of the growth occurred in the first six months of this year. Prospects for the second half and into next year have become more uncertain, emphasized by some adverse influences emerging.

Concerns about economic activity in numerous countries intensified during the past few weeks. Preliminary GDP data confirmed that the eurozone economy is effectively in recession (this year's second quarter was down by –0.2% from the previous quarter) and there are no indications of when a firm recovery may begin. Other countries, including China, mostly appear to be struggling to maintain a healthy trend. Currently, optimism for 2013 is restrained.

Iron ore

A sizeable increase in world seaborne iron ore trade still seems achievable this year, as shown by the forecast in table 1. Additional imports of 43mt (million tonnes) could raise the 2012 total by 4%, to 1,112mt. However, this outcome is entirely dependent on China's continued robust expansion, because there is only limited potential for growth elsewhere and Europe's volume may fall sharply.

One positive influence recently has been the pick up in Japan's steel output, contributing to an annual rise, while South Korea's production also may be slightly above last year's level. In the European Union by contrast, a 4-5% production decline is foreseeable. Although China's steel output is currently averaging 2% higher, indications for this year's remaining months are mixed, and a downturn is possible.

Coal

Coking coal movements, comprising one quarter of overall seaborne coal trade, evidently are rebounding from last year's sharp reduction. The much larger steam coal sector also continues to expand. Both sectors are less dependent on China as a growth component than iron ore trade. Overall global seaborne coal trade is forecast to grow by 55mt (over 5%) in 2012, reaching 1,068mt.

A large proportion of the extra import demand originates in Asia. In addition to China's higher volumes, a strong upwards trend in India's foreign purchases remains a prominent feature. Among other countries also, positive factors are visible. In many areas, expansion of coal-fired electricity generation persists as a key contributor to the growing energy supply mix.

Grain

On a calendar year basis, world seaborne grain trade (including wheat, corn and other coarse grains, plus soyabeans) could increase moderately by 3% in 2012 as a whole, reaching an estimated 319mt. However, growth probably was concentrated in the first half, corresponding to the 2011/12 crop year's second half. The following six months looks set to be much weaker.

After a robust January–June 2012 period, negative factors have emerged. There have been no signs of severe domestic crop shortfalls in the summer harvests of northern hemisphere importing countries. Also, several exporters, especially the USA and Black Sea suppliers, will have reduced volumes available because of poor harvests. Consequently import demand may diminish.

Minor bulks

Commodities related to manufacturing and construction, such as steel products, forest products, bauxite/alumina and cement comprise a large part of the extensive minor bulk trade sector. Agricultural commodities comprise the remainder. Overall seaborne trade growth of 3% could be seen this year, assuming that the global economy avoids a deterioration in the months ahead.

Bulk carrier fleet

Expansion of the world bulk carrier fleet continues apace. Calculations suggest that during 2012 a very rapid 12% increase is likely, raising capacity to 688m dwt by year-end, as shown in table 2. Newbuilding deliveries appear set to rise, exceeding 100m dwt, and probably less than one-third of this total will be offset by a strong upturn in scrapping, to over 30m dwt.

TABLE 1: WORLD SEABORNE MAJOR DRY BULK COMMODITY TRADE (MILLION TONNES)

	2007	2008	2009	2010	2011	2012*
Iron ore	787.5	844.0	905.0	1005.0	1069.0	1112.5
Coal	810.6	823.6	841.7	951.0	1012.8	1068.0
Grain (including soyabeans)	274.1	290.3	294.4	296.5	309.8	319.0
Total major bulks	**1,872.2**	**1,957.9**	**2,041.1**	**2,252.5**	**2,391.6**	**2499.5**
% growth from previous year		4.6	4.2	10.4	6.2	4.5

source: Bulk Shipping Analysis estimates and forecasts **forecast*

TABLE 2: WORLD BULK CARRIER FLEET (MILLION DEADWEIGHT TONNES)

	2007	2008	2009	2010	2011	2012*
Newbuilding deliveries	24.9	24.5	43.1	80.4	98.3	105.0
Scrapping	0.6	5.5	10.6	6.4	23.0	32.0
Losses	0.3	0.1	0.3	0.4	0.4	0.2
Other adjustments/conversions	0.1	6.9	8.6	4.3	4.1	0.5
Net change in fleet	24.1	25.8	40.8	77.9	79.0	73.3
Fleet at end of year	**391.7**	**417.5**	**458.3**	**536.2**	**615.2**	**688.5**
% growth from previous year		6.6	9.8	17.0	14.7	11.9

source: Clarksons (historical data) & BSA 2012 forecasts **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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Doubts about China's bulk imports

Earlier this year, confidence about predicting a continuing upwards trend in China's dry bulk commodity imports during 2012 and further ahead was solid. Signs of strength remained clearly visible in the first half but, over the past couple of months, more questions have been raised about the outlook. Chinese imports now comprise almost one-third of global seaborne dry bulk trade, and consequently their progress is a crucial influence.

Doubts about prospects reflect accumulating evidence of a slowing economy, with some evidence suggesting that it is decelerating more than the official figures indicate. GDP growth in the second quarter of 2012 declined to 7.6%, compared with the same period a year earlier, after an 8.1% increase in the previous quarter. Recent forecasts imply a pick up beginning soon, extending into next year, but it is becoming less clear whether this can be achieved.

Iron ore uncertainties

The largest import trade into China, iron ore, comprising over half of the dry bulk commodities total, performed strongly in this year's first six months. Iron ore imported in that period totalled 367mt (million tonnes), a 10% increase above the first half of last year. However, after reaching over 187mt in the first quarter, average volumes in subsequent months have been lower.

Steel industry output grew at a much less rapid pace. Crude steel output is provisionally estimated to have risen by 2% in the January–June 2012 period, to 357.2mt, while pig iron production at blast furnace mills was 4% higher at 335mt, according to World Steel Association statistics. These figures are likely to be revised, probably greatly, when more complete information is available.

Predictions of further growth in China's 2012 annual iron ore imports total continued to be published recently. But the probability of a very large rise seems to be receding, amid expectations of weakening steel demand from construction and manufacturing activities, with unfavourable effects on steel production. Other factors also will affect the outcome, including ore volumes produced by domestic mines and iron ore stocks

Coal questions

In the first half of this year, a very strong coal imports evolution was seen. Official figures reportedly show the total volume, now

CHINA'S DRY BULK IMPORTS (MILLION TONNES)

	Main bulk commodities					
	2007	2008	2009	2010	2011	% change*
Coal	51.0	40.8	126.6	166.3	183.1	+10.1
Iron Ore	383.1	444.0	629.8	618.6	686.1	+10.9
Soyabeans	30.8	37.4	42.6	54.8	52.6	-4.0
Steel products	17.2	15.6	22.4	17.2	16.3	-5.2
Bauxite/alumina	28.4	30.5	24.9	34.7	47.1	+35.7
Nickel ore	15.6	12.4	16.6	25.1	48.3	+92.4

source: China Customs, USDA, BSA * *2011 compared with previous year*

extended to include lower-grade lignite, a large category, and all types of coal products, reaching 140mt, a remarkable 66% rise from the same period a year ago.

Among the grades which China imported during the first six months of 2012, varying growth highlights differing circumstances in consuming industries. Supplies of domestically mined coal of different types also varied, while there were changes in usage of alternative fuel sources, affecting foreign purchases. Coking coal received apparently was 44% higher at 27.6mt, contrasting with steam coal imports (including anthracite) expanding by 91%, to 62.6mt.

During the remainder of 2012 and into next year coal imports probably will be adversely affected by slowing activity in a number of industries, including steel production and power generation. Domestic coal output, which provides the largest part of China's supplies, also will have a big impact. In this year's first half, domestic production was up by 6% at 1.91bn tonnes which, together with the increased imports, apparently contributed to some over-stocking.

Grain and soya scepticism

Imports of both grain (wheat plus corn and other coarse grains) and soya into China have risen strongly in the current marketing year ending September 2012. An estimated 20% increase could raise the total to 67.8mt, based on US Dept of Agriculture calculations. But the outlook has deteriorated recently, possibly resulting in a 3% reduction during the 2012/13 year.

Despite good Chinese domestic grain output last summer, strong consumption growth was reflected in market tightness and additional imports of wheat and corn. A lower domestic soyabeans crop and rapidly rising meal and oil usage boosted the upwards soyabeans import trend.

Estimates for the summer 2012 wheat and coarse grains harvest suggest that production could rise again, by 2% to 325mt. Higher corn output, coupled with tight global export supplies, may result in sharply lower imports of grain in 2012/13. Conversely, a further 7% decline in China's soyabeans output to 12.6mt could reinforce the positive imports trend, assisting a 3% increase to 59.5mt, based on USDA's figures.

Puzzling prospects

Among other dry bulk commodity imports, many have performed strongly. Large elements include bauxite/alumina, nickel and manganese ores, steel products and woodpulp. China's foreign purchases in the period ahead will be greatly affected by how the overall economy evolves, as well as reflecting more specific factors in individual importing industries using these raw materials or semi-finished products.

Some indicators emerging suggest that the economic growth outlook is becoming much less promising. Over the past couple of months the Chinese government has introduced measures to stimulate momentum, amid cooling activity. Many forecasters still assume that a 'hard landing' can be avoided, and that a manageable slowdown begins to reverse fairly soon, followed by an improving trend, but doubts remain.

Commodity exporters around the world, especially Australia, Brazil and Indonesia, are heavily dependent on strong and expanding demand from China's industries. This emphasis is particularly intense at a time when there is only limited additional import demand from other countries, and when one of the main importing areas, Europe, is still mired in a recession which may persist for some time.

Richard Scott

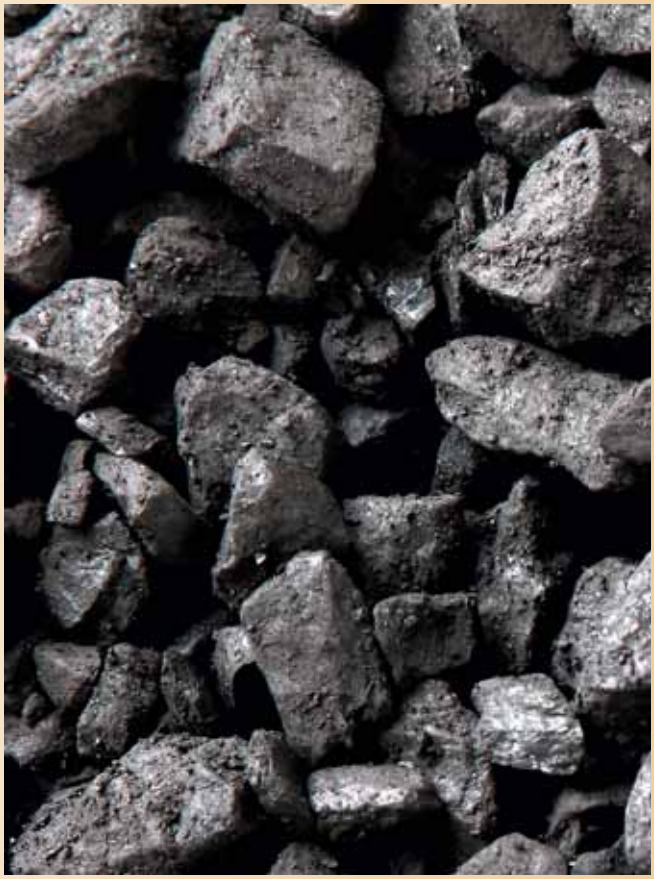
End of commodity supercycle?

Commodity price falls across the board — excepting crude oil and its derivatives — over the last few months have set off a lively debate among academics as to whether the commodity supercycle that began in 2000 is over. Not on many subjects, differences of opinion could be as sharp as on the life of the last one in a series of commodity supercycles. Interestingly, those who have studied the phenomenon over the last two centuries are too in disagreement over the length of expansionary phase before commodity price decline starts. For example, Morgan Stanley's Ruchir Sharma has discovered a trend of two decades of price declines followed by one decade of gains. On the other hand, many believe the life of an expansionary phase representing supercycle could be anything between 15 and 20 years.

The much-acclaimed author of *Breakout Nations: In pursuit of the Next Economic Miracle*, Sharma has said in an article in the *Financial Times* newspaper, "over the past 200 years, real commodity prices have declined along a predictable path: one decade up, two decades down. We have just finished one decade up. The path of oil and copper is an exception, but real prices have stayed broadly flat, with no evidence of supercycle." Whatever his views on copper, the fact is the red metal is down to around $7,580 a tonne from over $1,000 a tonne in early 2011. As for crude oil, unlike any other commodity it is as much subject to forces of demand and supply as to complexities of geopolitics. In any case, academics are split on supercycle longevity. But the point raised by Sharma that 'commodity mania' puts community fortunes in mostly unproductive hands will find wide acceptance. Mania it is, as the world has seen the birth of any number of commodity investment funds in recent years facilitating participation of people enticed by the prospect of making quick fortunes but with no knowledge of the trade. According to Sharma, money garnered by commodity funds in five years to 2011 had more than doubled to over $400bn. He has a distaste for the commodity bubble for strong economic reasons as also for the commodity chase finds wealth falling in unproductive hands.

Whatever be Sharma's view on the subject, the commodity supercycle standing for a very long-term surge in prices may or may not have run out of all its steam. Unarguably, bulk commodities and metals subject to stagnation in the two decades preceding 2000 subsequently started experiencing regular spikes in prices on the back of unprecedented demand growth in emerging markets. If China stood out for its ravenous appetite for raw materials, a big market opened up for their suppliers, benefiting emerging economies like Brazil and Russia. In the beginning of the cycle, demand for raw materials was ahead of supply and buyers in China and India (for coking coal) were constrained to pay ever rising premium prices. Raw materials price spikes left huge surpluses with the mining groups leading them to invest heavily in capacity expansion to take care of the world hunger for minerals. This is bringing about a balance in demand and supply and as a result, a southward push to prices of raw materials and collaterally to metals.

Many economists say rises and falls in commodity prices happen in waves lasting 20 years. If it is to be accepted that a supercycle has a life of 20 years, then the market is taking a hard look at slowdown in all emerging economies from where bulls in the first place drew inspiration. The Chinese double-digit growth rate is in the past. China has now lowered its 2012 growth target to 7.5% from the earlier 8%. As for India, rating agency

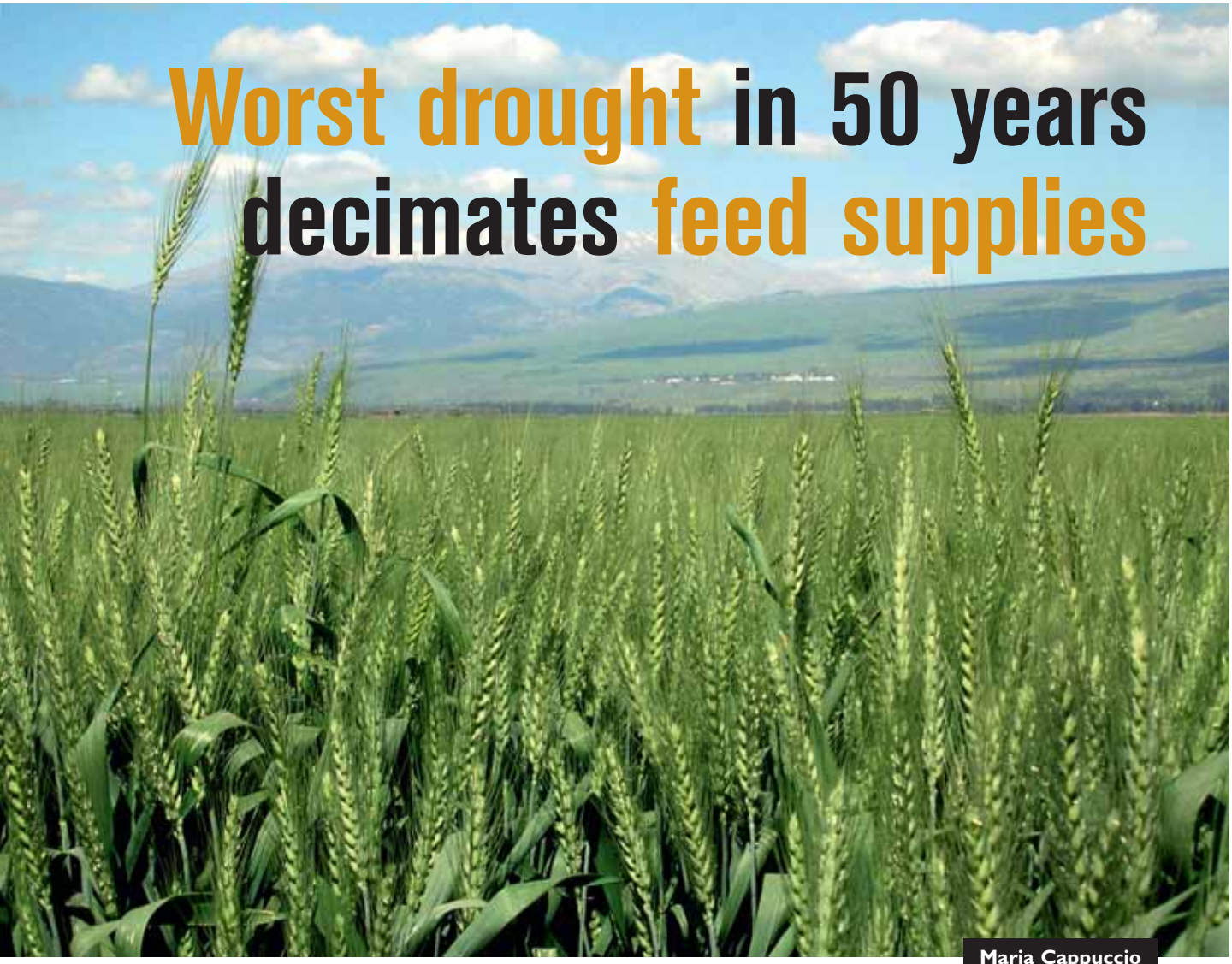


Moody's says the combination of a broad-based slowdown, a poor monsoon and a government that has "badly lost its way" will restrict the country's growth to 5.5% this year. Growth deceleration in the two BRIC (Brazil, Russia, India and China) nations will set off a chain reaction. Falls in China's raw materials import growth rates in particular will be hurtful for resource rich and export dependent Brazil and Russia. Australia, a major supplier of a host of minerals to the world, is also taking a hit. Retreat by bulls is also due to discouraging industrial output data from Eurozone countries. Their main concern is Europe's manufacturing hub Germany, which after sustaining growth through the European debt crisis is now feeling the impact of Eurozone storm. Bulls are further disheartened by the Bank of England warning that the UK economy will grind to a complete standstill and the US Federal Reserve and European Central Bank refusing to introduce new stimulus packages.

So from China's procurement of industrial raw materials being less rapid than in the past to so many other negative considerations, many have come to believe that the boom is over and further price falls are on the cards. *The Economist*, however, finds this prognosis premature. It quotes HSBC saying that the seven year old (not a decade old) cycle is showing signs of "creaking middle age" and "a long senescence" is likely to follow. At the same time, mining majors like BHP Billiton and Rio Tinto are pinning their faith in demand revival in China. Flush with cash, a result of a long period of high raw materials prices, they are to spend over $200 billion in expanding capacity out to 2015. Rio hopes to see signs of improvements in Chinese economic activity as Beijing's new stimulus measures "begin to flow through to infrastructure investment." China is, therefore, expected to provide sustenance to commodity supercycle for some more years.

Kunal Bose

Worst drought in 50 years decimates feed supplies



Maria Cappuccio

The prolonged sovereign debt turmoil in the eurozone, faltering US growth and a marked slowdown in emerging markets have weakened global economic growth, forecast at 3.5% in 2012. The International Monetary Fund (IMF) warns that the downside risks have intensified and threaten to derail economic recovery, unless urgent action to allow financial conditions in the eurozone to ease coupled with progress on banking and fiscal union; for the US to raise the debt-ceiling and develop a fiscal plan and emerging markets to support their economies to cope with trade declines and the high volatility of capital flows. But while these serious challenges remain, they were overshadowed by a catastrophic drought that savaged crops in the US and threatens to trigger a global food crisis — the third in five years — which crushed hopes that large crops and falling commodity prices would offer some relief to the troubled global economy.

The drought, the worse seen in half a century, decimated the corn crop and adversely affected soyabean yields, across large swathes of the US. The prospect of plunging feed grain supplies, exacerbated by heat damage to crops across most of the spring wheat growing areas in Russia, Ukraine and Kazakhstan, and reports of below-average monsoon rains in India, fuelled price rallies across the feed grain complex. Corn surged by over 60% from mid-June, while wheat and soyabeans made significant gains. The sheer scale of the cut in US corn yields and an increase in acreage that will not be harvested this year, prompted concerns that record high grain and oilseed prices, combined with scanty stockpiles could lead to a re-run of the 2007/08 food crisis. The UN's food agency reported a jump in food prices by 6% in July, and warned against export bans, tariffs and buying binges that worsened the price surge four years ago, but neither they nor the IMF and World Bank see signs of a widespread food crisis this time.

Severe heat and drought conditions drive global harvest lower in 2012

Despite an increase in the planted area and favourable sowing conditions for several countries, USDA's preliminary forecast indicates this year's drought-hit grain and oilseed harvest will fall by some 40mt (million tonnes) to 2.24bn/tonnes. The smaller 2012 global harvest has caused a seismic increase in the price of grains and oilseeds, not seen before, expected to ration demand, as global supplies fail to keep pace with rising feed, food and fuel demand or, replenish dwindling reserves, resulting in high and volatile prices this year and beyond, with poorer countries hit hardest as food makes up a larger proportion of the household budget.

Global grain production is forecast in 2012 at 1,784mt, 3% lower than last year. While overall grain use is forecast 1,821mt, it is expected to outstrip supply, drawing stocks lower in 2012/13. Grain for feed use is cut to 794mt in response to higher prices, and reduced demand. With the exception of China and Brazil, overall feed use has been scaled back with a number of countries expected to shift some of their livestock and poultry feeding from corn to wheat, and other non-grain

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MAJOR FEEDINGSTUFFS — PRODUCTION, USE, FEED & STOCKS 2011–2012/13 (MT)

	Prod 11/12	Prod 12/13	Use 11/12	Use 12/13	Feed 11/12	Feed 12/13	Stock 11/12	Stock 12/13
Wheat	695	663	696	683	146	134	198	177
Coarse grain	1149	1121	1,146	1,138	659	660	169	152
Total Grain	1844	1784	1,842	1,821	805	794	367	329
Oilseed/Meals crush	436	457	389*	390*	261	264	61	61

*Source: IGC/USDA: Prod — mainly harvested Jul-Dec/Local marketing years/oilseed/meals*Crush/oilseed/meals — ex. fishmeal*

ingredients. The global oilseed crop is forecast to increase by 21mt to 457mt — smaller output of US soyabeans, will be more heavily dependent on the outturn of good South American soyabean harvests to ease price and supply pressures. Feed use of oil meals is forecast to rise by 3mt to 264mt, due to demand for protein in Asia.

Sharply lower global wheat crop as heat and drought affect CIS output

Smaller wheat crop in Russia 39mt, agricultural Ministry announced that grain yields are 27.5% lower than last year at 1.98t/ha; Kazakhstan 11mt and Ukraine 15mt, partially offset by larger crops in, India 94mt, Canada 25mt and the US 62mt, where the crop was planted earlier, and avoided the drought. Reports on the harvest in Germany, which was delayed by rain but is almost complete suggest that wheat output is lower 22mt, winter kill reduced the winter sown harvested area; while in France yields are higher but a greater proportion will be classified as feed wheat. Global wheat output reduced to 663mt, some 32mt below last year's record.

Reduced scope for southern hemisphere crops

Argentina is forecast to sow 3.6m/ha with wheat this season down 22% from last year, according to the Buenos Aires Grains Exchange, and expected to produce a crop of 11.5mt considerably lower than in previous years, as wheat loses acreage to corn and soyabeans. When comparing the costs of cultivation (crop rotation, irrigation, seed, fertilizers and other inputs) wheat and corn are similar, but with government restrictions on wheat exports, and fewer marketing outlets, which curb growers' returns, makes corn, soyabean and more recently barley, better options. Also while international wheat prices have risen since mid-June by 40%, they are not keeping pace with corn. BCH the Australian growers' co-operative, estimates the Australian crop to be smaller than the bumper harvest last year at 24mt due to lower output in the key producing state of Western Australia, and below the USDA estimate of 26mt.

WORLD WHEAT PRODUCTION 2008–2013/13 (MT)

	2008/09	2009/10	2010/11	2011/12	2012/13
EU	151	139	136	137	133
E. Europe	5	5	4	4	4
CIS Baltic's	116	114	81	114	83
N & C America	101	91	87	83	92
S America	21	22	27	25	22
N East Asia	30	39	40	40	37
F East Asia	218	228	227	236	243
Africa	20	26	21	25	22
Oceanic	22	22	28	30	26
Total	683	686	652	695	663

Source: USDA, IGC trade-totals may not add due to rounding

US growers to plant largest corn acreage in 75 years for 2013 harvest

The combination of exceptionally low stocks and soaring prices will provide the incentive to boost global plantings for the 2013 harvest. Post drought while dry weather across the US wheat growing regions remains a concern and may delay autumn fertilization as farmers await rain and cooler temperatures, US corn growers reveal intentions to plant 95.9m/acres higher than last year and the largest corn acreage in 75 years.

Due to reduced supplies and a substantial increase in the international price of corn, which has risen faster than wheat, the USDA has increased the estimate for feed wheat use to 134mt, although 12mt lower than last year, while livestock producers and feed manufacturers in a number of countries including the EU-27, Ukraine, South Korea, Vietnam, Israel, India and Thailand, shift some of their livestock and poultry feeding to wheat. Global trade is forecast lower at 137mt, due to higher prices and reduced demand. Smaller Russian crop will reduce wheat exports from 21mt to 6mt in 2012/13. In recent tenders, Egypt's state grain authority, GASC, purchased 60,000/t of wheat from Russia at $313/tonne, and 60,000/tonne from Ukraine at $313.88/tonne (Aug 14), beating offers for US soft wheat at $344.53/tonne (ex. freight). Of the 840,000 tonnes of wheat offered to the GASC 540,000 tonnes were sourced from Russia.

Egypt's purchase of Russian wheat coincides with a report highlighting the decline in Russia's on-farm stocks, against a backdrop of concerns that the government may impose grain export restrictions later in the season to preserve supplies, and reflects heightened competition between shippers. Andrey Sizov, SovEcon managing director, said. "… Exporters were selling new crop quite aggressively even in May and June, and needed to source supplies." The early sales, ahead of the market rally, left some shippers with loss-making deals, while margins remain low and reliant on Russia's 10% VAT rebate. Without the rebate, wheat export prices of $310-315/tonne, compared with costs at port of $300–303/tonne and other costs of $30/tonne, imply a loss. Fears of Russian export restrictions refuse to subside,

WORLD WHEAT SUPPLY & DEMAND 2008–2012/13 (MT)

	2008/09	2009/10	2010/11	2011/12	2012/13
Production	683	686	652	695	663
Consumption	643	653	655	696	683
Trade	144	136	134	152	137
Stocks	168	201	198	198	177
Key exporters	*46	56	51	47	41

Sources: IGC, USDA-Production-mainly harvested Jul-Dec/Local marketing years/
**Australia, Canada, US, EU.*

UK bioethanol plants defy setbacks to increase output

Despite higher feed wheat prices in the UK, over £200/tonne, and a poor outlook for the UK's wheat crop this year, Europe's largest wheat-based bioethanol plant is set to restart production. At the time of writing, production was anticipated to restart in late August, following a 15-month closure.

The £300m Ensus plant at Wilton, Teesside, closed last May after just a few months' commercial operation, blaming poor market conditions and a regulatory loophole that allowed cheaper imports of US ethanol into Europe. However, the EU's closure of that loophole was a major factor in re-opening the plant, which is expected to reach full production by October.

Ensus has the capacity to refine 1.1mt of locally grown feed wheat mainly from Yorkshire and surrounding areas, supplied through Glencore. It will produce more than 400m/litres of bioethanol, plus 350,000 tonnes of high-protein animal feed, distillers' dried grains and solubles (DDGS) and 300,000 tonnes of carbon dioxide for use in soft drinks and food production.

While Ensus was the first wheat-based plant in the UK, Vivergo Fuels opened a new biorefinery plant in Eastern England this year, similar in capacity to Ensus. Vivergo, part-owned by BP, Associated British Foods and DuPont, is expected to begin commercial operations this year. Like Ensus, the biorefinery, is designed to turn 1.1mt (million tonnes) of feed wheat each year into bioethanol and mid-protein animal feed. The wheat will be supplied by Frontier Agriculture, the UK's largest grain merchant, which is jointly owned by ABF and Cargill.

While the animal feed will be marketed by KW Trident, a unit of ABF, the fuel has two potential nearby customers with the ConocoPhillips Humber refinery and Total's Lindsey Oil Refinery, said Dave Richards Managing Director of Vivergo Fuels Ltd. The bulk of the fuel could be exported as both refineries have coastal access, with potential destinations for the fuel, to include Rotterdam, the Mediterranean and Nordic regions. The operation of two large plants will potentially provide support for feed wheat prices, while meeting the UK's Renewable Transport Fuel Obligation (RTFO), which provides a target of 5% for renewable biofuel in all UK fuel by 2013/14.

providing support to wheat markets. Paris wheat contract (Nov12)-E267.50/tonne. Liffe UK wheat contract (Nov 12) £206.40/tonne (Aug 23) gains also supported by the re-opening of the UK's Ensus wheat ethanol plant, Europe's biggest bio refinery, with capacity for more than 1mt of grain a year; CBOT December wheat contract $9.17/bu at the close (Aug 22).

Severe US drought slashes global coarse grain output

While early indications pointed to a bumper coarse grain harvest, needed to replenish stocks and pressure prices, the sudden and severe drought hit the US corn crop and coupled with setbacks in the EU and Ukraine, cut supplies of coarse grains, by 28mt to 1,121mt (corn 849mt, barley 131mt and sorghum 59mt); tight supplies saw feed grain prices reach new contract highs, and are forecast to reduce global demand for food, feed and fuel use by 8mt to 1,121mt; the sharp decline in US demand partially offset by increased consumption in other countries including, China, Brazil, Argentina and Canada. With a smaller exportable surplus, and higher prices international trade in coarse grains is forecast at 116mt. Global stocks at 152mt are the lowest in five years, while stocks of 35mt in key exporting countries are at historic lows.

Supply shortage rations demand

Before the drought struck US corn production was heading for a record 376mt, but the widespread impact on 31 US states during a vital stage of crop development, slashed estimates to 274mt, a drop of 102mt. Better crop prospects in China 200mt, Egypt 6mt, Mexico 22mt, Nigeria 9mt, coupled with the prospect of better crops in the southern hemisphere countries — South Africa 13.5mt, Brazil 70mt and Argentina 28mt — on track to produce record crops, will lift global corn output to 849mt. However, recent reports cut the estimate for the EU crop by 3.5mt, and the Profarmer crop tour, currently touring the northern and central states in the US, made up of traders, analysts, researchers and crop scientists, suggest further downgrades to the US crop are likely. The International Grains Council forecasts the corn crop at 838mt below USDA's estimate.

The prospect of sharply reduced corn supplies, and the significant hike in corn prices, which rose by 60% from mid-June, will result in a drop in consumption, the first time since 1993/94; competition for supplies between US food, feed, fuel and exports, reignited the food-versus-fuel debate. Livestock producers and feed processors joined by Democratic governors from Maryland, Delaware, North Carolina and Arkansas and the UN's food agency, petitioned the Environmental Protection Agency (EPA) to waive the Renewable Fuel Standard (RFS) mandate for ethanol, which requires oil companies to blend 13.2bn gallons of ethanol with the gasoline they produce this year, rising to 13.8bn gallons in 2013.

Additionally, the RFS permits oil companies to build-up blending credits or RINS (renewable identification numbers), which currently total 2.6bn gallons, that can be used to count against the 'blending total' in any year. Those in favour of the mandate, like the growers' organization and the fuel industry support the use of RINS, in preference to changes to the ethanol mandate. This year the use of RINS would cut the corn used for ethanol production by 13mt, easing pressure on supply. The EPA

COARSE GRAIN SUPPLY & DEMAND 2008–2012/13 (MT)

	2008/09	2009/10	2010/11	2011/12	2012/13
Production	1,113	1,113	1,098	1,149	1,121
Consumption	1,082	1,111	1,130	1,146	1,138
Trade	111	119	116	125	116
Stocks	195	197	165	169	152
Key exporters	76	83	58	48	35

Source: IGC/USDA

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New and bigger market for sorghum

Should sorghum be approved as an advanced biofuel, Western Plains Energy LLC in Oakley, Kansas, which makes conventional ethanol, aims to be the first to install equipment that will use methane gas from cattle manure, cut down on water use and turn waste into a fertilizer. The transition will cost $30–40m and could be done by the end of the year or early next year.

The only advanced biofuels in the US are sugar cane-based ethanol imported from Brazil and domestic biodiesel, a mixture of petroleum diesel and renewable sources such as soyabean oil. Advanced ethanol made from sorghum would provide another option to meet the federal goal of producing 36bn gallons of renewable fuels per year by 2022. Currently the Renewable Fuels Standard mandate for ethanol is 13.8bn gallons for 2013.

While almost all the ethanol produced in the US is conventional ethanol made from corn starch. Critics of the ethanol industry complain that too much corn is going to energy production, resulting in higher food prices for consumers. Corn affects food prices in multiple ways because it's a widely used ingredient in food manufacturing and it's used to feed livestock. Sorghum proponents point to the environmental advantages — more drought-tolerant than corn, and produces about the same amount of ethanol per bushel as corn while requiring one-third less water. And, unlike corn it is not the main ingredient in a number of foods in the US, while it can be used in human food, it's sold mainly to feed poultry, cattle and other livestock. With only 6m acres planted to sorghum versus 96m acres to corn, corn supply is more available, with most ethanol plants centred in the Mid-west around Iowa and Illinois. Sorghum is grown primarily in the central and southern Great Plains, including, Kansas, Colorado, Nebraska, Oklahoma, South Dakota and Texas.

"We're going to try to produce over 50m gallons (of advanced ethanol) per year," said Curt Sheldon, Western Plains' chief accounting officer. The plant plans to buy 17.5m/bu of grain sorghum a year from area farmers, and if more biofuel plants begin using sorghum, it has the potential to create a new and much bigger market for those growing the grain.

The National Sorghum Producers Association, back the Western Plains' plans and helped to push the Environmental Protection Agency to recognize grain sorghum as a base for advance biofuel. While the EPA has concluded that ethanol made from grain sorghum can qualify as an advanced biofuel providing plants use the proper green technology. The agency has taken public comments and a decision is awaited.

has until October to evaluate the economic harm done by the original RFS and decide if it will issue a waiver. A recent report from Purdue University, which examines 'Potential impacts of a Partial Waiver of the Ethanol Blending Rules', concludes that the impact of the waiver in reducing corn prices is not clear as the price of corn would only fall under certain market conditions

Rabobank forecasts US feed wheat demand to rise by a further 5mt

Global consumption of corn is revised down to 862mt, 6mt below last year and well below pre-drought estimates of 923mt, with global feed use forecast at 509mt. The USDA expects many countries to respond to tight corn supplies and volatile prices this season, in different ways; some countries, including China, Brazil, Argentina and Canada, are expected to increase the use of corn, due to better crops, while in the US a sharp 25mt cut (feed 12mt and fuel 13mt) in corn use, is forecast. Rabobank estimates that the cuts in feed and fuel may be difficult to achieve, given reasonably resilient production of ethanol-needed as an oxygenate additive to gasoline-whether or not the US waives mandated levels of use-and the need to feed US livestock. While feed demand is seen tumbling by 10.4% (12mt), US livestock numbers are set to fall by only 1.4% this year, Such a reduction in corn use for feed would be difficult given that pasture conditions (the alternative to feed lots when prices rise), are extremely poor. The bank concludes that livestock farmers will choose to feed wheat rather than reduce their herd in the short-term, and raises the feed wheat estimate to 10mt in 2012/13, 4–5mt more than the USDA forecast.

Escalating feed costs rising faster than meat prices

The rapid-rise in prices of corn and soyabean and other feed ingredients, at a time when economic uncertainty, higher prices and slower growth have curbed demand have pressured livestock margins. Beef production is static, poultry lower by almost 1mt to 82mt, with pig meat rising by 3mt to 104mt mainly due to increased output in China. The FAO meat price fell in July by 1.7%, the third consecutive monthly fall, while market weakness characterized the four major meat sectors, pig meat saw prices fall by 3.6%, with smaller reductions of 1% for poultry, beef and sheep meat.

Typically feed costs account for approximately a third of production costs for dairy and intensive beef producers, 60% for poultry and 70% for pigs. US-based Smithfield, the world's largest pork producer, confirmed it had locked in feed costs well into the spring, before corn hit $8/bu in June; it forecasts pork prices to rise by over 10% in 2013. And, with corn and soyabean meal prices at record highs in August, this year, it expects the cost of beef and chicken to become more expensive with the price spread between the two expected to narrow. Both Smithfield and Pilgrim's Pride Corp. (PPC) imported Brazilian corn to cut feed costs this year. Farmers groups in France have passed on higher feed to animal breeders while in Spain, Europe's major pork producer, farmers are especially vulnerable because the animal feed industry relies on imports. Brazil's UBABEF and Germany's ZDG Poultry Associations believe the sudden and dramatic surge in the cost of corn and soyabeans, on top of higher prices and operating costs even before the drought, have squeezed producers' margins, with costs rising faster than meat prices. Both organizations conclude the current situation is unsustainable, and that higher costs will reduce production and increase consumer prices for meat in coming months, as producers seek to recoup costs. Fitch ratings (Aug) report that the impact of high grain prices will be more

immediate in poultry, while in the short run live pigs may decline as producers slaughter animals early; while US cattle ranchers may skip the feedlot and send the animals directly to slaughter, to avoid higher feed costs

China's pig market grappling with oversupply and low prices

Disease problems in Asia including foot and mouth disease (FMD) in South Korea and PRRS in China have improved, but while input costs have soared, China's pig meat sector is grappling with domestic oversupply and low meat prices. China is the world's biggest meat consumer, with pork consumption forecast at 52mt this year, accounting for almost 50% of global production. With larger supplies of corn due to a bumper harvest, feed use is expected to rise by 8mt, but the sharp hike in corn and soyabean markets, has lifted the feed price to historic highs, that could worsen losses for Chinese pig farmers. Ma Chuang, deputy secretary-general of the Chinese Association of Animal Science and Veterinary Medicine, expects pork price growth will be stable to the end of the year, but expects pork prices to grow much faster in 2013.

Lower US output, stocks at critical level provide support for corn

For other major corn buyers, the USDA projects Japan's corn imports to remain unchanged at 15mt while China's imports will decline by 3mt due to a record harvest. Two successive years of large crops in Brazil support some growth in corn feed use. Other major corn buyers like South Korea are switching some of their corn requirements to wheat-purchasing six cargoes of feed wheat totalling 325,000 tonnes (likely Indian origin) between $322/tonne and $326/tonne (C&F) for arrival by November; Indian wheat on a delivered basis in East Asia selling more than $65/tonne cheaper than US corn. Corn 3YC FOB Gulf quoted at $336 (Aug 23). The US traditionally supplies more than half the world's corn, but this year exports are not expected to go beyond 33mt (30%) down from 39mt last year, leaving stocks at a critical 17mt, representing not more than 21 day's supply. The tightening supply situation in the US has caused Chicago's most-watched December corn lot to hit a contract high $8.49/bu (10 Aug). The ProFarmer group indicate initial crop results were below expectations and are supporting the steady rally in prices-corn hit $8.40/bu (Aug 21), retreating to $8.14/bu (23 Aug) at the close.

Argentine government poised to approve barley tax on feed exports

Barley prices like other feed grains have remained high, and have strengthened since the drought-French barley Fob Rouen $307 (Aug 21), UK Feed Barley Merchant Sept $261-$268/tonne (Aug 17). Larger crops in the EU, Canada, US and Argentina offset by smaller crops in Australia, Russia Ukraine, Kazakhstan and Morocco, cut global output to 131mt, 3mt below last year. Feed use is forecast at 90mt, 1mt below last year. Trade is forecast to fall to 17mt — with a sharp cut in Iran's imports down by 800,000 tonnes and Saudi Arabia, the largest single buyer of feed barley, expected to cut imports by 500,000 tonnes to 7mt in 2012/13. While Argentina is forecast to export a record 4.2mt of barley this year, shippers scrabbled to register exports to avoid a tax (expected to be between 3–5%) on barley exports this year. The tax is based on a reference price for feed barley of $280/tonne. Argentine farmers' interest in the international

barley market, is due to tight export restrictions that limited foreign competition and curbed grower's returns in the wheat market.

'Advanced' status for biofuel will expand sorghum production

For sorghum a combination of an increase in the planted area and better crops in a number of countries including Sudan, US, Argentina, Brazil, India and Mexico boosted global output to 59mt, with consumption rising by 4mt mainly for feed. Larger exports to Morocco 2mt due to poor domestic harvest, Mexico 1.5mt and Japan 0.3mt boosted trade to 6mt. Due to the drought and the sensitivity surrounding corn, the US federal government is close to approving sorghum as an 'advanced' biofuel, joining sugar and biodiesel. Sorghum is seen as being more drought-tolerant than corn, and although the technology is still not fully developed, it is possible, but would require production to steadily increase through the next decade. Sorghum November delivery FOB Nola $329 (Aug 17).

Drought-hit US crop drives soyabean futures to record high

Markets rallied as further reports emerged on the state of US soyabean yields — CBOT soyabeans November contract hit a high of $17.34 ¼ /bu before closing at $17.23/bu (Aug 21). USDA forecast output will fall by 10mt to 73mt and likely to be revised down as recent rains have failed to improve Midwest crops, while only razor-thin US stocks remain, until southern hemisphere crops arrive. Global soyabean output is increased to 261mt (despite a smaller US crop) due to larger anticipated crops in South America Brazil 81mt, Argentina 55mt and Paraguay 8mt; output of rapeseed 62mt and groundnut 36mt are also expected to increase, partly offset by lower crops of cotton 43mt and sunflower seed 36mt. Global oilseed production forecast higher at 457mt, while crushings marginally up by 1mt to 390mt and global trade forecast to increase by 3mt to 112mt, the increase mainly due to Asian demand.

Tight supplies, surging prices expected to slow demand

The recent price surge for soyabeans comes on top of a previous run-up in prices from earlier this year, caused by extensive crop losses in South America that reduced the cushion the market built-up over previous years. At that time, soyabean prices peaked at nearly $15/bu before falling on the strength of early US plantings and improved production prospects. However, this time demands for crush and exports, as well as deteriorating crop conditions and concern that stocks of US soyabeans, like those of corn, will be unusually tight, saw prices of soyabean and soyabean meal surge, this will pressure livestock and poultry margins and eventually curb demand for soyabeans and soyabean meal, until the large South American crops become available in March, when prices are expected to moderate.

MAJOR OILSEED SUPPLY & DEMAND 2008–2012/13 (MT)

	2008/09	2009/10	2010/11	2011/12	2012/13
Production	397	445	457	436	457
Soyabeans	212	261	265	236	261
Crush	339	359	377	389	390
Consumption*	229	239	251	261	264
Trade Seeds	94	108	109	108	112
Trade Meals*	69	72	77	80	80
Stocks	57	73	82	62	61

*Source: USDA/*excludes fishmeal — totals may not add up due to rounding*

Lower prices should boost soyabean demand as buyers replenish depleted stocks and livestock and poultry producers slowly expand their operations.

Chinese crush margins hit by higher prices and price curbs

US soyabean export prices FOB Gulf averaged $644/tonne in July, rising on the back of poor US yields; but in one day soyabean export prices FOB Gulf rose by $19 to $685/tonne (Aug 21), some $154 higher than at the same time last year. USDA forecast global soyabean trade up by 3mt to 94mt, mainly due to increased exports to China, but with export prices at these levels significantly raises feed and food costs, is expected to discourage buyers. Global crushings of soyabeans are expected to rise to 227mt, but Chinese processors are said to be making plans to reduce production as the crush margins are being eroded by the drought-driven rally in the US and price curbs urged by Beijing. With China's pig meat sector in oversupply and low consumer prices for pork, producer margins are squeezed with crush margins said to be in negative territory. Shares in Wilmar, the top oilseed supplier and processor fell by 10% on reports of dismal earnings as no outlets are willing to pay higher prices for the products.

Lower output of DDGS improves US demand for soyabean meal

While global demand for soyabean meal and oil is partially reduced in response to higher prices, US crushings are forecast to fall by 5mt in 2012/13. Recently due to near record-high prices for soyabean meal created the incentive for US processors to buy and crush soyabeans. Demand for soyabean meal, has climbed in the US as a result of lower corn supplies and the cut-back in ethanol production, which has reduced the availability of Distillers' Dried Grains and Solubles (DDGS). DDGS, a valuable feed by-product from ethanol production, is mainly consumed by the domestic feed market, in direct competition with soyabean meal. With feed mixers replacing DDGS with soyabean meal, has stimulated demand for soyabeans — CBOT soyabean meal futures Sept. $590.63/tonne (Aug 22).

Southwest monsoon dictates agricultural production in India

The behaviour of southwest monsoon, which generally accounts for about 75% of annual precipitation of rains, has a decisive bearing on India's agricultural production, including oilseeds. Production volume of groundnut, soyabean (black and yellow), sunflower, sesame and niger, sown in July and August and harvested before the winter sets in, is decided by the course of monsoon as only about 45% of India's cultivated area gets irrigated water. The southwest monsoon, which breaks in the first week of June, has so far played cat and mouse with the country, making policymakers worry about its impact on farm production and resultant food inflation.

For example, ahead of the season of rains, the Indian Meteorological Department (IMD) forecast that the 2012 southwest monsoon would be 99% of the long period average with an error possibility of ±5%. But till July end, the rainfall deficiency over large tracts of the country, including major

oilseeds growing centres, was big enough to raise the scare of a severe drought and consequently a major setback in crop production. The resurgence in monsoon since has somewhat improved the crop outlook with the area under oilseeds cultivation rising 18% from 13.83m hectares on 27 July to 16.57m hectares on 16 August.

But whether the oilseeds coverage will finally come up to 18.5m hectares to give India a good monsoon harvest remains a point of conjecture. Encouragingly, in the last few weeks, the country's overall monsoon deficiency is down from 21% to 16%. September rains will, however, have a decisive impact on the size and quality of oilseeds harvest. In its latest monsoon assessment, IMD has said that rains in September would be less than in August. Based on the first monsoon forecast, Indian research agency CMIE projected nine major oilseeds production in 2012/13 to rise by 3% to 32.1mt (million tonnes). Given the situation, there is no way the CMIE forecast will come true. The crystal gazing, therefore, is about the extent of shortfall in oilseeds crop that India is going to have in the current season leading to that much higher imports. The country is the world's second-largest importer of edible oils after China.

In fact, the situation could have been grimmer for India had not the government in an uncommonly proactive way revised minimum support prices (MSPs) for oilseeds well ahead of the start of sowing operations. With the MSP for groundnut up was 37% to Rs3,700 ($81.30) a quintal and for soyabean 30% to Rs2,200 a quintal, it is expected that farmers found to be losing interest in growing oilseeds in the last few season will change their mind. In fact, the move has opened the possibility of shift of land from cotton, where rewards are minimal to oilseeds.

"This is an unusual year with monsoon rains flip-flopping and so we have to wait for the next season (MSPs are revised annually) to see the impact of compensating oilseeds growers handsomely in terms of production increment. At the same time, I will say MSPs for sunflower and safflower will have to be raised considerably if land under these oilseeds is not to shrink," says Sushil Goenka, president of Solvent Extractors' Association. The growing ranks of Indian middle class and also change in general food habits are leading to an annual demand growth of edible oils of 3% to 4% in normal times. This is happening in a situation of near stagnation in India's oilseeds production and the crop prone to damage by drought. Oilseeds productivity in India leaves much scope for improvement and this is the road to be pursued since land will become increasingly scarce.

India did not have a good crop last year and the prospects for 2012/13 remain uncertain. No wonder then that in the first nine months of the current season till July 2012, the country's imports of vegetable oils rose 20.22% to 7,265,527 tonnes against 6,043,403 tonnes in the corresponding period of 2011/12. In the import basket, the share of crude palm oil at 81% was 5,779,504 tonnes.

An SEA official says that "as we go forward, we will, however, be importing larger and larger quantities of refined, bleached and deodorized palmolein (RBD) from Indonesia for its inverted export duty structure. In its drive to value addition to industrial and agricultural raw materials, Djakarta has levied an export duty of 9% on refined palmolein and double that for crude oil."

Moreover, the fall in the premium for RBD palmolein over crude oil from $95 a tonne to around $33 within a year is also supporting imports of refined oil. Even while Malaysia remains the top supplier of palm oil to India, Indonesia is taking growing interest in this market. Rise in imports of refined oil is, however, of concern to Indian refineries, which already is beset with much excess capacity. Besides palm oil, India has emerged as a big importer of oils derived from soyabean and sunflower.

How will palm oil prices behave in the coming weeks in the face of economic slowdown in the two largest importing countries China and India? According to most analysts, palm oil is likely to drop to its lowest in 22 months as Malaysian harvest outlook improves in a backdrop of a slowing world economy. According to Palm Board in Malaysia, palm oil inventories rose 17.6% in July to 2mt, the most in almost two years. July also was the fifth month in a row of Malaysian production rise, climbing 15.1% to 1.69mt. Therefore, expect palm oil to stay within 3,000 ringgit ($957) a tonne in the near term. *Kunal Bose*

Brazil anticipates record exports next year

Brazil is on course to export a record 80mt (million tonnes) of soya and maize next year, as high world prices push up plantings.

High prices caused by the severe drought in the US this summer, by low world stocks and continued strong demand, notably from China, are encouraging farmers in Brazil to hike up plantings of soyabeans and maize this year.

Soya will be planted on more than 27 million hectares for the 2012/13 crop, an extra 8.4% — or 2.2 million hectares more than last year. Weather permitting, an all-time record crop of 82mt is expected, 24% or 16mt more than this year and 7mt more than the previous record of 2011.

The soya crop in the south of Brazil itself was affected by drought as well early this year, with the result that 5mt less will be exported this year than the record 50mt of 2011.

Most of the extra soya to be available next year will be exported, taking exports to a record 60mt. Thirty-five million tonnes of that will be beans.

This is expected to result in Brazil overtaking the United States to become the worlds leading exporter of soya.

Up to 40mt of the soya will go to China, by far the most important importer of Brazilian soya beans in the past few years. Just over 3mt of beans were exported to China ten years ago, at a time when the Netherlands was Brazil's leading customer for beans.

The record price of maize, hit even harder than soya by the drought in the United States, will also encourage farmers to plant more of the grain 2012/13.

A maize crop of 76.5mt is expected for 2013, 3mt more than has been harvested this year.

Soya is an easier and cheaper crop to grow than maize, so many farmers will give preference to the oilseed as a summer crop, planted in September and October in Brazil.

However, the area planted to maize as a winter crop, most of it put in the ground in the centre west as soon as the 38mt of soya to be harvested there this year has been collected, will be responsible for most of the extra.

Because this years winter crop has been a record as well, 15–16mt will be exported this year, most of it shipped in the second half. Almost all the soya has left the country by now, so the ports, as well as roads and railways are under less pressure.

Until a few years ago, Brazil frequently imported some maize, of which more than 40mt is used each year to feed pigs and chickens, as well as dairy cattle and some of the beef cattle held on feedlots in the dry season.

This year, some of Brazil's surplus maize will find its way to the United States. The US is not only having to cut back sharply on the amount of maize it exports, or uses to make ethanol, but will have to import some from Brazil as well.

On the other hand, because farmers and traders in Brazil rushed to export as much soya as soon as possible after it was harvested, and with most of the crop in by early March, Brazil may have to import some soya at the end of this year and early in 2013, and this could come from the US.

About 20mt of soya meal is needed for animal feed, as well as the maize.

Feed is responsible for about 65% of the cost of raising livestock and the price of maize and soya meal has risen by up to 50% in the past few weeks.

As a result, the retail price of meat is now rising fast as well, causing analysts to suggest that the price of chicken and pork will increase by up to 40% to compensate.

Brazil's exports of both pork and chicken have been slipping in recent months, as has domestic demand. Therefore, farmers are cutting stocks and sending animals for slaughter younger and lighter than usual. The result may be that less feed will be needed in the next few months than usual.

The fact that so much extra maize has been exported this year has put tremendous pressure on Brazilian ports, especially Santos and Paranagua, as well as Rio Grande, in the state of Rio Grande do Sul.

The proportion of the soya Brazil exports which is grown in the states of the south and south east has fallen steadily over the past 20 years. More has been grown each year in the centre west and even more recently, in the north east.

The roads linking states such as Mato Grosso and Rondonia to ports on the Amazon river are very precarious, while waterways have still to be opened to navigation. As a result, almost two thirds of the soya for export still travels up to 2,500km by truck to ports in the south east, at a cost of about $100 per tonne.

More than 9mt of beans — as well as almost 3mt of meal — left from Santos last year, compared with only about 8mt of the two products seven years earlier. Six million tonnes of beans, and 4.5mt of meal, left from Paranagua as well last year.

As soya plantations have fanned out in the past 15 years, more is being exported from ports such as Itacoatiara, adjacent to Manaus on the Amazon river, from Santarem, half way between Manaus and the open sea and from Sao Luis, terminal point of the 'north–south" railway being gradually extended south through Tocantins to Goias state. Some now leaves from Salvador and Vitoria, two ports which between them shipped 4mt of beans last year.

But the increased competition from maize can mean a truck arriving at Santos or Paranagua often has often has to queue for three or four days before it can unload its cargo, which obviously pushes up costs.

Even now, only about 40% of the soya for export, is taken to ports by train.

The Brazilian economy is now slowing after a decade during which wages were increased faster rate than production, causing consumption to increase.

With costs and inflation under pressure, the government has launched a major programme for improving logistics as part of a series of measure aimed at getting the economy growing again. About US $150 billion is to be spent on building 10,000km of new rail track, upgrading ports and roads and building locks on rivers. This programme has been received by considerable scepticism. It is noted that although work on the 2,500km-long North-South line which runs through the heart of the soya growing area began 25 years ago, the line is not yet complete.

Two hundred kilometres of track has been found to be substandard, so will have to be re-laid at a cost of $300 million.

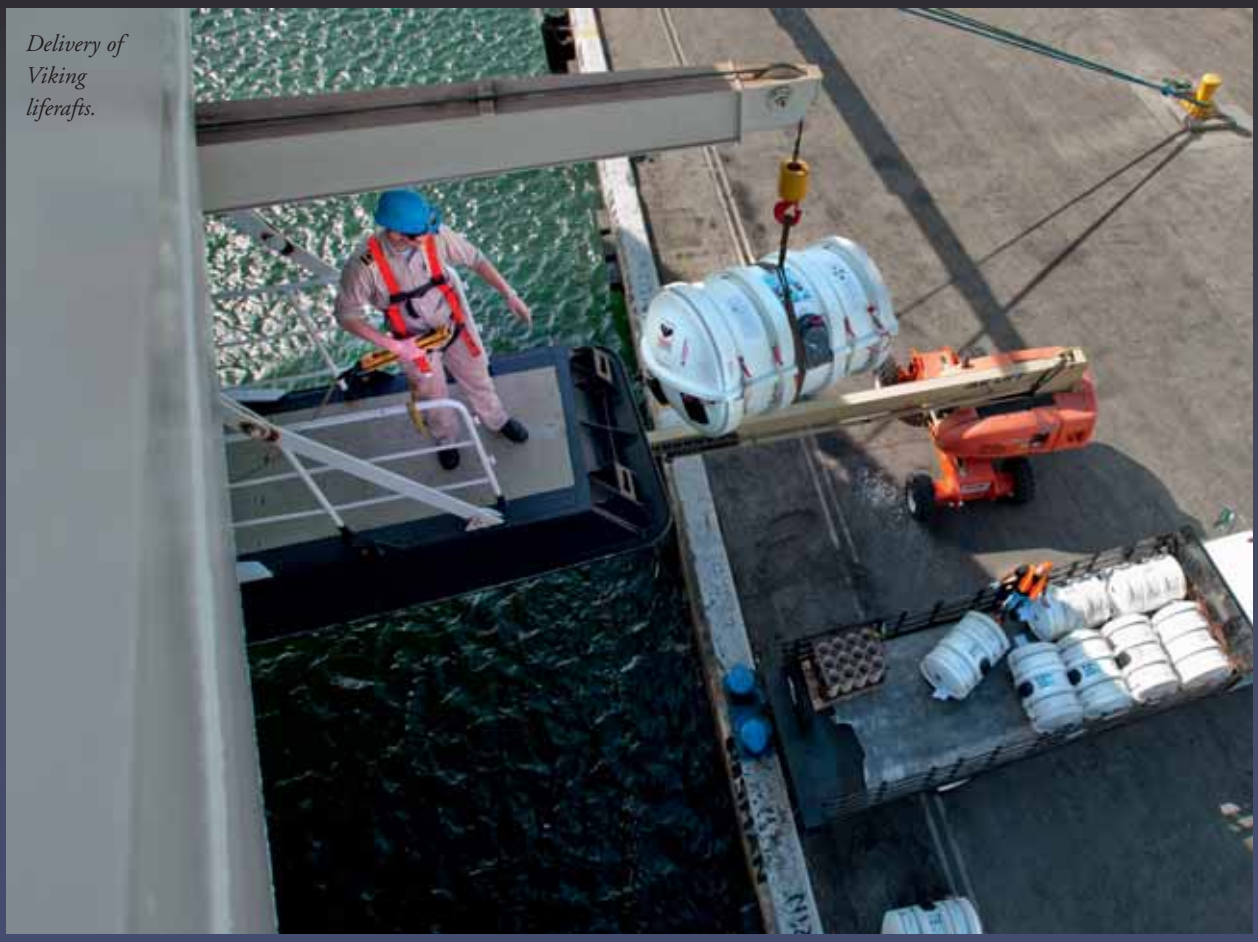
Dredging work has been carried out at 40 ports and terminals in the past few years, to allow larger ships to use them. But the navy, responsible for authorizing access by larger ships, has so far given permission for only one of them to handle such vessels.

An oil refinery being built in Pernambuco state, will cost ten times to build as much as was first estimated, and is running four years behind schedule.

So nobody is betting that a new generation of roads, railways, ports and waterways, will be operational any time soon.

Patrick Knight DCi

VIKING ramps up Down Under



Delivery of Viking liferafts.

Marine and fire safety equipment specialist VIKING Life-Saving Equipment has announced the extension of its global servicing network in Australia and New Zealand, primarily aimed at servicing liferafts.

Six existing certified service partner stations in Australia, and three in New Zealand will expand their servicing portfolio to include VIKING's popular fixed-price Shipowner Agreement. The expansion will take place through two long-running VIKING partners – Australia's Wiltrading and New Zealand's Denray Marine.

The inclusion of Australia and New Zealand in VIKING's fixed-price Shipowner Agreement network has long been on the wishlist of shipowners doing business in that part of the world. While the addition of these two highly developed countries may seem a natural step for a global offering like the Shipowner Agreement, there is a powerful underlying driver in these markets: the generally high price levels Down Under, making VIKING's globally fixed prices particularly attractive.

VIKING CEO Henrik Uhd Christensen: "By getting closer with the two partners Down Under, we have achieved our goal of providing comprehensive geographical coverage for the Shipowner Agreement. In both cases, we have simply extended a long history of fruitful co-operation, formalizing and deepening it even more. All parties are confident that this agreement will result in higher service volume and closer co-operation for many years to come."

With the introduction of the Shipowner Agreements to the region, VIKING and Wiltrading have strengthened their long-term relationship with Wiltrading's nationwide network.

According to Wiltrading's general manager, Rob Lynn, "VIKING's Shipowner Agreements are revolutionizing the way servicing of life-saving equipment is carried out. Australia is an important link in VIKING's global network and, with strategically located service facilities located around the Australian coastline, Wiltrading is committed to supporting shipowners whose vessels operate in this region."

John Peake, general manager of Auckland-based Denray Marine, sees the benefits of the Shipowner Agreements for his clients and his business: "We're pleased to be part of VIKING's Shipowner Agreement network, helping to bring fixed-price servicing to the global shipping industry."

VIKING's Shipowner Agreements offer the market's broadest, most comprehensive servicing package for marine safety equipment. The agreements were the first to provide global, all-in-one servicing with a choice of product packages, systems and servicing that range from basic options to top-of-the-line innovations. These highly customizable, managed service offerings have been rapidly adopted by the shipping industry.

Key to the success of the Shipowner Agreements is a variety of fixed-price payment plans aimed at ensuring shipowners know exactly what they can expect and how much it will cost. Shipowner Agreement-based servicing at a fixed price is now available in up to 118 ports all over the world.

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Inchcape Shipping Services opens new office in Mauritius

Major maritime services provider Inchcape Shipping Services (ISS), has expanded its operations into Mauritius, with the acquisition of Belship Co Ltd. Renamed ISS Belship, this opening marks ISS's first venture in the country and is based in the capital, Port-Louis.

Belship Co Ltd was founded in 1996 and ISS Belship will continue to offer established services including marine and offshore agency, logistics and freight forwarding, as well as introducing a wider portfolio of global service offerings. The ISS Belship team in Port Louis is headed by general manager Arnaud Teycheney, who is a former shareholder of Belship and is loyally supported by his team of experienced staff.

ISS celebrated the opening in Mauritius with a reception at the Le Meridian Resort, Balaclava on 1 June 2012. Captain Claus Hyldager, Group CEO Inchcape Shipping Services, played host to a number of local dignitaries and customers, including the former owner of Belship Mrs Monique Oshan Bellepeau, Acting President of the Republic of Mauritius, Mr M Allet, chairman of the MPA and Captain L. Barbeau, Port Master of the MPA.

The acquisition is ISS's seventh opening during a formidable period of growth for the company this year. Mauritius is viewed as an increasingly strategic location which is well situated on major shipping lanes. Bunkering and transfer of security personnel are both seen as tremendous growth opportunities for the business. All clients will now have the advantage of local expertise and knowledge, combined with ISS's global network, systems, infrastructure and compliance standards.

Allan Vermaak, vice president of special projects said: "We are very pleased to open ISS Belship in Mauritius not only to further our expansion in the region but to support our clients with our extensive range of integrated maritime, cargo and vessel supply chain solutions, developed to maximize efficiencies within their operations and improve business performance and profitability."

Inchcape Shipping Services is a renowned maritime services provider. With over 280 proprietary offices in 65 countries, and a workforce of over 3,700, the company's diverse global customer base now includes owners and charterers in the oil, cruise, container and bulk commodity sectors as well as naval, government and inter-governmental organizations.

ISS provides landside commercial and humanitarian logistics, transit, offshore support, informational and other associated maritime services. The company also provides a growing range of outsourcing services including global crew and marine spares logistics; port hub agency management; and sophisticated enterprise resource planning solutions through its subsidiary ShipNet.

Graig and GMI work to deliver safe havens to shipping lenders

The Cardiff, UK-based Graig Group has teamed up with Global Maritime Investments to provide shipping lenders with tailor-made solutions for problematic shipping exposures. Working together the two groups will provide lenders with workout solutions, safe havens and exit routes for distressed assets and underperforming shipping portfolios. The joint approach brings together the long-term ship management experience and bank contacts of Graig and the outstanding freight market expertise of GMI.

Hugh Williams, CEO, Graig Group, says, "This is a slow burn crisis for shipping banks and it is by no means over. Banks are currently only really lending to offshore and LNG projects, while nursing portfolios of tankers and bulkers which may be under the water in value terms and in many cases are underperforming as loans. They want a lot of ships off their books or under better commercial and technical management and with GMI alongside us we can deliver that. We know there is a queue of ship managers outside every banker's door offering technical ship management, and there is private equity in the market place looking to pick up opportunities. This link up with GMI brings the two together in a powerful combination which can apply technical knowhow and commercial presence to help banks clean up their portfolios."

Steve Rodley, managing partner of GMI says, "Our large physical portfolio and robust freight management systems provide a low-risk pool for tonnage, which is why we are the charterer of choice for risk-savvy counterparties. Extending this expertise into managed services is straightforward and offers an optimal solution to current market challenges. We chose to work with Graig due to their recognized excellence in technical management, in order to offer the best available product to the market."

Graig has active ship management divisions in Cardiff and Shanghai and has close links with significant shipping banks. It provides regular inspection services and technical support to two major shipping banks. GMI is one of the largest freight trading groups in the world and consistently provides an outstanding risk-adjusted return to its institutional shareholders.

The Graig Group is a broad-based international shipping services, ship owning, and offshore group delivering technical ship management and commercial ship management, newbuilding supervision, offshore support services, expert consultancy, dry-dock management, ship inspections, lay-up services, ship design, ship owning joint ventures and ship finance to global clients who appreciate personal service.

Graig has been building, managing and owning ships since 1919. Today it provides technical and commercial management and crewing for a mixed fleet of vessels on behalf of a number of owners and banks and has supervised over 100 newbuildings for itself and major shipowners. Graig provides technical consultancy and management support services to two major banks with a financed fleet of over 100 vessels and also to a number of flag states. It develops innovative designs such as the Diamond bulk carriers and the Marlin fuel-efficient container ships. It can source yards and finance for all vessel types and provide newbuilding supervision and follow up with in service management.

Graig employs a global maritime workforce drawn from the UK, China, the Philippines, Vietnam, India and Russia and has offices in Cardiff, London, Oslo Shanghai and Hong Kong. Graig Group staff bridge the gap between sea and shore, between east and west to bring the best in innovation, service and partnership to the global shipping industry.

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New Lilaas lever takes centre stage

Lilaas, a renowned global manufacturer of control levers and joysticks for the maritime and offshore industries, is launching its new electronically-controlled LO1 lever range at SMM 2012, which is taking place from 4–7 September in Hamburg, Germany.

The LO1 range marks a major technological step forward for the company and for the industry itself. The range incorporates advanced software solutions and a digital display screen and brings together the functionality of multiple joysticks or levers into a single unit.

In addition, a wide range of different functions including tension and force feedback can be programmed to meet individual customer requirements.

"All-electric levers like the LO1 series are the future," says Lilaas sales and marketing manager Terje Akerholt. "Everything a customer needs can be pre-installed within the lever structure, and only a very shallow cut-out beneath the lever is required. This is putting us right at the cutting edge as far as control technology development is concerned."

Lilaas has paid particular attention to the design of the new lever and is emphasizing its unique aesthetic appearance in an industry where conventional levers have all looked the same until now. Optional colour and engraved switch text in the event of backlight failure are particular features of the new design.

The built-in TFT LCD display shows the position of the lever and feeds back information from the ship's systems that are being controlled. It is a key feature of the design. The display screen also allows settings to be easily configured by the user to suit individual preferences much more easily than in the past.

According to Lilaas, the fact that the display is an integral part of the lever's structure makes the LO1 class levers easier to use, as all the information required by the operator is available in one place. The levers have also been designed to ensure a high degree of redundancy in the event of technical problems, and feature capacity touch switches, with up to four for azimuth or single controllers and up to eight covering a double controller.

The switch text has been engraved on the lever as an added precaution against electrical failure. Other features of the LO1 range include an isolated analogue and emulated potentiometer output, an isolated back-up system and an analogue dimming input.

Lilaas is marketing a core design platform for the LO1 series, with different models available for azimuth, thruster or propulsion control, and a range of options to facilitate customization. These include a 4–20ma current loop, relay outputs, display graphics, USB Interface, El motors, force feedback and the possibility of having either CAN bus, Profibus or Ethernet interfaces.

"This year's SMM will be very special for us. It is an excellent place to arrange meetings with new and existing customers to explain and highlight the many benefits of new products which we believe will put Lilaas firmly in the driving seat," says Akerholt.

About Lilaas

Lilaas AS was established as Lilaas Finnekaniske AS in 1961 by Jan Lilaas. The company has over 50 years of experience in the manufacture of precision mechanics for both shipbuilding and offshore customers. The company's products range from simple, one-axis control levers in different sizes, hand wheels and rudder controls to azimuthing control units and multi-axis joysticks.

Fast underwater repairs keep ships out of drydock

Hydrex offers turnkey underwater repair solutions to shipowners wherever and whenever they are needed. Hydrex's multidisciplinary team helps clients to find the best solutions for problems below the waterline. The company can immediately mobilize its diver/technicians to carry out necessary repair work without the need to drydock.

Hydrex diver/technician performing welding work on a rope guard.

Hydrex has a long track record of performing complex permanent underwater repairs to thrusters, propellers, rudders, stern tube seals and damaged or corroded hulls. By creating drydock-like conditions around the affected area, its diver/technicians can carry out these operations in port or at anchor.

All projects are engineered and carried out in close co-operation with the customer and any third party suppliers, relieving the customer of all the hassle of coordination, planning and supervision.

Headquartered in the Belgian port of Antwerp, Hydrex has offices in Tampa (U.S.A), Algeciras (Spain), Mumbai and Visakhapatnam (India), and Port Gentil (Gabon).

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Cavotec wins substantial order for MoorMaster™ automated mooring systems

MoorMaster™ MM200C units at the Port of Salalah, the same models that have been ordered under the new contract.

Global engineering group Cavotec has won an order to supply 18 MoorMaster™ automated mooring units for use at a Mediterranean Sea port, marking yet another landmark project in the company's long-standing history in the maritime engineering industry.

Under the terms of the contract, Cavotec will engineer, manufacture, install and commission 18 MoorMaster™ MM200C units, which will be used on an exposed container berth on the Mediterranean Sea. The technology is equally applicable for use with bulk vessels. The major dry bulk application is in Australia at Port Hedland (Utah Point iron ore berth), in operation since October 2010; and Port Geraldton (Anderson Point Berth 7, also iron ore), due to go on line later this year. By reducing mooring times to a matter of seconds, the MoorMaster™ delivers higher rates of productivity and utilization that are not possible with conventional mooring methods.

"This project further demonstrates our continued strategic focus on bringing state-of-the-art, innovative technology to the global ports and maritime sector," says Ottonel Popesco, Cavotec CEO.

The contract follows a milestone order at a Mediterranean port in 2011 for the supply and installation of 24 MM200C units, which are currently being delivered.

Commenting on the announcement, Juergen Strommer, Managing Director of Cavotec Middle East, said: "This exceptional order highlights the efficiency gains that MoorMaster™ provides to port operators and shipping lines, and is indicative of how the technology is rapidly being adopted across the maritime industry. In addition to the high degree of safety offered by the system, MoorMaster™ also enables operators to maximize utilization, and increase efficiency and productivity. It represents a genuine evolution in mooring operations," he added.

Due to its technological sophistication and multi-faceted benefits, ranging from cost reduction to ecological sustainability, the adoption of Cavotec's MoorMaster™ technology is growing across the maritime industry. MoorMaster™ now serves ferry, bulk handling, Ro-Ro, container and lock applications worldwide.

This is the third location involving MM200Cs units at a dedicated container port, following last year's project where Cavotec provided a turnkey solution for 24 MoorMaster™ MM200C units, and an order from the Port of Salalah in Oman for 12 MM200Cs in 2009. MoorMaster™ is a vacuum-based automated mooring technology that eliminates the need for conventional mooring lines. Remote controlled vacuum pads recessed in, or mounted on, the quayside, moor and release vessels in seconds.

Cavotec supplies a wide variety of innovative technologies to the ports sector, including shore-to-ship Alternative Maritime Power (AMP) systems, Panzerbelt cable protection systems, crane controllers, marine propulsion slip rings, radio remote controls, motorized and spring driven cable reels and steel chains.

Cavotec is a major global engineering group, developing innovative technologies that enable the maritime, airports, mining and tunnelling, and general industry sectors to operate more sustainably.

Pilots and shipowners join forces on pilot ladder safety

The International Maritime Pilots' Association (IMPA) and the International Chamber of Shipping (ICS) have joined forces to update a brochure aimed at shipping companies and seafarers, reminding them of the vital need to ensure that ladders used for pilot transfers are safe and always rigged correctly.

The revised brochure — *Shipping Industry Guidance on Pilot Transfer Arrangements* — is supported by a wide range of other international shipping bodies. It takes account of the latest amendments to the Safety of Life at Sea Convention (SOLAS) concerning pilot ladders, which came into effect on 1 July 2012.

IMPA Secretary General, Nick Cutmore, explained: "Sadly, pilots continue to lose their lives as a result of accidents while boarding or disembarking from ships, and many more have been seriously injured. We are therefore very pleased by the support we have received from ICS, as well as from other industry organizations and unions, in helping to promote the message to seafarers and to shipping company management about the vital need to rig pilot ladders safely in accordance with SOLAS."

ICS Secretary General, Peter Hinchliffe, added: "When pilots come aboard ships it is to help seafarers during critical and demanding phases of a voyage. It is incumbent on ship operators and their crews to do everything possible to ensure safety during pilot transfer operations, which always involve a degree of risk, even when conditions are good. Some common causes of accidents still appear to be defects in the structure of the ladder treads or ropes, or a lack of a proper securing of the ladder to the ship."

The updated guidance is being distributed throughout the industry by the national shipowners' and pilots' associations that make up the memberships of ICS and IMPA. The brochure is also supported by the International Group of P&I Clubs, BIMCO, CLIA, Intercargo, IPTA, Intertanko, OCIMF, SIGTTO, ITF, IFSMA and the Nautical Institute.

The International Maritime Pilots' Association (IMPA) is a professional, non-profit making body, primarily concerned with promoting professional standards of pilotage worldwide in the interests of pilots' safety. To date, it has some 8,000 members in over 40 countries. IMPA seeks to achieve its principal objective, the promotion of professionally sound and safe pilotage.

The International Chamber of Shipping (ICS) is the principal international trade association for shipowners, with a membership comprising national shipowners' associations from 36 countries, representing over 80% of the world merchant fleet, in all sectors and trades.

ICS presses for early IMO study into availability of low sulphur fuel

The International Chamber of Shipping (ICS), whose 36 member national shipowners' associations represent all sectors and trades and more than 80% of the world merchant fleet, has called on the International Maritime Organization (IMO) to accelerate a critical study into the global availability of low sulphur fuel for ships.

ICS has been expressing concern for some time about whether sufficient fuel will be available to allow ships to comply with strict IMO regulations aimed at reducing sulphur emissions and whether, as result of insufficient supply, the costs for those ships which are able to obtain the required fuels might be prohibitively expensive.

In an important submission to the IMO Marine Environment Protection Committee, which meets in October, ICS is again pressing IMO to start work now on a study that can consider the impact all of the major changes required, before it is too late for the oil refining industry to respond and invest. There is already a formal mechanism in MARPOL Annex VI for IMO to complete a review, by 2018, of progress made towards meeting the demand for 0.5% sulphur fuel that must be used globally outside of Emission Control Areas by 2020 or 2025. However, ICS stresses that the enormity of the switch and its economic impact on shipping should not be underestimated.

ICS Secretary General, Peter Hinchliffe said: "It is essential that a global fuel availability study is carried out sufficiently in advance of 2020 in order to give the refiners adequate time to invest and react. The major refinery upgrading required could take a minimum four or five years, perhaps longer, and we fear that completing the study in 2018 would simply be too late."

Developments in the safety of bulk vessels

Maritime leaders want firmer international against pirates before the costs of piracy become institutionalized, a status quo which would have long-term implications for the bulk carrier industry's cost profile and the future design of vessels, writes Michael King.

The scourge of piracy has become a major drain on the shipping industry and the consumers it serves. It is also affecting the bulk carrier industry in surprising and damaging ways, heaping further pressure on a sector already coping with bottom-feeding rates and bearish commodity prices.

According to the International Maritime Bureau there have been over 200 pirate attacks worldwide this year and 21 vessel hijackings. While attacks in West Africa have increased and the Malacca Straits region remains a problem area, pirates based in Somalia are still by far the most potent threat to international trade.

Merchant ships are now being attacked deep into the Indian Ocean up to 1,750 miles off the Somali coast by pirates using mother ships — usually hijacked fishing vessels — to launch skiffs manned by heavily armed gunmen. So far this year Somali pirates have been responsible for over 70 incidents, have taken 212 hostages and hijacked 13 vessels.

As of 16 August, 11 vessels and 188 people were being held hostage by Somali pirates, according to the latest figures from the International Maritime Bureau's Piracy Reporting Centre.

Typical of the type of incident to which crew and ships are exposed was the case of the Turkish bulk carrier *Namrun*. The vessel was attacked by seven pirates manning a skiff in the Arabian Sea in late June 110 miles north of Socotra while en route to Greece. The pirates were heavily armoured with RPGs (rocket-propelled grenades), grenades and machine guns and opened fire on the vessel. Armed private guards onboard the *Namrun* returned fire and sent an alert to military vessels in the vicinity. The arrival on the scene of the Dutch navy eventually saw three pirates killed and a number of arrests.

No crew were injured on this occasion but the threat to seafarers transiting shipping lanes over large swathes of ocean is clear and present. Since 2007 over 3,500 have been held captive by pirates operating out of Somalia and 62 have lost their lives. Many are beaten and tortured while in captivity awaiting ransoms to be paid.

Yatin Gangla, chief operating officer of Thome Ship Management's bulk carrier division, said that each time a vessel prepares to enter an area of known piracy threat a full risk assessment must be conducted taking in everything from weather and sea conditions, through vessel condition and the optimal speed required to discourage attacks.

"We also look at placing guards and many owners do engage them," he said. "If they don't then we take the best possible route, we hug the coastline, we track the vessel, stay with naval convoys, and we also track known pirate mother vessels.

"The crew is kept informed of all this information and they also carry out anti-piracy drills so they are totally prepared."

The passage through a piracy area usually involves increasing vessel speed, which Gangla said pushed up operating costs. "We

have to decide if the higher bunker cost will be cheaper than employing guards and taking other protective measures. Insurance costs are also a burden.

"Bulkers have a lower freeboard than container ships and lower speeds so they are usually a higher risk."

A recent report titled 'The Economic Cost of Somali Piracy 2011' by Oceans Beyond Piracy (OBP), a programme run by the One Earth Future Foundation, found that Somali-based piracy cost the maritime sector between $6.6 and $6.9 billion in 2011. Of this total the $160 million collected by pirates as ransom payments represented just 2%, with the vast majority spent on deterring pirate attacks — safeguarding vessels, their crew and cargo.

Captured Somali pirates.

"The report assesses nine different direct cost factors specifically focused on the economic impact of Somali piracy," explained Anna Bowden, the author of the OBP report, "Over the past year we have had substantial cooperation from maritime stakeholders which has helped to ensure the figures are as reliable as possible."

The breakdown of the most notable costs incurred by the maritime sector in 2011 included $2.7 billion in fuel costs associated with increased speeds of vessels transiting through high risk areas, $1.3 billion for military operations, and $1.1 billion for security equipment and armed guards. $635 million was also attributed to insurance, $486 to $680 million was spent on re-routing vessels along the western coast of India, and $195 million was the estimated cost for increased labour costs and danger pay for seafarers.

Almost all of the costs associated with piracy are recurring, that is, they are repeated each year or each journey through a risk area. With no resolution, piracy will in effect become a new long-term overhead for shipping and trade.

There are also signs piracy risk reduction is also being factored into how some bulk cargoes are shipped, and how bulk carriers are designed.

Eirik Hooper, Director of Competitive Intelligence at port operator DP World, said the perceived security of container shipping in comparison to bulk vessels, which usually have a low freeboard and are easier to board, had led to a "significant shift" of cargo between the sector. "The shift towards containerized transport has increased the transport cost per tonne for many basic imported commodities such as sugar, cement and fertilizers," he said.

Strikingly, the containerization of some cargoes traditionally shipped as bulk has been gathering speed despite the fact that one study estimates that the excess premium on cargo transiting piracy regions has increased by between $25 and $100 per container in the past few years.

Hooper warned there was now a risk that short-term strategies adopted to mitigate the risks of piracy, such as the use of citadels — a stronghold on the vessel where crew can seek shelter during a battle — and higher steaming speeds were becoming more firmly accepted across the shipping industry and had begun to impact some longer-term decisions.

"Citadels and other vessel hardening options are being incorporated into new vessel designs, especially in the bulk and tanker markets," he added.

He said that each vessel transit through waters where pirates are active now costs on average $125,000. "Whilst hidden within the cost structures of most of the shipping lines, these additional costs and inefficiencies will yet be passed onto consumers in import markets, and are in real danger of becoming institutionalized," he explained.

"Overall, the shipping industry is very concerned that, without some specific trigger to push for more forceful action to limit the pirates' activities, the current situation has become a new *status quo*."

OBP said the sums spent on prevention were in sharp contrast to the paltry $38 million spent last year on prosecution, imprisonment, and building regional and Somali capacity to fight piracy.

"Average ransoms increased 25% from approximately $4 million in 2010 to $5 million in 2011," said OBP. "Although the total cost for ransoms was $160 million for 2011, money collected by pirates represents a mere 2% of the total economic cost. While ransoms provide the incentive for Somali pirates to attack vessels and hold hostages, they represent a disproportionately small cost compared to the nearly $7 billion spent to thwart these attacks."

Speaking at a recent conference, DP World Chairman, Sultan Ahmed Bin Sulayem, said the long-term economic consequences of piracy on trade could not be over-stated. He called for more unified action to combat the problem before piracy became accepted as a normal transaction cost of business.

"The macroeconomic impact on countries of the region and beyond will have long term negative consequences if this menace is left unchecked," he said, adding that the cost of piracy to the international community was now one billion dollars more than Somalia's entire GDP.

"For the fifth year running the busiest sea-borne trade route in the world, the Gulf of Aden and the western Indian Ocean region, continues to be held to ransom by a relatively small but aggressive group of pirates."

"Maritime piracy is as old as maritime trade itself, and yet we have not been able to eradicate it. Indeed, with the ransom taking that has come to dominate modern piracy over the past five years, piracy has a new and even more sinister face."

Comprehensive, sustainable solutions to maritime piracy had still not been achieved despite an increased military presence, better monitoring of suspected pirate motherships and better information sharing on key trade lanes, said Sulayem.

He called for a "higher level of collaboration" between all parties to further improve the anti-piracy effort.

"The fact is that attacks by pirates not just endanger the lives of hundreds of seafarers and disrupt vital economic activities, they also undermine efforts to restore prosperity and stability to Somalia.

"Piracy's destabilizing impact can only be mitigated through collaboration across political, military, financial and legal arenas.

"The need of the hour is to explore new ways to secure the freedom of those held captive, curb the reach of the pirates, and provide comprehensive support to Somalia."

Are safety improvements stalling?

Intercargo's sixth annual report into the state of safety on the bulk carrier fleet discovered some worrying trends, not least signs that after two decades of success, casualty rate improvements may now have reached a plateau, writes Michael King.

Falling commercial returns and the increasingly fragmented ownership of the expanding dry bulk fleet could threaten the sector's reputation for safety and high training standards, according to Intercargo's latest *Benchmarking Report*.

In 2011 the 1,061 newbuilding deliveries that joined the global fleet not only put huge downward pressure on shipping rates. Aided by unprecedented scrapping levels, they also pushed the average age of the global active bulker fleet down to 10.4 years, from 13.1 years in 2010.

Statistically the influx of newer vessels should improve safety performance, in part because Intercargo found that almost all the new vessels were classed with IACS members, which historically means better than average performance, but also because the new deliveries prompted the scrapping of older vessels traditionally more susceptible to faults.

However, the carrier owners' organization warned the surge of new vessels had also brought with it a large number of new vessel ownership vehicles which, because of global shortages of experienced personnel and the reluctance of some owners to fund their recruitment, could have quality and safety repercussions.

"With a net growth of around 100 companies since 1 January 2011, we envisage that smaller and more recently established companies may struggle to find the correct calibre and experience of in-house or third-party management to implement increasingly stringent regulations," said the *Benchmarking Report*.

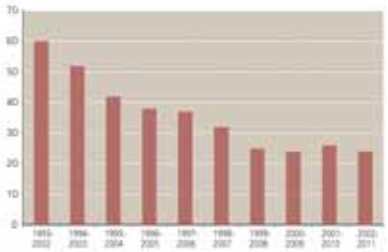
There are already signs that the huge improvements in the casualty record of the bulk carrier fleet in recent years may have stalled. After seven casualties in 2010 another 13 bulk carriers were lost in 2011, resulting in the loss of 38 seafarers' lives.

Intercargo points out that the ten-year rolling average for loss of life on bulk carriers still shows major improvements between the 1993–2002 period, when 60 lives were lost each year on average, compared to the 24 lives lost each year on average in 2002–2011. Yet the organization also concedes

Trends — annual average lives lost

1993-2002	60
1994-2003	52
1995-2004	42
1996-2005	38
1997-2006	37
1998-2007	32
1999-2008	25
2000-2009	24
2001-2010	26
2002-2011	24

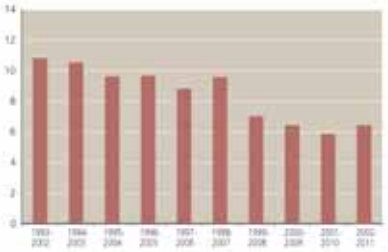
Annual average lives lost 1993–2011



Trends — annual average ships lost

1993-2002	10.9
1994-2003	10.5
1995-2004	9.6
1996-2005	9.7
1997-2006	8.9
1998-2007	9.6
1999-2008	7.1
2000-2009	6.6
2001-2010	5.9
2002-2011	6.8

Annual average ships lost 1993–2011



©Intercargo.

that the "long-term downward trend in terms of vessels lost and commensurate loss of life sadly seems now to have reached a plateau, with progress towards the goal of zero losses seeming more elusive than ever."

As *DCI* has noted in previous issues, the export of nickel ore from Indonesia remains a major safety issue, with the loss of the Vietnam-flagged *Vinalines Queen* accounting for 22 of the bulk carrier deaths at sea last year. This followed the loss of 44 seafarers in 2010 linked to the export of nickel ore, and specifically to loading errors which resulted in liquefaction of the cargo once the vessels left their respective Indonesian load ports.

"Recent fiscal legislation in Indonesia, which places a heavy tax on the export of unprocessed shipments of nickel ore, will hopefully contribute in the longer term to the reduction in the number of casualties due to cargo liquefaction that have been seen recently in this region," said Intercargo.

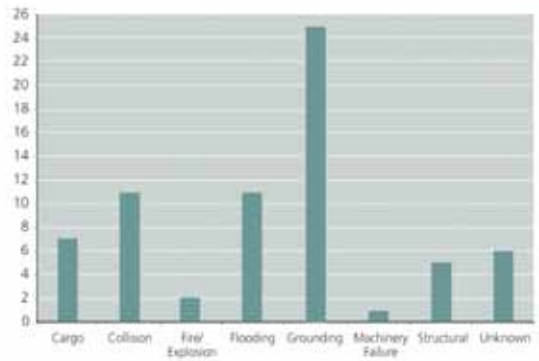
Intercargo warned that companies which did not pursue a culture of seafarer competence and experience within the highest levels of management, and suitably supported by shore-based structures, would increasingly come to the attention of ever stricter Port State Control regimes.

"Given that a few companies are finding it increasingly difficult to manage their safety and quality responsibilities correctly, we note that the results from this year's analysis suggest a continuing improvement for the better performing companies, matched only by a deterioration in less-quality orientated ones," said the report.

The drive for improved bulk carrier safety would be better pursued, however, if the various Port State Control inspectorate regimes were more harmonized. As part of the push for uniform standards Intercargo will this year publish four regional reports covering PSC data for specific ports visited by bulk carriers in the Paris, Tokyo, Indian Ocean, Vina del Mar MoUs and the USCG.

These will "give responsible owners the tools to help improve their PSC performance through port-specific information and more sophisticated and personalized Benchmarking techniques," said Intercargo.

Cause of loss 2002–2011



BulkSafe proves safe and flexible WIAS solution for Dalian Shipbuilders

BulkSafe Water Ingress Detection and Alarm System (WIAS) from PSM have proven the safe and flexible solution for seven OC3000 series vessels, constructed by the Dalian Shipbuilding Industry Corporation in China since 2010. The Dalian OC3000 series state of the art ships are 315,000dwt of the Very Large Ore Carriers (VLOC) class.

Ships of this class are mandated by SOLAS legislation to be fitted with WIAS to detect the presence of water at the bottom of cargo holds that could under certain ship conditions cause liquefaction of the ore cargo. This is a major cause of cargo movement, instability and consequential listing risk. Each of the seven identical vessels had five ore hold and two engine space measurement points.

Dalian was seeking a WIAS supplier that it could be confident would provide service and support in the years ahead and whose products have type approval from globally recognized authorities. The shipbuilder chose PSM because of the company's credibility and track record of successfully installing robust and reliable, globally approved safety critical equipment on bulk carriers.

PSM proved a credible supplier because its wealth of experience, in the testing and safety processes required in shipping of metal and mineral ore cargoes, had led to the development of BulkSafe, a proven safety aid able to detect the presence of the water in bulk carriers that conforms to SOLAS XII Regulation 12 for bulk carrier cargo holds.

The BulkSafe system for Dalian comprised cargo mounted water level transmitters connected to a central control alarm panel. The system was simple to install with only one 'live zero' water level transmitter required per hold that had easy 'check-from-the-deck' operational functionality. PSM's expertise meant it was able to customize its standard BulkSafe design to add the extra functionality required by Dalian. Repeater alarm panels were slaved around the ship from the central panel along with a data connection to the ship's voyager data recorder (VDR).

Dalian also benefitted from PSM's local engineering and commissioning support via its Chinese technical partner located in Dalian city, close to the shipyard.

PSM has over 30 years' experience in designing, manufacturing, installing, commissioning and maintaining advanced marine instrumentation, software systems and application solutions. BulkSafe complies fully with the stringent IMO performance standards having undergone extensive testing in the presence of all of the major classification societies. The system is offered with full type approval from Det Norke Veritas (DNV), Bureau Veritas (BV), American Bureau of Shipping (ABS) and the China Classification Society (CCS).

Better information helps charterers factor efficiency into the vetting process

Having started more than a decade ago by developing a tool to give dry bulk charterers better vetting information, RightShip has now demonstrated its value across all sectors of the industry. Using its unique online vetting system and supporting services has enabled charterers, owners, agents, marine bankers, insurers, ports and terminals to better understand and manage marine risk and improve safety standards.

In the past two years, RightShip has also turned its hand to meet growing demand from its customers for more usable information about the environmental performance of ships available for selection. RightShip CEO Warwick Norman says the fact this is a complex, challenging, sometimes controversial area should not put anyone off trying to make better commercial and policy decisions.

"As we found with vessel safety, the key is putting reliable, accurate data into the hands of decision-makers," he says. "Make it easy and quick to review the data, add user-friendly summary information and guidance points, and it becomes possible for everyone to make good decisions that align with their standards, even under intense commercial pressure."

RightShip's environmental rating tools were launched in early 2011. Its customers are able to access sophisticated information online through www.rightship.com, while the broader industry have been able to sample many of the system's features free by using the www.shippingefficiency.org site, created through a partnership between RightShip and Carbon War Room.

Already, the www.shippingefficiency.org ratings have been viewed over 60,000 times, while technical information about the system has been viewed and downloaded from both there and RightShip's site over 10,000 times.

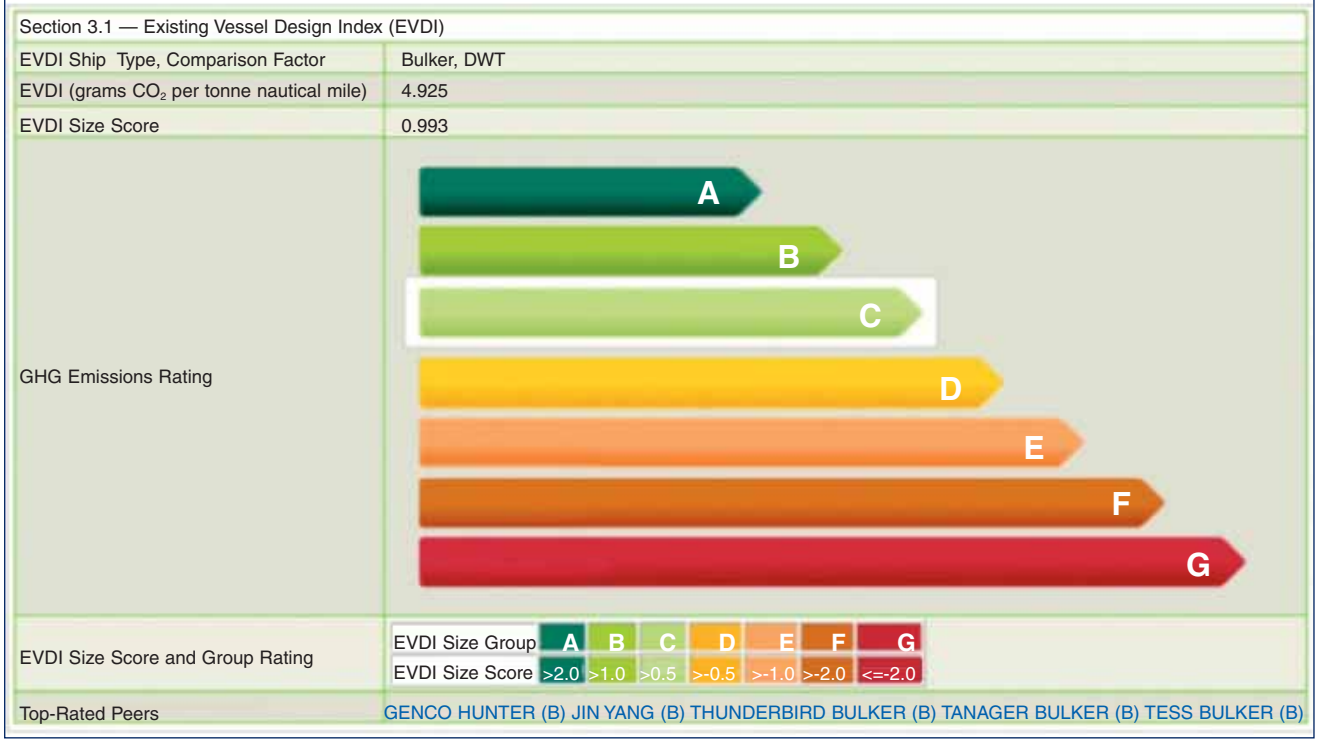
And in a more tangible expression of support, a number of RightShip's customers have now set sustainability criteria for nominated vessels in their supply chains as part of the vetting process. Three of these customers operate using significant numbers of dry bulk vessels – their combined operations involved some 230mt (million tonnes) of dry bulk cargoes and 5,850 vessel movements in the 2011/12 financial year — so this is a significant milestone.

Norman suggests that, as has happened with ship safety standards, once enough users have the information and tools to bring their environmental policies and their commercial interests into their vessel selection decisions, market pressure will result in standards being raised. "And, as we've seen with rising safety standards, the early adopters get a significant commercial advantage from using new and better ways to measure performance."

Benefits of improved sustainability performance could include, for example, MPA discounts for Singaporean-flagged vessels verified below the reference line from 2011, anecdotal support from class societies regarding verifications performed before the IEEC takes effect for new deliveries from 2013, benefits from ports and terminals benchmarking environmental performance and the competitive advantage of more efficient ships in a market that currently has excess capacity.

"Having access to reliable data, applied using a consistent, statistically valid framework, to deliver a consistent method for comparing vessels of the same type on the basis of energy efficiency, is a breakthrough for individual organizations and for

RightShip's GHG Emissions Rating Tool



the industry", Norman says.

RightShip's rating is a unique tool, enabling users to instantly identify and evaluate the sustainability-related performance of any of more than 60,000 ships in the world fleet.

The system has two major elements.

First, RightShip developed a metric it calls the Existing Vessel Design Index, or EVDI™, which estimates the amount of CO_2 emitted per tonne by any nominated ship, per nautical mile travelled, based on the characteristics of the ship when it was built.

In July 2011, at MEPC 62, the IMO introduced the EEDI as a mandatory measure to reduce CO_2 emissions from shipping on a global scale, coming into force for new ships delivered from January 2013.

The obvious gap is a measure to help everyone in the industry, including insurers and bankers, evaluate the efficiency of ships already operating in the world fleet — some 60,000 ships that won't come under the IMO ruling but will be sailing now and for the next 25 years, emitting over a billion tonnes of CO_2 each year.

"Our EVDI™ is not a replacement for the EEDI, or a way to apply it more widely in ways that are inappropriate, and it is not aimed at driving retrospective legislation," Norman says. "But it is a valuable tool for those who need to compare and benchmark the environmental performance vessels of similar size and type in their day to day work."

The second element of the system is a GHG Emissions Rating, which uses a unique logarithmic transformation of calculated EVDI™ values to deliver each ship a rating compared to peer vessels. A ship's rating can range from A (most efficient) to G (least efficient). On the bottom of the same screen, the system shows the top rated peer vessels for the ship (similar size and type).

For example, a shipper might have a choice of two ships of similar size to carry cargo from Tubarao, Brazil to Qingdao, China. The instant online assessment shows that one vessel rates B (with an EVDI™ of 2.63, emitting 5,013 tonnes of CO_2 on the voyage) and the other rates F (with an EVDI™ of 3.42, emitting 6,410 tonnes).

In this way, the benefits of one particular ship over another in a specific trade, in CO_2 emissions and bunker costs, are clearly highlighted.

This reliable, usable and practical information makes more sustainable ships easier to identify and more likely to be chosen, thereby reducing CO_2 emissions from seaborne trade. It can also help ports rate ships and reward energy efficiency through incentivised fees and charges. And owners can use it to identify opportunities to make their ships more attractive in selection.

"At its simplest level, the environmental rating is like an efficiency sticker on an appliance," Warwick Norman says.

"RightShip always advises users that it has similar limitations, in that it doesn't allow for how well or poorly the ship is operated, as a fridge won't perform to its efficiency standards if the door is left open. However, the environmental rating is a significant innovation, giving users the ability to track a vessel's efficiency and CO_2 footprint and produce metrics on relative and absolute environmental performance."

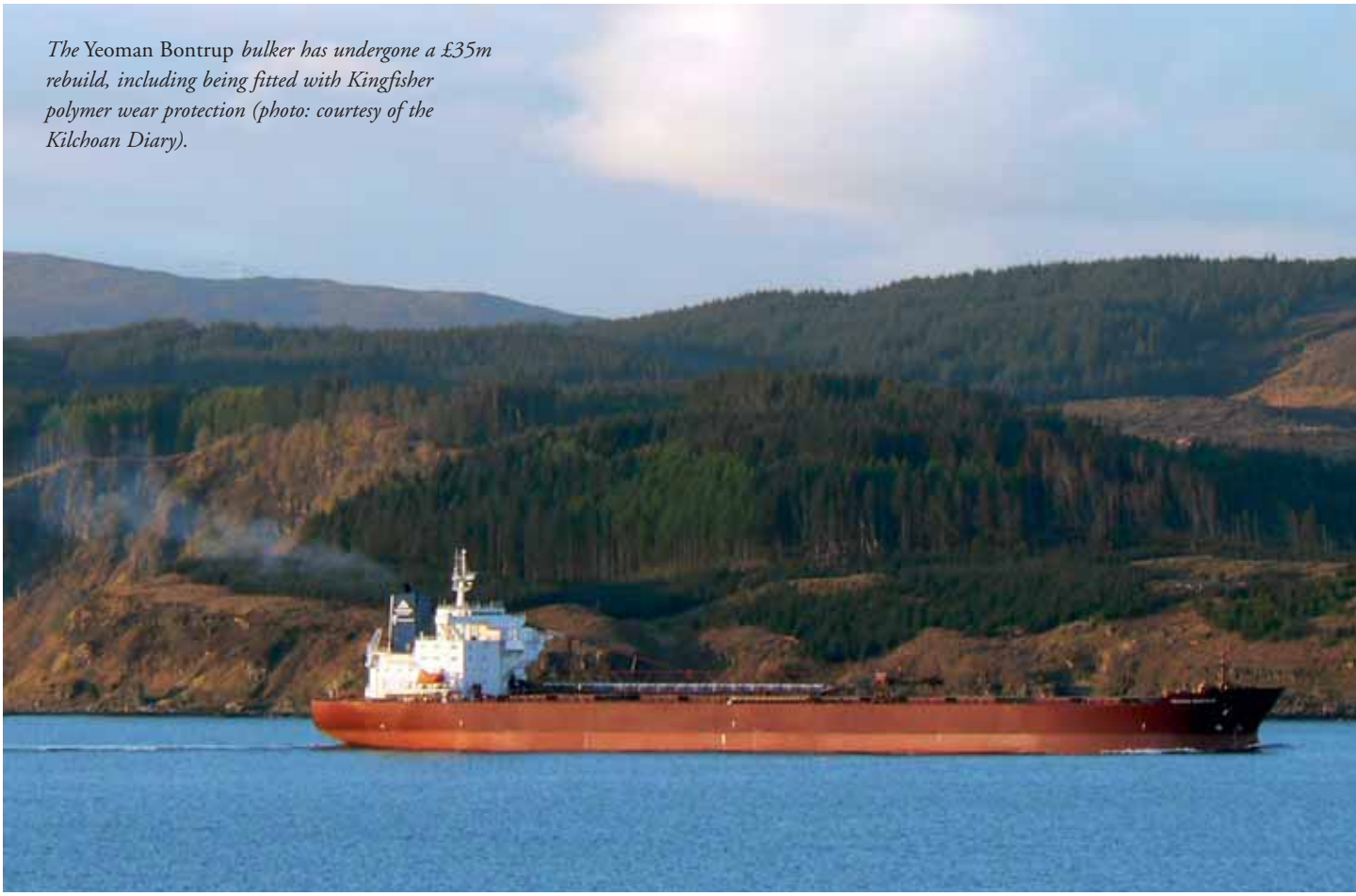
It is a pressing industry issue because, while shipping is a relatively efficient means of transport, it is a hugely significant contributor to CO_2 emissions through sheer volume of trade. Studies have highlighted, for example, that if shipping were a country it would be the world's sixth-largest emitter of CO_2. And that one in every 30 tonnes of CO_2 currently generated by human activity comes from a ship, and this is anticipated to reach 18% of the total by 2050 if left unabated.

"Ultimately, each customer has the opportunity to use this tool to best advantage as they pursue their own commercial priorities," Norman says.

For a more detailed explanation of the system and the assumptions used in its design, anyone interested can check http://site.rightship.com/environmental-rating.aspx. DCi

IMO, 2009. Second IMO GHG Study 2009. International Maritime Organization (IMO) London, UK.

100,000dwt bulker returns to service



The Yeoman Bontrup *bulker has undergone a £35m rebuild, including being fitted with Kingfisher polymer wear protection (photo: courtesy of the Kilchoan Diary).*

Kingfisher wear protection integral to major rebuild of granite aggregates carrier

The *Yeoman Bontrup* bulk transport ship has been re-launched to perform a transport and delivery service for granite aggregates supplied from Glensanda Quarry in Scotland. The 100,000dwt self-discharging vessel is back in service after a £35 million rebuild which included key material handling equipment such as transfer chutes being removed, rebuilt and re-installed. In order to enhance the performance of this equipment, wear protection specialist Kingfisher was called in to incorporate its technology to enhance the performance and service longevity of the chutes due to detrimental effects of handling hard granite stone.

The 21-month planning, engineering and rebuild process was triggered by fire damage caused while in berth at the Glensanda super quarry in Morvern, north-west Scotland during July 2010. The damage to the structure of the vessel along with its materials handling equipment required Kingfisher to carry out lining work using its specialist wear- and abrasion-resistant K-ALOX lining system while in dry-dock in Poland. The installation was carried out by Kingfisher's experienced international team of fitters who travel around the globe providing repairs and wear protection for ships, ports, power stations, mining and aggregate processing sites.

Now, following the rebuild, the *Yeoman Bontrup* has resumed its dedicated shuttle duties transporting high-quality crushed granite aggregates from Glensanda to markets across northern Europe. The re-launch comes at a time when major investment is taking place at Yeoman Glensanda on the Morvern Peninsula including the relocation of the primary crusher and mobile plant workshop removing the primary crusher and conveyor from the skyline.

Darren Loftas, Yeoman Glensanda works manager, was reported as saying of the project: "It's great news for both Yeoman Glensanda and the local community that we are able to make this investment in our business. In times of continued global economic uncertainty, this significant investment demonstrates the company's ongoing commitment to both the quarry and the community."

Commenting Kingfisher MD John Connolly said. "We have served the marine, bulk cargo ports and quarrying industries for many years and with the knowledge gained along with utilization of our range of ceramic, metallic and polymer protection systems we have a good understanding of what works where and what doesn't.

The reasoning behind the use of our 92P K-ALOX ceramic liners on this application takes in to account both its previous

Applying K-ALOX tiles to a chute.

track record of success and its excellent rating for resistance to all forms of abrasion; it is one of the few protection systems that can cater for the constant abrasion that occurs when handling hard granite aggregates.

The primary material used for the manufacture of Kingfisher's K-ALOX components is calcined alumina at over 90% purity. In order to achieve its fine molecular structure it is milled and dried to create a near submicron powder. It can then either be pressed or slip cast into almost any form and kiln hardened in a controlled process of heat treatment reaching temperatures of 1,600°C which results in a material with characteristics of extreme abrasion, impact and heat resistance.

The primary use of the K-ALOX material is for the protection of plant against abrasion and erosion when bulk solids or by-products are being conveyed or processed by mechanical, pneumatic or hydraulic means. With a hardness rating of 9 on the MOHS harness scale, K-ALOX is ideally suited to counter both impact and sliding abrasion and erosion within the bulk solids handling or processing applications, making it ideal for bulk import or export terminals along with protecting the transfer systems on self unloading vessels carrying hard aggregate such as crushed granite.

As operational uptime is becoming more critical in determining the success or failure of manufacturing, processing and logistics operations, the need for high plant availability, extended service life and trouble free operation is key. Plant owners and operators alike are seeking to offset the risk of supply chain failure and this is resulting in increasing demand for design, engineering, fabrication and installation work, in addition to providing wear protection solutions. By having our dedicated expert teams on hand, we can also take responsibility for delivering turnkey projects on time and ensure quality, cost, delivery schedules and employee safety requirements are all achieved."

'Typhoon Saola' closes Taiwanese ports

In August, 'Typhoon Saola' closed ports in Taiwan and caused severe disruption to shipping

Inchcape Shipping Services (ISS), major maritime services provider, advised that Typhoon Saola caused severe disruption to shipping in Taiwan with all ports closed and cargo operations suspended — with the exception of Kaohsiung on the west coast of the country.

The Port of Kaohsiung, the only Taiwanese port to remain open during 'Typhoon Saola'.

The Taiwan Central Weather Bureau's sea warning area covered the sea of north, northeast and southeast of Taiwan, and the north and south Taiwan strait. It also issued a land warning predicting torrential rain in the northern, eastern and northeastern areas overnight.

Inchcape Shipping Services has over 280 proprietary offices in 65 countries, and a workforce of over 3,700. The company's diverse global customer base now includes owners and charterers in the oil, cruise, container and bulk commodity sectors as well as naval, government and inter-governmental organizations.

ISS provides landside commercial and humanitarian logistics, transit, offshore support, informational and other associated marine services. It also provides a growing range of outsourcing services including global crew and marine spares logistics; port hub agency management; and Enterprise Resource Planning solutions through its subsidiary ShipNet.

STEMA – Matola Silos and Grain Terminal SARL

STEMA, SARL — DRIVEN BY CUSTOMER SATISFACTION

Providing storage of dry bulk grains up to 45,000 tonnes in a complex of 27 concrete silos at Maputo Port in Mozambique

The company was established in Maputo, Mozambique in 1996 to operate in national and international grain markets to serve the Mozambican milling industry and trade. Its facilities also act as a transit centre within the country. Since its establishment, Stema has invested nearly US$7 million in equipment which has increased productivity in storing grain and distributing it by sea, rail and road.

In addition to equipment, the company employs a team of technical staff, all Mozambican nationals, qualified and specialized in the latest grain handling developments.

Apart from the local milling industry, at present, the company serves also South Africa, Zimbabwe, Botswana and Swaziland markets on grain import and exports.

Stema receives cargo at a berthing pier able to handle ships up to 30,000dwt. Its sea terminal is equipped with a fully pneumatic ship unloader (250tph [tonnes per hour]), and linked to the silos through a belt-type conveyor of around 700 metres with capacity to move up to 500tph.

A similar system is used for loading vessels which is normally at a rate of 500tph, depending on the weather.

Wheat, corn, rice, soybeans, soya flour and sunflower pellets are the most commonly handled commodities. Compared with 2010, in 2011, the company has increased its volume with 25%. This included exports of South African corn to México and South Korea. Beyond handling the company also has equipment for the disinfection and cleaning of grain.

The company is planning to increase its unloading capacity to more than 600tph at the sea terminal and to enlarge its storage capacity to 100,000 metric tonnes — all in concrete silos.

The terminal works on a shift basis without interruption 24 hours a day, weekends and national holidays excluded. Operations are on an automatic and integrated fully computerized system (PLC) allowing full and efficient control of the inflow and outflow of grain.

Port of Longview announces new CEO

Bringing more than 26 years of maritime experience to the position, Geir-Eilif Kalhagen was selected as the Port of Longview's next chief executive officer in a Special Commission meeting on 18 July. Set to succeed long-time executive Ken O'Hollaren, Kalhagen officially joins the port on 1 September.

Port of Longview commissioners hired consultant Shey-Harding to lead a nationwide search, which led to local candidate Kalhagen. Kalhagen's diverse maritime management experience and familiarity with the Columbia River made him the standout candidate. He has worked in operations management for both SSA and Star Shipping, and most recently served as the general manager for Tidal Transport and Trading in the Columbia River.

Geir-Eilif Kalhagen.

"Geir's strong industry background, combined with his familiarity of our region made him a great fit for the Port of Longview," said Commission president Bob Bagaason. "We're looking forward to him joining our team and carrying on the legacy of success."

"It is a great privilege to be joining the Port of Longview, I am looking forward to the many challenges and opportunities that lie ahead," said Kalhagen. "The port has a strong foundation and I'm eager to work with all of the partners to keep the momentum going."

Kalhagen holds a bachelors degree in Philosophy and Political Science from the University of South Alabama. He also earned his United States Coast Guard Limited Masters Ticket.

Kalhagen will spend the first several weeks on the job with O'Hollaren getting up to speed on port issues and projects before assuming all official executive duties. O'Hollaren will spend the remainder of this year focused on customer relations and marketing before retiring in December. He joined the port in 1980 and was promoted to executive director in 1988.

About the Port of Longview

The Port of Longview is the first full-service operating port with strategic transportation connections on the deep-draught Columbia River shipping channel in southwest Washington State. The port is located just 66 river miles from the Pacific Ocean, 120 driving miles from Seattle, Washington, and 40 driving miles from Portland, Oregon. Port facilities include eight marine terminals and waterfront industrial property with direct connections to main-line rail and interstate highway. Cargo handling specialties include all types of bulk cargoes and breakbulk commodities such as steel, lumber, logs, pulp, paper, project and heavy-lift cargo.

Full steam ahead on Long Beach bridge replacement

On 23 July, the Long Beach Board of Harbor Commissioners approved a $649.5 million contract with a joint venture team headed by Shimmick Construction Co. Inc., FCC Construction S.A. and Impregilo S.p.A. (SFI) for the design and construction of a replacement for the Port of Long Beach's obsolete and deteriorating Gerald Desmond Bridge.

Final design and engineering will begin shortly, and construction of the new bridge is to start in 2013 and is scheduled for completion in 2016. The bridge replacement — designed to ease traffic congestion and improve safety — is being jointly procured by the Port and the California Department of Transportation. Caltrans, Los Angeles County Metro, the Port and the US Department of Transportation are contributing funds to the project.

The Gerald Desmond span, which opened in 1968, is a major commuting route for the region, and a major trade corridor. The bridge connects Terminal Island, the heart of the port complex, with the Long Beach (710) Freeway as well as downtown Long Beach.

The new bridge, rising more than 200 feet over the water, will include a separate bicycle and pedestrian path.

"We're looking forward to seeing the joint venture team finalize the designs and then get to work building the bridge that will serve our communities and the needs of international trade for years to come," said Long Beach Harbor Commission President Susan E. Anderson Wise.

The SFI joint venture — which in addition to Shimmick, FCC, and Impregilo includes subcontractors Arup North America Ltd. and Biggs Cardosa Associates Inc. — submitted a design-build proposal earlier this year that was selected by the Port and Caltrans as the 'best-value' proposal.

"The new Gerald Desmond Bridge will be an essential part of the region's infrastructure that will play a vital role in California's transportation and economic future," said Caltrans District 7 Director Mike Miles. "A design-build approach will expedite this project and helps us improve mobility for goods, people and services."

While the contract for the joint venture is about $650 million, the total cost of the overall bridge replacement project is estimated at about $1 billion, including site preparation, demolition and other considerations. Over the four years of construction and demolition, the work is expected to employ nearly 3,000 people a year on average.

The Gerald Desmond Bridge Replacement Project is the eighth design-build project authorized by the California Transportation Commission under state design-build legislation (SBX2 4) signed in 2009. This legislation created a transportation design-build demonstration program which authorizes best-value procurements for a limited number of design-build projects. The design-build method combines design and construction work into one contract to expedite the project and potentially reduce costs.

European Bulk Services Rotterdam

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Final phase of Port of Liverpool's lock gate refurbishment programme completed

The second and final phase of the latest £4.3m investment in the refurbishment of the Port of Liverpool's lock system has been successfully completed.

The complex engineering operation, over 24 months in the planning, saw the West Inner Gate at the UK port's Gladstone Lock replaced.

Lessons learned during a similar operation in May involving the Lock's East Inner Gate resulted in a vastly-reduced 36-hour outage.

Careful timing of the outage meant that all scheduled regular shipping arrivals were able to access the dock system via Gladstone Lock as normal without disruption.

The work saw the giant West Inner Gate — 16m in height and weighing 400 tonnes, removed and replaced with a fully refurbished gate.

The operation started Friday 27 July at 7am and was completed the following day, with the first vessel able to transit the lock at 6pm.

Peel Ports Mersey's Head of Port Operations David Huck said: "The outage is the culmination of many months of planning, and we're delighted that this major feat of engineering was completed in very good time by our contractors BAM Nuttall.

"Our customers were alerted well in advance of the outage and with good planning all of our regular calls were able to be accommodated as normal, which was very important.

"The completion of these works has provided an even more reliable lock system for our customers, reducing maintenance costs and improving access for our engineering personnel.

"These key assets are essential to the smooth running of the Port and we envisage that these upgrades should ensure the gates are functional for many years to come."

This latest operation at Gladstone Lock takes overall investment in this area of Liverpool's infrastructure to £20m.

Meanwhile, an earlier project in the overall refurbishment programme has been recognized. Work carried out last year to stabilize the Outer West Ram Pit at the Gladstone Lock River Entrance has won the North West Structural Engineering Small Project Award — with the highest score in all categories. The award will be presented at the Annual Structural Engineering Awards this month (September).

Canadian ports conference sails into Hamilton

Grain handling at the Port of Hamilton.

The 54th annual conference of the Association of Canadian Port Authorities (ACPA) has been hosted by the Hamilton Port Authority (HPA) on the occasion of the port's 100th anniversary.

Delegates from port authorities and maritime organizations across Canada met in Hamilton to discuss topical issues in the shipping industry.

"The theme of this year's conference is 'game changers', and we are exploring many of the issues that have an impact on our industry, including economic shifts and changes in the political landscape," said Bruce Wood (pictured above, left), HPA President & CEO, prior to the conference.

Speakers at the 2012 ACPA conference included: Hon. Lisa Raitt, Minister of Labour; Hon. Ted Menzies, Minister of State, Finance; author and economist Jeff Rubin; entrepreneur Ron Foxcroft; Hon. Perrin Beatty, President & CEO of the Canadian Chamber of Commerce; and others.

"We are very fortunate to have a great lineup of speakers to share their insights on the future of trade, commerce and growth in the shipping sector and the broader Canadian economy," said Wood.

The conference was also an opportunity to showcase Hamilton and its port to visitors from across Canada. "At the Port of Hamilton, we work hand-in-hand with our local community, supporting economic investment, employment, and environmental sustainability. It is an exceptionally rewarding partnership," said Mel Hawkrigg, HPA Chair.

The conference's social programme showcased some of the city's favourite attractions, including visits to the Art Gallery of Hamilton, the Canadian Warplane Heritage Museum, the Royal Botanical Gardens, shopping and historical tours, harbour tours, and other Hamilton highlights.

"The annual conference provides an important networking opportunity for port stakeholders including shippers, carriers, intermodal service providers and governments," said Robin Silvester, President and CEO of Port Metro Vancouver, and Chair of the ACPA. "We are pleased to bring the entire port community together on the Hamilton Port's 100th anniversary to recognize an important milestone for this successful Great Lakes port."

The 54th annual ACPA conference ran from 19–22 August, 2012.

The Port of Hamilton is the largest Canadian port on the Great Lakes in terms of both size and cargo handled. The Hamilton Port Authority's strategic vision is to be the Great Lakes port of choice.

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Mozambican ports need to invest

A survey undertaken by USAID has identified a shortage of handling equipment at the Mozambican ports of Beira and Nacala. At the latter, for example, existing equipment can only satisfy about 35% of current needs. Despite this, it noted that both ports are gradually positioning themselves as regional hubs, attracting ever more traffic from East and West Africa.

Increased demand at Beira has come about given completion of emergency dredging of the access channel, which was completed in July 2011.

Worryingly, the study also concluded that neither Mozambican port can offer significant advantages in terms of productivity and efficiency compared to other Eastern and Southern African ports with which it competes. *Barry Cross*

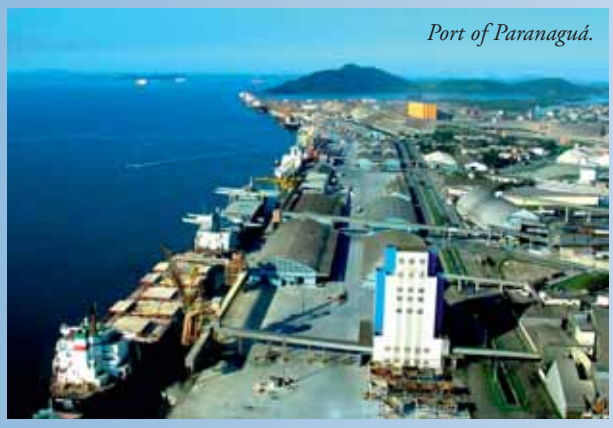
APPA achieving higher productivity

The Paranaguá and Antonina Port Authority (APPA), which was set loading targets of 6,000 tonnes of fertilizer per ship per day, is actually achieving highs of 12,000 tonnes per vessel per day, whilst averaging around 9mt (million tonnes) per year. This has been achieved by improving the logistics of fertilizer storage, freeing up space in areas behind the port and discharging consignments more rapidly in the terminals. Road haulage companies have also improved the provision of trucks required to move shipments.

In the month of June, the port authority reported 718,000 tonnes of fertilizer handled, which was 8% higher than in the same month in 2011 and this was despite heavy rains that negatively affected work on at least 15 days during the month. However, to date, fertilizer traffic is down 14% on the year, because of healthy stocks held over from last year and the strength of the dollar.

Two berths are now dedicated entirely to handling fertilizer traffic, while another three also receive shipments. *BC*

Paranaguá to increase agribulk storage



Port of Paranaguá.

The port of Paranaguá is to receive investments to increase the storage of agribulk products, which is vital given that the state of Paraná is focused heavily on this type of production. The port is also to issue a tender in respect of deepening the draught of the access channel from 13m to 16m, which will cost around $70 million to achieve.

According to the port superintendent, one of the main projects in hand is to remodel the port's export corridor, which will cost around $35 million, and also boost the imports of fertilizer. In order to do this, upgrading of existing berths must go ahead and also a new 'T'-shaped pier will be required, costing the port authority some half a billion dollars in total, of which half will have to be raised from its own resources and the rest from private investors. *BC*

Chinese continue to keep Brazilians at bay

Chinese shipping lines such as Cosco and Sinotrans continue to oppose CVRD's request to allow its Valemax bulk carriers to access the ports of Dalian, Majishan and Qingdao. In addition, the China Shipowners Association has also applied pressure on the government not to allow these vessels to use domestic ports. On the other side of the argument are Chinese shipyards that helped to build the vessels in the first place.

A spokesperson for the Brazilian company was not totally optimistic that the ban will be lifted, but thought that some form of compromise arrangement would eventually be reached. Many Chinese shipping lines are currently experiencing a financial squeeze, hence their reluctance to allow competition to move into their territory. *BC*

Port of Dalian.

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Grab the magic and float on...

OFT Mara *carrying out transshipment operations.*

Floating cranes

Jay Venter

Rocktree Logistics specializes in environmental protection and flexibility

Rocktree Logistics Pte Ltd is a rapidly growing player in the marine logistics industry, providing environmentally friendly transshipment, storage, automatic sampling and blending solutions to leading dry bulk commodity producers, end users and international trading companies through its advanced, crane-equipped Offshore Floating Terminals (OFTs) *Zeus* and *Mara*. Based in Singapore, Rocktree is located near some of the world's fastest-developing markets, with the strategic ability to provide transshipment anywhere in the world. With mining operations being conducted in more remote locations, this capability is a necessity for any company looking to strengthen logistics operations with the rapid handling of large cargo volumes.

Rocktree's fully equipped OFTs currently operate out of Samarinda, Indonesia, where they have brought the Indonesian transhipment sector to new levels of sophistication. *Zeus* and *Mara* are equipped with an impressive array of capabilities that make them game-changers to any client's existing logistics system. Their rapid loading rates, buffer storage capacity, automatic sampling ability, and advanced safety and environmental systems capabilities are unmatched by competitors. Additionally, *Zeus* and *Mara* provide the only offshore facilities in Indonesia that can merge different qualities of coal to produce a homogenous blend, increasing profit margins for Rocktree's customers.

Zeus and *Mara* load and unload cargo rapidly while reducing time at sea and port demurrage fees. This is because the OFTs' cranes can be positioned between quay and ship, ship and barge, barge and barge or between two seagoing ships. *Zeus* comes equipped with two powerful MacGREGOR K 3028-4HD cranes capable of unloading two barges simultaneously. This allows for an average net loading rate of over 40,000 metric tonnes per day. *Mara* has four cranes (two MacGREGOR K 3028-4HD and two Liebherr FCC-CBG 30(25)/28(30)/LIT cranes) capable of unloading up to four barges simultaneously. This allows for an astonishing 60,000 metric tonnes per day, matching loading speeds for onshore terminals and giving *Mara* the capability to fully load a Panamax vessel in 36 hours.

Distance, small barge sizes and late arrival times create complex logistical challenges that affect the bottom line. *Zeus*'s buffer storage capacity of up to 9,000 metric tonnes addresses this issue by allowing clients to either pre-load their cargo before an export vessel arrives or store the return cargo instead of taking it back to the loading jetty, allowing for continuous operations. Over the course of a year, *Zeus* is capable of handling over 7mt (million metric tonnes). *Mara* enhances this capability with a massive storage capacity of 60,000 metric tonnes, offering one of the largest storage capacities in the Asia Pacific region.

Mara can handle over 10mt per year. Offering a combined storage amount of 69,000 metric tonnes, Rocktree gives clients the freedom to reduce fleet sizes, free up barge capacity and maximize cargo readiness for loading onto the export vessel

OFT Zeus.

upon arrival.

In keeping with Rocktree's mission to enhance the efficiency of logistics operations, *Zeus* and *Mara* both come equipped with automatic sampling systems. Typically a service handled at the loading jetty, cargo samples can be taken and analysed while being loaded onto an oceangoing vessel. This conveniently establishes the exact condition of the cargo at the point of loading, reducing the chance of quality disputes at destination.

While environmental systems are neither compulsory in many developing markets, nor industry practice, Rocktree's focus on environmental protection has prompted the fitting of advanced environmental systems on both *Zeus* and *Mara*. These advanced systems aimed at reducing dust pollution include hopper spill plates, water spray equipment, covered conveyors and dust suppression systems. As a result, the environment is protected from dust pollution and clients have reduced cargo loss and contamination.

Zeus and *Mara* are the only offshore platforms in Indonesia that blend different qualities of coal to produce a homogenous, quality product. This is due to their special hopper and conveyor system, which allows for commodities such as coal to be blended to produce any desired quality. As a result, clients can eliminate the logistical costs associated with the double handling of cargo by blending at sea rather than transferring the cargo to a shore-based facility.

While the capabilities of Rocktree's OFTs distinguish the company on an equipment level, it is its business philosophy that makes it unique among marine logistics operators. Its focus on understanding each customer's business needs, current and future trade flows and its desire to improve the efficiency of existing logistics methodologies makes Rocktree an ideal partner for leading international producers, end-users and trading companies. Rocktree continuously innovates to add value to every customer's business by identifying existing supply chain inefficiencies and solving them with customized, cost-efficient solutions.

OFT Mara.

Waterway cargo-handling on the move

The first Terex® Gottwald floating crane, a HPK 330 EG, in mid-stream operation together with two Model 6 cranes. As a result of the trend towards larger cranes for increased handling capacity, several Model 8 floating cranes are now operating on the Mississippi River, too.

BARGE-MOUNTED MOBILE HARBOUR CRANE TECHNOLOGY

Today's cargo volumes are more than many ports can handle with their present infrastructure. In some cases, the quays are approaching their capacity limits and can barely cope with the ever-increasing ship sizes.

However, for a number of terminal operators, the investment costs and the risks involved in expanding their present infrastructure are simply too high. A different solution is needed both to prevent cargo-handling bottlenecks and, at the same, provide a long-term flexible response to fluctuations in demand and longer-term market developments.

TEREX® GOTTWALD FLOATING CRANES

Terex® Gottwald floating cranes were developed as a solution to these challenges by Gottwald Port Technology, which has since become part of Terex Port Solutions, a business group within global equipment manufacturer Terex Corporation.

Terex® Gottwald floating cranes offer many benefits:

- flexibility;
- mobility on water;
- comparatively low specific investment cost; and
- short delivery time.

Of course, with floating cranes, there is no need for the purchase of additional land or the construction of new quays, involving lengthy approval procedures and time-consuming construction work.

Terex® Gottwald floating cranes, available as harbour pontoon cranes and portal harbour cranes on barges, are used:

- for ship-to-ship handling;
- for ship-to-shore handling;
- in ports and sheltered waters;
- on rivers;
- in coastal waters; and
- on the open sea.

Having the same technology incorporated in its mobile harbour cranes, Terex® Gottwald floating cranes offer the same strengths. Designed for all types of applications, they are available in all the different harbour crane variants.

Since Terex® Gottwald floating cranes are diesel-electrically driven and use electrical drive technology, it is also possible to make use of an external power source. If the crane works on the quay, it can be supplied with energy from the local power supply. Bypassing the diesel-powered generator increases the efficiency rating of the drive system and reduces maintenance costs. In both cases, operating costs are reduced while locally generated exhaust gases are also avoided.

The cranes' electric drives, flexible choice of lifting gear, high lifting capacities and working speeds as well as service-friendly design provide efficiency, economy and a broad range of applications.

The barge — the basis of every floating crane

In its floating cranes, the company combines its crane know-how with the expertise of third-party barge manufacturers. The customer can choose between a used barge, which can be modified if necessary, and a new one.

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MOBILE PORT EQUIPMENT - EXAMPLES OF USE

Unloading a ship or barge and loading trucks


Ship unloading direct to a truck


Using a mobile hopper


Using a pressure cyclone


Unloading Wagon and loading a ship


Transhipment from barge to ship

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- fast delivery and installation
More information at www.neuero.de/en/gsd

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They can either order the barge directly or appoint Terex Port Solutions to manage the whole project.

Ship-to-ship handling

Terex® Gottwald harbour pontoon cranes boost handling rates

Terex® Gottwald floating cranes can be used on different types of waterways, including those having no or few quays. This is the case on the Mississippi in the USA, where, in the Port of South Louisiana, not far from New Orleans, 16 Terex® Gottwald harbour pontoon cranes are employed in mid-stream operation.

These harbour pontoon cranes, all of which are 4-rope grab variants, tranship a wide range of bulk materials between ocean going vessels and river barges. As a result to the trend towards higher handling rates, Terex® Gottwald floating cranes over time have become larger as well. In demanding continuous-duty operation, currently they achieve handling rates of up to 1,850tph (tonnes per hour) depending on terminal and operating conditions.

For cargo-handling companies operating in the port, such as St. James Stevedoring Partners LLC, Associated Terminals LLC and Impala Warehouses LLC, Terex® Gottwald harbour pontoon cranes are the ideal solution for replacing old, lower-performance equipment and for boosting mid-stream handling rates.

Ship-to-shore handling

Terex® Gottwald harbour pontoon cranes offer unparalleled flexibility

When space on the quay is limited, Terex® Gottwald harbour pontoon cranes can transfer the cargo direct from ship to shore, making land-based cranes unnecessary. Cost-intensive modification of the infrastructure can thus be avoided.

The cranes can also be used alongside existing handling equipment in order to share the workload at times of peak demand. And if a ship is unable to moor directly alongside the quay because the water is too shallow, a Terex® Gottwald harbour pontoon crane can be used to bridge the gap between ship and quay, making it unnecessary to invest in expensive quay walls and deep-draught berths.

One of these cranes, a G HPK 8200 B variant, has been put to very flexible use in the Port of Amsterdam. It operates at the quayside, in mid-stream and in the waters beyond the locks. As a high-performance Generation 5 Terex® Gottwald harbour crane, it is used primarily for handling imported coal.

A combination of efficiency and functionality

Portal harbour cranes on barge

Terex® Gottwald floating cranes were launched onto the market in 2004. Since then, 27 units have been put into service, including several portal harbour cranes on barges. Each barge is fitted with rails on which the crane's portal can travel. The crane can thus serve several ship holds, travelling between them on its rail-bound portal, making it unnecessary to warp the barge or the ship.

Two portal harbour cranes on barge are operated at the Shipyard River Terminal in Charleston, South Carolina, USA. They handle coal for local power stations and must meet the toughest flexibility requirements.

They operate at the pier, which is equipped with hoppers and conveyor belts for onward land transport of the coal. They can also be used mid-stream, transshipping coal from large ships to smaller barges, which, in turn, transport it on to its destination. These barge-mounted portal harbour cranes, which are of a 4-rope design, achieve handling rates of up to 1,100tph.

To keep the crane stable during travel on the barge, the rails are upwardly inclined from the centre to the two ends of the barge.

As with all Terex® Gottwald floating cranes, the barge is supplied by a specialist manufacturer.

Bulk handling on the open sea

Terex® Gottwald floating cranes up to 35km off the coast

In operation off the Indonesian coast, the Generation 5 floating

Terex® Gottwald floating cranes are available as harbour pontoon cranes and portal harbour cranes on barges. The latter combine the company's portal harbour crane concept with a barge.

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cranes supplied so several customers are taking Terex® Gottwald floating crane technology to new places. Used for open-sea transhipment of export coal from barges to ocean-going vessels up to several 10 kilometres off the coast, they are demonstrating their suitability for open-sea operation.

Such cranes can be operated in winds up to force 9 on the Beaufort Scale and with waves up to 2.5 m high. The wind pressure and swell give rise to additional heeling moments along with increased motion of the crane. Gottwald Port Technology accounted for these severe conditions by modifying the design of the floating crane — including a reinforced boom design and an increased number of slewing gear drive units.

Sea Transport Logistics floating harbour transshipper

Floating harbour transshippers.

Sea Transport Logistics (STL) has a 36-year track record of bulk transshipper designs for remote areas and a variety of commodities.

In a bold move to improve the cost efficiency and environmental standards in remote area export of bulk materials, Sea Transport Logistics has addressed the key problems for export miners.

Until now bulk exporters in remote areas firstly had to acquire land closest to the export site and build expensive negative pressure storage sheds to hold at least one export shipload (180,000 tonnes).

Then a jetty has to be constructed to extend to at least 20m in depth to cater for Capesize (180,000dwt) bulkers.

This can be 3–10km long in shallow coastal areas. The mining company has to then place an Environmental Bond to remove the jetty and sheds at the end of the mine life. This is now relevant in many countries. This bond can cost approximately 30% of the initial jetty cost, and remains as a contingent liability for infrastructure owners

The cost of the sheds, jetty, loading equipment as shown, and removal bond can be up to US$1bn.

In a novel approach, Sea Transport Logistics proposes the construction of a small harbour with 4m depth at LAT closest to the mine. This harbour can be used for small feeder vessels, and given to the community at the end of the mine life.

Attached to the small harbour is a relatively small negative pressure storage shed (5–10,000 tonnes) with a wet dock for a small feeder vessel to reverse into. The feeder loads between 3–10,000 tonnes of ore and ships it to the transshipping vessel.

Transshipper: traditional

1. dust problems and air pollution;
2. grab spillage and sea pollution;
3. open holds and rain/spray adversely affecting the transportable moisture limit (TML) and possibly delaying the departure;
4. a maximum constraining wave height of 2–2.5m; and
5. numbers 3 and/or 4 would cease the transshipment and demurrage costs commence.

Floating harbour transshippers

Resurrecting a 1988 Sea Transport Solutions concept of a Floating Harbour Transshipper (FHT), STL further developed and patented the FHT, which overcomes all the disadvantages of traditional systems.

The FHT comes in 4 relevant sizes:-

- Handysize FHT: 25–30,000 tonnes storage capacity 7m TPA;
- Panamax FHT: 40–50,000 tonnes storage capacity 12m TPA;
- Capesize FHT: 90–100,000 tonnes storage capacity 20m TPA;
- VLOC FHT: 200–240,000 tonnes storage capacity 35m TPA.

The small feeders then reverse into the wet dock of the FHT and the product is offloaded into the FHT or if the export vessel is alongside, the product goes directly into that vessel.

The FHT has minimal manning and no propulsion engines or large superstructures, and incorporates anchor ground tackle for the combination of both the FHT and the export vessel, or storm conditions for itself. It does have stern transverse Voith

The FHT (top of image) with Capesize vessel alongside.

thrusters to keep the combination of the FHT and export vessel out of a beam sea wave vector, to avoid a synchronous rolling situation.

Load-out rate from the FHT is 3,500–6,000tph (tonnes per hour). This allows the feeder vessels to supplement the 40% of export cargo during the load cycle without incurring demurrage.

Each FHT comes with patented SLV feeder vessels. These shallow draught maximum payload, multi-screw vessels ensure minimization of dredging and have a degree of redundancy in case of engine gearbox or propeller breakages. The SLVs connect into the FHT by a three-axis connection coupling for a fast coupling that will endure heave, pitch and roll. The feeder can also fit in bow first to push the FHT to cyclone moorings or drydock. Alternatively the feeder can tow the FHT.

The FHT dock arrangement eliminates any stevedoring damage to feeder vessels and transshipment vessels and eliminates demurrage due to weather delays on the feeding operation.

Ten days of model tests were carried out at the Australian Maritime College during November 2010 confirming that five metre significant wave heights can be handled without stopping the feeder vessel operations, whereas 2–2.5 metres is the normal maximum limit. Motions coefficients have been established to readily verify the optimum size FHT and feeder for any particular coastal sea state anywhere in the world.

The FHT can also be used for other cargoes such as containers, possibly alleviating congestion of expanding container ports.

Mining companies in four continents are in dialogue with Sea Transport Logistics regarding this innovative system for bulk cargoes.

The Bulk FHT is an environmentally friendly solution for 21st century bulk cargo transhipments, with the following advantages:

Advantages for the state, community and environment:

- stockpile is at export site, downsizing or eliminating the need for large expensive negative pressure sheds ashore, and large jetties;
- an environmentally superior system (smaller footprint, no dust, no spillage) than most other transfer systems and well clear of residential areas;
- shallower draught feeder vessels can be used from very small ports, at scheduled times, eliminating the need for dredging sensitive areas;
- revenue from mining royalties can be secured at an earlier time;
- lower road transport greenhouse gases with small harbours closer to the mine sites;
- employment and training opportunities in small ship feeder operations; and
- at completion of the mine life, a small harbour is available for community fishing and recreational boats.

Advantages for the mining company

Reducing capital expenditure and sovereign risk

- a solution that can be implemented quickly (as opposed to the lengthy wait of permits, etc.);
- stockpile is afloat and moveable, reducing the need for large storage sheds ashore;
- small shallow harbour eliminates the cost of a major jetty structure, and the bond for its removal at end of mine life, as the small harbour will be a legacy for the community or traditional owners; and
- an environmentally superior system (smaller footprint, no dust, no spillage) than most other transfer systems.

Reducting operating expenditure

- can handle rougher seas, and eliminates demurrage and feeder stevedoring damage;
- lower power and manning requirements than traditional systems;
- reduced port charges — berthage, wharfage, tugs;
- faster transfer rates than conventional transshipper systems;
- and FHT with SLV feeders can handle inbound fuel, dangerous goods (such as ammonium nitrate) and outsized heavy lifts into mining areas with little or no infrastructure. DCi

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GOLFETTO SANGATI
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Pavan Group: guaranteeing strength and good prospects

The Pavan Group in Galliera Veneta, Italy (manufacturer of processing equipment and packaging systems for the food industry), has announced final results for 2011 with revenues growing 15% to €123 million, EBITDA amounting to €19 million (+15%) and net income of €6.5 million.

Pavan Group CEO Andrea Cavagnis.

Pavan Group CEO Andrea Cavagnis has commented about the outcome: "Our 15% growth is for us a great gratification that strengthens our solidity and encourages prospects. In a rapidly growing world, our scope is to offer an active contribution to growth worldwide, by providing increasingly efficient and rational solutions in order to extend the consumption of the food products manufactured by our clients, for which the group aims to become a valuable technological partner.

"With the complete integration of Golfetto Sangati, world leading manufacturer of milling and animal feed equipment, acquired in early 2010, Pavan obtains the first rewards of a true group policy, by exploiting the synergic potential of covering the entire supply chain: from unloading of the grain to the packaged product ready for sale on the shelf."

Forecasts for this year are very positive, with an additional growth of 10% in volume and profitability expected. In Europe and North America, like in all mature markets, Pavan is pursuing a strategy aimed at enabling its customers to diversify the offer, in particular by promoting innovative lines for the production of snacks of new generation, fresh pasta and ready meals, with a high level of convenience.

Africa and Latin America continue to be market areas with significant growth rates. Following the physiological trend of these areas, by proposing a technology that allows to obtain an optimized production of large quantities of finished products, led to significant installations in the area of pasta and the snack division. India and China and the entire Asian Continent are experiencing a moment of exponential growth in the food sector. The group's increased attention to these areas has enabled Pavan to consolidate long-standing relationships and create new business opportunities.

Automated material conveying system for non free-flowing material

National Bulk Equipment, Inc. (NBE) has designed an automated material conveying system for non free-flowing material. Designed specifically for fully automated handling and processing of highly abrasive, non free-flowing metal flake material, this NBE, self-contained bulk material conveying system ensures reliable, repeatable material supply to integrated feeders that meter material for introduction to an inline briquetter. Processed briquettes are conveyed downstream for reclamation.

Material supply hoppers with live-bottom, variable frequency drive discharge-metering conveyors transfer material to inclined, cleated, belt conveyors. Downstream sensors monitor material supply requirements and automatically call to discharge-metering conveyors for material as process rates dictate. Integrated material feeders receive and prepare material for metered discharge to the briquetter. NBE Integrated automation centralizes all drive controlling, material feed sensing, material routing, and control layer monitoring and reporting to a single, UL listed HMI, designed and built by NBE. Rigorous NBE risk assessment procedures work to prevent hazards to those who operate and maintain the equipment, while identifying improvements in physical ergonomics and equipment access points. NBE expertise in application-appropriate codes, standards, and regulations ensured system compliance at start-up.

Tsubaki Kabelschlepp: specialist for abrasive environments

The cable and hose carriers S/SX1252B and S/SX1802B from the STEEL-LINE product family are suited perfectly for applications in steelworks, foundries and blasting shops. Their construction offers no chance for dirt or foreign bodies to be permanently deposited inside the stroke system.

The Tsubaki Kabelschlepp STEEL-LINE steel cable and hose carrier systems significantly increase system availability in abrasive work environments.

Work in steelworks, foundries and blasting shops is particularly rough on personnel and machinery. Conventional cable and hose carriers quickly reach the limits of their resistance in these kinds of conditions. The optimized chain geometry of the cable and hose carriers STEEL-LINE S/SX1252B and S/SX1802B by Tsubaki Kabelschlepp reliably prevent costly downtimes and maintenance times in highly abrasive environments.

Foundry sand, corundum (crystalline form of aluminium oxide with traces of iron, titanium and chromium) and scale are the natural enemy of any cable and hose carrier. They are by-products of metal production and processing, where they appear in large volumes and can quickly result in blockages on the stroke system of conventional cable carriers. The cable and hose carrier system fails, and the entire system comes to a standstill. Against this background, the Tsubaki Kabelschlepp cable and hose carrier types S/SX1252B and S/SX1802B offer users specialist systems for the deployment in environments, where high volumes of fine abrasive media are generated. Both of these cable and hose carriers are available in steel (S) and stainless steel (SX) and are — like all steel cable and hose carriers by Tsubaki Kabelschlepp — lubricant-free. The cable and hose carriers STEEL-LINE S/SX1252B and S/SX1802B have both been awarded the Eco-Link label and comply with the strict Tsubaki Group environmental compatibility standards.

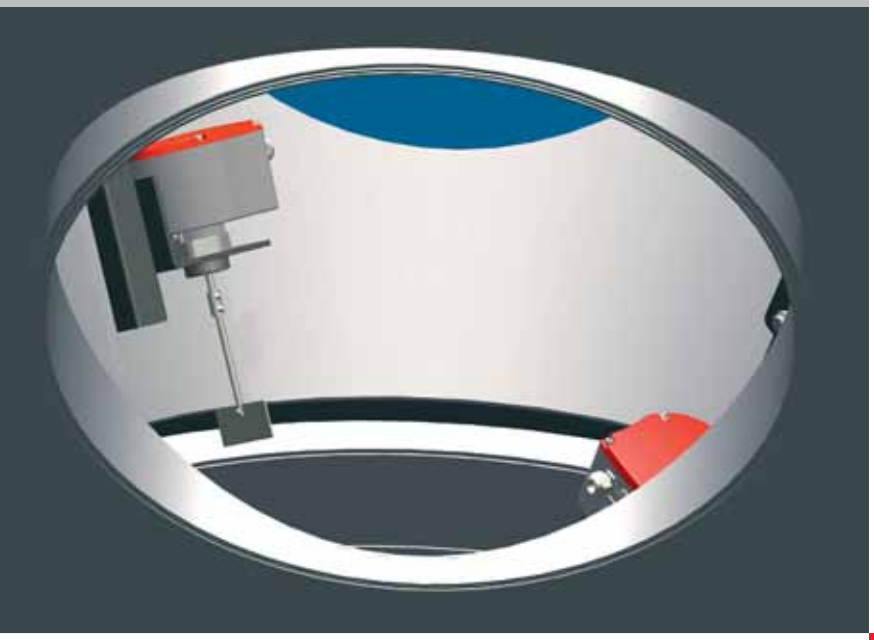
The optimized construction of the cable and hose carrier systems S/SX1252B and S/SX1802B of the STEEL-LINE product family by Tsubaki Kabelschlepp permanently prevents dirt and foreign bodies from collecting in the stroke system and thus inhibiting the function of the carrier. The stroke system is virtually 'self-cleaning', as foreign bodies are removed while the cable carrier is in travel. Blockages of the cable and hose carrier are effectively prevented, as no dirt deposits can form in the stroke system. Depending on the type of application, screw connections or rivets are used.

With the ability to withstand continuously high temperatures up to 600°C, the steel cable and hose carriers are ideally suited for use in the extreme heat of steelworks and foundries. The cable and hose carriers S/SX1252B and S/SX1802B can optionally be equipped with rust-proof steel band covers for additional protection of the routed lines and hoses against external influences.

Various types of stays allow the made-to-measure adjustment of the routed lines. The aluminium hole stays of type LG, for example, can be delivered with custom bore patterns. The solid and fourfold screwed metal frame stays of type RM are ideally suited for use with extreme stresses or large carrier widths.

The optimized 'self-cleaning' geometry of the cable and hose carriers of type S/SX1252B and S/SX1802B by Tsubaki Kabelschlepp prevents and blockage of the strokes with dirt.

SMB Shiploading



SMB Group
best solution

Highlight of the month

All systems are equipped with standard devices for Lightning protection, storm warning and storm locking and all possible acoustic signals. The material transfer points are all equipped with the MBA level switch (see picture) – this is the most reliable and robust way to avoid overfilling and spillage of material. MBA level switches control the distance of the loading spout to the material in the ship.

Ships all over the world are being loaded with level measurement know-how from MBA

MBA level switches from MBA Instruments GmbH are proven for more than 70 years to be robust, safe and reliable. The rotating paddle MBA 200 “Type Maihak” has now been improved with many attractive and functional advantages. The individual components of this modular system can be selected to build differentiated solutions for individual applications. One of the great features of MBA 200 is high reliability under most difficult operating conditions. No wonder that MBA 200 is possible to support the safety and maintenance also for conveyors and ship loading systems. The design of this SMB Shiploading system is customized to ensure maximum efficiency. The material transfer points of that SMB shiploading systems are all equipped with the MBA level switch – this is the most reliable and robust way to avoid overfilling and spillage of material. MBA level switches control the distance of the loading spout to the material in the ship.

SMB Filling

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Aumund Fördertechnik celebrates 90th anniversary

On 3 August 1922 Professor Heinrich Aumund laid the foundation stone on the establishment of Aumund Fördererbau GmbH in Berlin, today a globally operating company with innovative and customer-oriented solutions for the conveying of demanding bulk materials.

Ninety years later and it is a different place; but the business idea is the same: in Rheinberg in the Lower Rhine region new concepts are still being developed and implemented with the goal of smashing old capacity constraints.

Professor Heinrich Aumund.

Since the first patent for a wagon tippler for train unloading in 1922, many further patents have underpinned the claim that the founder developed new and innovative transport and handling solutions. This is still a robust constituent of the company's philosophy today.

An inventor's spirit and courage to try out new things are not sufficient to be able to confirm again and again the success over so many years. An additional ability is vitally important in order to be able to manufacture successful products from good technical solutions. Franz-Walter Aumund, third-generation company boss has hit the nail on the head: "The question is not what is technically possible. Whoever wants to maintain their position in the market must ask themselves how they can achieve the best result for the customer."

The principle that the material and its properties — as well as the application and its confirmed environment determine the choice of conveyor — also determines the customer relationship as well as the work in the research and development department. Already, at this stage, the points are set for the later economy of the entire installation. The consequence of this principle is pleasing in every respect: customers receive equipment which is suited to each particular task and runs both reliably and long-term. Aumund profits from the resultant reputation of being a supplier of very reliable and capable machinery — and similarly in widely varying industrial sectors.

Originating from conveying technology for the German mining industry, Aumund rapidly developed a series of different conveying installations which are employed nowadays in the cement industry, the metallurgical industries, in power plants, in mining, but also in many other fields in which large volumes of bulk materials need to be continuously conveyed. The pan conveyors have made a special name for themselves for example. They are employed in hot material conveying in the cement or metal industry (clinker, sinter, pellets etc.) but also in the conveying of extremely abrasive materials. The same applies to Aumund heavy-duty apron feeders which are used in mining or in quarries for the loading of crushers.

Apart from horizontal conveying up to 60° angle of inclination, vertical conveying also plays an important role. Aumund belt bucket elevators nowadays achieve conveying capacities of up to 1,500tph (tonnes per hour), conveying heights of up to 160 metres and, thanks to a special design which has most recently been introduced to the market, they are also suitable for conveying of coarse grain bulk materials. A special design also makes them reliably employable with ambient temperatures of up to 130°C. Whenever preheater towers on modern cement plants are especially tall, Aumund bucket elevators are frequently found.

In the case of chain bucket elevators, Aumund has ploughed its own furrow in two respects which have been demonstrating impressive performances for many years: in contrast to other suppliers the experts from Rheinberg choose a design with a central chain. The chain, developed by Aumund, is available in different variants. In the strongest variant the breaking strength of the chain (Aumund type AU19) is up to a breaking force of 2,400kN. This model is employed in the new triple chain bucket elevator (Aumund type BW-T) which can handle conveying capacities of up to 4,000tph.

The load capacity limit, here Aumund is sure, has not yet been reached. New processes and materials will continue to demand suitable equipment which meets varying needs.

The 90 years of company history also provide in this respect a good reason to celebrate. The company has always enjoyed success. What began in an old workshop in Rheinberg many years ago is today an operation with over 400 employees worldwide, with its own production and worldwide service locations.

The strategically important acquisitions since the turn of the century also fit in well here. The management team attached great value to the extension of the product base. B&W Mechanical Handling Ltd from England and Schade Lagertechnik GmbH were two companies which were incorporated into the group covering important fields in conveying and storage technology. B&W specializes for example in mobile conveying installations for ports and terminals and Schade focuses on the most up-to-date stockyard technology which above all is employed in power plants and anywhere where large volumes of bulk materials need to be stored and handled.

The company is well equipped for the future. The operative managing directorship has been recently handed over by Franz-Walter Aumund to Dr. Volker Brandenburg and to Joerg Hoffmann, who was previously in the same position at Schade. In the overseas subsidiaries in Brazil, China, France, India, Hong Kong and USA as well as in the product companies Aumund, B&W and Schade a new management team has been formed which determinedly pursues the same goals. Franz-Walter Aumund: "If we remain true to our principles and prioritize customer usability, quality and innovation then we all have good reason to look forward to what the next 90 years will bring."

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ABB transforms waste heat to clean energy

ABB, EKZ GETEC and Jura Cement have signed an agreement to install an ABB system at the Wildegg AG cement plant, which generates power from waste heat. The advanced solution is based on ORC (Organic Rankine Cycle), a thermodynamic process that enables waste heat to be converted to ecologically sound electricity. Once the system is in operation, the plant energy costs at the Wildegg plant are reduced dramatically. Jura Cement will have to purchase about 20% less electricity. EKZ GETEC is financing the system.

ABB has the expertise required to integrate the power plant completely into the cement production process. The turnkey power station order includes design, project management, delivery, installation and commissioning and is scheduled to be started up in November 2013.

Cement production is very energy intensive. The temperature in the kilns where the clinker is produced reaches 1,500°C. Although the waste heat from the cement process is largely reusable at this modern plant; for example, to dry raw materials, a substantial amount of low-temperature gas goes up the stack. ABB's ORC power station is an integrated system that allows low-grade waste heat in industrial plants to be utilized efficiently. A business case can be made for utilizing stack gases hotter than 200°C to produce power. The generator ratings range from 500kW to the double-digit megawatt range.

Tenova to deliver copper handling/processing system to Chilean customer

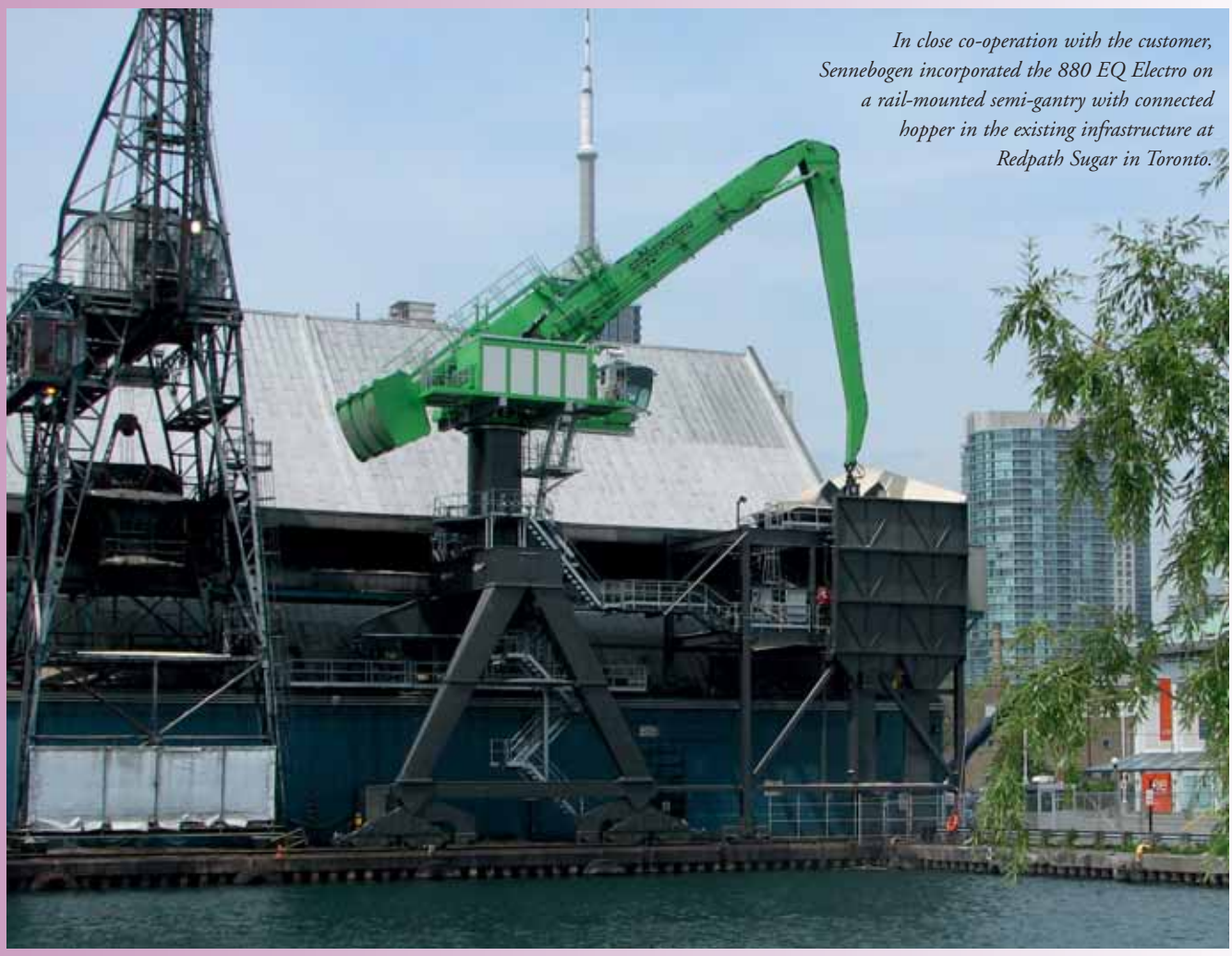
Tenova Mining & Minerals has announced that Tenova TAKRAF and Tenova Bateman Technologies will design and deliver a copper ore handling/processing system and a Solvent Extraction (SX) — Electrowinning (EW) plant, to produce 80,000 tonnes per annum of fine copper cathodes for Minera Antucoya, part of Antofagasta plc. The new plant, with a life time of approximately 20 years, will be located at Antofagasta region, approximately 45km east of the Group's Michilla mine, Chile.

These contracts will include engineering, supply of proprietary equipment, construction, training, commissioning and start-up supervision.

Tenova TAKRAF will provide an agglomeration plant, an on-off leach pad measuring 3,000m by 800m and a waste handling system and Tenova Bateman Technologies will supply the SX plant based on Bateman Settler™ technology. This is a proprietary reverse-flow mixer-settler (RFMS) technology, which was developed and patented by Bateman and which is used in various plants in Chile, including Codelco's Gaby plant and Vale's Tres Valles plant.

Jointly, the two Minera Antucoya contracts are the largest project ever awarded to Tenova Mining & Minerals, the division of Tenova focused on serving the global mining & minerals and metals industries. The combination of biddings for the Minera Antucoya project reflects Tenova's strategy looking forward, offering a full range of technologies and engineering services to provide clients with a unique one stop total solution source across the full mining value chain, harnessing the capacities and capabilities of multiple business units strategically located around the globe.

Increasing handling speeds: Sennebogen 880 EQ in use at Redpath Sugar



In close co-operation with the customer, Sennebogen incorporated the 880 EQ Electro on a rail-mounted semi-gantry with connected hopper in the existing infrastructure at Redpath Sugar in Toronto.

The production site of Redpath Sugar in Toronto, Canada, is situated on the north bank of Lake Ontario. Raw sugar from the Caribbean and South America is delivered by water to the plant on the St. Lawrence River. The company has significantly increased its material handling performance with a new Sennebogen 880 EQ.

Sugar is sold at Redpath Sugar in both summer and winter. This poses a major challenge, particularly during the cold season, as the port is inaccessible for several months at temperatures falling as low as –20°C. This means that the company has to work even harder in the summer months, unloading everything as quickly as possible to build up stock for the cold months. Two old cable cranes have been replaced with a new Sennebogen 880 EQ. At the first signs of spring, the machine showed just what it could do for the first time. With a material handling performance of 600tph (tonnes per hour), the 880 EQ significantly out-performs its predecessors. A complete loading system made up of a material handling machine and hopper was set up on the existing rails. The machine sits on a semi-gantry and the hopper is taken along automatically when the machine is moved so that it is always in the right place.

With a capacity of around 8,000kg sugar per cycle, the Sennebogen 880 EQ moves nearly twice as much as the previous two cranes put together. The customer is particularly impressed with the electric motor. Keeping the noise and exhaust emissions as low as possible was particularly important due to the proximity to other buildings.

The electric motor and counterweight also offer optimal power and energy efficiency – an important criteria for keeping operating costs low. The new 880 EQ was individually adapted to the conditions at the site in close co-operation between the customer, the sales and service partner Top Lift Enterprises and Sennebogen LLC. The machine reaches a height of 9m with rail-mounted semi-gantry and pylon elevation. With the cab position set at 6m, the driver has full view of the ship and inside the hopper from above. The elastically mounted Sennebogen Portcab spacious cab offers complete all-round view with a window in the floor and large window areas, as well as outstanding ergonomics and excellent sense of space. The robust slewing ring with powerful drive guarantees quick material handling speeds. The raw sugar can be unloaded quickly and safely with the 10m³ clamshell grab from Rotobec. The sugar production is protected over the entire year and the ships can also keep to their schedule.

In contrast to the previous cable cranes, the material handling machine uses its hydraulic force to reach deep into the loading goods and fill the grab optimally. This required a change in the work processes at first, but the drivers now report that the machine has become an integral part of the process and they are proud to be making an important contribution to the success of the company with increased material handling performance.

"We have definitely made the right decision with the Sennebogen 880 EQ. We planned to increase our productivity by up to 50 % by investing in this new machine. I'm sure that we will reach this goal thanks to the outstanding performance," says Jonathan Dunn, Redpath's manager for engineering projects.

River Consulting announces new management appointments

Carstens brings wealth of experience to River Consulting business development team

River Consulting has also announced the addition of Christopher Carstens as Manager, Business Development to its New Orleans office. With more than15 years of sales experience, he brings an innovative approach to managing and growing accounts.

Carstens brings extensive sales experience in engineered products and service environments. As a sales representative for a broad variety of companies, he has helped migrate accounts, increase sales, develop outreach programmes to target new customer bases, and build companies from start-ups to large successful organizations. In his new role, he will use this experience to lead business development activities along the Gulf Coast of the United States.

"We are excited about the new opportunities Chris will bring to River Consulting. Chris's engaging personality and depth of experience will allow him to foster relationships with our current clients, and establish partnerships with new ones," stated John Strayer, senior vice president. "His work will be integral to River Consulting's growing footprint and will allow us to continue to provide world-class services and solutions to our clients."

Lorence adds depth to River Consulting Team

River Consulting has announced the addition of Steven Lorence as a Senior Project Manager in its Columbus office. With more than 25 years of experience, he brings great industry knowledge and adds depth and technical expertise to the firm. Acting as a Senior Project Manager, Lorence will play an integral part in nurturing client relationships, pursuing new opportunities, and managing successful projects.

Lorence joins River Consulting with extensive experience in engineering and R&D for numerous industries both in the private and non-profit sectors. His most recent work focused on developing and implementing new processes and products for the energy and environmental market sectors. Additionally, his diverse background includes programme management, technical leadership, and business development experience. Lorence holds a Master of Engineering degree in chemical engineering from the University of Louisville.

"We are excited for someone of Steve's calibre to join our team," stated Gregory DiFrank, president. "His experience complements the markets and clients we serve and enhances our capability to deliver world-class expertise and solutions. Steve's passion and energy is contagious, and we're glad he has chosen River Consulting as the firm to continue his career with."

River Consulting is a leading mid-major A/E to global energy, food, process and industrial clients, delivering multi-discipline engineering and project management solutions for major capital projects and facility and process expansions. The firm's experience spans over three decades and 57 countries with offices in Columbus, Oh; New Orleans, La.; Pittsburgh, Pa; and Tulsa, Ok. It is recognized nationally by Engineering News-Record as a Top 500 design firm.

Liebherr Group again grew considerably in 2011 business year

The Liebherr Group was able to increase its turnover in the 2011 business year by €747.0 million or 9.8% to €8,334.0 million. Once again, almost all the group's divisions contributed to this growth. Turnover from construction machinery and mining equipment recorded an above-average increase. In these product areas, Liebherr boosted turnover by €642.4 million or 13.5%, thereby achieving revenues of €5,386.6 million. Furthermore the share of these areas in the Group's total turnover increased once again from 62.5% to 64.6%.

Development in the earthmoving and mining divisions, the latter of which was disclosed separately for the first time in the accounts, was especially dynamic. In the earthmoving division, the Group was able to increase its turnover by €448.6 million or 27.9% to €2,058.8 million. In the mining division, the Group was able to increase its sales revenues by €209.5 million or 26.1% to €1,012.0 million.

Turnover from mobile cranes, which Liebherr includes in the construction machinery product area, was not quite able to match the previous year's figure. Following an upturn in 2010, turnover in the year under review fell slightly by €73.2 million or 4.0% to €1,738.6 million. Developments in the construction crane and mixing technology division were positive. Following the severe drop in sales revenues during the worldwide financial and economic crisis, demand for construction cranes and mixing technology products is recovering appreciably. Liebherr's overall turnover in the construction cranes and mixing technology area was €577.2 million, which represents an increase of €57.5 million or 11.1%.

From activities outside the construction machinery and mining equipment areas, the Liebherr Group achieved a turnover of €2,947.4 million, €104.6 million or 3.7% higher than in the previous year. However, this moderate growth does not accurately reflect the actual pattern of business in the individual divisions — namely maritime cranes, domestic appliances, machine tools and automation systems as well as aerospace and transportation systems. It is due to a specific effect in the area of other products and services: after the successful conclusion of a large-scale project in Saudi Arabia, no comparable turnover was available in the other products and services area in 2011, with the result that sales revenues fell by €113.4 million or 36.8% to €195.1 million.

All other product divisions boosted their turnover, and, with one exception, achieved two-digit percentage increases. The maritime cranes division increased its turnover by €78.4 million or 10.7%. Its sales revenues in the year under review were €808.0 million. The aerospace and transportation systems division also recorded a significant increase in turnover. Business activity progressed gratifyingly in the machine tool and automation systems division. At €186.4 million, sales revenues were €20.8 million or 12.6% higher than in the previous year.

Turnover by region

The Liebherr Group's business volume developed in markedly different ways in the various sales regions. Its ten largest individual markets in the 2011 business year were Germany, Russia, the USA, France, Australia, Brazil, Great Britain, China, the Nether-lands and Austria.

In Western Europe, turnover was only slightly higher than in the previous year. Sales revenues amounted to €3,815.2 million, an increase of €129.7 million or 3.5% in this sales region. The Group recorded an increase of €269.4 million or 42.3% to

achieve a revenue of €906.9 million in Eastern Europe. As in the previous year, sales revenues from the Near and Middle East dropped sharply. At €290.7 million, turnover was 37.1% or €171.2 million below the 2010 figure. This reduction is due to the completion of the large-scale project in Saudi Arabia. In contrast to this, the Liebherr Group recorded considerable growth on the American continent, where sales revenues rose by 20.7% or €232.9 million to €1,360.0 million. Following the previous year's downturn, sales revenues in Africa rose again in 2011. In this sales region, the Group recorded an increase of €120.5 million or 34.4%, to €470.5 million. In the Far East/Australia region, the Group was able to continue the success enjoyed in the 2010 business year. Turnover went up by €165.7 million or 12.5% to €1,490.7 million.

Investments

Notable investments in the year included €53.4 million invested in the mobile cranes division. In Ehingen, Germany, the bulk of the investment was allocated to the construction of a new building for large crane assembly prior to delivery and for the storage, packaging and loading of equipment for these cranes. At the end of the year, 40,000m² of land were acquired in Miami-Dade County, FL/USA for building a new sales and service branch. Construction work commenced in the spring of 2012.

The maritime cranes division invested a total of €69.6 million. In Rostock, Germany, work on the new structural steelwork building for ship and offshore cranes, which is 750m long, was almost completed.

The Group's total investments in the year under review were offset by depreciations totalling €376.3 million.

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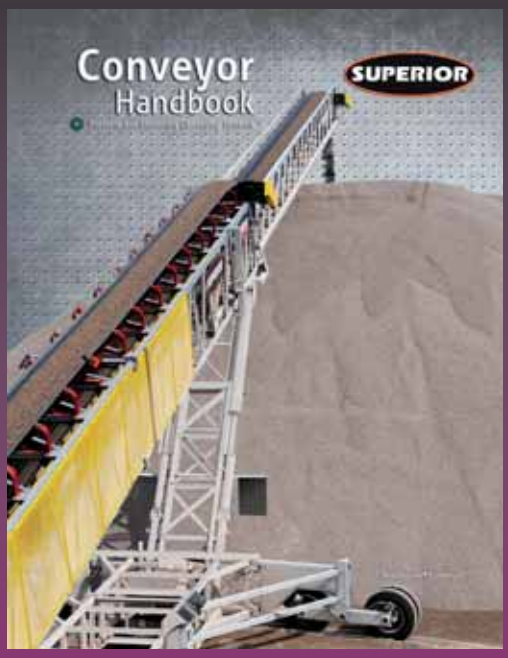
Superior Industries publishes new conveyor handbook

Superior Industries, North America's only combination manufacturer of conveyor systems and related accessories, has new conveying equipment literature today.

The 48-page product handbook details features and benefits of Superior's growing collection of telescoping radial stackers, portable stackers, transfer conveyors, feed systems and stationary conveying solutions. Pages include new and improved application photography, product features unique to Superior Industries and data related to each product's dimensional range.

"We think the update offers customers a very clean and modern view of our equipment solutions," says Mary Erholtz, Superior's marketing director. "The features and benefits are easy to read and understand, the photography is current and crisp and together, the handbook is a great resource to showcase everything we manufacture."

As a conveyor accessories manufacturer, the literature also tells how the company's Conveyor Components Division connects to its systems and equipment. Superior is the only North American based designer and manufacturer of conveying equipment and components.



About Superior Industries

Superior Industries has a reputation for engineering and manufacturing groundbreaking, bulk material handling conveyors and cutting-edge components. From its headquarters in Morris, Minnesota, the manufacturer supplies the market with stackers, transfer conveyors and stationary systems plus idlers, pulleys and accessories to lower operating costs and increase production. The company manufactures from two additional plants in Arizona and Georgia.

Choosing the right belt alignment sensor: rub block vs. Touchswitch

Belt misalignment is a common problem in belt conveyors and bucket elevators. When the belt is severely misaligned it can cause damage to the machine casing while generating dangerous heat in potentially explosive atmospheres like that found in grain handling.

Two typical methods of detecting belt misalignment are the rub block and the Touchswitch.

The rub block consists of soft brass with an embedded temperature sensor. The sensor alarms when the brass heats to the trip temperature. Three main drawbacks exist for this sensor. First, by the time the brass heats, the belt has already been misaligning for a period of time. Second, the belt could periodically rub against the brass and move away, wearing through the rub block without ever giving an alarm, leaving you unprotected. Finally, there is no simple way to test the rub block without introducing heat into a potentially hazardous environment.

The Touchswitch design addresses these three issues. First, it detects the lateral force of the belt, and gives an immediate voltage-free relay contact change when the belt contacts it. Second, the face of the sensor is made of hardened stainless steel, which is much more resistant to wear than soft brass. Finally, each Touchswitch has a test knob and status LED, so you can tighten the test knob to simulate a belt misalignment and watch the LED go out followed by machine alarm/shutdown. When you loosen the test knob it simulates the belt moving off of the Touchswitch and the LED turns back on.

The Touchswitch sensors are usually installed in pairs on opposite sides of the belt/pulley. As the Touchswitch is not affected by dust or material built up; it will work even when completely covered by material.

It is easy to adjust and can be used with pressures between 2kg and 5kg.

The Touchswitch is ATEX certified for zones 20, 21 and 22 Ex II 1D T125°C without internal cabling and also has CSA and IECEx approvals.

The Touchswitch sensor can be connected direct to a PLC or for increased security to an independent monitoring system such as the B400 ELITE, WATCHDOG ELITE or T500 Hotbus, all ATEX approved zone 21 and 22.

Touchswitch in operation.

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E-Crane: getting to grips with grain

Equilibrium cranes purpose-built for bulk handling

The E-Crane excels in bulk handling applications requiring heavy-duty production cycles. Specifically designed for barge and ship unloading processes, anything from coal to limestone to fertilizer to grain to scrap steel can be handled. The E-Crane is a truly versatile machine in that it can easily switch between commodities and still offer the high production required at many ports and industrial facilities. Built for 24/7 duty cycle operation, E-Cranes have unprecedented life cycles, high efficiency, and low maintenance costs.

The standard E-Crane product line consists of five series of balanced hydraulic cranes (Equilibrium Cranes): 700, 1000, 1500, 2000 and 3000 Series. E-Cranes provide longer outreach and higher duty cycle capacities than typical material handlers. Outreach ranges from 24.8 to 47.8 metres (82 to 157 feet) and duty cycle capacity ranges from 5 to 50 metric tonnes (5.5 to 55 US tons).

The green alternative

The E-Crane is a truly unique and revolutionary machine with a very low power consumption cost. The E-Crane runs on clean electric energy, saving customers huge amounts of money when compared to diesel powered equipment. E-Cranes also have very little associated maintenance costs due to E-Crane's innate design. The key to the E-Crane's efficiency is the parallelogram design linking the stick to the moving counterweight. This unique four-bar mechanism ensures that the E-Crane remains in near perfect balance throughout its working range. Compared with conventional cranes that require as much as 80% of their available energy just to move the boom, stick, and grab, the E-Crane allows gravity to work for you instead of against you, reducing horsepower requirements and power consumption by up to 50%, reducing maintenance and operating costs.

Grain handling at GPMM

In 2009, an E-Crane was installed at the Grand Port Maritime de Marseille (Marseille FOS Port Authority) near Marseille, France for grain unloading. The 1500B Series E-Crane, Model 9359-GAE pictured, unloads grain and pleat from ships at the GPMM grain terminal. The grain is either put into silo storage or transferred directly from river barges to sea going vessels. The E-Crane is rail mounted, has an outreach of 35.9 metres (117.5 feet), and a duty cycle capacity of 12.5 metric tonnes (13.8 US tons).

The crane was delivered along with a mobile hopper which is attached to the E-Crane by a tow bar. This system allows the

hopper to be pushed and pulled along the rails by the crane as it moves back and forth so that the distance from the centre of the E-Crane to the centre of the hopper remains constant. This results in shorter cycle times, as the distance that the E-Crane must swing to the hopper is always the same and the operator never has to travel back to deposit material into the hopper; a perfect application for E-Crane's semi-automatic cycle feature. The E-Crane loads material into the hopper which feeds two conveyer belts which transport the grain back to the silos. The hopper can also be disconnected or decoupled from the E-Crane in order to work completely independently from the crane. This feature is needed in certain cases such as when self-unloading ships are received at the dock. This is also useful because the hopper can be moved to another section of rail where other cranes can use it. In this configuration, the decoupled hopper can be controlled either by the E-Crane operator from inside the cab or by a control panel located on the hopper.

The crane was also delivered with two hydraulic grabs as well as a quick change device. The quick disconnect allows for the operators to easily change between grabs or switch the crane to hook/lift mode in a matter of minutes. The E-Crane also included the EMM (Electronic Machine Management) system, remote access equipment which allows E-Crane engineers and service technicians to remotely diagnose and fix problems. GPMM utilizes this advanced troubleshooting system saving it time and money associated with downtime and maintenance.

The GPMM project was a 'turnkey'-style project, as E-Crane designed and provided the complete system from start to finish. E-Crane engineers developed the entire layout concept from basic to detail design. E-Crane provided the crane to hopper tow bar system along with the electronic machine manager communications and crane monitoring systems. E-Crane engineers also provided start up assistance and hands-on training for operators and maintenance crew following a turn-key installation. DCi

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On-line analysis of coal

Coalscan measuring ash content of coal.

and, now, minerals

On-line analysis of coal is the analysis of coal on a conveyor belt. The largest companies in Indonesia, China, Taiwan, Vietnam and Thailand are all using this technology, first developed in Australia by Scantech. The key to the successful implementation of Scantech on-line analysis is that results are presented in real time and, if required, operators can make immediate changes to their operations to ensure product quality. As well as the traditional coal applications, the analysers are now being used in the minerals industry. Iron ore, nickel, phosphate, copper, zinc and manganese producers are all improving their process control, thereby making their plants more efficient and saving costs.

On conveyor belt elemental analysers, known as the COALSCAN 9500X in the coal industry and the GEOSCAN-M in the minerals industry, are now available to analyse the entire stream, avoiding not only the operating and capital costs of sampling, but also the sensitivity of older technologies to variation in ash mineralogy. This technology is known as Prompt Gamma Neutron Activation Analysis (PGNAA). As well as measuring ash, this technology measures the ash oxides and many other parameters useful for efficient plant control. There have been four generations of this analyser, with the latest model requiring minimal maintenance, has very low levels of external radiation and drift-free analysis.

The modern designed analysers, such as the COALSCAN 9500X, are now installed directly around the primary belt, and so measure all the material of interest. Direct on-belt analysis of the material of interest has numerous advantages, the most important being that all of the material of interest is 'seen' by the analyser, so that there can be no errors from sampling, both by the by-line sampling technique and that used by laboratories for analysis.

Analysers that employ PGNAA technology have the capability to measure the concentration of a number of key elements. With the measurement of the sulphur, and with the use of blending software, the end user can control SO_X output levels from the stack by adding a low concentration sulphur coal with a higher concentration coal to produce a resultant product that will ensure that emission levels are within the regulatory levels.

These technologies can all be combined with the microwave moisture monitor, so that a complete analysis of the coal is available in real time. Scantech also produces stand alone moisture monitors. The TBM 210 was developed about 25 years ago. The Scantech moisture analyser measures both the changes in phase and attenuation of the microwave signal, making it the most accurate analysers on the market. It is installed at many sites to assist, for example, monitoring moisture levels in of coal shipments, optimizing washery performance and maintaining appropriate levels of dust suppression. The TBM 230 has recently been introduced. This new moisture monitor penetrates coal bed depths up to about 600mm.

The results from on-line analysis are updated every one, two

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Installation structure for PGNAA analyser.

thousands of tonnes of coal.

To maintain each analyser, Scantech has developed an extensive service network. The analysers are inherently very reliable and remote access via the internet to most analysers results in any problems usually being rectified very quickly. Additionally, a world wide group of service agents and Scantech's own service engineers are available for remote and rapid on site support.

Analysers can be used in many applications; at the mine, the preparation plant, to control train/vessel loading, to monitor received coal at the power station and to measure the coal quality fed to the bunker. Operators can control their plants according to the ore quality they are actually processing, not what they think they are processing. This leads to more efficient plant operations and better asset management.

or five minutes as compared with the laboratory analyses of samples, which may be available hours or even days after the coal has been processed. This delay is even longer for samples collected in remote barge loading facilities. Further, it must also be recognized that no matter how accurate the laboratory analysis is, it is always based on a few grams of sample. There will always be errors involved with sampling, dividing, crushing and then preparing a few grams of sample to represent many

On-line analysis allows more efficient use of the resource, more effective process control and more cost effective methods of mining, processing and burning of coal. On-line analysis should be viewed not simply as an alternative to laboratory analysis. The most beneficial on-line analyser installations are generally those where the user has realized the advantages that real time analysis can bring to their process. DCi

TBM moisture analyser.

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Moving mountains

the role of mobile harbour equipment in the transport of dry bulk commodities

Shiploader stored off the berth when not required for loading.

Louise Dodds-Ely

B&W maximizes existing port capacity with congested narrow berths

In many coastal ports constructed with a man-made breakwater or taking advantage of an existing safe anchorage, berths were created using finger jetties built out from the shore line to deeper water adequate to berth vessels up to Handymax or even Panamax size, *writes Barry Woodbine, AUMUND Group*. These jetties are typically used for a variety of cargo handling operations, now using often mobile harbour cranes for general cargo and containers, plus perhaps cruise ships for local tourism. Many such ports have developed a loose dry bulk export trade using a mobile shiploader to complement the other mobile equipment on the port, thus maximizing existing berth and port resources without tying up a specific berth to a specific trade.

Such is the case at the Port of Salaverry in Peru, strategically placed to benefit from its proximity to the copper mines exporting gold and copper ores for the Goldfields Company coming from the Cerro Corona Mine situated in the highest part of the Andes in northern Peru. The company produces gold and copper by conventional open pit mining methods and the copper-gold

Operating on a finger jetty at an angle to the vessel.

Integrated Samson™ surface feeder allows direct transfer from truck to ship.

flotation concentrate is trucked to the Port of Salaverry for shipment to smelters in Japan, Korea and Europe. For cruise tourism, the Port of Salaverry is well placed for exploring some of the 2,000 historical sites nearby; this trade is obviously sensitive to port cleanliness and any quay surface contamination or windblown dust is clearly unacceptable.

A B&W mobile shiploader is employed for vessel loading, equipped with an integrated Samson™ feeder able to receive the concentrate direct from tipping trucks without the need for fixed ramps or underground pits and therefore the equipment may remain fully mobile in operation, independent of any fixed port infrastructure or permanent handling systems.

In this case the Samson™ feeder is mounted to a slew ring on the shiploader chassis, allowing the Samson™ to be aligned through a 180° working range. This arrangement allows the shiploader, as a complete and autonomous unit, to operate on a confined berth width whilst accommodating restricted truck access requirements. In Salaverry this is particularly important since the existing finger jetties have limited width and to ensure the preservation of an adequate loading rate, truck access must be maintained to and from the equipment, without excessive lost time in truck manoeuvring.

Trimming high density concentrate with rotating trimming chute.

Cambered outloading boom provides adequate reach to trim the vessel.

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Trucks line up on the jetty for discharge to the Samson™.

To speed machine movements along the vessel, between holds and within the hold for trimming purposes, this shiploader is equipped with full powered manoeuvring facilities including both in-line and parallel travel simplifying machine movements across and along the jetty. By combining multi-directional powered travel and the slewing Samson™ mount, the appliance may be arranged with the boom at an angle to the vessel of around 45°, whilst the Samson™ feeder remains in line with the quay allowing easy vehicle entry and exit to speed the truck turnaround and thus the vessel loading rate.

B&W (Aumund Group) pioneered the development of the integrated mobile shiploader allowing direct transfer from truck to ship without double handling and without contamination of the quay surface or risk of polluting the port with contaminated water runoff from quayside stockpiles. Using this concept, it is possible to export minerals from virtually any suitable berth or jetty without risk of environmental damage or adverse effects on other port users, particularly cruise lines where there is any potential for dust pollution.

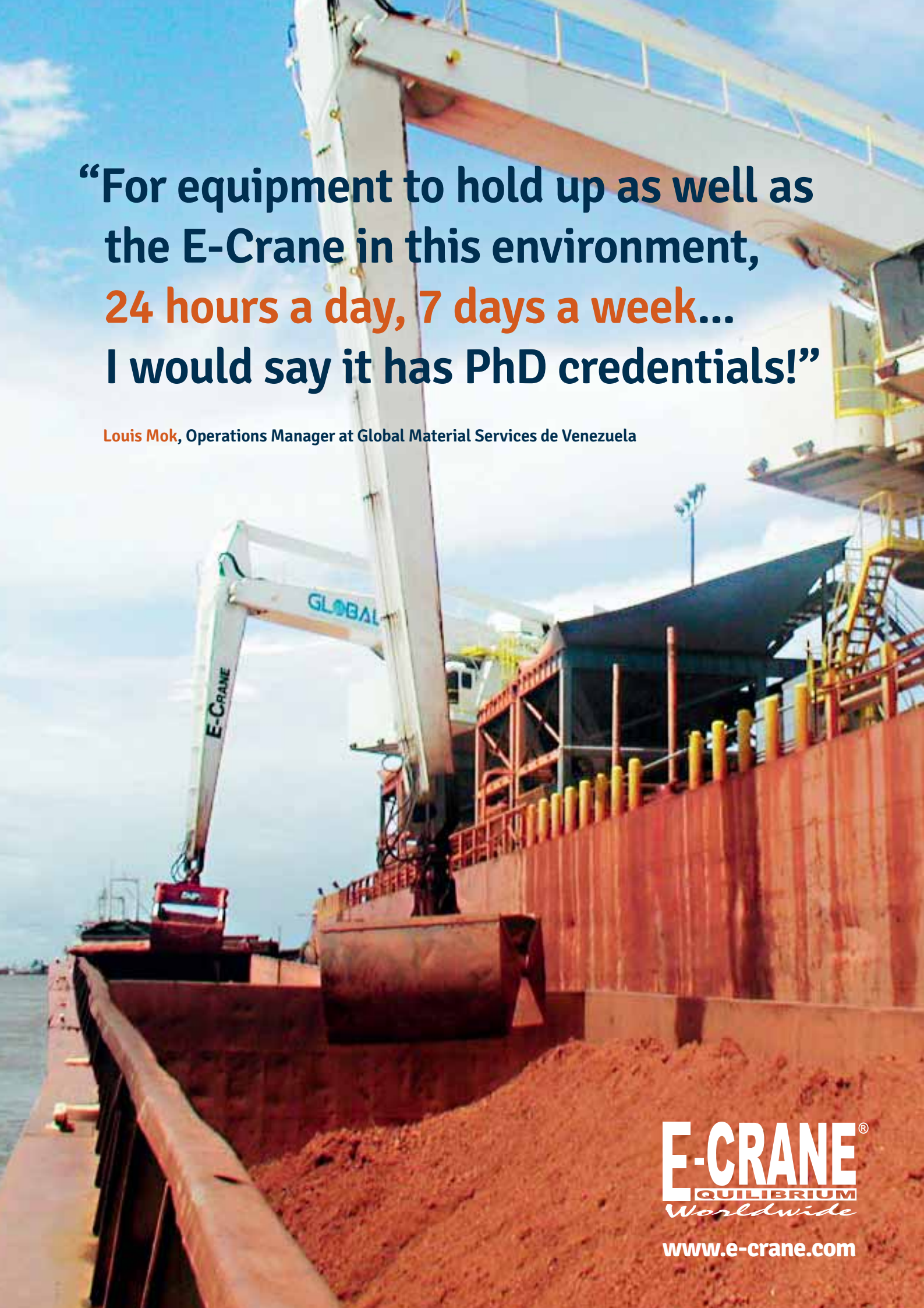
For handling dusty cargo the Samson™ is a real bonus thanks to the wide apron-belt technology. The free fall height from the truck to the Samson belt is reduced to a minimum and, once the load starts to move, the bulk of the vehicle contents are drawn into the Samson™ body in a controlled stream, thus eliminating particulate separation and minimizing dust generation at source. With most dry bulk cargoes, such as concentrates, minimum dust extraction is required to eliminate any fugitive dust pollution. For this application the shiploader is supplied with integrated dust extraction equipment at the Samson entry enclosure. With the on-board diesel generator the equipment is fully mobile under its own power and may be easily moved off the jetty between loading operations and stored in the port area thus freeing the berth for other operations. This is a truly flexible solution without sacrificing either performance or environmental protection.

After the first delivery to Peru, the users liked the benefits offered by the Samson™ surface feeder so much another operator, Perubar, was persuaded to order an independent unit to feed an existing ship loading installation, replacing existing machinery, also exporting mineral concentrates. A third very recent contract with Impala is currently in progress for a similar machine; again handling concentrates.

About the AUMUND Group

B&W of the UK was established back in 1966 to serve the bulk shipping and storage sectors with particularly mobile and surface mounted highly flexible solutions that cross many industry sectors. AUMUND Fördertechnik GmbH, SCHADE Lagertechnik GmbH and B&W Mechanical Handling Ltd. are consolidated under the umbrella of the AUMUND Group along with AUMUND Logistik GmbH. In conjunction with the headquarters of the manufacturing companies, the global business is supported in eight locations in Asia, Europe, North and South America by own subsidiaries plus worldwide by an extensive network of agents covering four continents with equipment operating in over 100 countries.

Samson intake for concentrates to existing shiploader.



"For equipment to hold up as well as the E-Crane in this environment, **24 hours a day, 7 days a week**... I would say it has PhD credentials!"

Louis Mok, Operations Manager at Global Material Services de Venezuela

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E-Crane: practical solution for mobility requirements

Rail-mounted 2000 Series E-Crane, model 17359 GA-E in operation at the Port of Kokkola in Finland.

Last month (see p103 of the August 2012 issue of *Dry Cargo International*), we discussed how an E-Crane on a floating terminal can be an economical solution for expanding your port infrastructure. This month, we'll be focusing on how mobile E-Cranes are a practical solution for any mobile needs at your facility. E-Cranes can be installed on either low or high gantry portal on rails, or on crawlers.

Recent project: Port of Kokkola

Port of Kokkola, located in mid-west Finland, purchased a rail mounted 2000 Series E-Crane, model 17359 GA-E for unloading iron ore, zinc concentrate, and coal. The crane has a maximum outreach of 35 metres (117 ft) and a duty cycle capacity of 21 metric tonnes (23.1 US tons). The location of Port of Kokkola in Finland makes it a very well-known harbour with connections to other parts of Finland, both by road and rail. The port is an indispensable link in the trade between East and West by offering fast connections to Russia and to other parts of the world as well. In recent years, the port has been improving and expanding its infrastructure. After extending the 'Deep Port' quay, it was decided to purchase a new E-Crane to increase the port's loading and unloading capacity. The newly installed E-Crane helped contribute to the successful development of Kokkola's 'Deep Port' activities and the long-term profitability of the port.

E-Crane was chosen by the port due to its high transloading capacity and precise operation. The balanced, E-Crane can reach capacities of up to 1,300tph (metric tonnes per hour) and can be operated easily, with utmost precision. Furthermore, the low energy consumption of this machine played a big part in making this choice. E-Crane's design, a parallelogram-style boom that provides a direct mechanical connection between the counterweight and load, ensures that the E-Crane remains in near perfect balance throughout its entire working range. This reduces horsepower requirements and power consumption by up to 50% compared with conventional cranes and material handlers.

The E-Crane at Port of Kokkola, baptized as *Nora*, now successfully loads and unloads iron ore oxide into large Handymax-sized vessels (shore-to-ship operation). More demanding jobs are no problem either; the E-Crane also offloads zinc concentrate from coasters into an existing travelling hopper, located on the side of the dock (ship-to-shore operation). The E-Crane at Port of Kokkola obtains fast cycle times of 40 seconds per cycle. Utilizing the E-Crane, equipped with a 7.5m^3 hydraulic clamshell bucket grab, results in a net payload between 14 and 16 metric tonnes, and peak offloading capacities in the 1,150–1,300tph range (zinc concentrate).

Nora is also equipped with E-Crane's new remote connectivity (tele-servicing) capabilities. This allows E-Crane service engineers to remotely connect to their specific E-Crane from anywhere in the world to trouble-shoot, resolve problems, and assist with repairs of the crane. This greatly reduces

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The rail-mounted 2000 Series E-Crane, model 17359 GA-E at the Port of Kokkola in Finland unloads iron ore, zinc concentrate, and coal.

down-time and costs associated with maintenance as E-Crane can provide the necessary support during regular service intervals without having to travel to the job-site.

As operators at the port have gained skills and expertise using the equipment and management has increased experience and know-how with the logistics of the E-Crane, the E-Crane continues to play a role in the successful development of the port. Management at the Port of Kokkola has been very happy working with E-Crane to make this project a success.

Torbjörn Witting, port director at the Port of Kokkola: "This project was the 'easiest' one in all my time at Port of Kokkola: E-Crane fully understood our wishes, and we were extremely pleased with how the negotiations, technical meetings and training sessions went".

Future projects

E-Cranes mounted on mobile undercarriages have proven to be very practical in many circumstances. The following customers in a variety of industries are aware of this and have chosen E-Crane to deliver a new machine to add to their fleet in the near future.

ThyssenKrupp ordered a mobile E-Crane for its facility in Mobile, Alabama USA. This E-Crane is on high gantry with an attached hopper and will be used for handling scrap. The 1500B Series E-Crane, model 9317, has been delivered and will be operational at the end of 2012. It will have a maximum outreach of 31.7m (104ft) and a duty cycle capacity of 14 metric tonnes (15.4 US tons) — see 3D drawing on p85.

Holcim Tuban in Indonesia recently ordered a 1500B Series E-Crane, model 9238 GA-E on rail, along with a hopper (to be made in Indonesia) for handling cement, coal, and gypsum.

Van Heyghen Recycling recently ordered its fourth E-Crane. This 2000 Series, model 21382 GA-E on rail will be operational at the end of October 2012. Two years ago, Van Heyghen installed its first 2000 Series E-Crane to offload Panamax-sized vessels at the Van Heyghen Recycling export terminal in the

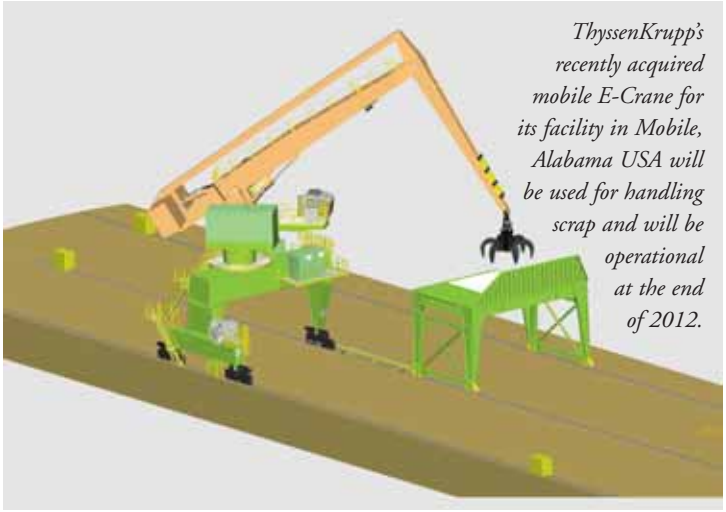
View from inside the cab of the Port of Kokkola's E-Crane.

Close-up of the rail-mounted gantry of the Port of Kokkola's E-Crane.

harbour of Ghent, Belgium. This recent order will be identical to the original 2000 Series unit (see photograph below).

In the past, the scrap loading, unloading, and stockpiling operations on the dock were carried out by contracted large rubber-tyred mobile harbour cranes. The first E-Crane purchased by Van Heyghen has proven itself for several years now and has passed numerous tests verifying reliability and hourly production rates with flying colours. The first E-Crane has realized ship loading rates that were 100% higher compared with the rubber-tyred harbour cranes. Commissioning for this E-Crane is planned for the end of October.

Savage Services USA purchased a 1500B Series, model 9317 E-Crane on crawlers earlier this year. This E-Crane will unload coke at their facility near New Orleans, Louisiana USA.



ThyssenKrupp's recently acquired mobile E-Crane for its facility in Mobile, Alabama USA will be used for handling scrap and will be operational at the end of 2012.

E-Crane: an experienced supplier of mobile harbour equipment

New and repeat customers know why E-Crane is an ideal solution for mobile harbour requirements. E-Crane's fundamental 'Equilibrium' design allows gravity to work for its customers, instead of against them, offering savings on maintenance and power costs. These economic advantages, along with high shiploading and unloading rates, are behind the cranes' popularity.

Van Heyghen Recycling has ordered its fourth E-Crane. This unit will be identical to the original 2000 Series unit.

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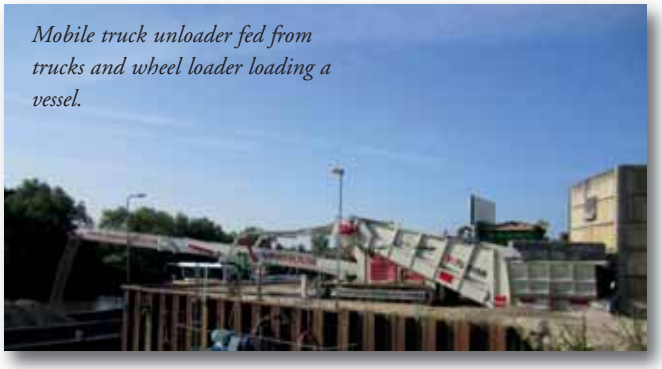
Telestack's mobile harbour equipment: the flexible solution

Mobile harbour equipment offers the operator the mobility and flexibility that is unrivalled to any fixed or semi-fixed equipment. The overwhelming trend in ports and harbours globally is to increase flexibility, productivity and efficiency, while minimizing costs, labour, fuel and emissions. The mobility factor ensures port operators and stevedores can use the equipment as required in one area of the port and move to another very easily, or move the units to storage ares for multi-purpose ports and harbours. This cannot be offered by fixed infrastructure and limits the possibilities of the application. The loading and unloading of vessels using wheeled and rail-mounted harbour cranes (MHCs) is the traditional and industry standard method for handling bulk materials in ports and inland terminals.

Mobile hopper feeding radial telescopic shiploader loading Handymax vessel at1,500tph.



Mobile truck unloader fed from trucks and wheel loader loading a vessel.

However, Telestack's range of mobile harbour equipment offer a proven alternative to traditional mobile harbour cranes/ stacker-reclaimer systems in sea ports and inland river terminals. The advantages of Telestack equipment include lower capital expenditure, lower operating costs, less reliance on human skills/training, better environmental performance, safer sites as there is less potential for human error, fewer planning requirements, significantly lower civil/infrastructure costs and excellent resale opportunities/values.

Compared with traditional mobile harbour cranes loading a vessel, Telestack solutions can offer:

- ❖ significantly less expensive systems to handle the same capacities (100–2,500tph [tonnes per hour]);
- ❖ continuous loading (MHC returns to dockside empty);
- ❖ lower operating and maintenance costs;
- ❖ elimination of double handling of material on quayside;
- ❖ does not require a skilled driver;
- ❖ better environmental performance in terms of dust, noise, emissions;
- ❖ signifcantly lower weights/better weight distribution to reduce the cost of dock constructions/civils;
- ❖ easier for operators to learn/understand the system, operate the system, troubleshoot the system;
- ❖ ease of movement around the dock / from dock to dock;
- ❖ the same solution can be used to load vessels, unload vessels, build stockpiles in the port stockyard; and
- ❖ if market conditions change, the Telestack equipment can be easily shipped globally to a variety of industries making resale values excellent.

Compared with traditional stacker reclaimer systems in the port stockyard Telestack's range of mobile stockyard solutions can offer:

- ❖ flexibility of the same piece of equipment to build stockpiles, reclaim from stockpiles, load rail wagons;
- ❖ support to existing stacker reclaimer system during breakdowns/planned maintenance whereby the Telestack solution

Mobile truck unloader fed from grab unloading a vessel.

can keep the stockyard processing;

- Telestack solutions can access hard to reach parts of stockpiles and users can reclaim from hard-to-reach areas; and
- Telestack solutions can stockpile in hard-to-reach parts of the stockyard, so operators can increase stockpile capacities.

Telestack solutions are in use in numerous ports and river terminals around the world handling a wide variety of dry bulk materials from coal, iron ore, aggregates, grains, fertilizer, wood chip and many more materials.

Mobile hopper feeder stockpiling and reclaiming coal in stockyard from wheel loaders.

Mobile truck unloading, linking, stockpiling, reclaiming and shiploading system installed in Africa.

More and more customers are turning to Telestack to solve their material handling problems and the company has a proven record of performance of supporting customers around the world before, during and after the sale.

Within its UK facility, Telestack designs, manufactures and fully assembles to test all functions, before it ships the equipment to customers. Telestack's ISO 9001:2008 status demonstrates that it has processes in place to help ensure it delivers on time and within budget of what the customer has ordered.

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Hitachi launches the new ZW250-5 wheel loader

Hitachi Construction Machinery (Europe) NV (HCME) presented the new ZW250-5 wheel loader at the Intermat exhibition which took place in April this year. After listening to feedback from European customers, Hitachi has designed the new wheel loader to satisfy their requirements for machines that offer an exceptional level of comfort, as well as excellent productivity, advanced technology, and a range of features for enhanced sustainability, safety and easy maintenance. The ZW250-5 is ideally suited for work within dry cargo stockyards, ports and terminals.

The comfort of operators was one of the most important considerations for the design of the new ZW-5 wheel loader range. The cab is more spacious than the previous range, because the heated air-suspension seat can slide further back, providing more leg room. The tilting telescopic pop-up steering column has also been repositioned to create additional space.

An improved air conditioning system has been installed that regulates the temperature inside the cab, and an optional filter is available for industrial waste job sites. Sound insulation reduces noise levels from the local environment and improves the overall user experience.

SPECIFICATIONS

	ZW250-5
Engine rated power	181kW
Operating weight	20,250–20,700kg
Bucket capacity	2.8–3.8m³
Breakout force	157kN

The ZW250-5 wheel loader complies with EU regulations on emission standards, but does not compromise on productivity. It has a 7.8-litre six-cylinder water-cooled turbo engine that enables a powerful digging performance, impressive travel speeds and excellent fuel consumption.

The new ZW-5 wheel loader is easier to manoeuvre than the previous model, which also results in higher levels of productivity.

It has two work modes, Standard and Power mode, that provide an appropriate level of performance for a particular task. In Standard mode, the engine speed is controlled, which allows for smooth and efficient acceleration during loading, regular operations and travelling on level terrain. Fuel consumption is reduced by up to 10% enhancing its environmentally friendly performance.

Power mode is useful when greater traction force is required for heavy-duty excavation and travelling uphill. By fully utilizing the engine's capability, it allows for powerful digging and quick ascent up gradual slopes.

A new clutch cut-off system allows for smooth operation when it is loading and unloading.

Furthermore, the ZW250-5 has a quick power switch, an example of its advanced technology, which boosts the power when required by changing work modes.

A new hydraulic circuit also has a positive effect on efficiency because it facilitates the combined operation of the bucket and lift arm for loading, and prioritizes the use of the bucket for unloading.

The optional auto-engine shutdown function avoids fuel wastage while the wheel loader is long idling. In addition to lowering fuel costs for the customer, this also has the advantage of enhancing the sustainable operation of the wheel loader. A further example of its sustainability is the muffler filter — it captures air pollutants, which are automatically burnt thanks to an oxidation catalyst and exhaust temperature control.

To enhance safety on the job site, the ZW250-5 offers greater visibility from the operator's seat thanks to a pillar-less windshield and large sun visor. The counterweight is also now visible from both sides of the machine. The shift-up delay to third gear makes the wheel loader safer to

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Cargotec's Siwertell dry bulk handling systems use unique enclosed screw conveyor technology to ensure that dry bulk cargo operations are environmentally-friendly and efficient. All solutions are tailor made to suit the needs in each port or terminal.

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operate in confined spaces, because it can perform excavating and unloading tasks more safely in first and second gear.

A variety of easy maintenance features have been incorporated into the design of the ZW250-5 to ensure maximum availability wherever the ZW250-5 is working. For example, the redesigned engine and radiator cover can be opened fully, providing quick and convenient access for daily inspection. The greasing points, oil levels and fuel filters can all be accessed at ground level.

For operation in dust-filled environments, the ZW-5 wheel loader can be equipped with an optional wide-pitch fin radiator to prevent clogging. Another useful feature for quick routine maintenance is the automatic reversible cooling fan, which allows for easy cleaning of the radiator with its one-minute automatic reverse rotation every 30 operating minutes.

In moderate working conditions, this can be manually operated for cleaning as necessary.

Wilbert Blom, Manager, Sales and Marketing Division, HCME, is looking forward to the reaction of the European market to the launch of the ZW250-5. "We believe that the new wheel loader not only meets our customers' expectations of high quality and reliability, but also provides a safe working environment, a comfortable cab with easy-to-use controls, and overall, a machine that responds quickly and precisely."

Loader proves its worth at pulp mill

The Hitachi ZW250 wheel loader has proved to be a reliable and highly productive performer at a pulp mill in Norway. After three years of operation at Södra Cell Folla, the machine has 15,500 working hours and 86,000km on the clock. It has helped the company, based in Verran, to reduce fuel consumption by up to 25 per cent.

Fitted with a 15 cubic metre bucket, the wheel loader transports wood pellets and sawdust around the mill in three shifts per day, seven days a week, and can travel up to 180km in 24 hours. The mill produces chemi-thermomechanical pulp for manufacturing milk cartons, tissue and printing paper. It is distributed to customers around the world, including Europe and the Far East.

Södra Cell Folla took delivery of the ZW250, its first Hitachi machine, after testing four leading brands. It was supplied by NASTA, the official Hitachi dealer in Norway, in February 2009 and is supported by the dealer's service contract.

Kjell Sørensen, who is responsible for wheel loader sales at NASTA, says: "The most important benefit of the ZW250 wheel loader for this customer is the 20–25% reduction in fuel consumption, compared to its previous model. Another significant benefit is the optional limited slip differential, which delivers effective driving force to both wheels for greater traction on snow-covered roads."

Tore Andreas Norum, a supervisor and operator at Södra Cell Folla, adds: "We use studded tyres and chains during winter — we can't sprinkle sand on the ground because it might contaminate the production process. The limited slip differential is important because it enhances traction and ensures the wheel loader keeps working in difficult conditions. The ZW250's tyres are also extremely durable.

"We are delighted with the performance of the ZW250 — it's a powerful, fast machine and it never stops. After three years, it seems as good as new, which is a good indicator of its excellent build quality."

NKS speeds up storage operations with RDS on-board weighing

North Killingholme Storage (NKS) provides one-stop storage and logistical solutions, including Customs-approved warehousing for bulk products. Based in the UK in North Lincolnshire, near Immingham docks, NKS receives a wide variety of products from across the world, which are stored and then screened to the customer's requirements before being sent out again.

The total capacity of the NKS site is over 250,000ft and around a million tonnes of different product is turned around each year. To help speed up this operation, NKS has invested in two Loadmaster 9000i onboard weighing systems from RDS North Eastern Ltd for use on its two Volvo L120F wheeled loaders.

RDS Technology manufactures a wide range of weighing systems suitable for all types of loader in the material handling industry including for use on wheeled loaders used in open cast mining. The Loadmaster 9000i is trade-approved for the commercial sale of goods to MID Class Y(b) and OIML Class R51 & R76 standards and at NKS is currently used in conjunction with a weighbridge, to ensure accurate loading, reducing the time trucks spend on site, increasing accountability and to speed up the complete operation.

Through use of the telemetry link option in the Loadmaster, NKS is looking to phase out the weighbridge and simply send load data direct from the loader to the office where a printed ticket will be automatically produced, further improving operational productivity.

NKS has used RDS weighing systems for over 20 years as Shaun Dannatt, Warehouse Manager at NKS explains, "We have received nothing but excellent service and product support from RDS North Eastern, who have always responded quickly and effectively to any question or support issue. The loader operators get on well with the RDS system and in such an operation as we have here it certainly helps our aim of achieving a quick vehicle turn around."

Loadmaster 9000i from RDS – on-board weighing scale for all types of loaders.

Mobile Sennebogen equipment widely used in today's ports

Since it was founded in 1952, the family company Sennebogen has been developing and producing cranes, telescopic cranes, special machinery, materials loaders and hydraulic earth moving machinery, including mobile equipment for use in harbours.

Numerous technical innovations and continuous product improvements have ensured that the company has a solid reputation in many of today's market sectors in the construction industry and industrial material loading.

The name of Sennebogen stands for reliable, finely engineered equipment. Sennebogen produces machinery to the highest quality level at its Straubing and Wackersdorf sites in Germany. Products are distributed worldwide through an extensive dealer network. The broad product range encompasses complete series of rope excavators, cranes, telescopic cranes, mobile telescopic cranes, material loaders and special carrying machinery. The development and design of all this machinery is focused on the needs of the customer. Sennebogen supplies flexible standard models as well as individual customized and specialist machinery, which it develops in conjunction with its customers.

Sennebogen supports its customers with a comprehensive service package to ensure that the machinery is used optimally and efficiently.

On the road with the Sennebogen 835 E-series

A machine only really shows what it can do when used in practice. Long development and testing processes culminate in the start of series production and the machine has to prove its worth to the customer. Hardly any other working environment is more demanding than the high requirements in port material handling. A new Sennebogen 835 E was one of the first machines to begin operation at Elzinga in Holland in the middle of 2012.

With 12 Sennebogen machines currently in operation, the Elzinga Group is not only one of the biggest customers in Holland, but has also been a partner for several new innovations at Sennebogen. The very first port materials handling machine delivered to Holland, a 835 B-series with crawler chassis, was supplied to Elzinga and it still running reliably today with over 16,000 operating hours on the clock. The new Sennebogen 835 E, which has been proving its worth at Elzinga since April 2012, has worked significantly fewer operating hours. Drivers and managers at Elzinga were some of the first customers to drive the machine. Elzinga handles around three million tonnes of scrap and piece goods each year at Eemshaven, north-east Holland. Mainly sand and gravel, as well as round timber, grain and waste are unloaded from and loaded onto the incoming ships each day.

'Time is money' has never been truer than at the port. In Eemshaven, the hull of the ship lies up to 6 metres below the quay wall at low tide — a major challenge for any machine driver. High loads and long ranges are required, combined with quick handling speeds. The potential afforded by the new machine is highlighted once again when unloading goods on trucks. The drivers describe their first impressions of the machine as 'impressively fast' and 'extremely quiet'. "With the new Sennebogen 835 E, we can achieve three cycles per minute in ship materials handling. This makes the machine significantly

A new Sennebogen 835 E in operation at Elzinga in Holland. "We are extremely satisfied with our Sennebogen machines. The 835 E surpasses its predecessor in both performance and efficiency. We are proud to be one of the first to drive the machine in practice," Eke Elzinga, manager and owner

A new Sennebogen 860M unloading cargo at the port in Tiel, Holland. "We chose the Sennebogen 860 because the machine makes a good impression with regard to structure and quality — boom, upper carriage, undercarriage or slewing ring — everything is sturdy and easy to use. We are completely happy with our first Sennebogen." Marco and René Hartemann, managers at Gebr. Harteman Holding B.V.

faster than its predecessor," highlights manager Eke Elzinga. According to Elzinga, between two and 2.5 cycles were previously possible depending on the situation — a direct increase in performance of at least 20%. In Eemshaven, there is now a direct comparison — the predecessor model and the new 835 E. It is the simple things that make a difference and are noticeable immediately without elaborate measuring equipment. Driver Andries Vriezema confirms: "You notice the change in noise immediately. The machine is much quieter both inside and outside." The running costs are important to every operator, and Elzinga is extremely satisfied in this respect too. It reports lower consumption with increased performance. The Green Efficiency Technology also guarantees increased efficiency and efficient technology. After many years of experience, the company is completely convinced of the reliability and high quality of the Sennebogen machines. A further benefit while on the move: the Sennebogen 835 and be transported easily on a low-loader thanks to its compact dimensions. So it doesn't take long for the new machines to reach customers all over the world. Elzinga is just one of many interested companies.

The Sennebogen 860M at the port in Tiel, Holland.

A Sennebogen 860 M does its job at TLC

A new Sennebogen 860M recently began unloading incoming ships at the port in Tiel, Holland. Located on the Amsterdam–Rhine canal, Tielse Loswal Combinat, a subsidiary of Gebrüder Hartemann Holding B.V. and K3 Industriezand B.V. carries out bulk goods handling at the site.

As the ships increase in size, ever more powerful and high-performance machines are needed. That was why a material handling machine from Sennebogen was chosen for the Tiel site. Sand and gravel in particular are handled there. The 860M is equipped with a 364hp Cummins diesel engine, a triple-circuit fan system and is particularly easy to service thanks to the centrally accessible measuring and lubrication points. Particularly important for port operations, the 860 is also equipped with a 2.7-metre hydraulic elevating maXcab comfort cab. This cab offers optimal overview when unloading the ships, combined with cameras for improved all-round visibility and a rail all around the upper carriage guaranteeing the highest possible safety. The responsible Sennebogen sales partner Kuiken N.V recently supplied the machine and acts as a competent contact partner on-site.

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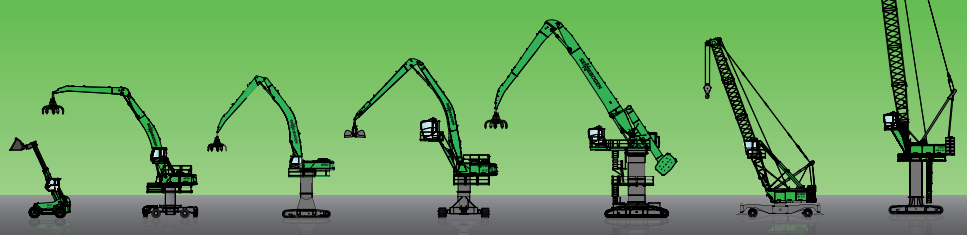

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Caterpillar partners with Demlone to create high-lift log handler

Caterpillar and Demlone have partnered to create a high-lift log handler based on the Cat® 980 wheel loader and a log grapple and front designed and built by Demlone. The new log handler complements the extensive line of Cat Forestry machines and enables Cat dealers to offer a total solution for material handling needs around the wood yard and in port situations. The Demlone DLH100k Log Handler will be commercially available this month (September) this year.

Demlone has extensive design experience in engineering steel fabrications and hydraulic systems. As a result, Demlone, a wholly owned subsidiary of the Vensys Group, has partnered with Caterpillar since 2010 in the design and development of ultra high demolition machines based on Cat excavators. For the new log handler, Caterpillar will produce the carrier, based on the proven 980 wheel loader platform, and Demlone will provide the lift structures, work tool and lift controls for this purpose-built machine.

Both Caterpillar and Demlone warranties cover the DLH100k Log Handler. The carrier is covered by a Caterpillar warranty with the same terms as a standard Cat machine. The front parts of the machine are covered by a Demlone warranty offering similar terms. The Demlone DLH100k is fully supported by Cat dealers.

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The development of Liebherr mobile harbour cranes not only follows industry related matters like increased turnover, but also reflects prevailing political guidelines concerning health and environment. Around the globe, an increasing number of ports are focusing on environmental issues. One of the major environmental concerns is noise pollution. Noise is one of the most common occupational health hazards in heavy industrial and manufacturing environments, as well as in ports. To prevent adverse outcomes of noise exposure, noise levels should be reduced to acceptable levels. The best method of noise reduction is to use engineering modifications to the noise source itself. In 2011, the LHM Noise-Control Initiative was implemented and is a major step in this direction.

To seek the greatest environmental benefit with its product range the design process is co-determined by fundamental thoughts on how to achieve a notable noise reduction.

For the first time the concept of elastic suspension of components was realized in port cranes with two times up to 104-tonne heavy duty winches, withstanding the daily tasks of dedicated bulk handling.

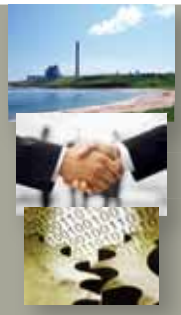
In order to minimize structure-borne noise level, the number of bulkhead plates in the LHM 550 is kept to a minimum. Isolated pipes and hoses ensure further noise reduction.

In fact, all these measures more than halve the noise level of new generation Liebherr mobile harbour cranes, in other words two LHM 550 make less noise than a single crane of their predecessor model. Even further noise reduction is possible if the cranes are equipped with an optional 'Attenuation Package'. This option includes the additional isolation of the slewing platform, which results in further reduction of noise pollution by approximately 50%. In close proximity to the customer, Liebherr will continue to explore new ways to enhance its noise abatement programmes for the entire mobile harbour crane range.

In the first six months of the year, twenty-two LHM 550 were delivered worldwide, quickly catching up with 28 deliveries achieved throughout 2011. In addition to such remarkable delivery figures, well-filled order books emphasize high demand and market acceptance of this innovative multipurpose crane.

Regarding geographical distribution Africa takes the pole position, accounting for eleven LHM 550. This underlines the on-going economic development in several African countries, which stimulates demand for highly competitive and top quality products. 2012 supplies also include Liebherr's one hundredth mobile harbour crane delivery to Africa. The crane is now part of APM Terminals Apapa's fleet which already comprises nine heavy-duty LHMs.

Five LHM 550 were destined for the European market,



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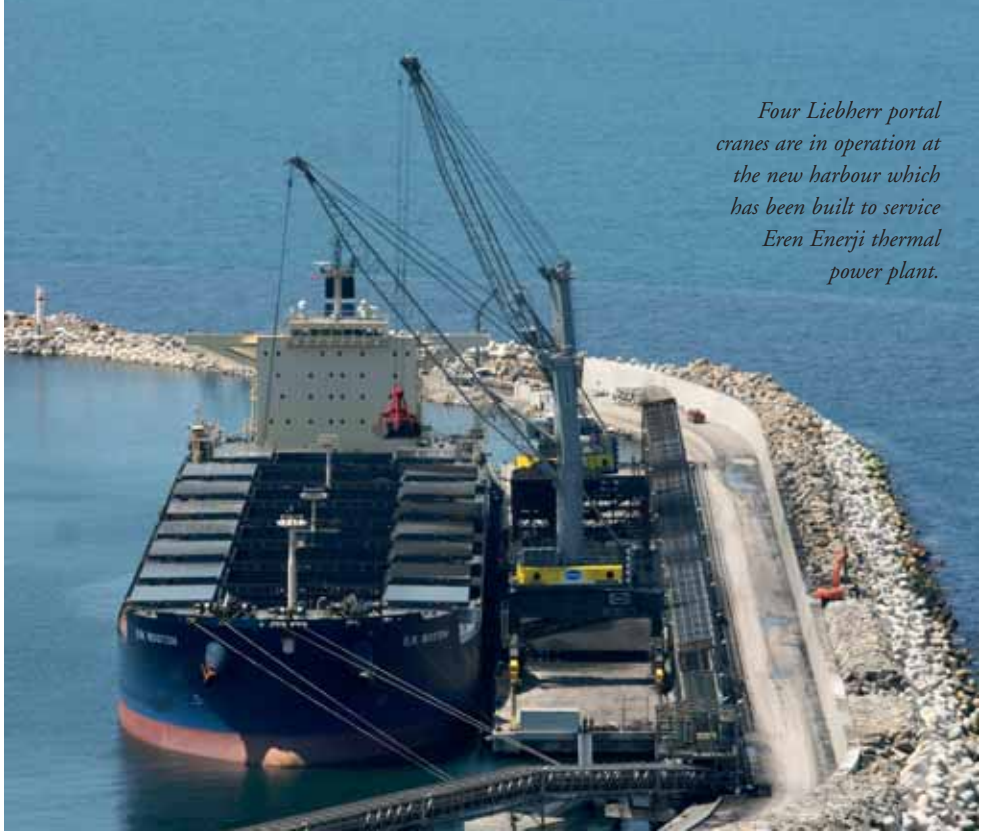

Four Liebherr portal cranes are in operation at the new harbour which has been built to service Eren Enerji thermal power plant.

including a crane for Nova & Hesse-Noord Natie Stevedoring (NHS). NHS is a Belgian stevedoring company specialized in conventional cargo handling which also operates the predecessor model LHM 500. The new crane provides an additional economical solution for handling coils, slabs and all kind of steel.

Three cranes were delivered to customers in Latin America. Amongst others, Terminal Zárate in Argentina opted for one LHM 550 for container handling supporting and backing up the existing STS gantry cranes. Two LHM 550 boost cargo handling in India and one crane was supplied to North America.

The majority of the LHM 550s delivered this year are equipped with two winches and are dedicated to bulk operation. Similar to 2011, the first and very successful year after market introduction, the LHM 550 is again the most popular model.

This highlights the competitiveness of Liebherr's new generation of mobile harbour cranes.

Regarding bulk handling, Liebherr mobile harbour cranes are mighty tools. In July 2011, Indian Krishnapatnam Port set a record for unloading coal with mobile harbour cranes. Liebherr's state-of-the-art machines discharged 106,171 tonnes of steam coal in just 24 hours. This record surpassed Krishnapatnam's previous record of discharging 95,528 tonnes in 24 hours.

In April 2012 Adani Petronet Dahej Port Pvt. Ltd. (APPPL) broke their old record for coal discharging as well. A total of 60,077 tonnes of coal were unloaded in just 24 hours with two LPS 600, the award winning model in the category 'Crane of the Year' at the IBJ Awards 2011.

Eren Enerji is a thermal power plant in Zonguldak, Turkey, which started operation in July 2010. In order to handle the large amount of coal required, a new harbour has been built at the Black Sea coast, where four Liebherr portal cranes are in operation. Two of them are type LPS 600 and are able to unload up to 2,000 tonnes of coal per hour. Harbour director Ali Kölemenoglu states that "Liebherr cranes are very efficient and reliable for our port availability. In conclusion, we are very satisfied with the overall performance of this equipment."

To minimize exhaust gas pollution, all high performance bulk handling cranes mentioned above are equipped with Liebherr's E-Drive. This alternative drive system allows for eco-friendly land-based power supply.

Unloading coal for the Eren Enerji thermal power plant.

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VIGAN's on the move

VIGAN mobile portable unloaders operating on the deck of a bulk vessel.

Since 1967, VIGAN Engineering S.A. has been designing and manufacturing portable pneumatic unloaders, commonly called 'mobiles' or 'grain pumps':

- **Model T100** or **T120:** working in 'suck only', 'suck & blow' or 'blow only' mode, their capacity ranges from 100tph (tonnes per hour) to 170tph, depending on configuration and product transported; and
- **the high-capacity model T200** is able to unload at rates of up to 250tph in sucking-only mode, without producing any dust emissions. Products are discharged by gravity, optionally through an integrated belt conveyor. It is equipped with an automatic self-cleaning filter with air-compressor.

These mobile portable unloaders are particularly adaptable, as they can be put on a ship's deck (see picture above) or on quay: directly on the ground (see picture, right), on a frame (see pxx) or on hopper (see p107). With a wide range of accessories available, they can be customized to meet customer's needs for cargo handling in many different working configurations: from vessels to trucks/railcars/conveyors/silos or warehouses and inversely to load ships, but also for transshipment for instance.

Their compact dimensions (≈ 4 x 4m without booms) and low weight (≈ from 5 to 15 tonnes depending on the model and accessories) make them among the most flexible of all grain handling equipment.

For higher capacity requirements (from 200tph up to 800tph) and annual throughput (over 250,000 tonnes per year), VIGAN designs and manufactures pneumatic continuous ship unloaders (CSUs) on gantries, called 'NIV' models (see p109). Self-propelled on tyres or rails, they can be powered by diesel engine or electrical motors with cable reels. The most frequent combinations found are either rail-mounted/electrical/discharging

VIGAN mobile unloading unit on the ground on the quay.

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VIGAN mobile unloading unit mounted on a frame.

into quay conveyors to ensure a regular movement parallel to the quay conveyor, or on tires/diesel/into trucks for ports which are not equipped with rails and conveyors. Each gantry is designed bespoke according to the port requirements (dimensions, wheel load and/or rail span, etc.). Boom length, piping system diameter and length, airlock size volume, filter size and number of turbo blowers all determine the expected unloading rate. Many optional devices are available.

The mobility on the dock alongside the boat allows highly efficient unloading of vessels up to Panamax size, following the typical required unloading chart of the holds.

Furthermore, VIGAN's range of equipment also includes a mobile mechanical continuous ship unloader called 'SIMPORTER' designed to meet very high discharging rates up to 1,500tph (metric). It is particularly suitable for large bulk carriers up to post-Panamax. The twin-belt SIMPORTER technology offers major benefits: efficiency, cost-effectiveness (minimum energy consumption, reduced operational and maintenance cost) and environment-friendly qualities (minimum noise, dust control…).

VIGAN mobile unloading unit fitted on a hopper.




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Gantry-mounted 'NIV' CSU from VIGAN.

Beside the variety of mobile unloading equipment, VIGAN's ship loaders (see picture, bottom), designed for almost any kind of products in bulk with a density from 0.2 to 1.8, are suitable for all size of barges or vessels.

The loading is achieved mechanically: for example, cargo can be transported into the loading boom by integrated belt (eventually with a travelling movement) or chain conveyor and discharged by gravity into the ship hold thanks to a telescopic loading chute. The loading boom is usually mounted on a slewing ring. The loading structure can be mounted on a self-propelled gantry on rails or on rubber wheels.

VIGAN has also gained significant expertise in other mobile harbour equipment design such as mobile hoppers/ bagging lines, like for the grain port terminal of Djibouti (see pictures left).

Originally, all VIGAN equipment was designed to convey dry agribulk cargo such as: all types of cereals, beans, seeds, and most of the raw materials for animal feeding. The company's units have also proved to be suitable for handling fragile products (malt, cocoa beans etc.), certain chemicals (dense soda ash, alumina, urea, etc.), as well as many products in pellet form, such as wood pellets for instance.

VIGAN's ship loaders are suitable for all size of barges or vessels.

Dust-free mobile hoppers from Scorpio

Scorpio mobile hoppers (capacities range from 30m³ to 120m³) are suitable for receiving grab unloaded material from large dry bulk carriers carrying powdered materials like coal, iron ore, alumina, rock phosphate, grain, fertilizer and so forth.

The hopper can discharge to a belt conveyor or to trucks parked below. Suitable discharge arrangement can be provided which can also be controlled electrically along with weighing. The equipment consists of a hopper in mild steel construction which is supported on four vertical corners by running gear. Four bogies are independently driven and are synchronized.

The entire unit is built with low centre of gravity so that the unit can be towed effortlessly by suitable prime movers.

The hopper's dimensions are 6m x 6m or 8m x 8m (approximately) at the top, with an approximate overall height of 14m to 20m. The hopper is supported by horizontal built-up steel sections which in turn are supported on vertical columns.

Suitable platforms, handrails and ladders are provided on the main structure and near the top of the hopper.

An electrical control panel enables direct operator control of the various functions.

The company can also supply hoppers with built-in dust filters and special one way baffles for dusty cargo.

Safety

Scorpio mobile hoppers comply fully with the safety requirements of port operations. The external surface protection is 250 microns DFT marine paint to prevent rusting of the steel parts. Also the structural components are designed for a safety factor of 2.5.

Page Macrae Engineering supplies hoppers and grabs to Australian stevedore

The 'complete package': one of Page Macrae's diesel hydraulic grabs unloading a ship into the company's dust controlled hopper.

Innovative New Zealand bulk cargo handling equipment designer and manufacturer, Page Macrae Engineering, has completed an order for two dust-controlled hoppers and two diesel hydraulic grabs for Qube Ports & Bulk.

Qube, previously known as POAGS, is a renowned supplier of stevedoring logistics and port management services in Australia. The $1.5 million package has been commissioned at the Western Australian port of Bunbury, a hub for worldwide distribution of products from the country's south-west.

Cargo Handling Equipment manager Bruce Ennis says the order package is the second from Qube and reflects the success of a previous order for three grabs and two discharge hoppers supplied two years ago to Qube's East Arm Wharf operation in Darwin, Northern Australia.

The Darwin bulk materials handling facility can cater for Panamax-size vessels and is used to export iron ore, manganese, copper concentrate and phosphate rock. The grab and hopper acquisition has enabled the operation to further improve handling efficiencies and ship turnaround times, meeting ever increasing environmental compliance standards for dust emission.

Ennis recently completed a two-year follow up to check on the equipment supplied to Darwin, and says it is working extremely well. "The owners are very happy with its performance."

Page Macrae's PMGrabs, a division of the company's cargo handling department, has experienced strong bulk grab sales growth over the past few years. Grabs have been supplied to Southern Cross Stevedoring, New Zealand (repeat order), ISO International Stevedoring Operations, New Zealand (repeat order), Northern Stevedoring Services, Australia (repeat order) and to the Koniambo nickel mine project in New Caledonia. In August 2012 PMGrabs supplied three of its latest designed chain bulk grabs to Qube's South Australia operation, along with an order for a bulk grab being confirmed by new customer Nyrstar, Hobart, Australia.

With exports of iron ore, bauxite and coal and other minerals enjoying a massive boom, Australia has become the major focus for the Tauranga, Bay of Plenty company, whose versatile grabs can be used to handle a large range of products including fertilizers, clinker, palm kernel, grains, soda ash, mineral concentrates and sand.

Page Macrae's aptitude for innovation in the bulk cargo equipment field and the market-leading quality and durability of its products was underlined in 2010 when the company won a premium award in a major Australian competition.

The 55-year-old company took the Innovative Technology category at the annual Australian Bulk Handling Awards in Brisbane for its diesel-hydraulic grabs, amid stiff competition from the world's leading manufacturers.

Operated via remote control by a crane operator, these grabs are designed to discharge large volumes of bulk material from

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ships' holds. They can carry up to 20 tonnes of material at a time, discharging hundreds of tonnes per hour and enabling stevedores and shipping companies to make significant savings in time and money, says Ennis.

Key to their success is the fact that they incorporate special features to control spillage, noise and dust emissions, while still providing operators with significant gains in productivity.

The company's range of wire or chain mechanical grabs provides advantages including low operating costs, exceptional productivity and high digging capacity, also featuring a unique overlapping blade seal that seals the material being transported, preventing leakage.

Page Macrae's diesel/hydraulic grabs excel in situations demanding low operating height and minimum noise emissions, and can be an ideal solution for working in difficult discharge situations. Like the wire and chain grabs, they contain features designed to reduce the risk of environmental impact from product spills, while producing low dust emissions.

Ennis says the busy division works closely with clients in coming up with the right cargo handling solution for their needs. That innovative 'can do' approach also helps Page Macrae Engineering stay competitive in a fiercely contested global market.

Cargo handling equipment designed and manufactured entirely at the company's premises includes log lifters, container spreaders, container loading equipment, over-height spreaders, spreader beams, remote and manual release multilifters, lifting cages and lifting beams.

Highly efficient dust emission control is also a feature of the company's range of discharge hoppers, which offer ship-to-hopper spillage recovery, dust controlled inflow chutes and a choice of onboard or separate dust collection.

With strict environmental controls now in place at ports in New Zealand, Australia and around the world, Page Macrae Engineering has refined its hopper design with a totally new product that integrates the dust collection system with the hopper. Until now, the two units have been separate, with the dust collection system having to be moved to wherever the hopper was positioned on the wharf.

"It's a new evolution in the line of equipment we produce and it completes our dust controlled hopper package," Ennis says. The operation is particularly adept at tailoring equipment to suit specific needs, which sometimes means designing and manufacturing custom discharge systems, he says.

"Our clients don't always know what they want, but they certainly do know what outcome they require. We tailor-make solutions for the outcomes they're after and provide any advice or technical support they might need along the way.

"We are particularly proud of the strong relationships we have built with all of our clients, including providing a 24 hour service and can dispatch service personnel as required." DCi

Page Macrae's PMGrabs supplied a set of mechanical grabs to Southern Cross Stevedoring, seen here in action at the Port of Napier, New Zealand.

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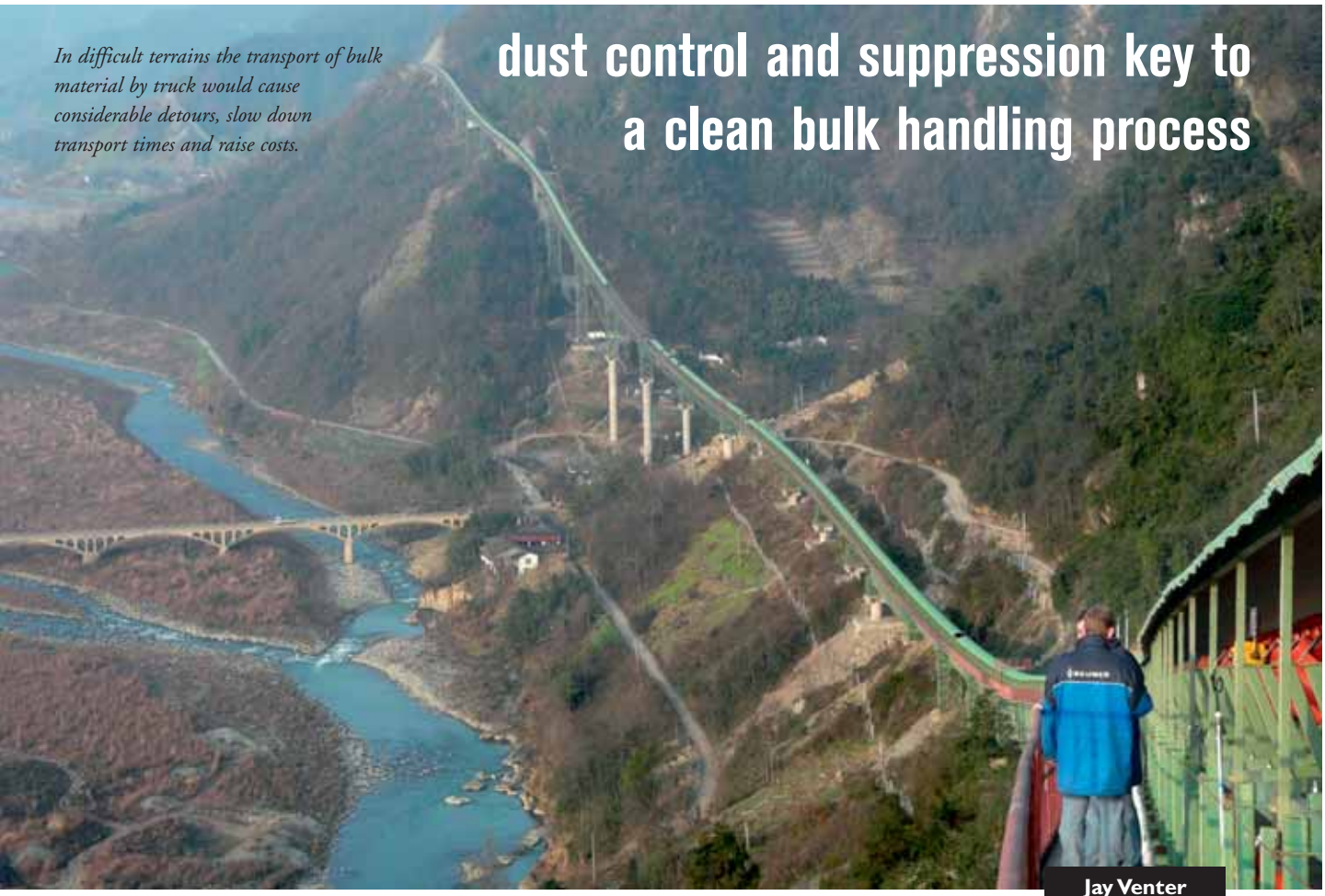


In difficult terrains the transport of bulk material by truck would cause considerable detours, slow down transport times and raise costs.

Jay Venter

Dust-tight conveying: a 'greener' option than truck transport

Technical report from the Beumer Group: sustainability is key to success

Modern cropping technologies require systems capable of transporting bulk materials quickly and efficiently from the quarry to the destination, and through rough terrain as well. Often trucks are used for this purpose. Depending on the nature of the terrain, however, trucks rapidly reach their limits. For example, they need well-developed roads. The costs arising from construction, maintenance and possible extension are not insignificant. The emissions caused by truck traffic are undoubtedly high, both with regard to toxic substances and to noise and dust. Beumer develops and installs curved belt conveying systems, which ensure efficient and environmentally safe transport also in rough territories. A comparison follows.

Belt conveyor or truck? This question was raised by Asia Cement Group, a large building material manufacturer headquarter in Taipeh (Taiwan): approximately 30km separate the quarry from the newly constructed plant. The requirements were clearly defined: the limestone has to be transported rapidly to the plant, which is provided with two kiln lines each having a daily output of 4,200 tonnes. For this, Asia Cement Group needs 14,000 tonnes of raw material each day. The building material manufacturer had the option of choosing between transport by truck or belt conveying system. Due to the fact that the terrain consists of mountains and bamboo woodland, the trucks would have had to drive mostly via public roads. This would have caused detours, slowed down transport times and raised costs. Asia Cement chose the troughed belt conveyor of the intralogistics expert Beumer as the cost-efficient solution.

Considering ecological, economic and social aspects

Several companies have to take this decision if they intend to transport large quantities of bulk material such as ore, coal, gravel or sand from the quarry, the mine or the sand pit to the plant or to the harbour as cost-efficiently and quickly as possible. For this purpose, trucks present many disadvantages. To build roads is expensive and implies considerable landscape changes, especially building roads dimensioned for dump trucks which require a width of approximately 30 metres. Moreover, roads must be maintained. Operational costs and emissions caused by trucks are to be added as well — including fuel consumption and personnel costs, as well as noise and dust. The more raw materials have to be transported from the quarry to the plant, the more truck loads have to be undertaken.

Belt conveyors — an efficient alternative

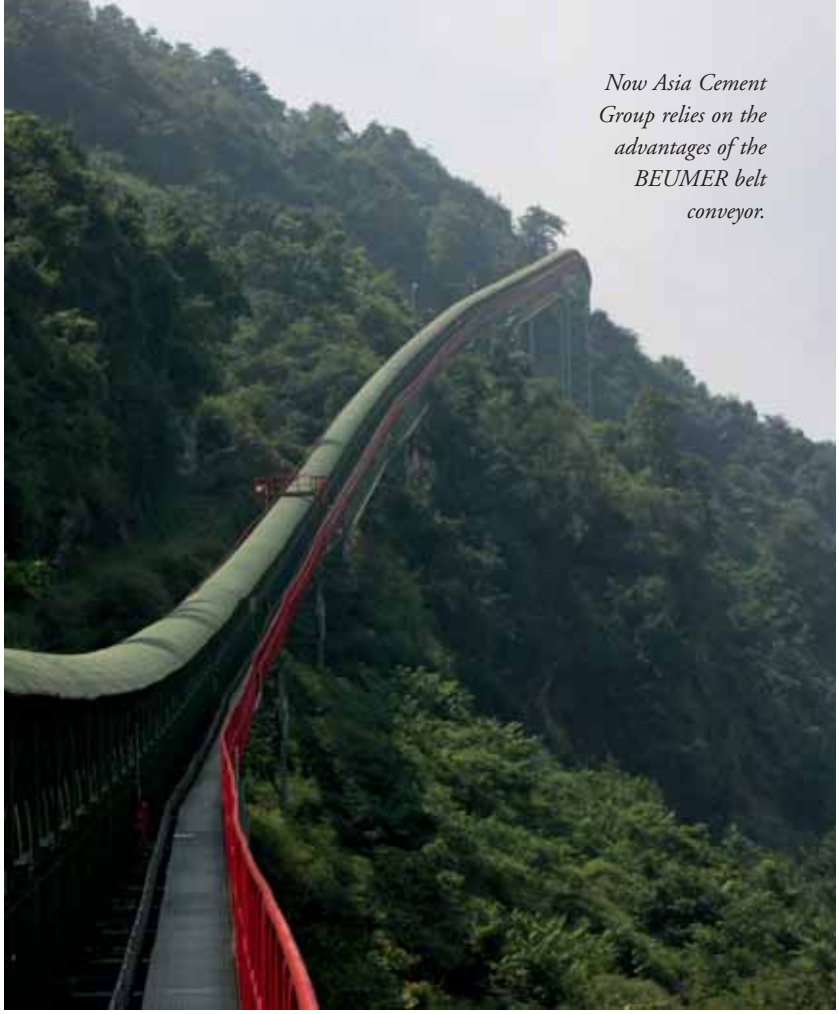
Therefore, in practice, companies must take a closer look at the alternatives. With its belt conveyors, Beumer provides an economical and environmentally sound solution for the transport of bulk material and piece goods. The belt conveyors

are able to navigate long distances, high angles of inclination and tight curve radii, and can be adapted individually to the respective application and topography. The landscape changes are minimal and meet even the highest environmental protection requirements. Durable conveyor belts guaranteeing tensile strength are used. Beumer makes use of different dimensioning programmes to determine the ideal belt design. In this way, tractive forces or loads arising by acceleration and delay also can be calculated — and this always considering the net weight of the belt and material transported. Possible curve radii are also calculated with this programme. Beumer provides preliminary

The advantages of the Pipe Conveyor are, for example, the protection of the material from the elements and protection of the environment by means of dust-free transportation.

feasibility studies in this regard. Furthermore, the belt position in the corresponding curve radius is pre-calculated for empty and loaded belts thus enabling the optimal adaptation of the belt conveyors to the local environment. Due to their slight routing, the belt conveying systems negotiate rugged terrain and other obstacles, such as rivers, streets, buildings or train tracks. Horizontal and vertical curves can even overlap. Except for support columns and steel structures that need to be constructed, the landscape is not subject to changes. Companies save significant costs, including those typically arising for example in connection with earthwork, and even in difficult environments the construction work for these systems is minimal. In addition, belt conveyors represent an environmentally friendly solution, which can therefore be adopted also in nature reserves.

The direct routing enables a considerably faster material transport than by truck. In addition, fewer personnel is required for operating the belt conveyors. A further advantage related to the use of belt conveyors instead of trucks and implying additional cost saving is the minor energy consumption that at the same time reduces the CO_2-emissions. Depending on the project, belt conveying systems require up to 90 % less primary energy than comparable truck transports. A concrete project-related comparison discloses that, merely due to the consumption of diesel fuel, trucks require a specific primary energy of 11.4kWh for each tonne of transported material. In contrast, the belt conveying



Now Asia Cement Group relies on the advantages of the BEUMER belt conveyor.

system that was constructed later requires only 1.44kWh. If, as in this case, 7.5mt (million tonnes) of raw material are transported annually, the use of belt conveyors means a total saving of 74 million kWh per year. This corresponds to an energy consumption of more than 20,000 single-family houses. Solely by saving diesel fuel, the operational costs of the company are reduced by more than €5.5 million a year.

Environmentally friendly transport

Depending on the requirement, Beumer provides open troughed belt conveyors for higher throughput, larger mass flows as well as larger curve radii, and closed pipe conveyors for products that need to be protected against environmental stress. These are used also in topographically challenging terrain that requires small curve radii and large angles of inclination. In order to minimize dust formation during transport, the open troughed belt conveyors can be covered or encased. This sealing ensures dust-free transport.

However, things are completely different for trucks: considerable dust quantities arise during transport. The dust is dispersed on the loading space and causes substantial environmental pollution. In order to minimize this, roads are for example sprinkled with water. This represents not only an immense expenditure, but in regions suffering water shortages this process is simply impossible. In addition this water — mixed with oil, tyre abrasion or bound contaminants — then flows back into the ground water.

Belt conveyors are additionally provided with environmentally safe electric drives and low-energy belts. Therefore, especially in times of climate change and increasing greenhouse gas emissions they are considered a 'preferred option'. The motors — which, depending on the topography are run in motor-driven and regeneration mode — are mostly adjustable. This permits an optimum load distribution on the drive unit in different operating conditions. If the belt conveying system conveys downhill, the system works in generative operation. The generated electric energy is fed to the mains by a regenerative feedback unit. This way the operating costs of the complete system can be further reduced.

A further advantage of the belt conveying system is the low noise emission. They operate quietly and meet also strict environmental regulations. Specific idlers, noise-reduced bearings and low-noise electric drives make sure that belt conveyors are so quiet that they are often the only alternative to material transport in nature reserves or in inhabited areas. Dump trucks, on the other hand, generate a very high level of noise. A 180-tonne truck can generate a noise level of up to 123dB and is therefore approximately as loud as an alarm siren. Compared with a belt conveying system this, noise is seven to ten times louder. Furthermore, there is the noise generated while loading and unloading the trucks.

The Beumer Group

The Beumer Group is an international manufacturer in the manufacture of intralogistics for conveying, loading, palletizing, packaging, sortation and distribution technology. Together with Crisplant a/s and Enexco Teknologies India Limited, the Beumer Group employs about 3,200 people and achieves an annual turnover of about €500 million EUR.

Dust emission control with NEUERO's dust suppression head

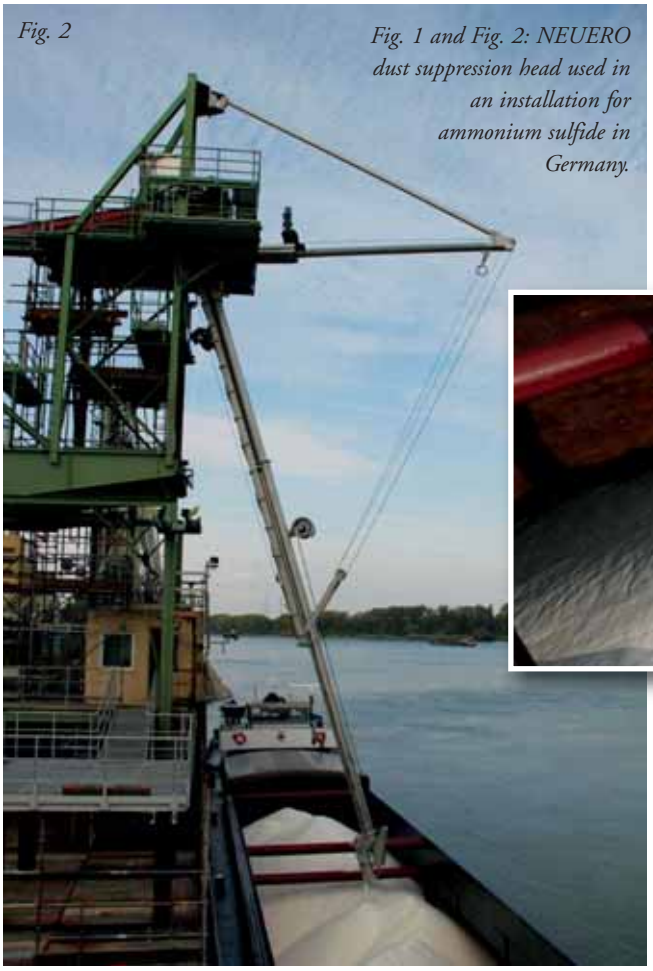


Fig. 2

Fig. 1 and Fig. 2: NEUERO dust suppression head used in an installation for ammonium sulfide in Germany.

Fig. 1

Function

NEUERO's dust suppression head's functioning is relatively simple, has low material speed and constant material column. The head, by opening and closing, only allows material to flow slowly, not letting the air carry the dust to the atmosphere. The front valve opens when a material column is built and closes it when the material column is reduced. The software can be adapted by different products optimizing the system.

Fig.5 Example of past loading spouts.

Examples

Depicted in Fig. 1 and Fig. 2 is an installation for ammonium sulphide in Germany. The parts in contact with the product are made of stainless steel.

The NEUERO dust suppression head is only applicable in new installations and also in existing installations. Below is the installation at Nibulon Grain Terminal in Nikolayev – Ukraine.

The same system, but in a different size, Fig. 3 and Fig. 4 shows 800 tonnes per hour loading spouts with 40m-long reach.

They were in the past as shown in Fig. 5, but the dust and wear was high. The combination of dust suppression and pipes made of Hardox 450 ensures the longevity of the loading pipes.

Fig.3 (above) and Fig.4 (below) shows 800tph loading spouts with 40m long reach.

Tower units extend reach, improve aiming of dust suppression equipment

One of the major manufacturers of open area dust suppression has announced the introduction of a new component in its arsenal of custom solutions: a family of tower mounts for the company's atomized misting equipment, which extends droplet hang time and range, while providing more precise aiming capability.

Complementing a product line that already includes wheeled carriages and skid mounts, by delivering millions of 50–200 micron droplets per minute from above dust-generating activities, tower-mounted units help commercial operations achieve superior particle control and prevent dust from migrating off-site.

The new tower mounts extend droplet hang time and range of DustBoss™ atomized misting equipment.

Dust Control Technology developed the new tower designs specifically to address ongoing operations that generate dust in fixed locations. They are well suited for slag handling, aggregate processing, recycling operations and coal handling.

"The tower mounts can deliver a focused mist to the areas where dust is created," commented DCT general manager Laura Stiverson. "This allows the DustBoss™ units to concentrate virtually their entire output directly to the source of the problem." Designed to withstand wind loads of at least 100mph (miles per hour), the towers are constructed of carbon steel pipe, hot dip galvanized to resist corrosion.

To further customize a dust solution for individual customer sites and conditions, any of the fan-driven units can be modified to address specific particle sizes or service environments. "In some applications such as slag handling, the dust particles can be so small that they are more effectively managed with smaller droplets," Stiverson observed. "In other situations, reduced flow may be preferred to protect moisture-sensitive materials."

In either case, the company can apply its Variable Particle Sizing (VPS) technology to match the dust to the most appropriate droplet size and water delivery. "The most effective suppression takes place when the dust particles and droplets are roughly the same size," she reminded.

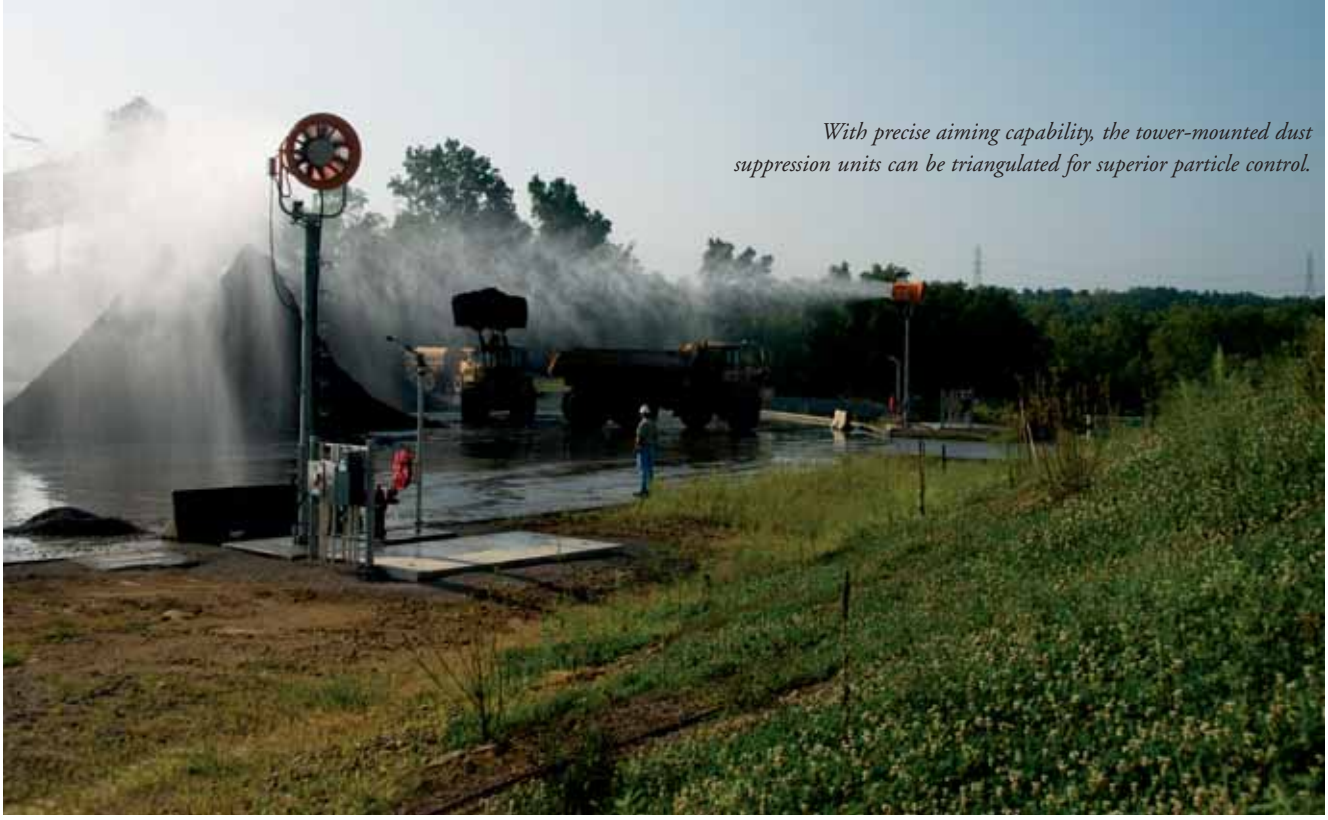
Three tower sizes are currently available. The 6" base tube is generally employed on tower heights under 15 feet, and is compatible with the standard oscillation package. For greater elevation, 8" diameter towers are used.

The heavy-duty design is the 10" diameter flange-mounted towers, which are secured directly into concrete. Available in heights up to 20 feet, the large diameter allows hoses and power cords to be routed inside the tower for protection and a 'cleaner' appearance. The flange-mounted units feature programmable oscillation, with a customer-settable range from 0–359°. Climbing rungs, work platforms, booster pumps and additive metering systems are all available as options.

Once installed, users have two options for raising and lowering the tower. The manual jack has a long handle attached, allowing operators to rotate the handle to change the height from the ground. When fitted with the optional electric jack, changes can be made via the control panel or remote control unit. With motion limits set by the programme, the operator simply activates the jack until it reaches the desired position, allowing quick and easy adjustments to accommodate weather changes or specific work activities.

The ability to network multiple machines and/or automate the on-off cycles can be a big advantage to large operations. "Automated units can be operated from a single radio-controlled, hand-held remote to conserve resources and avoid over-saturation, with the units running only during dust-generating activity," Stiverson explained. The radio-powered remote control allows rapid start-up or adjustment of the machines by a single operator, without any manual contact.

In fully-automated systems, the network can be equipped with sensors that track wind and weather details, with customized software and programmable logic control via computer. Driven by proprietary software, the resulting 'intelligent' systems can be programmed to manage start/stop cycles based on dust monitor readings, motion sensors or weather input. The technology allows users of DustBoss equipment to automatically adjust elevation, oscillation range and other features on any number of machines to improve suppression efficiency and free up



With precise aiming capability, the tower-mounted dust suppression units can be triangulated for superior particle control.

manpower for other tasks.

The tower units provide a versatile, customizable dust and odour control solution. Spraying the worksite from above, the tower units help prevent nuisance dust or odour from entering the air stream, greatly reducing the possibility of fugitive dust leaving the worksite. With the number of tower sizes and available options, the systems are customized based on the needs of the specific application and individual location.

Dust Control Technology is a global provider of dust and odor control solutions for mining, rock and aggregate processing, demolition, recycling and scrap processing. The company's DustBoss® product line helps reduce labour costs vs. manual sprays, freeing up manpower for more important tasks. The automated units also use less water than hoses and sprinklers, with some customers realizing payback in less than six months and netting an annual cost savings of more than $50,000.

Improved design increases serviceability, boosts collection and offers more flexibility, says Martin Engineering

To overcome the maintenance problems and operating costs of centralized dust control systems, Martin Engineering recommends the use of insertable air cleaners on conveyor transfer points and recently introduced an updated version of its insertable air cleaner. The Martin® Air Cleaner is very effective in applications which create significant dust.

Rather than carry dust-laden air to a central collector, insertable systems filter the air inside the transfer point where they can easily return material to the conveying system.

Dust collectors have been around for decades. However, the name dust collector is misleading. The unit does not collect airborne dust; rather it solves the problem of airborne dust by keeping fine particles in the load, by returning them to the main material body, essentially cleaning the air of dust.

Martin® Air Cleaner

An integral fan pulls dust-laden air through the filter elements. The air passes through the filter, leaving the particles on the filter element. Each filter element is then regularly cleaned by a 'reverse jet' of compressed air, which is injected into the filter element. This causes a momentary reversal of the air flow dislodging the dust cake back into the main material body.

The Martin® Air Cleaner is the next generation of the insertable air cleaners. It features a side access door, making the units easier to service and more readily available for regular maintenance. Its rectangular design allows for more flexibility for expansion and it is available in four different configurations to control airborne dust at belt conveyor loading points and other bulk material handling operations.

The Martin® Air Cleaner features mesh-like material in its filters which cleans better while consuming less energy than conventional filter bags. The filters allow a reduction of the size of the fans used to move air through the filter elements and therefore reduce the power consumption of the collection system.

The improved Martin® Air Cleaner features the same small filter elements that were included in the previous insertable air cleaner. However, the system offers more flexibility to customers and is offered with two filters, three filters, four filters and even six filters. The two-filter version cycles 1,000CFM (air volume in cubic feet per minute), while the six-filter version can cycle up to 3,000CFM. Martin Engineering offers a range of system sizes and filter materials to match clients' application environments.

The small filter elements allow a significant reduction in the air cleaner's 'footprint', allowing the Air Cleaner to be installed in locations where tight quarters complicate the installation of the other systems.

In addition, the system is now available with a side access door which will allow the unit to be serviced quickly and more safely. Because of this side access door, headroom is no longer an issue and allows access from a conveyor walkway.

The Martin® Air Cleaner feature a pulse cleaning system where a short pulse of air is sent back through the filter to dislodge accumulated material. Changing the filter is now a one-hand, no-tool procedure utilizing the side access door of the air cleaner.

Installation of insertable air cleaners will eliminate many of the problems seen with central 'baghouse' collection systems, including long runs of ducting, large enclosures, maintenance difficulties and high power consumption. There is no large fan, no ductwork and no central bag house. Insertable filters are integrated into the transfer point enclosure, where they can easily return material to the conveying system.

Rather than carry dust-laden air to a central dust collector, the Martin® Air Cleaner filters the air inside the transfer point and can effectively handle the heavy concentration of dust and high volumes of air arising at belt conveyor transfer points.

The new line of insertable air cleaners was developed to handle the heavy dust concentrations and air volumes arising from material transfer points. They are designed to remove 99.9% by weight of all dry particulates 0.5 micron and larger (based on a time-weighted average of a properly-installed, operated and maintained unit.)

The automated 'reverse jet' cleaning sequence facilitates continuous operation, keeping filters working effectively with a minimum of compressed air. The small integrated fan runs only when the conveyor is operational, further improving energy efficiency. An insertable unit eliminates the need for installing or maintaining ductwork, and there's no haulage or cleanup costs for waste disposal, since fugitive material is returned to the process.

The Martin® Air Cleaner is automatic, self-cleaning and was designed to remove dust from the air in conveyor loading and transfer points, silo vents, bucket elevators and screens and thereby minimizing the negative consequences of airborne dust and spillage, including the potential risk to worker health, explosive hazards and the potential for injury from slips, trips and falls. Another objective is to prevent waste, avoid unnecessary maintenance and enhance efficiency, allowing bulk handlers to contain fugitive dust within the material stream.

Founded in 1944, Martin Engineering is an active player striving to make bulk materials handling cleaner, safer and more productive. The firm is headquartered in Neponset, IL, offering manufacturing, sales and service from factory owned business units in Brazil, China, France, Germany, Indonesia, Mexico, South Africa, Turkey, India and the UK.

Advanced air cannon design for improved material flow

Votorantim Cimentos, manufacturer of cement, concrete and aggregates has specified a total of 110 air cannons to facilitate material flow in two new plants currently nearing completion in Brazil. Starting in the early design stages of the project, Votorantim Cimentos has maintained an intense focus on efficient material flow, with engineers carefully researching the latest technologies to maximize efficiency and reduce maintenance expenses. Company officials anticipate that the cannons, equipped with high-efficiency valves, will prevent blockages that could slow production, while minimizing air consumption.

Martin® Air Cannons

The two new plants are part of a massive R$2 billion investment to enhance production throughout Brazil, and are expected to produce approximately 8,500 tonnes of clinker per day between them when they come online later this year. In designing the processes, Votorantim engineers wanted to take all reasonable measures to prevent accumulations in vessels and storage systems. They contacted Martin Engineering to conduct an audit of the two processes, and a joint effort was developed to determine the optimum solution, including air cannon design, nozzle selection and specific locations to maintain high throughput.

Air cannon operation

"The two primary components of an air cannon are a high-flow valve and a pressure tank," explained Martin Engineering national sales manager Rodrigo Trevenzolli. "The device performs work when compressed air in the tank is suddenly released by the valve and directed through a nozzle, which is strategically positioned in the tower, duct, cyclone or other location."

Votorantim Cementos in Rio Branco do Sul, Brazil

Often installed in a series and precisely sequenced for maximum effect, an air cannon network can be timed or computer-controlled to best suit individual process conditions and material characteristics. Fast-acting valves can release the tank volume in less than 300 milliseconds, creating a high-magnitude force at the exit nozzle which is installed through the wall of the vessel or duct.

The timed discharge breaks down material accumulations and releases blocked pathways, allowing solids and gases to resume normal flow without intervention by maintenance personnel. In order to customize the air cannon installation to the service environment, specific air blast characteristics can be achieved by manipulating the operating pressure, tank volume, valve design and nozzle shape.

Cost of ownership

One of the primary reasons Votorantim officials selected Martin Engineering for the air cannon work is the low operating cost of the company's equipment. "Compared to other sources of energy, compressed air is relatively expensive," Trevenzolli explained. "As energy costs continue to rise, so does the value of cannon technologies that can reduce compressed air consumption."

Martin Engineering's newest cannon designs optimize compressed air use by employing advanced valve technology, with more efficient valves mounted on smaller tanks able to deliver higher discharge forces than less efficient valves mounted on larger tanks. The work is performed more effectively by the high-efficiency valve, and the compressed air savings is equal to the difference in tank volumes.

Because larger tanks deliver longer blast durations from the greater air volume being discharged, there's a temptation to assume that the larger tanks perform more work. Trevenzolli explains the fallacy: "In reality, peak force is generated only during the first few thousandths of a second following the valve opening, so in applications requiring high output force to move material, the duration of useful energy is extremely short. The subsequent discharge of compressed air is actually wasted."

The new family of positive-action valves from Martin Engineering produces about twice the blast force output of the valve generation introduced just a decade ago, while using about half the compressed air volume. If the two designs were set to deliver the same discharge force, the new valve would operate at about half the pressure of the preceding design. Firing only in response to a positive surge of air, the specially-designed valve allows the control solenoid to be positioned as far as 200 feet (60 metres) from the tank, keeping critical components away from harsh service environments.

After studying the plant designs and potential accumulation spots, engineers from the two companies identified the optimum locations for the air cannons. Crews are now collaborating on the installation of 110 Martin® Hurricane Supreme Air Cannons in the plants, covering preheater towers, additive silos and cyclones. The units will fire a powerful discharge of compressed air in a prescribed pattern to remove material that sticks to vessel walls and ductwork. In the Cuiabá plant, 56 cannons are being installed, with 54 being placed at Rio Branco.

The benefits of specifying the new technology for air cannon networks include reduced energy costs, improved system performance and increased uptime, with greater availability of compressed air for other processes within the plant. All should contribute to a healthier bottom line, justifying the added up-front expense with a payback period that's far exceeded by the equipment's expected lifespan.

Votorantim Cimentos was founded in 1936, and currently supplies more than 40 products from 50 different production facilities, located in nearly every Brazilian state. Outside Brazil, VC operates six factories and more than 150 concrete and aggregate units in North America, while maintaining substantial South American investments in Bolivia, Chile, Paraguay, Argentina, Uruguay and Peru.

Page Macrae hoppers: fighting the good fight against dust emissions

Environmental considerations have become one of the most important factors in choosing new bulk cargo handling equipment.

And it is Page Macrae Engineering's strong focus on this aspect of grab and hopper design that has seen its award-winning grabs, dust-controlled hoppers and other equipment selected by port and stevedoring operations throughout Australasia.

The Tauranga, New Zealand-based company has won an international reputation for designing and building quality equipment that is not only robust, efficient and built to last, but can also provide operators with substantial savings in time and money, through low operating costs and increased productivity.

While it might not be the cheapest on the market, it is in strong demand from companies looking for high quality equipment that will meet strict environmental standards while still operating efficiently in sometimes challenging situations.

Page Macrae produces a range of grabs and discharge hoppers and specializes in providing integrated solutions for bulk discharge with a strong focus on assisting clients in reducing their operations environmental impact.

Its line of hoppers has recently been refined with the design of a totally new product that integrates the dust collection system with the hopper. This not only makes it easier to control dust emissions, but also eliminates the time involved in deploying a separate dust collection unit to wherever the hopper is located on the wharf.

"It's a new evolution in the line of equipment we produce and it complements our hopper package," says Cargo Handling Equipment manager Bruce Ennis.

Page Macrae came up with a solution package for major Australian client QUBE Ports and Bulk, which operates in Darwin, Northern Australia and needed to meet a strict requirement from the Darwin Port Corporation to reduce dust from cement clinker and fertilizer.

The equipment package supplied included diesel hydraulic bulk grabs and dust-control discharge hoppers.

These have a raised rim to cut product wind carry off, augmented by dust-controlled chutes that close off to give excellent control over dust emissions. They also include retractable loading spouts for discharge into trucks, incorporating state-of-the-art vacuum and dust reduction technology.

Ennis, who visited Darwin recently to carry out a two-year follow up on the equipment, says it has been a major success, resulting in another order for two diesel hydraulic grabs and two discharge hoppers which have been commissioned at QUBE's operation in Bunbury, Western Australia. For more details on this project, please see p111 of this issue.

Page Macrae was also the supplier of choice for diesel-hydraulic grabs to the massive Koniambo nickel mining project in New Caledonia in the South Pacific.

In this fragile coastal peninsula environment, tight control over dust and product spillage was crucial. Efficient use of energy, protection of natural resources, waste minimization and biodiversity conservation were key to the success of the project.

The company's equipment once again proved more than equal to the task, thanks to new technology incorporated in the grabs, which is now standard across the diesel hydraulic range.

That same success has been evident in New Zealand, where operators face stiff penalties under the Resource Management Act for illegal discharges and are also required to maintain safer and healthier environments for their workers.

Ennis says tight control over dust at bulk transfer points increases system productivity by cutting material losses, which can be a significant amount of the total product handled.

And this is where Page Macrae's links with Michigan, US-based Dust Control and Loading Systems (DCL) comes in. The New Zealand company is Australasian agent for DCL, which manufactures a large range of highly regarded dust control loading systems and components. Some of these have been incorporated in Page Macrae's equipment, bringing benefits for both companies.

Ennis says the DCL range of discharge spouts, filter modules, conveyors and valves can handle a wide range of bulk materials including limestone, salt, alumina, grain, fertilizer and cement.

Because of their superior quality, DCL components are a good fit with Page Macrae's focus on providing environmentally friendly solutions while also improving efficiency and productivity. The load spouts are capable of operating at up to 6000 tonnes an hour, but a high degree of dust suppression is provided by flexible sleeves and rubber skirted lining, and additional suppressors can give almost dust-free product handling.

"DCL discharge spouts are a key component in our hoppers," Ennis says. "We put them through a rigorous assessment process and found that they really were the best available."

The DCL agency works well for both companies, especially given Page Macrae's increasing focus on whole chain bulk handling solutions, he says.

"That can include from ship to storage, and also equipment for any handlers of bulk materials that create a dust problem.

Page Macrae's lineup of equipment now includes bulk grabs for unloading ships, while the Enviro-Max range of hoppers provide an ideal solution for dust-free discharge into enclosed rail cars and trucks.

That was in fact the case with the Darwin project, where the client had to prove clearly to authorities how they intended to manage dust losses, Ennis says.

"The DCL discharge spouts we fitted have proven highly effective in achieving that, and the client is very happy with the way both our grabs and our discharge hoppers work."

Page Macrae Engineering provides a 24 hour service and can dispatch service personnel quickly whenever and wherever they are needed.

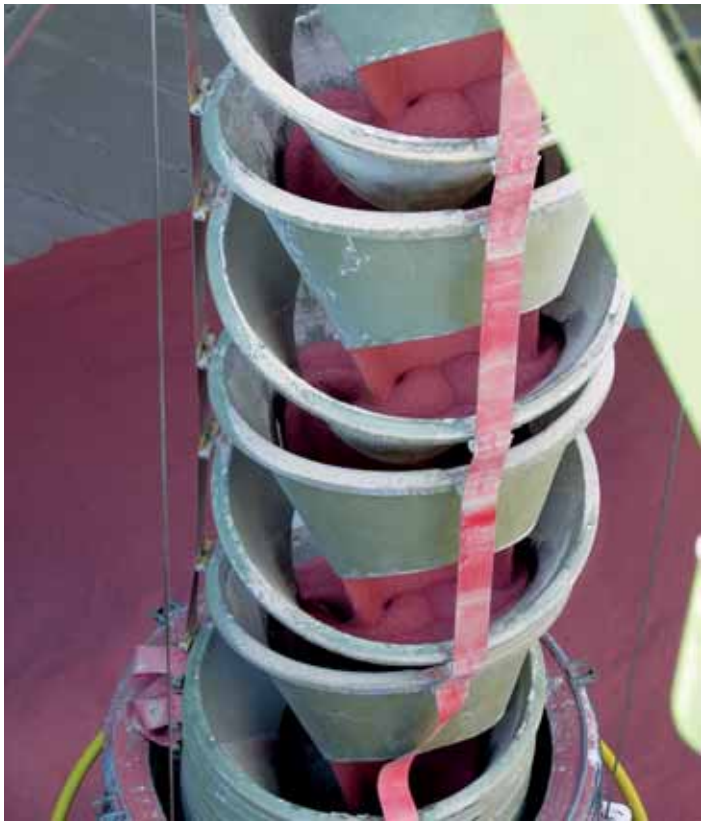
Hopper package ready for shipment to Australia, at Port of Tauranga, New Zealand.

Cleveland Cascades systems lower dust emissions

Ever-increasing global consumption of commodities such as alumina, potash, iron ore and grain has brought well-documented challenges to the bulk handling industry and port operators the world over. As shipping volumes have grown, so have the demands on the industry to provide increasingly efficient bulk handling systems. Increased efficiency often means increased throughputs, which, for many dry bulk materials can increase dust emissions, leading to environmental pollution and putting operator safety at risk.

This efficiency vs. safety dilemma that faces the bulk handling industry is well known to Cleveland Cascades Limited. Based in the United Kingdom, the company has provided over 500 loading chutes the world over since 1992. The first of these chutes was in fact borne out of dust emission issues relating to the loading of potash in Middlesbrough, England.

"The Cleveland Cascade Chute originated from an in-house project development at a bulk handling facility in the early 1990s," says Chairman Ian Barnard. "The facility faced pressure from port operators and surrounding businesses relating to the safe and efficient loading of potash. At the time we looked at the existing market for loading chutes but were unable to find a system to meet our requirements, so we put our heads together and designed our own system — which resulted in the Cascade chute being created." Cleveland Cascades Ltd was formed as a private company specializing solely in the design and production of cascade- and conventional-style loading chutes and the company has continued to develop and improve the loading chutes manufactured.



Case Study 1: *Potash – ThyssenKrupp, Germany*
The Cleveland Cascades cascade system was developed with the safe handling of potash in mind. This close-up shows the unique cascading of the material throughout the length of the chute, which minimizes the build-up of corrosive dust particles.

Case Study 2: *Alumina – Voest Alpine, Australia. In terms of dust emission control, alumina is one of the most problematic materials to handle. With particle sizes of less than 75µm, airborne dust can be a risk to both operator health and the wider environment. Note that the entire Cleveland Cascade chute is clearly visible in the confined space of the ship's hold, and dust is minimized, despite loading rates of up to 1,500tph.*

The Cleveland Cascades cascade system allows a controlled yet efficient transfer of material from conveyor to ship, silo or stockpile. The material is supported the full length of the chute by means of an arrangement of oppositely inclined cones. The material is loaded at a low velocity, yet high volume and this means products can be transferred with minimized generation of dust emissions and also minimized degradation and segregation of product.

Such is the low environmental impact of the cascade chute that Cleveland Cascades is the only loading chute manufacturer in the world that can guarantee the lowest dust emission levels for specific loading applications. The company also manufactures traditional freefall chutes, which are fitted with high specification dust extraction units to keep dust emissions to a minimum.

Safety does not compromise efficiency however, as the Cascade

System can accommodate high loading rates of problematic materials, yet still keep dust emissions to a minimum. Cleveland Cascades can manufacture its range of loading chutes to accommodate materials loading at rates from 50 to 6,000 cubic metres per hour.

Recent installations include shiploading projects in Brazil handling alumina and potash, silo/storage loading applications in Eastern Europe handling fertilizers, as well as shiploader projects in Australia handling coal and coke products.

"We have supplied projects to many of the world's leading corporations, including Rio Tinto, ThyssenKrupp and BHP. Each project we deliver brings new challenges in terms of project specification, environmental issues; material handled performance criteria and increasingly dust emission. Our approach is for our commercial, design and engineering teams to work closely with our customer counterparts from project inception right through to project commissioning. We are able to draw on our previous experience but we are constantly bringing in new ideas and incorporating those of our customers".

Case Study 3: *Grain - Nibulon, Ukraine. Loading mobility is often an issue facing port operators. This photograph shows one of eleven chutes for mobile shiploaders supplied by Cleveland Cascades for grain handling facilities in Ukraine. The lightweight nature of the freefall chute facilitates movement along the full length of the quay. Dust emissions are minimized by high specification extraction units at the base of the chute. This removes the need for heavier dust extraction units on the quayside and reduces material wastage as the dusty material is re-circulated and loaded onto the pile.*

For Cleveland Cascades Ltd, dust emission control is increasingly important. The company offers a dust performance guarantee as part of its ISO9000 accreditation and continues to work with its customers in providing innovative loading systems to the bulk handling industry.

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Dust-free loading with confidence with DCL equipment

DCL loading spout in action.

Dust Control and Loading Systems (DCL), based in Charlevoix, Michigan, USA, is a renowned expert in the provision of dust-controlled loading systems.

When loading bulk product, it is essential to have a smooth, safe loading process. Companies in the food, chemical, mineral and energy industries all depend on DCL to supply systems that offer quality without compromise.

DCL is a leader in innovation. The company was founded in 1981 as a place to develop new approaches and new solutions. This means DCL is able to commit itself completely to research and development, and it is always looking for new and improved ways of helping the customer. Some of its innovations include the industry's first: full-length inner spout cone set; high-efficiency pleated, spun-bonded filters in a compact spout filter module; fully automatic hands-free truck loading system; low-horsepower silo aeration reclaim system for fine products; pedestal-style articulating loading arms to include automatic in-line tracking; telescopic air-slide ship loading boom; and non-mechanical deadfall spout discharge for dust control of fine products in shiploading

DCL believes in fostering creativity and teamwork, and demands the highest standards in openness, honesty and ethics from its workforce. Also, it's an organization that recognizes the importance of its commitment to the community.

DCL designs, engineers, manufactures and provides high-quality dust control and loading systems for dry bulk materials. For nearly any material, any loadout application, in any industry, it can develop cost-efficient and effective solutions.

DCL believes strongly in the need to protect the environment, and its equipment plays an important part in meeting regulations for dust emissions.

Among the wide range of products available from DCL are: loading spouts, loading spout positioners, diverter valves, shut off valves, collectors, filter modules, bag and drum filling stations, aeration equipment, automation and system controls.

Loading spouts

The company's loading spouts make innovative use of technological advancements to provide dust-free loading of a wide range of dry, dusty materials, at loading rates up to 6,000tph (short tonnes per hour).

Its heavy duty loading spouts are designed to load dry bulk materials from conveyors and other discharge points into open barges, ships and onto stockpiles. These rugged heavy duty spouts are available in retracted lengths as low as 3m and travels up to 30.5m. Loading rates can vary up to 76.5 m³/minute, depending on the product being loaded.

DCL's standard duty loading spouts are designed to load dry bulk materials from storage bins, silos, conveyors and other discharge points into either open or enclosed vehicles. These rugged standard duty spouts are available in retracted lengths as low as 482mm and travels up to 5.5m. Loading rates can be up to 14.2 m³/minute, depending on product being loaded.

A choice of construction materials means that it is possible to handle effectively all types of products — fine, granular, lumpy, abrasive and corrosive — and difficult dusty or sanitary applications.

Loading spout positioners

Used in conjunction with standard duty loading spouts at truck and railcar loadout facilities, DCL loading spout positioners increase speed and efficiency in any loading operation.

DCL's exclusive Model HP positioners virtually eliminate the need to re-spot vehicles once they are in the loading station. All HP models are available in vent-thru and non vent-thru styles. The vent-thru style eliminates the need for venting the spout below with cumbersome duct work. Dust is drawn through the spout and positioner and can be vented with typical ductwork to a central dust collector. A DCL model CFM compact filter module can also be mounted directly above the spout positioner to completely eliminate ductwork. A choice of construction materials means DCL can provide durable equipment to handle any type of product: fine, granular, lumpy, abrasive, or corrosive.

Diverter valves

Rugged, heavy duty diverter valves are available in flat and curved blade models, for nearly any application, in a wide variety of configurations. DCL can match the design and material to the specific needs and material of the customer.

Shut off valves

DCL's wide range of curved blade and slide gate valves can offer the shutoff control needed for nearly any material and any loadout application. Tipping valves make it possible to monitor product flow from outlets of dry bulk dust collectors, filter modules and other discharge points.

Dust collection

DCL offers many innovative dust collection solutions. There is a large selection of dust collectors and bin vents in a choice of construction materials allow handling of all types of products, including fine, granular, lumpy, abrasive and corrosive materials.

Ventilation modules are available in sizes from 185 to 750 square feet of filter media, while DCL's innovative Compact filter modules area available in sizes from 155 to 660 square feet.

Filter media is available to accommodate most applications. DCL's exclusive pleated design, spun-bonded media features a smooth finish with exceptional dust cake release. The filter surface is calendared and compact to make it resistant to particulate penetration — giving better cleaning efficiency and less downtime for cleaning.

Close-up of articulating arm.

Conveying bulk cargoes

Tramco's product line includes conveyor systems that really deliver

Tramco Europe Ltd is a renowned supplier of bulk handling conveyors. The company's conveyors meet the criteria for delivering product for various industries such as chemical, coal, food and grain, mining, plastic, pulp, rubber and paper, or solid waste and recycling.

A unique combination of design, engineering, proper component selection, manufacturing, and service before and after the sale has made Tramco a popular source for consulting and supply in bulk material handling situations.

Tramco's products are robust, reliable and designed to handle

TRAMCO®

The World's Most Complete Line of Chain and Enclosed Belt Conveyors.

TRAMROLL™
Enclosed belt conveyor with innovative features such as; self-reloading and self-cleaning tail section, and multiple inlets. The heavest-duty design in the industry.

JETBELT™
An efficient system requiring less horsepower than other systems. Used for dry bulk handling requirements in a variety of products.

MODEL RB
Designed for self-cleaning and quiet operation with a u-shaped trough for handling soft stock or materials that are easily crumbled or broken.

BUCKET ELEVATOR
Centrifugal Discharge design used for the bulk handling of free-flowing fine and lose materials with small to medium size lumps. Built-to-last for the toughest requirements.

MODEL G
Built standard with 10-gauge construction to accommodate large capacities of free-flowing materials. Provides years of trouble-free service under extreme applications.

BULK-FLO™
The heavy-duty chain conveyor designed specifically for processing applications such as; wet and sticky, varying sizes and densities, and abrasive or corrosive materials.

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severe processing applications.

The wide variety of designs offered by the company allows flexibility to specify the size of conveyor for any capacity, at excellent value. Tramco Europe has an ATEX Quality Assurance Notification.

Tramco has been involved in the design, application, engineering and manufacture of the world's most extensive line of chain conveyors, enclosed belt conveyors, specially designed conveyors and conveyor conversions since 1967.

Since 1998, the company has had a design and manufacturing facility in Hull in the UK. Tramco employs local people with a diverse range of skills, including bespoke product design, fabrication, welding, machining, assembly and painting.

Tramco supplies conveyors across the world from local bioethanol plants to strategic grain storage facilities in the UAE. Eighty per cent of its production is destined for the export market.

In excess of 20,000 Tramco conveyors have been designed and put into service all over the world. This has come as a result of dedication by Tramco employees who care about the quality of product and service a customer receives. The level of dedication may be found in Tramco's design/engineering staff, technically and mechanically oriented sales engineers, experienced drafting personnel, qualified manufacturing people, and full support for after-the-sale customer service. Every conveyor Tramco builds is developed for the specific application to serve its customers' best interests.

Tramco engineering and drafting staff use the most current releases of AutoCAD and SolidWorks systems to develop and produce approval drawings and manufacturing drawings with the utmost professionalism. Tramco customers may receive their drawings via e-mail to assure the fastest review time possible.

Very few conveyors are identical twins; each is developed and built for a particular application. Tramco partnered with Engineering Design Automation to develop Tramco's one-of-a-kind Design Center. This allows its customers to research, engineer and size conveyors for their individual applications. In a matter of minutes, the Design Center can provide customers with automatically generated layout drawings for the fastest possible review time.

Automation is further extended through computerized fabrication layout, control punching, and robotic cutting and welding.

The philosophy of Tramco is to produce high quality, reliable equipment that meets specific customer needs. Its production facility offers high technology in automated milling and machining equipment and robotics which allows for complete in-house production. More than 12 acres make up the Tramco complex, thus providing flexibility for construction of all types of conveyors. Spare parts are also manufactured on site, which permits more timely and better response to satisfy situations that arise for critical spare parts.

Another service offered to customers is that of conversions. Clients may have a facility that is in need of updating. Tramco can upgrade an older unit using Tramco components. Once the critical dimensions are known, the task is relatively easy, and the customer's conveyor can be upgraded to work better with new Tramco parts. DCi

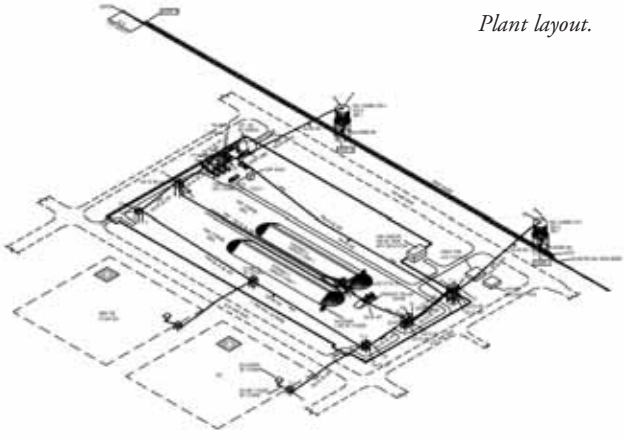
Takraf India supplies petcoke handling system

Petcoke (petroleum coke) is a low molecular carbonaceous solid product of thermal cracking of the residual oil from the vacuum distillation column in oil refineries. In India, the cement industry is the largest end-user segment of petcoke. The industry is able to use high volumes of petcoke as its high sulphur content is neutralized by the limestone in the clinkerization process. The demand for petcoke from the cement industry is estimated to grow at a rate of 24%. An average petroleum refinery may produce as much as 2,000–5,000 tonnes of petcoke every day. Also, coke mixed with coal makes it more economical than pure coal, which makes this industry more interesting for the power sector. Tenova Takraf (India) Pvt. Ltd., as a major supplier of systems for dry cargo handling, is well equipped with the required technical knowledge and decades of experience to design and supply systems for this thriving industry.

The 9.02MMTPA Guru Govind Singh Refinery Project of M/S HPCL-Mittal Energy Limited (HMEL) at Bathinda (Punjab) is one of the major recent installations from Takraf India. HMEL has two DCUs (delayed coker units) which produce coke at a rate of 3,150 tonnes a day each. Petcoke is continuously sent to the destinations through rail loading systems and/or the truck loading systems. To avoid disruption of work in times of no production of coke, a stock of about 10 days' of petcoke (~42,000 tonnes) is kept in the storage yard.

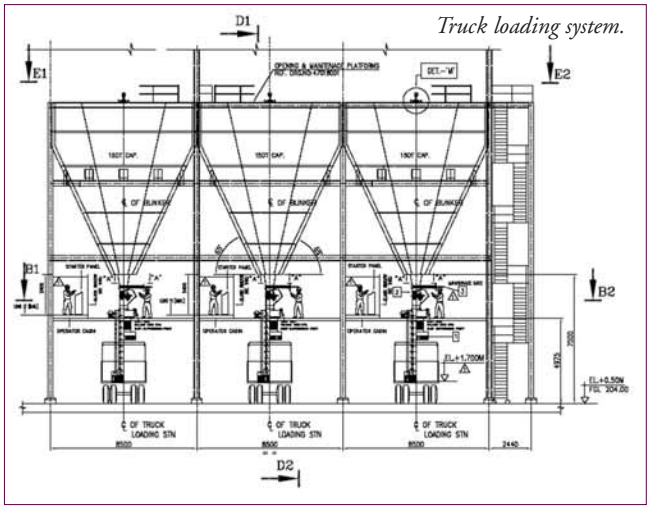
Conveyor belts (nylon/nylon) are used to transfer the coke from one point to another. The belts are made oil-resistant and are designed to handle the incoming coke at temperatures of 50°. These were designed for capacities of 500tph (tonnes per hour), with a rated capacity of 450tph. Walkways are provided on both the sides of the conveyor belt for maintenance purposes, and are covered with handrail pipe constructions (middle, top, knee guard and toe guard) for safety purposes.

Stockpiling and reclaiming of materials is carried out by the 500tph stacker-*cum*-bucketwheel reclaimer. This is equipped with a travelling arrangement, on rail tracks. The stacking boom (luffing and slewable type) is kept as close as possible to the pile top to prevent dust generation. The PLC on the machine is pre-programmed to carry out the stacking procedure. This can also be operated and monitored from a remote location like the central control room. Two payloaders are kept for assistance, which may also be used for reclaiming in emergency situations. Conveyors then transfer the reclaimed petcoke from the stockpile to either the silo of the rail loading system or the truck loading bunkers. The whole conveying system is covered with hoods throughout, hence it can work in any weather conditions.



Plant layout.

The rail loading system (RLS) is located in a straight portion of the railway tracks, which receives the petcoke from stockpiles and DCUs. The concrete silos are provided with suitable liner, inspection doors and inspection platforms, complete with all accessories and other loading equipment like loadcell-mounted weigh hopper, hydraulically operated gate and hydraulic loading chute. The wagon loading is achieved through a flood loading system and is controlled from the control room located at the first floor of the silo. The overall rate of loading is 3,600tph, matching the variation of creep speed of locomotive. This is achieved by means of a loadcell-mounted weigh hopper and hydraulically operated loading spout. The level of material inside the silo is continuously assessed by a monitoring device which gives a signal as soon as it reaches the pre-set value. The level indication devices are located inside the silos with suitable enclosure for maintenance. All equipment is electrically/mechanically interlocked to ensure starting and stopping of drives in a sequence or as required for logical operation of the system and adequate time lag is provided to avoid overloading of the electric/hydraulic system.



Truck loading system.

The truck loading bunkers are comprised of a structural steel building having three loading bunkers for loading onto tippable trucks. All loading bunkers are provided with ultrasonic level indicators at the top which continuously indicate the material levels inside the bunkers based on which the feeding system starts/stops. The bunker mouth is provided with electrically operated sector gates with a suitable telescopic chute mechanism for loading onto the trucks and can be operated by pendant switches.

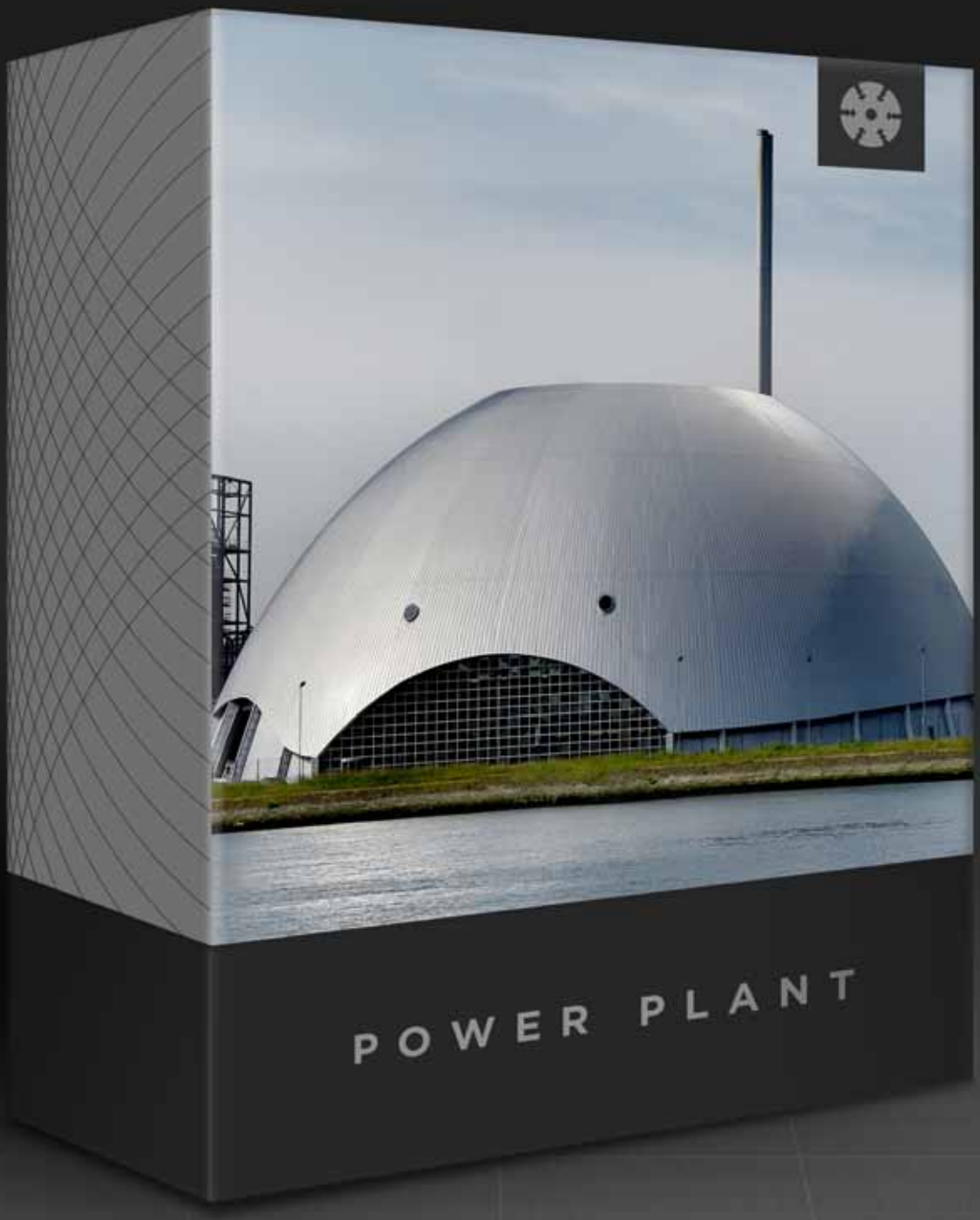
The on-line belt weigher is made complete in all respects with a speed sensor, hermetically sealed and temperature compensated load cell etc. It is provided with an auto correction facility to set right any deviation from actual rate of conveying over the pre-set /rated capacity. Road weighing stations are set up near the truck loading bunkers to monitor the weights of the outgoing trucks. Similar in-motion railway bridges are installed after the second silo to monitor the weights of the loaded wagons.


Rail loading system.

Water-based dust sprinkler systems are used to reduce the emission of dust. Pump stations are set up to cater for the water supply to all the sprinklers and are designed to cater for at least 25–30 minutes in case of a shortage of water supply. In addition to the dust suppression system, cooling systems for power packs and fire-fighting systems are also installed for emergency situations.

Tenova Takraf, located in Chennai (India), belongs to Tenova Mining & Minerals division and is represented in all major countries in the world. In the last five years, over 200 machines and systems have been supplied by the company for a variety of stockyard operations to major cement manufacturers, power producers and mining companies in India and other parts of the world specially in Asia, the Middle East and Africa.

PETRONAS (Malaysia), ESSO S.A.P.A. Campana Refinery plant (Argentina Campana), MIDOR Coke Refinery (Egypt port of Alexandra), TOYO Petrobas Refinery (Brazil Porto Alegre) and PHB Weserhutte, S.A. British Petroleum Coke Handling Plant Castellon, Valencia (Spain) are some of the proud owners of Tenova TAKRAF equipment. DCi



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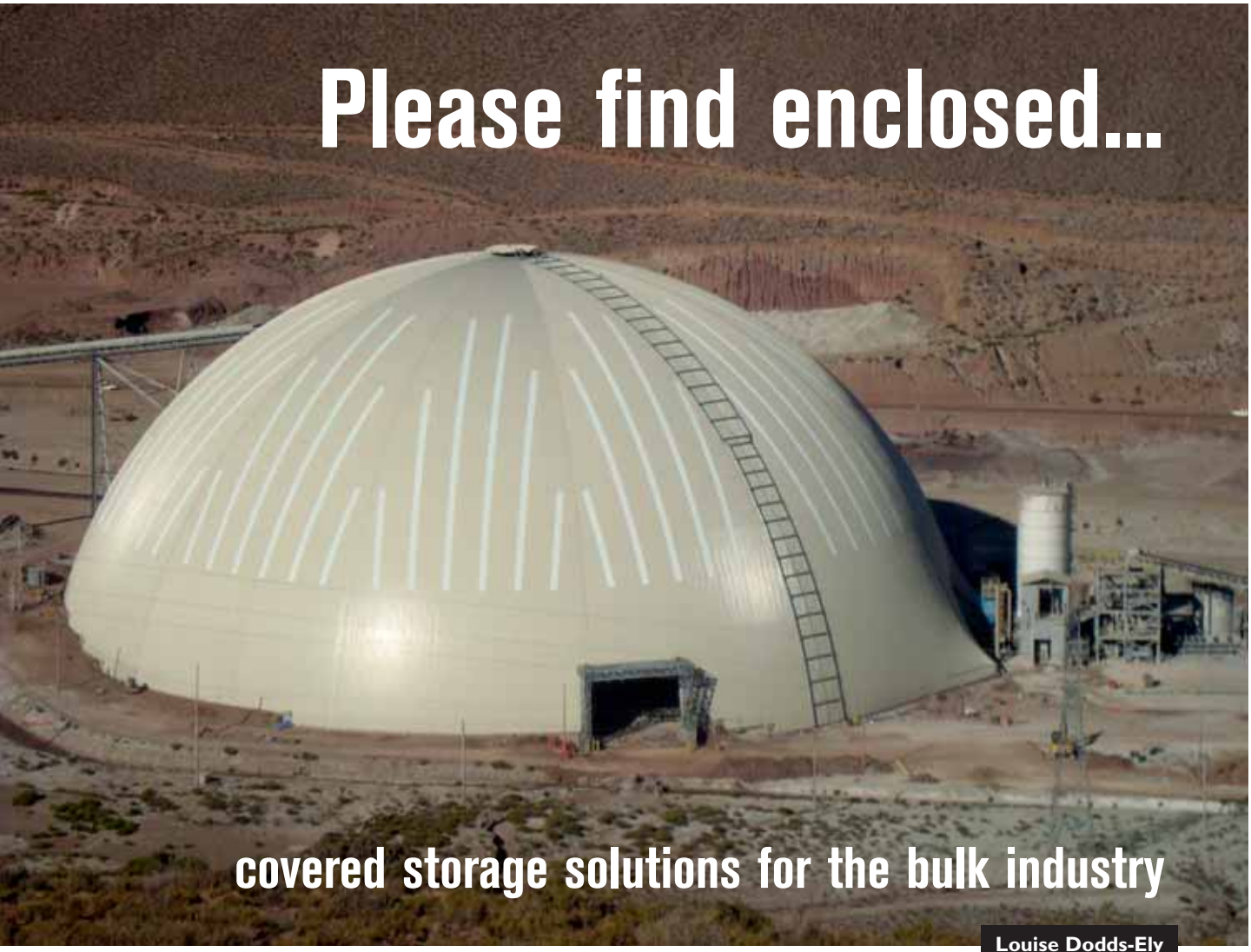


covered storage solutions for the bulk industry

Louise Dodds-Ely

Geometrica focuses on domes and space frame structures

Geometrica, celebrating its 20th year, has designed, manufactured and installed domes and space frame structures since 1992. The company has developed unique technology to build stunning long-span structures. With facilities in Houston, Texas and Monterrey, Mexico, Geometrica supports its clients with a global network of representatives, and has delivered domes and space frames in nearly 30 countries.

Considering its customers' needs, Geometrica offers: architectural solutions; industrial buildings; and bulk material storage.

Bulk material storage

Power plants, mines, cement plants, ports and many other industries need to stock large quantities of dry bulk materials. These were traditionally left uncovered, or stored in vertical silos. But open stockpiles produce dust and contaminated runoff, and silos are small and expensive. Due to increasing environmental concerns, many organizations desiring covered storage have looked for and found a cost-effective way to solve their problem: Geometrica's geodesic domes.

Material stockpiles may be classified in four general categories by their shape: ring, conical, longitudinal and free form. Ring piles are formed by automated circular stacking/reclaiming equipment having a slewing stacker at the centre and a bridge reclaimer spanning the radius of the pile. A fixed drop from above forms conical piles. Linear stacker/reclaimers or trippers form longitudinal piles. And dumping material from trucks or stacking with moveable conveyors and spreading with front-end loaders forms irregular piles. Any of these types of piles may rest directly on the ground, or may be constrained at its perimeter by a wall. Geometrica's geodesic domes easily adapt to each of these types of piles and cover even the largest ones.

Geometrica's geodesic domes are made with its efficient structural system of strong and corrosion resistant galvanized steel or aluminium. The light, prefabricated domes are containerized and shipped from the company's plant to anywhere in the world. Construction may proceed before, during or after material handling equipment is installed, and, frequently, the domes are built over existing live material stockpiles with minimal or no downtime.

Industry recognition

Geometrica has often been recognized for the quality of the services that it offers. Among notable achievements are:

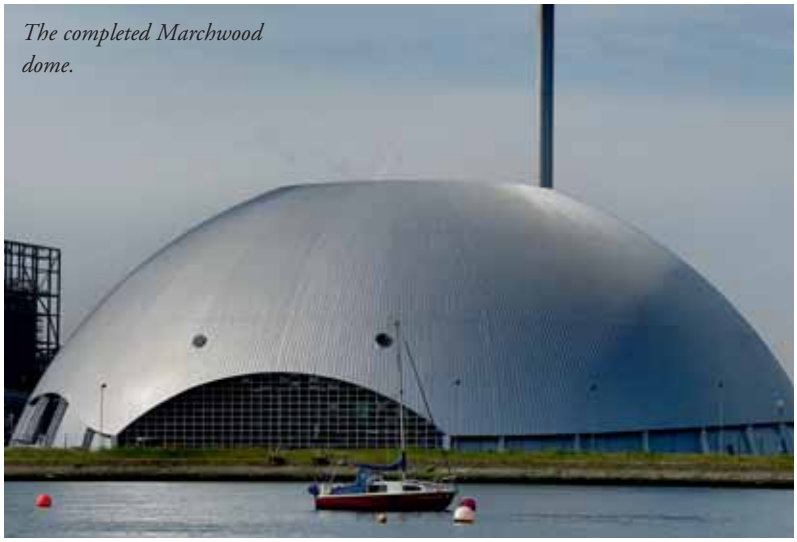
Finalist — Carl E. Nelson Best Practices Award

The Carl E. Nelson Best Practices Award was established to recognize excellence in the Enterprise Content Management (ECM) field. This award provides an exciting and unique way for end user organizations to share their ECM project implementations with their peers and for ECM solution providers to showcase the ROI (return on investment) that their

solutions can achieve.

Geometrica submitted its entry based upon the use of a wiki to implement a ISO9001 Quality Management System, and further develop it into a full knowledge management system. The company now also uses its wiki for information sharing with clients, suppliers and potential clients. Geometrica's entry has garnered it a finalist position in the Small Company Category (100 employees or less). Wikis are a new tool for effective collaboration in document creation and editing. Geometrica has found that using a wiki enables the experts in the organization — the wiki users — to read, edit and maintain documents right at points of use.

AIIM is the organization that provides education, research and best practices to help companies find, control, and optimize their information. The winners of the award are picked by the international membership of AIIM.



The completed Marchwood dome.

ASQ recognizes Geometrica

Earlier this year, ASQ (American Society for Quality), 'the global voice of quality', featured Geometrica in its publication, recognizing the company for its use of a wiki for its quality and safety programmes and also featured the company in its carousel of on-line stories.

2011 OHSAS 18001:2007 Certification

In 2011, Geometrica achieved the OHSAS 18001:2007 certification, awarded by BSI. The Safety System, integrated with the current Quality System, is also wiki based, and enables the company to maintain high standards for the employees' safety.

2009 ISO 9001 Certification

After nine months of developing a wiki-based Quality Management System (QMS), Geometrica was visited by BSI personnel and successfully passed the ISO 9001:2008 auditing process. By implementing the QMS through wiki, the certification was achieved in a minimal time and proved that this ground-breaking approach to quality systems taken by the company was the best option. A paper using a wiki to implement a QMS was written to explain the steps for the implementation. It has been published in several journals and websites that understand the enormous contribution of a wiki for such an endeavour. Geometrica continues to share with various companies in different industries, as they explore the opportunity to become certified using a wiki-based system.

2007 Marchwood 'Jewel in the Crown'

Geometrica provided the structure for the Veolia Environmental Services Marchwood, UK facility. Veolia's CEO Denis Gasquet called the facility the "jewel in Veolia's crown", and a major achievement among the 50 incinerators it runs across Europe. It was described by Veolia's UK chief executive Jean-Dominique Mallet as a "unique, state-of-the-art facility". The architect for this remarkable dome is Jean Robert Mazaud of S'Pace in Paris, France.

2006 Safety Certificate — Bateman/Lafarge

Geometrica was granted a Safety Certificate for contributing in achieving 50,000 man hours accident-free on the Lafarge Limestone Stockpile Domes Project. The certificate was issued by both Lafarge Cement and Bateman.

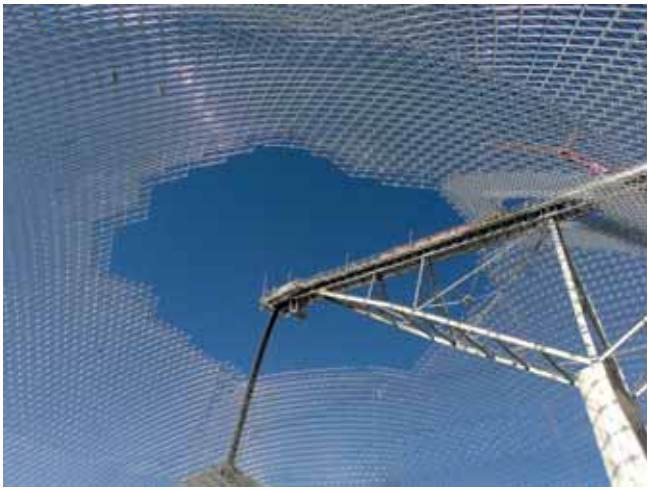
2005: Safety recognition from Nemak Corp.

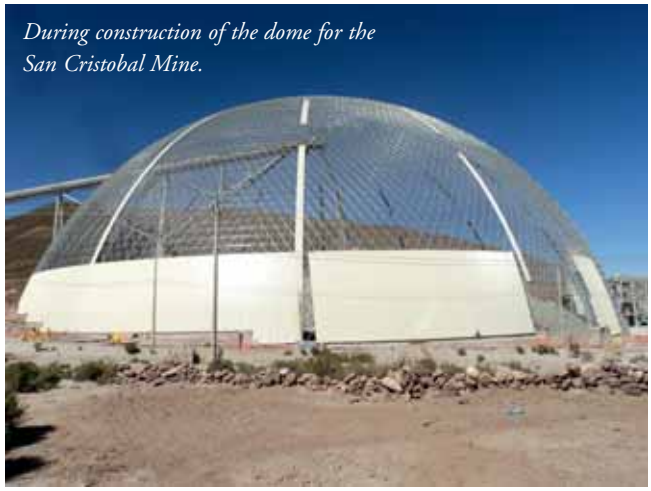
Geometrica's commitment to safety was acknowledged by Nemak for not having any accidents while building the Nemak structures.

The largest storage dome in South America, constructed over an operating stockpile

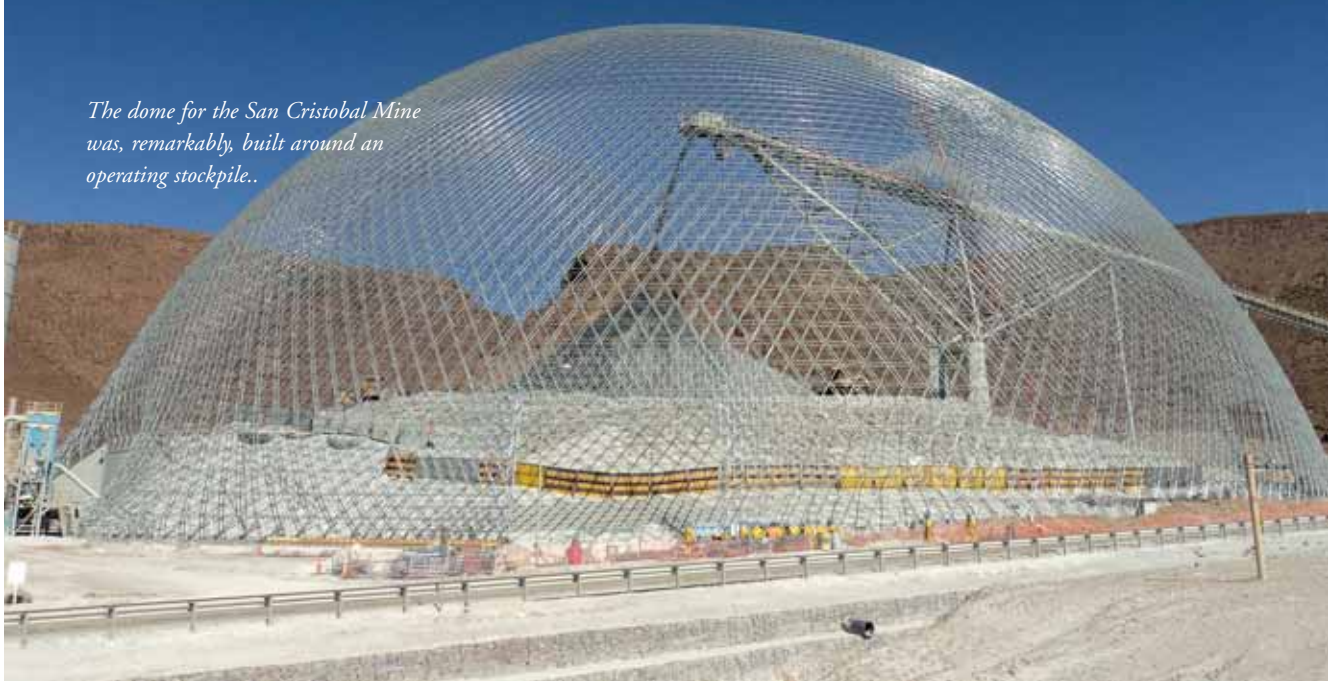
In one of the company's most notable recent contracts, Geometrica Inc. together with Carlos Caballero SRL has created a rugged solution high in the Bolivian Altiplano.

Located over 4,000 metres above sea level in the Altiplano of the Andes Mountains, the San Cristobal Mine is the largest





During construction of the dome for the San Cristobal Mine.



The dome for the San Cristobal Mine was, remarkably, built around an operating stockpile..

mine in Bolivia. The open-pit silver, lead and zinc mine's production process requires the transportation of 150,000 tonnes of rock, and the processing of 40,000 tonnes of mineral daily.

In early 2010, Bolivian contractor Carlos Caballero SRL responded to a bid request for a stockpile containment solution. Minera San Cristobal — in accordance with its principles regarding worker protection and protection of the environment and neighbouring communities — sought to prevent the release of dust from its stockpile into the environment, and protect the material awaiting transport to the mine's ore processing facility.

Caballero teamed with global storage company Geometrica, Inc. to propose a customized containment solution for the mine. Following review of the proposal and visits to other Geometrica bulk storage domes in South America by San Cristobal engineers, the project was awarded to the Caballero-Geometrica team. Caballero served as the main contractor and installer of the dome, while Geometrica, as a subcontractor, engineered, manufactured and supplied the dome. Key factors in the decision to employ a Geometrica dome solution for the site included the team's extensive experience, the capability to build around an operating stockpile, and the capability to follow an irregular shape for the supports.

The finished stockpile containment structure is a Geometrica dome 140m in diameter and 59m in height anchored by concrete foundation — the largest dome of its kind in South America. The foundation, which accommodates a 9m change in elevation over 140m, is fitted to the terrain. The dome is designed to withstand wind speeds of up to 150kph and an ice load of 110kg per square metre.

The Geometrica dome at San Cristobal Mine is made up of more than 88,000 galvanized steel tubes organized and inserted into aluminium hubs to form the structure. Local crews recruited by Caballero built the dome as deliveries by Geometrica arrived on site.

Shipments consisted of containerized crates of parts, each holding 2t of structure, and organized by construction phase. The Geometrica system requires no welding, as the prefabricated tubes slide easily into the aluminium hubs and hold fast. The precise yet simple assembly process allowed the mine to continue to operate in the midst of dome construction and made it easier to assemble the building in an environment subject to high winds.

A ventilation lantern is located at the top of the dome and additional armature on the side of the dome can support dust removal equipment. The interior includes a system for lowering the material-conveyor pulley for maintenance, and a catwalk circling the dome interior. Three 13m x 10m doors allow simultaneous access by up to two off-road vehicles to the interior of the dome. The finished building is clad in galvanized and painted metal sheets and translucent skylights provide natural light. Material is transported from the dome to the mine's ore processing plant via an existing underground tunnel.

In addition to creating the largest bulk storage dome in South America at the San Cristobal Mine, Geometrica has designed more than 15 bulk storage domes for mining projects located in the Andes, where construction challenges include rugged terrain, remote jobsites and insanely high snow loads. Examples of recent projects include the Barrick Zaldivar Mine, the Mantos Blancos copper mine, both located in neighbouring Chile, as well as Minera Aguas Tenidas in Spain. Hundreds of Geometrica structures have been built for clients and end users around the world including BHP Billiton, Anglo-American, Barrick, Codelco, First Quantum, Fluor, Sumitomo, and other mining companies in locations ranging from the Sahara desert to the jungles of Borneo.

In addition to the solutions for irregular shapes, Geometrica offers containment solutions for automated, ring-shaped stockpiles and for spans of up to 300m. A precise design process, the ability to package and ship a complete structure by construction phase, and mechanical structural joints that do not require welding result in a durable structure that is easily built in a wide range of environments.

PROJECT STATISTICS

Covered area	15,493m^2
Surface area	25,340m^2
Base diameter	143m
Height from base to apex of dome	59m
Weight of structural dome elements	523,400kg
Structural material	galvanized steel and aluminium
Number of tubes	88,329 pieces
Number of connectors	25,295 pieces
Cladding	galvanized painted steel and translucent panels

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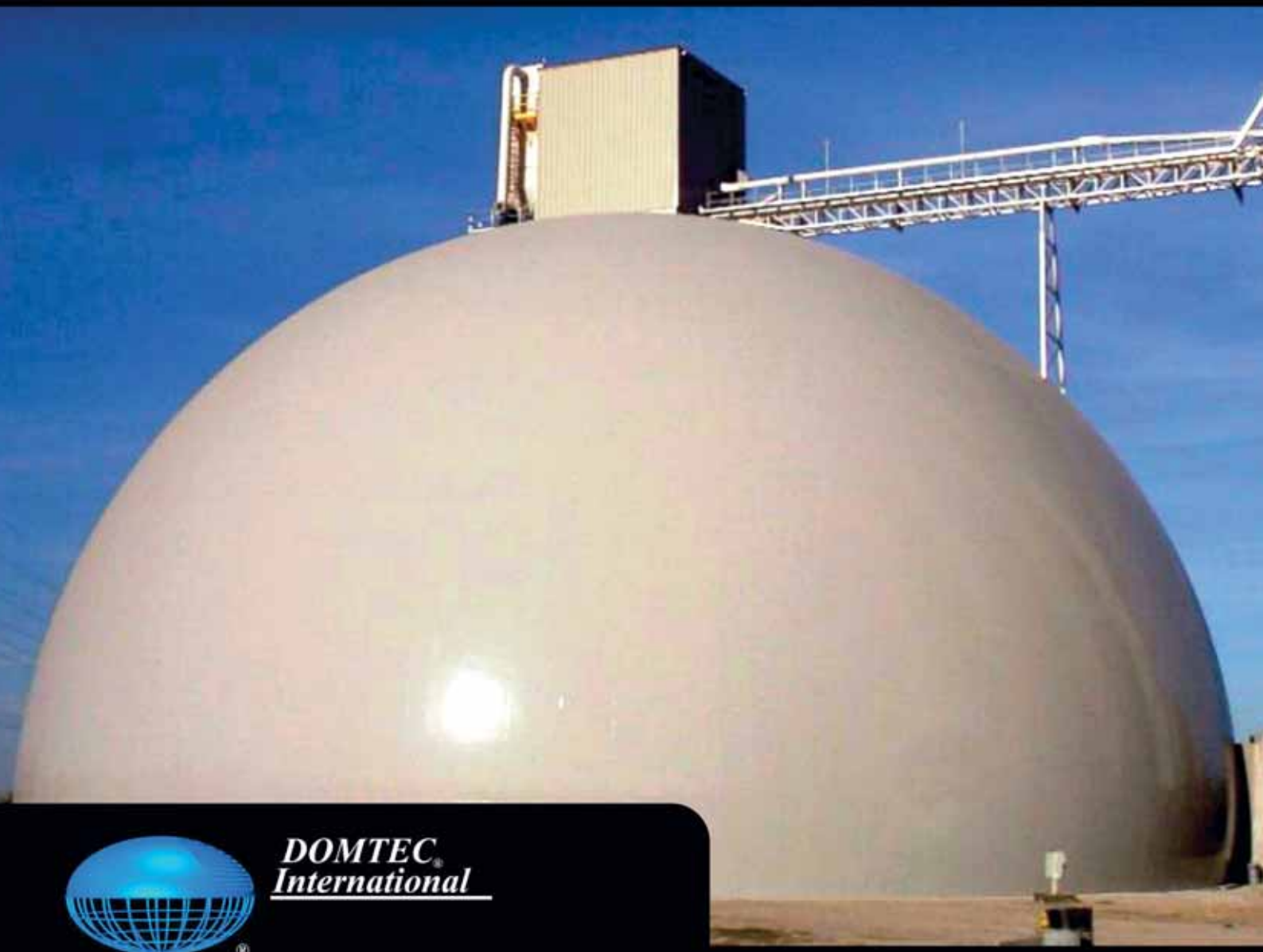

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World-class bulk storage from DOMTEC® International

DOMTEC® International (DOMTEC) has been in the insulated concrete dome construction business for over 20 years providing global world-class bulk storage. This article explores the types of product stored in domes, advantages of domes, the challenges of building in different industries and how DOMTEC overcomes those challenges.

Dry bulk storage industries

Domes become cost-competitive when storing dry bulk materials in capacities greater than 6,000 tonnes. Products generally fall into one of four industries:

- **mining:** frack (frac) sand, iron ore, slag, minerals, molybdenum, precious metals, limestone, coal;
- **power:** wood pellets, wood chips, miscanthus grass, limestone, fly ash, bottom ash, FGD gypsum, coal, petroleum coke;
- **agricultural:** phosphates, potash, and other types of fertilizers (nitrates and sulphates, etc.); grains (wheat, soyabeans, and meals), peanuts, sugar, salt; and
- **cement:** cement, clinker, fly ash, limestone, gypsum.

Dome advantages

The inert nature of concrete, the benefit of polyurethane foam insulation and exterior DomeSkin™ (waterproof roofing membrane) provide an optimized climate for ensuring high product integrity while in storage.

Benefits include:

- high settlement tolerance (reducing or eliminating deep foundations);
- no weather delays during construction (construction activity from the interior);
- no interior condensation;
- no fugitive dust;
- no internal structural elements (no dust settlement);
- fire safe;
- earthquake, high wind/driving rain resistant;
- supports heavy apex and asymmetrical loading;
- small footprint
- product stored high against walls
- variety of reclaim options.

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Not all scrubbing is for surgeons!

This scrubbing is definitely not for surgeons! It is for cleaning air at crushing and other materials handling sites. With the Bateman Dynamic Scrubber you can get rid of dust with 99.5% efficiency!

Four Stages of Operation

- Dust-laden air enters scrubber and heavy particles are forced towards the shell where it is washed into the outlet cone.
- Dust-laden air is forced through horizontal impingement vanes, mixed with water under turbulent conditions, causing the water to break up into smaller droplets, which entrap the fine dust particles carrying them into slurry outlet.
- The almost dust-free air enters the inlet of scrubber fan and scrubbing water is introduced into the centre of the impeller, and mixes with the remaining dust.
- The mixture of dust-laden water flows through the impingement stage into the slurry outlet and clean air leaves the scrubber vertically.

With the recent acquisition of the Bateman Engineering Group by Tenova, Bateman Engineered Technologies, as supplier of a comprehensive range of leading-edge comminution, environmental control and specialised handling equipment and technology to the minerals processing, cement, and food sectors, brings to Tenova TAKRAF its recognised specialist expertise in specialised mechanical technology and equipment and general bulk material handling. Tenova TAKRAF, part of Tenova Mining and Minerals, specialises in the engineering and supply of open-pit mining and bulk materials handling equipment.

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Industry challenges

MINING: Mines are sometimes in areas accessed by dirt roads, at high altitudes, with short building seasons or far from large cities. This makes planning and scheduling critical. Ready mix concrete trucks must continuously access the job site, be dispatched at correct intervals and concrete must not set up before arriving and being applied to the dome structure. USA mines require an additional level of safety requirements in the Mine Safety and Health Act (MSHA) above and beyond what is typically required in the Occupational Safety Health Act (OSHA) requirements at most industry sites.

POWER: Power plants are heavily regulated and often self-impose a strict safety and quality-control standard. Requests for Proposals (RFPs) or Requests for Quote (RFQs) sometimes consist of hundreds of pages of complex requirements. Security is critical and gaining access requires advance planning.

AGRICULTURAL: Domes and reclaim equipment must take caustic product into account and product degradation from mechanical equipment. Train cars continually delivering product to the port or terminal can block entrances, requiring strict scheduling or creative ideas to deliver concrete.

CEMENT: Cement market demand is cyclical, in terms of seasonal summer construction, and year to year fluctuations in the general economy. Due to the high cost of shutting down and restarting kilns, plants prefer to run year round, with short term plant outages. This means construction must often occur within narrow windows to avoid a slowdown in production.

Staying competitive in the market

- Each industry has logistical challenges. Being nimble, planning, scheduling and thinking through the entire construction process, time of year and contingencies has reaped the reward of 100% on-time completion for every DOMTEC project.
- Stringent safety requirements on mining sites helped the entire company hone safety programmes and procedures and think safety from job site to office.
- Quality control requirements in the power industry helped quantify quality assurance and quality control policy. DOMTEC's 77-step quality control plan is second-to-none in the dome industry.
- RFQs from varied industries demands attention to detail. DOMTEC's RFQ review process ensures complete understanding of the document, and safeguards from costly change orders in time and money.
- DOMTEC has weathered difficult world economic times and become a fiscally fit and responsible company. Its healthy financial condition supports adequate bonding capacity and peace of mind to owners and contractors who hire DOMTEC, knowing they'll be around long-term.
- Specialization in dome construction helps DOMTEC stay nimble and focused on being a world-class dome builder. It has an extensive network of consultants, engineering firms, equipment suppliers, and subcontractors who performed to its required standard of excellence in the past and on whom it can call to fill additional scope an owner requires. DOMTEC partners with the finest material handling companies to meet budget and unloading demands for its clients. Using owner contacts or DOMTEC's extensive network, it finds storage solutions suitable to client needs.
- Specializing in dry bulk storage is part of DOMTEC's strategy and long-term success. Its goal is to be the pre-eminent dry bulk storage builder in the world.

Conclusion

Domes make economic sense when storing dry bulk products and keep product integrity high. No matter the industry or location, DOMTEC has and continues to deliver exceptional bulk storage options around the world.

Company background

Established in 1995 after more than 10 years in the monolithic concrete dome industry, DOMTEC was founded on the core values of honesty, excellence and continuous improvement. Now a global leader in bulk storage, DOMTEC partners with owners, engineers and contractors to build properly engineered and constructed domes of superb craftsmanship to protect the bulk storage products of the world.

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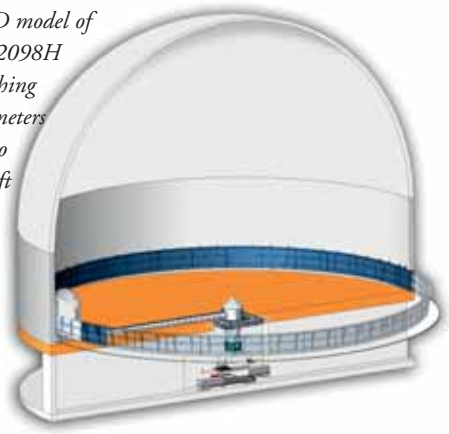
Laidig's new hydraulic DOMinator™ reclaims bulk product from storage facilities

Laidig Systems, Inc. of Mishawaka, Indiana, USA has unveiled the new hydraulic version of its extreme-duty DOMinator™ reclaim system. The Model 2098H DOMinator builds upon the highly-successful electric DOMinator, already installed in nearly 40 silos and domes worldwide.



CAD model of the 2098H reaching diameters up to 120ft

The DOMinator series is well-known in the industry for offering dependable, high-volume, fully-automated reclamation of hard-to-handle bulk materials. Its massive reclaim auger and rugged drive system are precisely controlled by Laidig's Local Machine Interface to provide the most powerful and efficient reclamation available. One of the unique features of the DOMinator is the easy-access perimeter service area — a walkway integrated into the entire perimeter of the storage structure, protected with a reinforced high-strength steel shield, to allow inspection and service of the track-driven advance system.

Installation of a DOMinator in a modern meal facility in Asia.

The new hydraulic DOMinator reclaim system offers significant benefits over its electric counterpart, including:

- more sensitive auger advance control, resulting in longer life of auger and drive components;
- better suited for use in hazardous or explosive environments since power is conveyed to the rotating drive system via a hydraulic union rather than electric bus bars;
- support for larger auger tube diameters, resulting in the potential for a ~30% increase in delivery rates — up to 700CFM (20m³/min);
- increased both starting torque and running torque by nearly 60%, providing dependable reclamation of materials with extremely-poor flow characteristics; and
- designed to accommodate larger-diameter silos or domes, up to 120ft (36.5m), with storage capacities in excess of 1,000,000ft³ (30,000m³).

Laidig has pioneered the development of automated storage and reclaim since 1961, and is now a noted provider of dry-bulk silo reclaimers around the world. It designs, markets, manufactures and services a wide range of storage and reclaim systems, and excels in providing customized solutions for materials with special handling requirements, especially those that require exceptionally-rugged, extreme-duty reclaimers. The company's research and testing has resulted in the development of systems that are well-suited for the storage and reclaim of hard-to-handle bulk solids, especially products with poor flow characteristics, including cement, fly ash, coal, gypsum, cellulosic feedstocks, biomass, meals, pellets, chemicals, recycled products, and a multitude of other bulk materials for process plants or port facilities.

The hydraulic DOMinator is just one of the new state-of-the-art reclaim systems recently developed at Laidig. Its new X-Traktor™ system provides cantilever reclamation in diameters up to 80ft (24m) and as large as 160ft (48m) with a perimeter-supported screw. In addition, Laidig's new Planetaire™ is ideal for the storage of high-density materials with a beam-supported auger enabling unprecedented access to all mechanical components; even in a full silo. As with all Laidig's track-drive, cantilever, and cone-bottom reclaimers, these new systems are designed for demanding, high-capacity applications, including those which require 24/7 operation.

Final assembly of a DOMinator in Laidig's 100,000 SF manufacturing facility in Indiana.

For applications where FIFO (first-in-first-out) inventory management is of value, Laidig's systems have a lot to offer. Its bottom screw reclaimers are specifically engineered to come as close as possible to making FIFO a reality. Unlike most other companies that provide reclaimers as just another component in the system, reclaim systems are Laidig's sole focus. Laidig designs, custom-engineers, fabricates, tests, installs and services its storage and reclaim systems worldwide.

Dome Technology: domes built to withstand wind and weather

The technology of building thin shell Monolithic™ domes by spraying foam and concrete to the inside of a pressurized, dome shaped, fabric airform was developed and patented in Idaho by brothers, Barry, David and Randy South. In 1975, the South brothers began experimenting with inflatable airforms, spraying them with polyurethane foam to develop initial rigidity, then adding rebar and continuous-spray concrete to form the completed structure. A year later, they created their first monolithic dome using the continuous spray-in-place process. They built the first monolithic dome home in 1977 and two years later were awarded their first United States patent for the monolithic construction process. The first patent was followed by a Canadian patent in 1980 and a second United States patent in 1982. Additional registered and pending patents for various dome construction applications have followed in the ensuing years.

By 1986, Dome Technology had constructed 100 domes and two years later built its first dome in Europe. In 1989, the company built 28 domes for grain storage in the Middle East. By 1994, Dome Technology had constructed 200 domes along with its first dome in Eastern Europe. A year later the company built its first dome in Asia, and three years later built its first dome in South America, as well as the world's largest clinker dome silo built in the United Arab Emirates. In 1988, Hurricane George struck three of the company's domes in Puerto Rico, none of which sustained any damage. No structural damage has occurred to dome structures that have been in the paths of recent hurricanes in the southeastern United States including Hurricanes Charley, Francis, Ivan and Jeanne (2004) and Dennis and Katrina (2005). One of the company's storage domes in Manzanillo, Mexico withstood 6.2 and 7.8 Richter scale earthquakes, while most surrounding port facilities and structures were heavily damaged or slipped into the ocean.

In 2000, Dome Technology built the then largest diameter dome ever built, a 280-foot diameter church structure in Birmingham, Alabama. In 2007, the company completed an industrial coal storage dome in the Midwest with a diameter of 298 feet, making it the current largest dome in the world. The Alabama church dome remains the largest architectural dome. Over the ten years prior to 2002, the company averaged in excess of 20 domes per year. With good business resiliency planning following serious setbacks caused by the September 11, 2001 terrorist attacks, Dome Technology began diversifying its products and services and expanding its markets for non-industrial dome applications. It has been successful in doing so and has experienced phenomenal growth over the last four years.

Beginning in 2005 and continuing into 2006, the industrial market rebounded strongly while the architectural market, particularly schools, remained strong. The years 2006 and 2007 marked an important entry into large recreational applications for Dome Technology's monolithic domes with completion of its first indoor water park under an elliptical dome as part of a new major chain hotel in Ohio. The years 2007 and 2008 showed very strong domestic and foreign markets with foreign dome construction projects pending, under way, or completed in Canada, Poland, Latvia, Morocco, Romania, and Bulgaria.

Over the last 30 plus years, Dome Technology has constructed some 500 monolithic domes throughout the United States and in Canada, Latvia, Estonia, Russia, Argentina, Germany, Jordan, Lithuania, Mexico, Puerto Rico, St. Croix, Turkey, Saudi Arabia, Iraq, and United Arab Emirates.

Refurbishments

As with all ageing equipment, domes can wear out and need refurbishing. One interesting contract recently completed by Dome Technology was the recovering of an existing dry cargo storage dome.

The storage dome was built over 20 years ago by another company. Wear and tear had exposed some of the polyurethane foam and the material began to sag.

An off-white double-kynar painted steel shingle was proposed and accepted as a covering. The kynar paint would act as a rust inhibitor from both sides of the shingle and provide years of protection. Damaged shingles can be easily replaced as needed, avoiding costly repairs trying to recover the entire dome. Dome Technology has a travelling crew with years of experience covering double-curved surfaces such as domes with metal shingles. They could provide an aesthetically pleasing cladding on the dome in a timely and cost-effective manner.

Dome Technology skilled staff refurbishing a 20-year-old dome for PCS Phosphate.

Due to stringent deadlines, there were just nine weeks to complete the job. Mobilization, the Labor Day holiday and other scheduling conflicts with the safety instructor caused a week and a half delay in the required MSHA (Mine Safety and Health Administration) training. After the training was done, there were only seven weeks to complete the job.

Shingling began and went smoothly until the head house, at the apex of the dome, was inspected. Several years of weather had deteriorated the existing foam. A water proofing solution was proposed and accepted to remove the existing foam insulation, shingle around the head house then waterproof and recover with foam. The project was completed three weeks ahead of the contracted deadline. The customer PCS Phosphate was pleased that all objectives were met and the project was completed ahead of schedule.

Grain dome for Parrish and Heimbecker

The advantages of choosing 'dome' style storage and handling facilities compared to common concrete and steel silos are numerous. Canadian grain handler Parrish and Heimbecker's (P&H), which moves 3mt (million metric tonnes) of grain to export and domestic markets, settled on these advantages after exhaustive comparison with the aforementioned.

Compared with the storage limitations of a traditional silo with a cylindrical wall and conical or flat roof, the entire interior of the DomeSilo™ can be used to contain the stored product, thereby increasing overall storage capacity for any given diameter and height. P&H operations worked with Dome engineering to create a unique conveyer system to maximize performance handling at its Hamilton, Ontario facility.

P&H realized considerable financial savings with the elimination of deep foundations required for other storage types. The superior strength of the DomeSilo™ provides a high tolerance for differential settlement. Additionally the reinforced concrete DomeSilo™ uniquely maintains structural integrity in extreme heat and fire conditions. Its designed strength provides superior explosion containment.

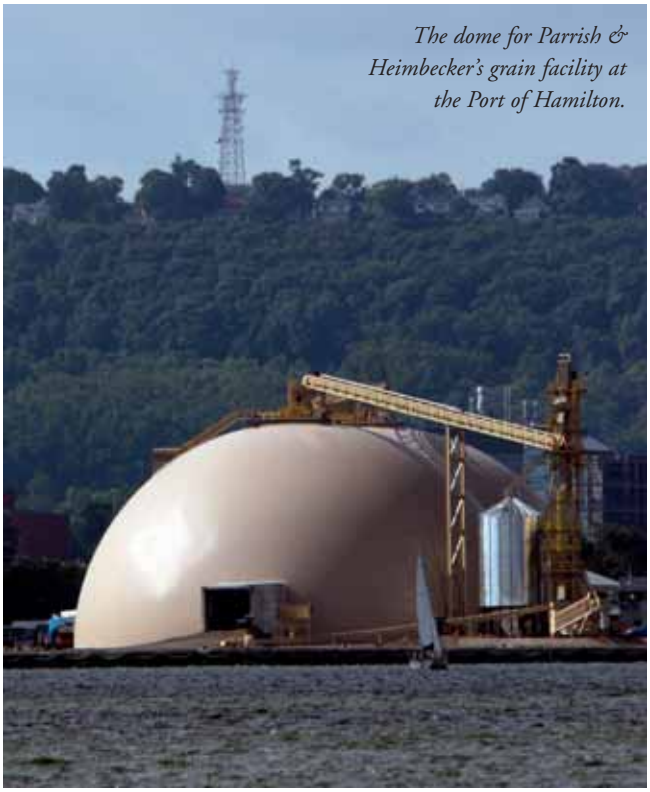
The DomeSilo™ building process is extremely efficient. Inflation of the DomeSilo™ membrane takes just a few hours, after which all construction processes continue inside the inflated dome, safe from outside weather conditions. This protected environment allows construction in adverse weather and enhances safer, faster completion of the project. Adding to this is a positive environmental impact. The efficient double-curvature structure of a DomeSilo™ conserves construction materials by using less materials to enclose more storage volume than any other comparative structure. During construction, as well as during operation, the DomeSilo™ more efficiently contains potentially harmful environmental contaminants.

The twin storage domes capable of housing more than 60,000 tonnes of agricultural products are boosting grain volumes in the Port of Hamilton. The new Parrish and Heimbecker (P&H) terminal on Pier 10 are a primary centre for moving grains and other agricultural commodities. The facilities are primarily used for export purposes, but also handle shipments from the US and Western Canada destined for local processors.

In addition to handling the traditional coarse grains that move through the port, the 90 foot high by 190 foot diameter domes have the flexibility to handle protein meals, sugar, salt and granular fertilizer. An integral part of the terminal design is the specialized under floor conveyor system connecting the two domes, which, in conjunction with other on-site conveyor systems, will dramatically increase loading and discharge speed for trucks, rail cars and ships, making the 380,000ft^2 terminal one of the most efficient on the Great Lakes.

P&H, with over 100 years of agribusiness experience, has committed over $30 million to the fully secured terminal, which has direct access to marine, road and rail including full Seaway draught, truck scale staging and a 25-unit railcar capacity. The terminal also has considerable available space to accommodate future expansion.

The domes, which were constructed by Dome Technology incorporate a floor level high-speed conveyor system that, compared to any other Canadian export elevator in the Great Lakes, will improve loading and discharge times for all modes of transportation by as much as 20–25%, according to P&H. In addition, the flat storage allows P&H to handle proteins that do not work that well through a silo and, since the facility is designed to be less harsh on product handling, it has attracted new customers.



The dome for Parrish & Heimbecker's grain facility at the Port of Hamilton.

"This facility is probably the most efficient on the east coast," said Bruce Wood, president and CEO of the Hamilton Port Authority. "With direct dockage and the slip, four ships can be accommodated at once."

The domes are constructed by inflating fabric airforms and subsequently spraying the inside fabric with polyurethane foam to develop the initial rigidity, then applying rebar and continuous spray concrete to form the completed structure. Compared with large conventional free span structures the domes' construction costs are lower. Other benefits include high energy efficiency, rapid construction and better space utilization as bearing walls and columns are not required. During the past 30 years hundreds of similar domes have been built around the world.

Bruce Hodgson, director of market development at St. Lawrence Seaway Management Corporation said, "Parrish and Heimbecker has recognized the efficiencies of the marine mode with the opening of their state-of-the-art facility in the Port of Hamilton. By including our system in their supply chain they are well positioned to work closely with their suppliers and to increase their market share by providing their customers with a consistent and reliable service while adding value. We look forward to working with them in the future."

Bill Parrish Jr., president and CEO, P&H paid tribute to Rob Bryson, director of Eastern Canadian Grain Operations for bringing the facility in on time and budget in a two- to three-year time frame. Parrish told the audience, "We've been around a long time, we've seen a lot and learned a lot. I think our stability is a key point in our success. Our key management team has been together for over ten years and most of us closer to twenty. We're old but we're not rusty and this is a vibrant time for the agribusiness. Over the past five years P&H have purchased or constructed five flour mills and now have seven mills. The seven mills consume 1mt of wheat per year equalling 33 of the newly constructed dome's capacity."

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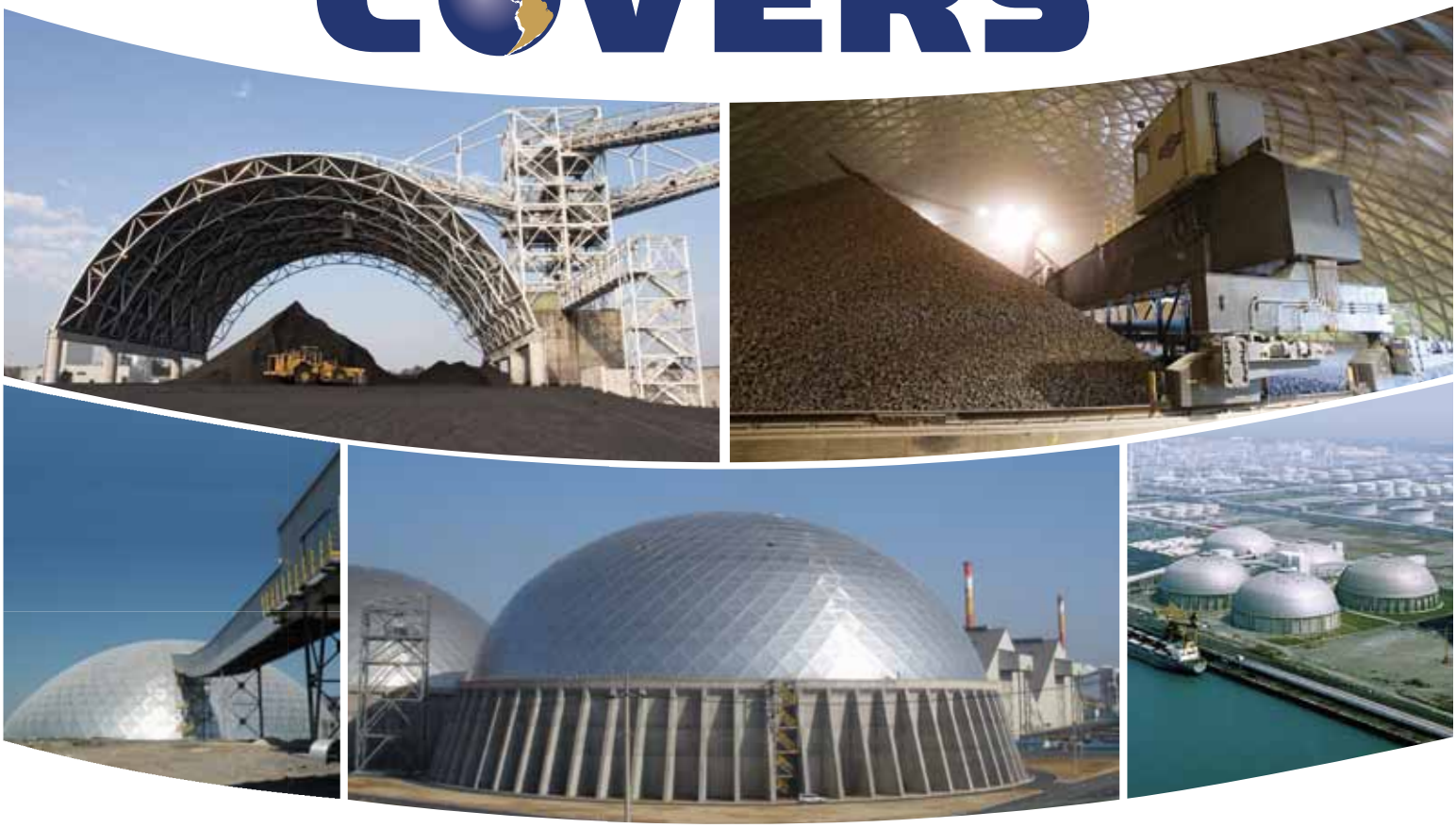

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CST Covers offers custom-designed aluminium domes for bulk storage

CST Industries, Inc., is a complete storage system provider for engineering and manufacturing professionals in thousands of different industries and applications throughout the world.

The company specializes in manufacture and construction of factory-coated metal storage tanks, aluminium domes and specialty covers and reclaimer systems.

The group's portfolio consists of CST Storage, CST Covers, Weaver Reclaimer Systems and Vulcan Tanks. Six manufacturing facilities and technical design centres and multiple regional sales offices are located throughout North America and the United Kingdom.

International offices are located in Brazil, United Kingdom, India, Singapore, Vietnam and Dubai. Currently more than 275,000 CST tanks and covers have been installed in 125 countries throughout the world.

CST Covers

CST Covers' aluminium domes are an ideal solution for almost any storage application. Aluminium dome structures offer the following advantages:

- **corrosion resistance:** aluminium is inherently corrosion resistant versus other alloys. It will last the lifetime of the structure and will not need to be painted or repainted for protection from the atmosphere;
- **low lifetime maintenance cost:** with no corrosion or the need to repaint to protect the structure over time, there is little-to-no maintenance cost associated with an aluminium dome;
- **clear-span capability:** aluminium's lightweight characteristics allow for larger clear-span cover capability than structures utilizing steel, concrete and other materials;
- **fast and low cost construction:** creative design and lightweight components provide for installation in a third of the time it takes to install some other cover systems. Less time, labour and equipment needs combine for a low total cost of installation;
- **design flexibility:** aluminium's excellent strength-to-weight ratios and creative component design yield covers and structures that cannot be achieved with other materials

The dome's superior structural design gives it many advantages. Using proprietary variations of geodesic geometry, CST Covers' domes are noted for their ability to meet exacting live load requirements by providing greater stiffness and strength, pound-for-pound, than any other dome geometry system.

CST Covers domes have been designed for snow loads of up to 165 pounds per square foot and windloads of up to 150mph. The company's unique panel design is specifically engineered to support loads of up to 500 pounds on any one square foot. CST Covers can design domes up to 1,000 feet in diameter.

CST Covers aluminium domes for bulk storage are custom designed around a bulk facility's specific clearance requirements, basin configuration and bulk handling equipment. Structurally efficient and lightweight, they maximize bulk storage capacity, minimize foundation costs and provide dependable protection form the elements while remaining virtually maintenance free.

CST Covers was created by combining two globally renowned aluminium cover companies, Temcor and Conservatek Industries. CST Covers designs, manufactures and builds custom aluminium covers and structures for architectural, environmental and industrial applications. CST Covers has supplied over 16,000 covers in more than 90 different countries and offers multiple structural, high strength aluminium design solutions including domes, vaults, extruded flat covers, formed plank covers, truss supported covers, space frames as well as custom products specifically designed for customers unique vertical and overhead applications.

The company maintains operations in Gardena, Calif., Conroe, Tex., and Rincon, Ga. The company is headquartered out of the Conroe, Tex. location.


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Recent dome projects for PIRS SA

The 30,000-tonne sugar storage dome built by PIRS SA for Ingenio La Union in Guatemala.

French bulk storage specialist has been in business for 29 years, building its systems and products.

The company has given *Dry Cargo International* details of some of its latest projects.

Polsky Cukier — Poland

Polski Cukier awarded the contract to build a storage Agridôme to PIRS SA. This dome is designed to hold 50,000 tonnes of refined sugar.

On 12 January this year, PIRS SA inflated the airform for the dome. In order to keep the dome footprint to the minimum, PIRS SA decided to use a geodesic shape, with the following measurements:

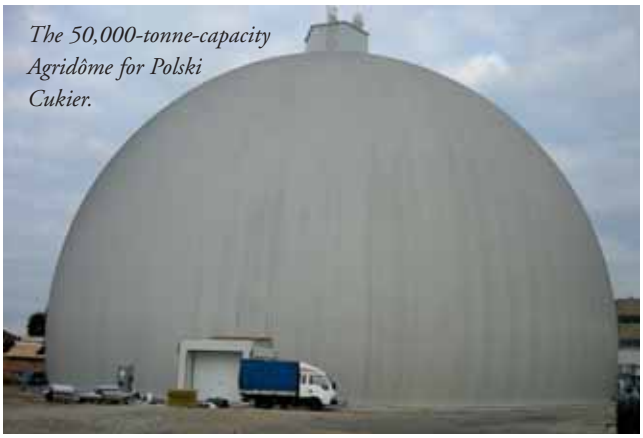
- diameter at the equator: 58.4m
- diameter at the base: 56.89m
- total height: 35.8m

Although Polish winters can be harsh and do not offer ideal conditions for construction, PIRS SA was able to finish the dome on time and the customer was able to keep to its schedule.

Ingenio La Union — Guatemala

Ingenio La Union awarded a contract to PIRS to build a 30,000-tonne Agridôme storage facility to hold sugar. This was the first facility of that capacity for refined sugar in Central America. PIRS SA therefore had to adapt all the systems for construction, ventilation, reclaiming and dedusting to local conditions taking into account important seismicity, climate conditions, distance from PIRS' base and customs.

Again, PIRS SA opted for a geodesic building, as a double arch is more resistant to earthquakes than a vertical cylindrical wall (single arch).



The 50,000-tonne-capacity Agridôme for Polski Cukier.

The measurements are as follows:

- diameter at the equator: 52m
- diameter at the base: 51.25m
- total height: 30.40m

Ingenio La Union was very pleased that the dome was completed on time and available for use when it began operations.

Riga Fertilizer Terminal — Latvia

PIRS SA was chosen to take part at the erection of six half-sphere Agridôme storage facilities for various fertilizers, with a total storage capacity of 130,000 tonnes.

The first unit was inflated on 31 May 2012. The fourth one was inflated at the end of August.

VIBRAFLOOR reclaiming system: active reclaim of dry bulk product

Silexport International of France manufactures a unique bulk reclaiming system, the active floor VIBRAFLOOR.

Initially designed to clean grain silos, active floors are being adopted in a variety of industries handling bulk products, such as sugar plants, refineries, cement plants, feed meals, biomass operators, shipping companies and so forth. A VIBRAFLOOR is the assembly of independent vibrating modules, typically 2.2m wide, 3m to 4m long and 45mm thick. Each module is powered by an electric vibrator, ATEX certified, 400 to 700W.

Laid on slightly inclined floors, typically 8 to 12°, modules will entirely clean residual slopes of bulk products, out of silos, ships, railway cars, containers and so forth. As a modular concept, there is no limitation of either size or shape of a VIBRAFLOOR.

Most bulk products, granular or powdery, free flowing or cohesive, can be efficiently handled by an active floor. VIBRAFLOOR is now used on all types of cereals, including soya beans, paddy rice, but also soyabean meal, fish feed, sugar, flour, fly ash, sulphur, saw dust, wood chips, wood pellets, serox and more.

VIBRAFLOOR first came to market in the grain industry. Grain operators and farm co-operatives value the unsurpassed efficiency and ease of operating active floors. One hundred percent clean-up, no maintenance, negligible power intake and total safety are major comparative advantages of the technology.

Recent references in the grain industry include 28m-diameter wheat silos in the harbour of Sebastopol, with an unloading capacity of 800tph (tonnes per hour). A 30,000-tonne barley silo was commissioned last year in the harbour of Antwerp. Several grain silos are equipped each year in France, for farm co-ops, diester (biodiesel) plants, and feed meal plants.

When required, self-cleaning triangular aeration ducts are interposed between spans of modules.

Five self-unloading vessels are in operation, for the transport of crystal sugar, flour and fish feed. A contract has recently been awarded by a Chilean operator, to unload wood chips barges at a rate of 2,000m³/h.

An active floor was recently been fitted inside a new 14m-diameter silo in a German sugar plant. The lay-out is 'conical', with trapezoidal modules reclaiming the residual cone of sugar towards a central opening.

With its core business in the grain industry, the company is progressively expanding its market in other industries. One very promising industry is biomass, where VIBRAFLOOR is positioned for large harbour wood chips receiving platforms, and self-unloading woodchip bulk carriers. The active floor is also very attractive to wood pellets operators, as the vibrating action gently carries pellets without noticeable breakage.

Another line of development is the stockpile reclaiming of coal and minerals. As gravity does not allow for more than a few percent to be reclaimed, heavy-duty vibrating modules laid around the reclaim openings can dramatically increase the initial flow.

Development in any sector of the industry can only be undertaken with the support of enlightened operators. The risk for such operators has been minimized over the years, with the experience accumulated by a highly competent and motivated staff, very much client-oriented, dedicated to success, come what may.

DC

NBE boosts market presence in Canada

In early July, National Bulk Equipment, Inc. (NBE). National Bulk Equipment, Inc., today announced that it has appointed PROMAT Engineering Sales (2003), Inc. to represent the full line of NBE bulk material handling systems, bulk material packaging systems, and packaged product recovery systems, throughout the Canadian provinces of Manitoba, Ontario, and Quebec; and the Maritime provinces of New Brunswick, Nova Scotia, Newfoundland and Labrador, and Prince Edward Island.

"PROMAT Engineering has a very proactive, engineering-based sales strategy," said Todd Reed, president of NBE. "They recognize the application-specific, integrated systems capabilities of NBE and are able to communicate that distinct position to their markets," he added.

Based out of Mississauga, Ontario, Canada, PROMAT provides to bulk material handling operations and processing facilities an experienced staff of sales engineers. "We are an organization with broad applications engineering experience," says David Lewis, president of PROMAT. "From food processing to chemical processing and pharmaceuticals; to mining or forest products, the PROMAT team is ready to leverage the strength of NBE and bring even greater process performance advantages to our customers," Lewis said.

World steel production falls

World crude steel production declined 0.1% in June to 128mt (million tonnes), compared with June 2011, the World Steel Association has said.

China's production increased 0.6% to 60.2mt of crude steel, Japan improved 3.5% to 9.2mt, and South Korea rose 4.3% to 5.9mt compared with June 2011.

In the European Union, Germany's production decreased 4% to 3.7mt of crude steel in June. Italy, France and Spain also produced less crude steel in June, compared with June 2011.

Turkey's crude steel production rose 4% in June to 2.9mt.

US production rose 8% to 7.3mt of crude steel in June, compared to the year-earlier period.

Brazil, South America's biggest steelmaker, produced 2.7mt last month, 8.5% less than in June 2011.

The world crude steel capacity utilization ratio for the 62 countries reporting to the World Steel Association was 80.4% in June, 2.5 percentage points lower than June 2011.

For the first six months of 2012, world crude steel production increased 0.9% to 766.9mt compared with the same period of 2011.

North America's production increased 7.2% with the United States seeing an 8.4% increase over the first half of 2011. Asia's crude steel production increased 1.6% with China improving 1.8% compared with the year-earlier period.

EU production dropped 4.6% and South America saw a 3.5% decline during the first half of 2012 compared with the same period in 2011.

FIBC imports to EU at three-year high in 2011

According to EFIBCA (European Flexible Intermediate Bulk Container Association), after a deep slump in 2009, FIBC (big bag) imports to the EU have climbed to a three-year high in 2011. Compared to 2010, the value of imports grew by 27% to a total of €339.2 million in 2011 (€267.5 million in 2010). The number of imported big bags has however still not completely caught up on the results of 2008 (€358.8 million Euro), but 2011 is already the second year of recovery.

Turkey consolidated its leadership as FIBC exporter to the EU with a market share of approx. 40% in 2011. India remained in second place with approximately 35% of the total FIBC imports to the EU (2010: 30%). Meanwhile, China's EU export share reduced from 13% to 11%.

These three main exporting countries together assume approximately 85% of the total import value to the EU27 zone. As in 2010, Bangladesh remained in fourth place. Serbia overtook Thailand and is now the fifth-largest importer of FIBCs to the EU.

EFIBCA represents the interests of FIBC manufacturers, distributors and material suppliers towards authorities, regulatory bodies, the public and other institutions connected with the FIBC business. EFIBCA is the European platform for exchange and co-operation on quality, safety and regulatory issues and provides guidance for the FIBC user.

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Transportation, handling, storage and filling of liquids and bulk material — the engineers from SMB International GmbH offer these technologies from one source.

The automation starts when the material is received. The automatic truck unloading system picks up the drums or containers from the truck and places them efficiently and precisely on the conveying system near the loading platform. In cases where drums are delivered on pallets, they can be de-palletized automatically. Empty drums may be stored in an automatic storage system before being filled. In cases where drums are filled with liquids or solid material, they can be emptied into underground silos. From here, pneumatic conveyor systems transfer the bulk material into the storage silos.

With the Kokeisl® fluidizator and dosing by gravity (Kokeisl® swivel valve) of the new affiliate Legno AG (Switzerland) the bulk material gets a regulated outflow and is filled accurately to the precision of one gram. The filled bags are then transported by a conveyor passing the bag press station, turntable, curve conveyor guide, sack rows, timing belt and finally the palletizing plant which handles high packing weights at high speed to pack the bags with high accuracy in individual packing pattern.

An automatic compact storage system may store the pallets before being transported automatically to the truck for dispatch.

The latest bag palletizing plant was designed by SMB engineers for a large German chemical company. This system has a capacity up to 4,000 bags per hour for five-layer pattern.

"Depending on the requirements normal or high-performance packing capacity is possible. Different layer in 3, 5, 6, 8 or 10 combinations combined with bag rotation to ensure the best positioning, space-saving and stable loading of bags on the pallet" explains Andreas Heckel, managing director of the SMB Group. After the pallet discharge point follows a "not ok" area and a stretch wrap machine. All units are equipped with necessary safety devices as well as safety light barriers with muting function. The drop-down and pick-up areas are secured with induction loops which recognize the pallet carriers automatically. After leaving the pick-up area the palletizing plant starts working on a fully automatic basis again.

Such complete systems integrate the highest grade of automation from the point of receiving material via material handling, conveying, filling, storage and dispatch.

The SMB Group covers the areas of filling and conveying equipment, ship loading, warehouse technology, level measuring technology and conductivity measurement. The main focus of the business lies in the planning, development, manufacture and the world wide distribution and service.

The SMB Group knows about high complex installations as well as the warehouse logistics as complete system provider. Quite consciously, SMB decided in favor of a high share of in-house production in Quickborn since many years. The choice of high manufacturing expertise and assures quality and timely delivery. The installation and service team handles national as well as international projects. An extensive, worldwide operating distribution network makes allows fast response and professional representation always.

Things get tougher for Brazilian pulp and paper

Klabin pulp mill.

Patrick Knight

Brazil is suffering with stagnant demand, falling prices, stocks rising — and now, apparently, the country is no longer the world's lowest-cost producer. The shine seems to be going off Brazil's pulp and paper industry, one of the world's largest.

The price of the short fibre pulp made in Brazil, the world's largest manufacturer of a type of cellulose used to make printing and writing as well as tissue paper, averaged $520 per tonne in the first half of this year, 6.6%, or $45 per tonne less than in the first half 2011.

Demand in China and western Europe, the two leading markets for Brazilian pulp, has been falling in the past few months. Although only a little less has been shipped to China, which pays the lowest prices for the pulp it buys, significantly less has gone to the Netherlands, Italy, and France, as well as to the United States, which pay up to $150 per tonne more for their pulp than China does.

Analysts suggest that the average price could fall a further $30–50 a tonne as the year progresses.

World stocks of short fibred pulp are now sufficient for 40 days' consumption, 5–6 days greater than normal, which is preventing price rises.

Brazil's three largest pulp and paper makers, Fibria, Suzano and Klabin — all with large debts denominated in US dollars — all made large losses in the second quarter of this year.

This was largely because the continued fall of the Brazilian currency against the US dollar, which means that it costs considerably more for the country to service its substantial debts.

The plus side of a devaluation, of course, is that the price of what is exported can be cut, but mills will still receive the same amount in local currency in which all running costs are incurred.

The brand new Eldorado mill, being built by a newcomer to the Brazilian pulp and paper scene, an associate of JBS (the world's largest beef packing company), is still on schedule to start producing pulp before the end of this year.

Eldorado is expected to make and export between 15,000 to 20,000 tonnes of market pulp this year, with output rising to close to capacity of 1.5mt (million tonnes) next year.

This will raise the amount of market pulp exported from Brazil, which has remained steady at about 5.5mt since Fibrias 'Tres Lagoas' mill started up in Mato Grosso do Sul state three years ago, to 7mt in 2013.

The Suzano company which, after Fibria, is the world's second-largest producer of the short fibre pulp made from eucalyptus, it is now looking for a partner to help it raise the funds needed to complete the 1.5mt-capacity mill it is building in Maranhao state, in the north east.

Suzano's new mill, the first ever to be built in this part of the

country, and the first of two planned for the region, is adjacent to a railway running to the port of Itaqui.

This port is about two days' less sailing time to customers in Europe and China than ports in the south, from where the bulk of Brazil's pulp now leaves.

Fibria, which lost $280 million in the second quarter of this year, is mulling over whether to make a start soon on the second phase of its mill at Tres Lagoas.

Stora Enso, a partner together with Fibria in the Veracel mill in Bahia state, is also considering duplicating that mill.

The world can accommodate the pulp produced by one large new pulp mill each year, which will add 1.5mt to the 50mt of pulp now being made each year. So the question of timing is crucial.

Stora Enso is to start up its new 1.5mt mill in neighbouring Uruguay early next year. But the company's senior executives, such as those responsible for sales, will be based in Brazil.

Progress is still being made in pushing up yields and many forests are now clear cut and mature trees replaced with new seedlings after the second cut, 14 years after being first planted. Forests used to be re-planted after a third cut at 21 years.

For how much longer it will be possible to develop clones which yield much more and which means it makes economic sense to grub up and replace trees after they have sprouted just once, remains to be seen. There will clearly eventually be a limit to further increases in productivity. But perhaps this is still some way off.

The pulp and paper companies are all taking steps towards using some of the waste wood to make second generation fuels for powering vehicles. Bio-fuels may become a new source of revenue for the companies in the near future, in addition to the sale of timber.

With millions of people moving from the countryside to cities each year in many of the world's most densely populated countries — notably China, India, and Bangladesh, as well as some in Africa — demand for tissue, for which Brazil's short fibred pulp is very suitable, seems likely continue to grow steadily for the foreseeable future. Consumers in urban areas spend much more on personal hygiene than those who live in the countryside.

The same pattern may not be true for printing and writing paper, however.

It was often predicted in the past that paper would soon become redundant in the modern office. However, this has not happened to any degree until now.

Demand for newsprint, on the other hand, is certainly falling. Any suggestion that a new mill or even a new line to make more newsprint should be built in Brazil has long been abandoned, as newspapers get thinner, or cease publication.

Whether books as we know them have a future, as sales of tablets and other gadgets boom, is being increasingly questioned. For the generation of people born in a digitalized world, the future of printing and writing paper looks less guaranteed.

This would be very bad news for Brazil, which exported about 50,000 tonnes less paper in the first half of this year than it did in the same period of 2011, and has seen the average price of paper fall by slightly more than that.

Although the giant Klabin company, the largest in the pulp and paper industry in Brazil, made a loss in the second half of this year, together with Suzano and Fibria, this was exclusively because dollar-denominated debt weighed more heavily. It was not because prices of packaging materials fell.

Demand for the various types of packaging which are the speciality of Klabin is holding up well, spurred by continued strong demand for consumer goods of all types. Demand also remains strong for liquid packaging. This, in conjunction with Tetrapak, is a Klabin specialty in Brazil, and is exported to dozens of countries as well.

Although most pulp companies transport most of the pulp they export to ports by rail the already very serious congestion at ports, notably Santos and Paranagua, has become appreciably worse in the past couple of years. This situation will continue to deteriorate, as exports of soya and maize, as well as of sugar, continue to soar. DCi

There is serious congestion at the Port of Paranagua.

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GRAIN TERMINAL *directory*

2012

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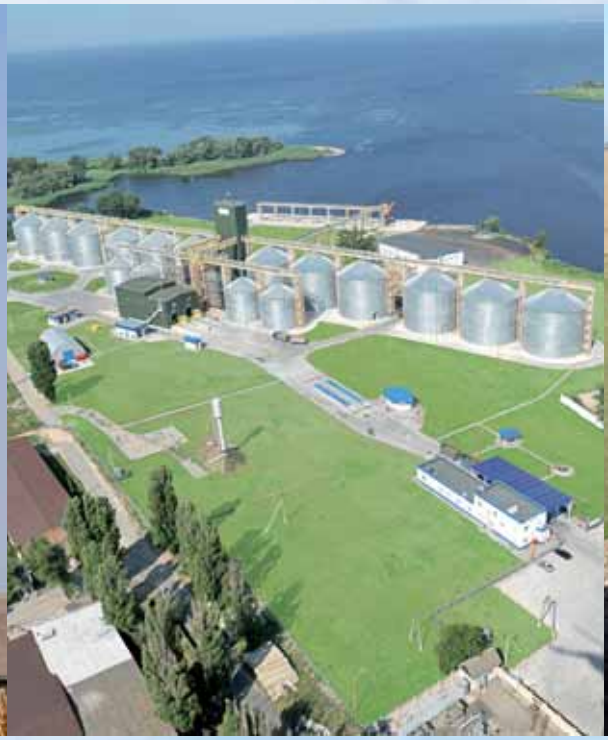

Grain & Seed processing plants

Silo complexes

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The scope of supply for the three 80,000-tonne silo projects comprised intake conveying equipment, outloading facilities and two huge maize dryers, each with a capacity of 100 tonnes per hour, at each of the three sites. Furthermore, a framework agreement covered additional plants, of which the next two has been put into operation for the time of the wheat harvest in July 2012.

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ARGENTINA

BAHIA BLANCA

Oleaginosa Moreno Hermanos SA

Berths 2 and 3
Puerto Galvan Port area
Bahia Blanca 8103
T: + 54 291 457 3333
E: jruz@omhsa.com.ar
Export: Yes
Location: Bahia Blanca, Argentina
Ownership: Bahia Blanca Port Authority
Total Storage: 100,000t
Vessel Size Limitation: Max draught 45 feet, Max LOA 250m
Loading rate: 1,600tph

BAHIA BLANCA

Terminal Bahia Blanca, Piers 5/6, 7/8 and 9

Ingeniero White Port Area
Bahia Blanca
Buenos Aires 8103
Contact: Mr Horacio Moretti
T: + 54 91 457 3035
F: + 54 91 457 1728
E: horacio.moretti@bunge.com
Export: Yes
Location: Bahia Blanca, Argentina
Total Storage: 120,000t
Vessel Size Limitation: Pier 5/6: Max draught 38 feet, Max LOA 245m.
Pier 7/8: Max draught 38 feet, Max LOA 200m.
Pier 9: Max draught 45 feet, Max LOA 250m.
Loading rates:
Pier 5/6 - 1,600tph
Pier 7/8 - 1,600tph
Pier 9 - 2,000tph

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C1104BCA
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F: + 54 11 45 900 991
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W: www.apmterminals.com

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Av. Edison y Calle Prefectura Naval Argentina
Dársena D Sud 2da.
Puerto Nuevo
Buenos Aires
1104
Contact: Lic. Nicolas C Caporale
T: + 54 11 4311 3598
F: + 54 11 4312 8031
E: ncaporale@terbasa.com.ar
Total Storage: 175,000t

BUENOS AIRES

Terminal EMCYM

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Buenos Aires 1104
T: + 54 11 4313 0332
F: + 54 11 4313 0347
E: maritima@basal.com
W: www.basal.com

PUERTO GENERAL SAN MARTIN

Terminal 6 S.A.

Hipolito Yrigoyen y Costa del Parana
Puerto General San Martin
Puerto General San Martin
Provincia de Santa Fe
CP 2202
Contact: Mr Pablo Ferrés Sayago
T: + 54 3476 438066
F: + 54 3476 438046
E: avaldez@terminal6.com.ar
W: www.terminal6.com.ar
Export: Yes
Location: Left bank of Paraná River.
Throughput Capacity: Monthly record in 2006: 1.1 million tonnes of grain, meal and vegoil.
Total Storage: 730,000 MT for dry products
147,600 MT for vegoil.
Vessel Size Limitation: Capable of handling up to Capesize vessels.

QUEQUÉN

ACA Berth Nbr 3 - Quequen Port

Asociacion de Cooperatives Argentinas Coop.(ACA)
940 Madero Avenue
6th Floor
Buenos Aires C1106ACW
Contact: Mr Nestor E. Salaberry
T: + 54 11 4313 1300 ext.1168/1170
F: + 54 11 4313 1349
E: Salaberry@acacoop.com.ar
W: www.acacoop.com.ar
Export: Yes
Location: Left hand margin at the mouth of the Quequen River, Buenos Aires, Argentina
Throughput Capacity: 1,800mtph
Total Storage: 180,000mt dry grains
Vessel Size Limitation: 230mt load; draught 39 feet alongside at datum but according to Necochea Port restrictions
Additional storage for vegetable oils, dry fertilizers.
ACA is a cooperative that also provides throughput to other Argentine exporters.

QUEQUÉN

Consorcio de Gestion del Puerto de Quequen

Avda. Juan de Garay 850
Quequén
Buenos Aires
7631
Contact: Mr Ernesto Costanzo
T: + 54 2262 450006
F: + 54 2262 450006
E: secretaria@puertoquequen.com
W: www.puertoquequen.com

ROSARIO

Neptun SA - Operadores Maritimos

Terminal 1 s/no
(Puerto Rosario)
Rosario
Sante Fe 2000
Contact: Mr Alejandro Jose Peirone
T: + 54 57 1221 9406
F: + 54 341 4808304
E: info@neptunlog.com
W: 'www.neptunlog.com

SAN LORENZO

ACA Berth - San Lorenzo Port

Asociacion de Cooperatives Argentinas Coop.(ACA)
940 Madero Avenue
6th Floor
Buenos Aires
C1106ACW
Contact: Mr Nestor E. Salaberry
T: + 54 11 4310 1300 ext. 1168/1170
F: + 54 11 4313 1349
E: Salaberry@acacoop.com.ar
W: www.acacoop.com.ar
Export: Yes
Location: KM 446,2 of Parana River – Santa Fe Province - Argentina
Throughput Capacity: 2,200 tph
Total Storage: 240,000mt dry grains
Vessel Size Limitation: 273mt load; draught 40 feet alongside berth at datum but according to Parana River limitation.
Additional storage for veg. oils, dry fertilizers & liquid fertilizers.
ACA is a cooperative that also provides throughput to other Argentine exporters.

SAN LORENZO

Vicentin Elevator

Km 441
San Lorenzo
Contact: Mr Jorge Forbitti
T: + 54 3 476 424 899
F: + 54 3 476 425 977
E: consultas@vicentin.com.ar
W: www.vicentin.com.ar

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F: + 54 3329 425279
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W: www.tpsp.com.ar

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W: www.abb.com.au

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CBH Albany Grain Terminal
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Contact: Mr Nicholas Trim
T: + 61 8 9845 5555
F: + 61 8 9841 8499
E: info@cbh.com.au
W: www.cbh.com.au

Carrington

GrainCorp Operations Ltd
Denison Street
(PO Box 64)
Carrington
NSW 2294
Contact: Mr Mark Jelbart
T: + 61 2 4224 6400
F: + 61 2 4224 6466
E: mjelbart@graincorp.com.au
W: www.graincorp.com.au
Import: Yes
Export: Yes
Location: East Coast of Australia
Ownership: Public Listed Company
Port Authority: Newcastle Port Coprporation
Throughput Capacity: 1.5 million tonnes
Total Storage: 175,000t in vertical storage
Vessel Size Limitation: Max 250m o/a length and 11.6m draught plus tide (nominal tide 1.5m)
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Newcastle Agri Terminal
Lvl 1 92 Hill Street
Carrington
New South Wales 2294
Contact: Mr Jock Carter
T: + 61 4 2728 3999
E: jcarter@naterminal.com.au

Esperance

CBH Esperance Grain Terminal
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F: + 61 3 9826 4776
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W: www.louisdreyfus.com

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W: www.flindersports.com.au

Wollongong

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GrainCorp Operations Limited
PO Box 1029
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NSW
2500
Contact: Mr Mark Jelbart
T: + 61 4 224 6400
F: + 61 4 224 6466
E: mjelbart@graincorp.com.au
W: www.graincorp.com.au
Export: Yes
Location: East coast of NSW, Australia, approximately 80km south of Sydney.
Ownership: Graincorp Operations Limited
Port Authority: Port Kembla Port Corporation
Throughput Capacity: 5,000,000tpa
Total Storage: 260,000t
Vessel Size Limitation: 120,000dwt

Austria

Vienna

RWA - Raiffeisen Ware Austria GmbH
Wienerbergstrasse 3
Vienna
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F: + 43 1 605 154569
E: karin.glaser@rwa.at

Belgium

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F: + 32 3 542 05 82
E: info@boortmalt.com
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Zeehaven-Oost
Alphonse Sifferdok
J F Kennedylaan 19
Gent
B9000
Contact: Mr Daniel Matthys
T: + 32 9 345 96 111
F: + 32 9 251 6074
E: daniel.matthys@eurosilo.be
W: www.euro-silo.com
Import: Yes
Export: Yes
Location: Ghent, Belgium: Sifferdok terminal and Rodenhuizedok terminal
Ownership: 100% privately owned
Port Authority: Euro-silo
Throughput Capacity: 20,000t per day on each berth
Total Storage: 650,000t (240,000t vertical storage and 410,000t flat storage)
Vessel Size Limitation: Panamax size
Two berths fully equiped for Panamax ships.
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Gent

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W: www.stukwerkers.com
Location: Port of Zeebrugge +/- 70 km / Port of Antwerp +/- 60 km
Port Authority: Havenbedrijf Gent
Total Storage: 300,000m2 of which approx. 140,000m2 warehouses and 160,000m2 open quay surface
Vessel Size Limitation: Panamax vessels (265m length, 12.25m draught, 34m width, 80,000dwt)
The Stukwerkers Group of Companies is able to offer you a total logistics solution including chartering vessels/barges/trainwaggons/trucks, stevedoring , warehousing and customs clearance.

Oostende

Ter Polder
Zwaaidok 2
Oostende
B-8400
Contact: Mr Steven Verhelst
T: + 32 59 331 133
F: + 32 59 331 433
E: steven.verhelst@verhelst.be
W: www.verhelstlogistics.be

Puurs

SMEG Belgium NV
Schoonmansveld 12
Puurs
2870
Contact: Mrs Ann Smedt
T: +32 03 860 96 96
F: + 32 03 886 0666
E: ann.de.smedt@smeg.be
W: www.smeg.com

Brazil

Belem

Port Authority of Para
Avenida Presidente Vargas
41-2 Andar
Belem
CEP 66010-000
Contact: Mr Carlos Acatauassu Nunes
T: + 55 91 3182 9000
F: + 55 91 241 1741
E: nunes@cdp.com.br
W: www.cdp.com.br

Belem

Port of Belem
Companhia Docas do Para - Autoridade Portuaria
Endereco Av. Marechal Hermes s/n
Cais do Porto
Belem
Para
CEP 66010-000
T: + 55 91 3216 2129
F: + 55 91 3216 2130
W: www.cdp.com.br

Paranagua

Port Silo/Socopar Berths 1/2; Gransol Berth 3
Administracao dos Ports de Paranagua e Antonnia (Port Authority)
Centro Administrative Taguare
Paranagua
Contact: Mr Osiris Stenghel Guimares
T: + 55 41 420 1100
F: + 55 41 422 5324
E: portos@pr.gov.br
W: www.portodeparanagua.pr.gov.br

Rio de Janeiro

Petroleo Brasiliero SA-Petrobras
Avenida Republica do Chlie
65 Centro
Rio de Janeiro
RJ 20035
Contact: Mr Luis Fernando Maya
T: + 55 21 3224 1510
F: + 55 21 2262 3678
W: www.petrobras.com.br

Rio Grande

Bianchini Terminal
Grain Terminal
Avenida Almirante Maximian da Fonseca
Sector 6 Industrial District
Rio Grande
RS
96204-040
Contact: Mr Carlos (CB) Bacchieri
T: + 55 53 2126 6000
F: + 55 53 2126 6011
E: cb@bianchini-rg.com.br
W: www.bianchinisa.com.br
Import: Yes
Export: Yes
Location: South Atlantic
Port Authority: Rio Grande
Total Storage: 1,000,000MT
Vessel Size Limitation: 284m - 12.80m; 75,000dwt
Grain, oil, woodchips

Sao Paulo

Coinbra - Grain
Avenida Brigadeiro Faria Lima, 1355
14° Andar
Pinheiros CEP
Sao Paulo 01451 903
T: + 55 11 3039 6700
F: + 55 11 3814 3235

W: www.louisdreyfus.com

Vitoria

Capuaba Quay Grain Terminal/Port of Vitoria
Ave Getuilo Vargas 556
Centro
Vitoria ES 29020
Contact: Mr Dirceu Cardoso
T: + 55 272 221 311
F: + 55 272 227 360
E: falaporto@codesa.gov.br
W: www.portodevitoria.com.br

Canada

Churchill

Hudson Bay Port Terminal
PO Box 217
Churchill
Manitoba ROB OEO
Contact: Captain Irvin Sawatzky
T: + 1 204 675 8823 ext. 206
F: + 1 204 675 2550
E: i.sawatzky@omnitrax.com
Export: Yes
Location: West shore Hudson Bay, North Central Canada
Port Authority: Omnitrax Port Authority
Throughput Capacity: 1,000tph
Total Storage: 140,000t in grain elevator
Vessel Size Limitation: Max LOA; 225m, Max Draught 11.5m, Max dwt 70,000.
Will not take full load due to draught limitation.
35,000 - 40,000 dwt can conveniently load at this port.

Goderich

Southpier Terminals Limited
230 Harbour Street
Goderich
Ontario
N7A 3Y5
Contact: Mr Calvin Kerr
T: + 1 519 524 7367
F: + 1 519 524 7995
E: ckerr@southpier.ca
Import: Yes
Export: Yes
Location: Great Lakes North America
Vessel Size Limitation: Seaway draught

Halifax

Halifax Grain Elevator Ltd
951 South Bland Street
Halifax
Nova Scotia B3H 4S6
Contact: Mr Robert L White
T: + 1 902 421 1714
F: + 1 902 420 0343
E: rwhite@halifaxgrain.com
Import: Yes
Export: Yes
Location: East Coast of Canada
Port Authority: Halifax Port Authority
Ice Free Harbour

Hamilton

Richardson International Ltd
155 EastPort Blvd.
Hamilton
Ontario L8H 7S3
Contact: Mr Brian Olson
T: + 1 905 545 3270
F: + 1 905 545 8913
E: brian.olson@jri.ca
W: www.richardson.ca

Montreal

Logistec Corporation
360 St Jacques
Suite 15000
Montreal
Quebec H2Y 1P5
Contact: Mr George di Sante
T: + 1 514 844 9381
F: + 1 514 842 1262
E: gdisante@logistec.com
W: www.logistec.com
Logistec Stevedoring Inc operates as grain stevedore in the ports of Churchill, Manitoba, Thunder Bay Ontario, Montreal Quebec, Sorel Quebec, Trois Rivieres Quebec, Quebec Quebec, and Halifax Nova Scotia.

Montreal

Montreal Port Authority (Grain Terminal)
Port of Montreal Building
2100 Pierre-Dupuy Ave, Wing 1
Montreal
Quebec H3C 3R5
Contact: Mr Réal Bélanger
T: + 1 514 283 1313
F: + 1 514 283 1858
E: belangerr@port-montreal.com
W: www.port-montreal.com
Export: Yes
Location: Canadian East Coast
Port Authority: Montreal Port Authority
Throughput Capacity: 262k
Total Storage: 262k
Vessel Size Limitation: Berth length : 395m (1, 300 feet)
Minimal depth : 11.3m (37 feet)
Beam : 36m (120 feet)
One of the fastest and most efficient grain-handling facilities in Canada, the Port of Montreal grain terminal is geared primarily to international markets. Open year-round and featuring a total storage capacity of 260,000 tonnes, the terminal is multifunctional.

Montreal

Strudes Inc
4700 De La Savane
Suite 218
Montreal
Quebec H4P 1T7
Contact: Mr Henry Nowodworski
T: + 1 514 731 6951 x 123
F: + 1 514 737 4146
E: nowodworski@strudes.ca
W: www.strudes.ca

North Vancouver

Kinder Morgan Canada Terminals Limited Partnership
1995 West First Street
North Vancouver
BC V7P 1A8
Contact: Mr David Arnott
T: + 1 604 904 7202
F: + 1 604 982 7110
E: darnott@kindermorgan.com
W: www.kindermorgan.com
Export: Yes
Location: Port of Vancouver, B.C., Canada
Ownership: Vancouver Wharves Limited Partnership
Throughput Capacity: 6-8 million tonnes
Total Storage: 111 acres
Vessel Size Limitation: Up to Capesize
Multi-product bulk and break bulk terminal

North Vancouver

Richardson International Ltd
375 Lower Level Road
North Vancouver
BC V7L 1A7
T: + 1 604 987 8855
F: + 1 604 987 9532
W: www.richardson.ca
Import: Yes
Export: Yes

Owen Sound

Great Lakes Elevator
1499 First Avenue West
Owen Sound
Ontario N4K 5PI
Contact: Mr Peter Myatt
T: + 1 519 376 2754
F: + 1 519 376 8292
E: info@greatlakeselevator.com
W: www.owensound.ca

Port Cartier

Les Silos Port Cartier
CP 400
188 Portage des Mousses

Port Cartier
Quebec
G5B 2G9
Contact: Mr Allen Tupper
T: + 1 418 766 2515
F: + 1 418 766 4136
E: allen.tupper@ldcommodities.com

Prince Rupert

Prince Rupert, Ridley Island Grain Elevator
PO Box 877
Prince Rupert
British Colombia V8J 3Y1
Contact: Mr Jeff Burghardt
T: + 1 250 627 8777
F: + 1 250 627 8541
E: edouglas@prgrain.bc.ca

Quebec City

Bunge of Canada Elevator
300 Dalhouise Street
PO Box 2537
Station Terminus
Quebec City
Quebec G1K 7R3
Contact: Mr Steve Cantin
T: + 1 418 692 0217
F: + 1 418 692 0182
E: steve.cantin@bunge.com
Import: Yes
Export: Yes
Location: Port of Quebec, St.Lawrence River, Canada
Ownership: Bunge
Port Authority: Quebec Port Authority
Throughput Capacity: 2,500tph Unload - 5,000tph Load
Total Storage: 224,000t
Vessel Size Limitation: Maximum 15m draught
Port of Quebec is open year-round.

Quebec City

Sillery Distribution Center Inc.
1111 Champlain Boulevard
Quebec City
Quebec G1K 0A2
Contact: Mr Stephen Leonard
T: + 1 418 687 7504
F: + 1 418 687 0169
E: stephen.leonard@cds-sillery.ca
W: www.cargill.ca

Regina

Viterra Inc
2625 Victoria Avenue
Regina
Saskatchewan S4T 7T9
Contact: Mr Bob Miller
T: + 1 866 569 4411
F: + 1 306 569 4715
E: investor@swp.com
W: www.viterra.ca
Export: Yes
Location: Port of Vancouver, B.C., Canada
Ownership: 100% Viterra Inc
Port Authority: Port Metro Vancouver
Throughput Capacity: 7.0mmt annual
Total Storage: 482,000mt
Vessel Size Limitation: Pacific Terminal - Handi
Cascadia Terminal - Panamax

Sorel-Tracy

Richardson International (Quebec)
10 Rue de la Reine
Sorel-Tracy
Quebec J3P 4R2
Contact: Mr Serge Laperriere
T: + 1 450 743 3893 ext. 22
F: + 1 450 743 7566
E: serge.laperriere@jri.ca
W: www.richardson.ca
Import: Yes
Export: Yes
Location: Canada, Quebec, St Lawrence River
Ownership: Richardson International
Port Authority: Sorel
Throughput Capacity: 4,500 tph
Total Storage: 150,000 tonnes
Vessel Size Limitation: Length 275m, Draught 11m
Strategic location at the exit of North America's Great Lakes, handling all type of whole grains. Distinct receiving & shipping berths for better flexibility. Operates all year.

Thunder Bay

Mission Terminal
Thunder Bay
Ontario
Contact: Mr Paul Kennedy
T: + 1 807 623 8868
F: + 1 807 623 8823
E: pkennedy@missionterminal.ca

Thunder Bay

Richardson International Ltd
PO Box 10339
Thunder Bay
Ontario P7B 6T8
Contact: Mr Gerry Heinrichs
T: + 1 807 343 5571
F: + 1 807 345 0522
E: gerry.heinrichs@jri.ca
W: www.jri.ca
Import: Yes
Export: Yes
Location: On Lake Superior in Port of Thunder Bay
Ownership: Family Owned
Port Authority: Thunder Bay Port Authority
Throughput Capacity: 1.5 million tonnes
Total Storage: 210,000t
Vessel Size Limitation: Max Draught 26 feet

Thunder Bay

Thunder Bay Terminals Ltd
McKellar Island
PO Box 1800
Station 'F'
Thunder Bay
Ontario P7C 5J7
Contact: Mr John Kepes
T: + 1 807 625 7800
F: + 1 807 623 5749
E: j_kepes@tbaytel.net
W: www.portauthority.thunder-bay.on.ca

Thunder Bay

Western Grain By-Products
Thunder Bay
Ontario
Contact: Mr Maurice Mailhot
T: + 1 807 6238500
F: + 1 807 622 0482
E: wstgrain@tbaytel.net

Trois Rivieres

Three Rivers Elevators
PO Box 35
Trois Rivieres
Quebec G9A 5E3
Contact: Mr Gilles Morin
T: + 1 819 374 6203
F: + 1 819 374 6392
E: g.morin@gls.qc.ca

Valleyfield

Valport Maritime Services Inc
Port de Valleyfield
Boul. Cadieux
Valleyfield
Quebec
J6T 6L4
Contact: Ms Belinda Vibert
T: + 1 450 377 6686 ext 222
F: + 1 450 337 2521
E: belinda@valport.ca
W: www.valport.ca

Vancouver

Cascadia Terminal
3333 New Brighton Road
Vancouver
BC V5K 5JK
Contact: Mr John Dewar
T: + 1 604 293 6207
F: + 1 604 293 6214
E: jdewar@cascadiaterminal.com
W: www.viterra.ca
Export: Yes
Location: South Shore of Burrard Inlet, Vancouver, BC
Ownership: 50% Agricore United, 50% Viterra
Port Authority: Port of Vancouver
Total Storage: 282,830t
Vessel Size Limitation: Max 120,000dwt

Windsor

ADM Agri-Industries Company/
Windsor Grain Terminal Ltd.
5550/5600 Maplewood Drive
Windsor
Ontario N9C 4G9
Contact: Mr Brian Brohman
T: + 1 519 972 8100
F: + 1 519 972 2355
E: b_brohman@admworld.com

Winnipeg

Richardson International Ltd
Corporate Head Office
2800 - One Lombard Place
Winnipeg
MB
R3B 0X8
Contact: Mr Riley Verhelst
T: + 1 204 934 5961
F: + 1 204 942 4161
E: corporateaffairs@jri.ca
W: www.jri.ca

Winnipeg

Viterra
CanWest Global Place
201 Portage Ave
Winnipeg
MB
R3C 3A7
Contact: Mr Walter Fox
T: + 1 207 944 5488
F: + 1 207 944 5476
E: info@viterra.ca
W: www.viterra.ca

Chile

Concepcion

Neuling Graneles SA
San Martin
553 Oficina
Concepcion
805
Contact: Mr Sergio Ulloa
T: + 56 41 2254 205
E: sergio.ulloa@neulingsa.cl

Valparaíso

Saam
Blanco 895
Valparaíso
Valparaíso
Contact: Mr Manuel Inostroza
T: + 56 32 2201 229
F: + 56 32 2201 481
E: servicioalcliente@saamsa.com
W: www.saamsa.com
Location: West of South America
Total Storage: Over 20,000sqm
SAAM offers a specialized service in loading and unloading large volumes of products including grain, ensuring efficiency in cargo handling performance, producing a shorter stay for vessels at port and allowing tariff negotiation improvements with shipowners for freight contracts. The company also has warehouses located in strategic zones, next to ports.

China

Qingdao

Xigang Company
65 Chongmngdao West Rd.
Huangdao District
Qingdao
Shandong
266500
T: + 86 532 8298 8085
F: + 86 532 8298 8085
E: bgs.xg@qdport.com
W: www.qdport.com/info/gkgk/gs/gk_gs_xg/en/

Shanghai

Ming Sheng Stevedores No 3/4 Terminals
No 3 Ming Sheng Rd
Pudong New District
Shanghai
200135
Contact: Mr Lin Huizheng
T: + 86 21 588 536 75
F: + 86 21 588 534 71
E: minsheng.port@online.sh.cn

Shenzhen

Shekou Port Service Co Ltd
Gang Wan Yi Lu
Shekou Industrial Zone
Shekou
Shenzhen
Guangdong Province
518067
Contact: Mr Zhang
T: + 86 755 2669 1135
F: + 86 755 2668 5859

Cuba

Miramar

Oficina de Repesentacion LDN
Calle 3ra, Entre 70 y 80
Edificio 1A, Officina 202
Miramar
Ciudad de La Habana
11300
T: + 537 20 60 96
F: + 537 24 60 99
E: ldhavana@ldnegoce.cu

Denmark

Aalborg

Aalborg Bulk Terminal
Østhaven
Aalborg
DK-9000
Contact: Mr Lars Andersen
T: + 45 982 577 00
E: inter@mail.tele.dk

Aarhus

Cargo Service A/S
Oceanvej 13
Aarhus
DK 8000
Contact: Mr Lars Krabbe
T: + 45 8730 8000
F: + 45 8730 8101
E: info@cargoservice.dk
W: www.cargoservice.dk
Import: Yes
Export: Yes
Location: Central Jutland, Denmark
Ownership: Privately owned
Port Authority: Port of Aahus
Vessel Size Limitation: Max. draught 13.5m
Independent operator

Fredericia

DLA Agro
Centerhavnsvej 13
Fredericia
DK-7000
Contact: Mr Jes Lutchoeft
T: + 45 7921 2133
F: +45 79 21 21 79
E: jhl@dlaagro.com
W: www.dla.dk

Fredericia

Fredericia Bulk Terminal c/o Fredericia Shipping
Moellebugtvej 5
Fredericia DK-7000
Contact: Mr Johnny B. Nielsen
T: + 45 76 20 20 20
F: + 45 76 20 20 25
E: bulk@fredericiashipping.dk
W: www.fredericiashipping.dk
Import: Yes
Export: Yes
Location: Fredericia, East coast of Jytland, Denmark
Ownership: Fredericia Shipping & Copenhagen Merchants
Port Authority: Associated Danish Ports A/S
Throughput Capacity: Est. 500.000 tonnes
Total Storage: 12,000 sqm, 6 pressure proff walls. + 280 m3 silos
Vessel Size Limitation: Max Draught 12 m (Panamamax)
Loading/discharging capacity 600-900 tph. Fully automated intake, semi automated outtake. Airiation available most warehouses. Integrated bagging line 16-50 kgs bags and screening of e.g. woodpellets. Container loading capacity abt. 1000 tpd.

Grenaa

Grenaa Bulk Terminal
Neptunvej 8
Grenaa
Contact: Mr Klaus Andersen
T: + 45 76 20 20 02
E: bulk@fredericiashipping.dk

Kalundborg

Kalundborg Bulk Terminal
Schultz Shipping A/S
Vestre Havneplads 2
Kalundborg DK-4400
Contact: Mr Simon Rodian Christensen
T: + 45 3996 5300
F: + 45 3963 1057
E: src@copmer.dk
W: www.schultzshipping.com or www.copmer.dk
Export: Yes
Location: North West of Zealand
Ownership: Schultz Shipping A/S and Copenhagen Merchants Group
Port Authority: Port of Kalundborg
Throughput Capacity: 900tph, 24 hours a day
Total Storage: 120,000mt
Vessel Size Limitation: 50.000 mt, 12m draught
Exports and imports of bulk commodities

Egypt

Alexandria

Louis Dreyfus Commodities Egypt Ltd
11 Kafr Abdou Street
1st Floor, Roushdy
Alexandria 21311
Contact: Mr Hesham Maksoud
T: + 20 3 522 80 90
F: + 20 3 522 80 88
E: axd-allusers@ldcommodities.com
W: www.ldcommodities.com
Import: Yes
Location: Alexandria , North of Egypt
Port Authority: Alexandria, El Dekheila , AbouQir
Major importer of wheat and corn into Egypt.

Safaga

Safaga Grain Berth No1
Ports and Lights Administration
Safaga
Contact: Cdr Serrag Emara
T: + 20 65 45 12222
F: + 20 62 33 1126
E: info@ramseystours.com
W: http://safagaport.com

Estonia

Tallinn

AS MGT Muuga Grain Terminal
57 Maardu Street
Tallinn 74115
Contact: Mr Jan Lipinski
T: + 372 6 319 232
F: + 372 6 319 179
E: mgt@mgt.ee
W: www.mgt.ee
Import: Yes
Export: Yes
Location: Muuga Harbour, North of Estonia
Port Authority: Port of Tallinn
Throughput Capacity: Export 3,000,000mtpa
Import 5,000,000mtpa
Total Storage: 30,000tons
Vessel Size Limitation: 150,000dwt (2 berths, depth 17.5m)
Ice-free port. Own railway network integrated into Russian & Latvian railways. Separate storage by client, by product. Storage of Intervention cargoes. ISO complies. Own ISO/GOST certified laboratory.

Tallinn

KS Stevedoring
Paljassaare Harbour
Tallinn
Contact: Mr Mati Roosioja
T: + 372 6100 999
E: mati.roosioja@stevedore.ee
W: www.stevedore.ee

Tallinn

Muuga (Novotallinskiy)
Maardu tee 57
Tallinn Eesti Vabarifk
Tallinn EE 0030
Contact: Mr Anatoliy Kanaev
T: + 372 6 319 205
F: + 372 2 234 313
E: tk@tk.ee

Tallinn

PETROMAKS SPEDIITORI AS
Nolva 9A
Tallinn 10416
Contact: Mrs Kadi Neemelaid
T: + 372 650 7702
F: + 372 650 7700
E: kadi@pmg.ee
W: www.petromaks.com

Finland

Oulu

Herman Andersson Oy
PO Box 37
Oulu 90401
Contact: Mr Jari Ramtamaula
T: + 358 8 315 0100
F: + 358 8 371743
E: info@hermanandersson.fi
W: www.hermanandersson.fi

Rauma

OY Rauma Stevedoring LTD
Hakunintie 23
PO Box 68
Rauma
FIN-26101
Contact: Mr Juha Vannio
T: + 358 2 83 121
F: + 358 2 8312 444
E: juha.vannio@raumasteve.fi
W: www.raumastevedoring.fi

Vantaa

Suomen Viljava Oy
Kielotie 5 B
Vantaa 01300
Contact: Mr Hannu Kortesmaa
T: + 358 10 3464 204
F: + 358 01 3464 200
E: hannu.kortesmaa@suomenviljava.fi
W: www.suomenviljava.fi
Location: Storage plant in the port of Naantali City in South West of Finland
Ownership: State owned 100%
Throughput Capacity: 500tph
Total Storage: 250,000t
Vessel Size Limitation: Draught 13m

France

Bassens

Ste Aquitaine du Silo de Bordeaux-Bassens
10 Quai Alfred de Vial
Bassens
33530
Contact: Mr yannick M Collet
T: + 33 556 33 47 00
F: + 33 556 06 22 76

Blaye

Blaye Grain Terminal
Silo Portaire
BP 15
Blaye
33390
Contact: Mr Rabu
T: + 33 557 42 0307
F: + 33 557 42 3918

Bordeaux

SAIPOL
Port of Bordeaux
Bordeaux
Contact: Mr Asneres
T: + 33 5 57 80 87 50
F: + 33 5 57 80 87 69
E: sofiproteol@prolea.com

Bordeaux

SEMABLA
Port of Bordeaux
Bordeaux
Contact: Mr Jean-François Rabu
T: + 33 5 57 42 74 91
F: + 33 5 57 42 39 18
E: jf.rabu@sodistock.fr
Export: Yes
Location: Blaye Export Terminal, West Atlantique Coast of France - Near Bordeaux Port on river Gironde
Ownership: 100% Sodistock
Port Authority: Port Autonome de Bordeaux
Throughput Capacity: Loading vessel: 1 x 700tph
Total Storage: Vertical storage: 6,000t cereals
Flat Storage: 85,000t cereals
Vessel Size Limitation: Water draught 10.5m - vessel length up to 190m
Capesize vessels - possible cargo completion
SEMABLA exports around 450,000t of cereals (mainly maize) each year to supply UK starch industries but also wheat for Portugal milling plants.

Bordeaux

SPBL
Port of Bordeaux
Bordeaux
Contact: Mr Th. Audiger
T: + 33 5 57 77 84 50
F: + 33 5 57 77 84 51

Boucau

Maisica
Quai du Base
Port de Bayonne
Boucau 64340
Contact: Mr Michel Prlleno Izac
T: + 33 5 59 64 6342
F: + 33 5 59 64 5718
E: contact@Maisica.com
W: www.ports-basques.com/ports/bayonne

Brest

Port of Brest - CCI
1, avenue de Kiel
Brest
Brittany
F-29200
Contact: Mr Gilles Fourré
T: + 33 298 46 23 80
F: + 33 298 43 24 56
E: info@brest.port.fr
W: www.brest.port.fr
Import: Yes
Location: A deep-water port on the leading edge of Europe, located at the crossroads of numerous North-South and East-West sea routes (48°23'8"N 4°28'8"W)
Port Authority: Chambre de Commerce et d'Industrie de Brest
Throughput Capacity: 160 000 tons
Total Storage: 10 000 sqm
Vessel Size Limitation: Max Draught 13m
Bulk agri-foodstuffs terminal completed with a road/rail loading/unloading station.

Dieppe

Dieppe Port
Capitainerie, Quai de la Cale No 1
Dieppe
Seine Maritime 76203
Contact: Mr Marc David
T: + 33 235 06 8656
F: + 33 235 06 12 56
E: marc1.david@equipement.gouv.fr
W: www.portdedieppe.fr
Port Authority: SYNDICAT MIXTE DU PORT DE DIEPPE (SMPD)
Total Storage: Marocco quay : 3 x 27000m2 warehouses, among which 14100 m2 air-conditioned ; Open storage surface = 9000 m2. Norway quay : 2 x 2200 m2 warehouses ; Open storage surface = 18000 m2
Vessel Size Limitation: LOA = 160m ; Draught = 9m ; dwt = 18,000t

Dunkerque

SGD - Silo a Grain Dunkerque
Route du Fosse Defensif
Port Est
Dunkerque
59140
Contact: Mr Olivier Albrecht
T: + 33 3 28 24 90 10
F: + 33 3 28 24 90 15
E: olivieralbrecht.dmt@orange.fr
Total Storage: 45,000sqm
Vessel Size Limitation: Max Draught 14m
Excellent nautical access. Private quay. Huge dry covered storage area. Excellent hub for UK and Northern France deliveries.

Dunkerque

Silonor
Quai Cerealier- Port Est
Dunkerque
59140
Contact: Mr Olivier Albrecht
T: + 33 3 28 24 90 10
F: + 33 3 28 24 90 15
E: olivieralbrecht.dmt@orange.fr
Total Storage: 20,000sqm
Vessel Size Limitation: Max Draught 14m
Excellent nautical access. Private quay. Huge dry covered storage area. Excellent hub for UK and Northern France deliveries.

Grand Couronne

SENALIA
Boulevard Maritime
BP 71
Grand Couronne
Rouen
76530
Contact: Mr Marc Blaiset
T: + 33 235 183 030
F: + 33 235 183 033
E: MarcBlaiset@senalia.com
W: www.senalia.com

La Rochelle-Pallice

Silo de la Rochelle Pallice
(SICA Manutention Portuer)
69 Rue Montcalm
La Rochelle-Pallice
17000
Contact: Mr Jean-Pierre Esterez
T: + 33 546 43 9922
F: +33 546 43 2494
E: jp.esterez@sica-atlantique.com

Le Havre

CIPHA Multibulk Centre
182 Quai George V
BP 1142
Le Havre 76600
Contact: Mr Eric Limare
T: + 33 23 274 2480
F: + 33 23 521 3815
E: elimare@shgt.fr
W: www.cipha.fr

Marseille

Marseilles Grain Terminal
Port Autonome de Marseille
Direction des Opérations - Terminaux de Marseille
23, place de la Joliette
BP 1965
Marseille
13226 Cedex 02
Contact: Mrs Sacha Roujier
T: + 33 4 91 39 44 21
F: + 33 4 91 39 57 00
E: gpmm@marseille-port.fr
W: www.marseille-port.fr
Total Storage: Grain is stored in a private silo owned by Sté Panzani, situated outside the port area
Vessel Size Limitation: Maximum authorised draught: 12.8 to 17 metres

Martigues

Carfos
13, Boulevard Maritime
Martigues 13500
Contact: Mr Xavier Hauterat
T: + 33 424 06 71 82
F: + 33 424 06 34 94
E: xavier.hauterat@sea-invest-france.com
W: www.sea-invest.be

Montoir-de-Bretagne

SONASTOCK & ATLANTIQUE STOCKAGE
Montoir Export & Import Terminals
Montoir-de-Bretagne
Contact: Mr Thierry Coiffard
T: + 33 2 40 90 01 37
F: + 33 2 40 90 46 17
E: t.coiffard@sodistock.fr
W: www.sodistock.fr/anglais/accueilgb.htm
Import: Yes
Export: Yes
Location: Montoir Export and Import Terminals, West Atlantique Coast of France - Port of Montoir at the mouth of the river Loire
Ownership: 80% SODISTOCK
Port Authority: Port Autonome Nantes Saint Nazaire
Throughput Capacity: Loading vessel: 2 x 700tph
Unloading vessel: 11,200tph
Total Storage: Vertical storage: 30,000t cereals
Flat storage: 147,000t cereals and feedstuffs
Vessel Size Limitation: Water draught 13.5m, vessel length up to 225m.
Capesize vessels - possible cargo completion.
ATLANTIQUE STOCKAGE transits one third of the feedstuff imports of Montoir (ie 2tpa) to supply the compound industries of Bretagne and Pays de Loire regions.

Nantes

Montoir Agri-Bulk Terminal
18 Quai Ernest Renaud
Nantes 44031
Contact: Mr L Buvry
T: + 33 240 442 020
F: + 33 240 442 181
E: l.buvry@nantes.port.fr
W: www.nantes.port.fr

Nantes

Port Atlantique-Montoir Agri-Bulk Terminal
18 quai Ernest Renaud
BP 18609
Nantes
Cedex 4
44186
Contact: Mr Pascal Freneau
T: + 33 2 40 44 20 06
F: + 33 2 40 44 21 81
E: p.freneau@nantes.port.fr
W: www.nantes.port.fr

Nantes

Roche-Maurice Terminal
18 Quai Ernest Renaud
Nantes
44031
Contact: Mr M Buvry

T: + 33 2 40 442 020
F: + 33 2 40 442 181
E: m.buvry@nantes.port.fr

Nantes
SODISTOCK Group
35 Rue des Usines
Nantes
Cedex 4, 44103
Contact: Mr Jacques Galisson
T: + 33 2 40 95 60 62
F: + 33 2 40 58 01 22
E: j.galisson@sodistock.fr
W: www.sodistock.fr
Export: Yes
Location: SONASTOCK - Nantes Export Terminal. West Atlantique Coast of France - on the river Loire - Port of Nantes
Ownership: 80 % SODISTOCK
Port Authority: Port Autonome Nantes Saint Nazaire
Throughput Capacity: Loading vessel : 2 x 700tph
Total Storage: Vertical storage : 110 000t cereals
Vessel Size Limitation: Water Draught = 9.1m - Vessel Length up to 220m. Up to 75,000dwt - possible cargo completion in Montoir
SONASTOCK exports around 1 MT each year - mainly quality milling wheat for Europe and Mediterrannean countries from its Nantes and Montoir export terminals.

Nantes
SONASTOCK - Nantes Export Terminal
Sortie No 30 - Porte de l'Estuaire
Nantes 44186
Contact: Mr Daniel Finon
T: + 33 2 40 95 60 61
F: + 33 2 40 58 15 59
E: d.finon@sodistock.fr
W: www.sodistock.fr/anglais/accueilgb.htm
Export: Yes
Location: Nantes Export Terminal, West Atlantique Coast of France on the river Loire.
Ownership: 80% SODISTOCK
Port Authority: Port Autonome Nantes Saint Nazaire
Throughput Capacity: Loading vessel: 2 x 700tph
Total Storage: Vertical storage: 110,000t cereals
Vessel Size Limitation: Water draught 9.1m. Vessel length up to 220m. Up to 75,000dwt - possible cargo completion in Montoir.
SONASTOCK exports around 1t each year - mainly quality milling wheat for Europe and Mediterranean countries from its Nantes and Montoir export terminals.

Port De Montoir
Sea-invest France (Stocaloire)
Terminal Agro Alimentaire
Port De Montoir 44550
Contact: Mr Florent Massart
T: + 33 232108516
F: + 331 55 66 81 50
E: trampset@sea-invest-france.com

Rouen
Lecureur
Val de la Haye
QuennePort
Canteleu, Rouen 7630
Contact: Mr Patrick Chevallier
T: + 33 2 35 36 25 23
F: + 33 2 35 36 48 52
E: p.chevallier@lecureur.com

Rouen
SENALIA
Presqu'ile Elie
Rouen 76100
Contact: Mr Kindelberger
T: + 33 235 726 904
F: + 33 235 723 054
E: contact@senalia.com
W: www.senalia.com

Rouen
Silos Soufflet - SOCOMAC I/II Terminals
Quai de Danemark
Dieppendalle Croisset
PO Box 1010
Rouen 76380
Contact: Mr De Braquillanges
T: + 33 235 363 145
F: + 33 235 085 671
E: pbrochot@soufflet-group.com

Rouen
Simarex Villette
Mole de la Darse des Docks
BP 7
Rouen
Petit Couronne 76650
Contact: Mr Charles Vedie
T: + 33 2 3568 2402
F: + 33 2 3567 2993
E: c.vedie@simarex.fr
W: www.portofrouen.com/

Sète
Sete-Multibulk Berth
2 quai Philippe Regy
BP 169
Sète
Cedex 34203
Contact: Mr Riethu
T: + 33 4 67 46 3505
F: + 33 4 67 46 28 18
E: cournon.henri@portsuddefrance-sete.fr
W: www.sete.port.fr
Export: Yes
Location: West Mediterranean
Port Authority: Epis Centre
Total Storage: 10,000sqm
Vessel Size Limitation: Max draught: 10.4m

St Malo
SMG - Societe Malouine et Granvillaise
12 Avenue Louis-Martin
St Malo
Cedex 35401
Contact: Mr Franck Rose
T: + 33 2 99 563 381
F: + 33 2 99 401 210
E: f.rose@blp.bollore.com

Tarnos
Matrama Bayonne
Rue de l'Industrie
Tarnos 40220
Contact: Mr Vincent Boullault
T: + 33 240 321 735
F: + 33 240 650 745
E: vincent.boullault@sea-invest.fr
W: www.ports-basques.com/ports/bayonne/

Germany
Brake
J. Müller Agri Terminal GmbH & Co. KG
Neustadtstraße 15
Brake
Lower Saxony 26919
Contact: Mr Thomas Bielefeld
T: + 49 4401 914200
F: + 49 4401 914229
E: thomas.bielefeld@jmueller.de
W: www.jmueller.de
Import: Yes
Export: Yes
Location: North of Germany, directly linked to the biggest compound feed area in Europe
Port Authority: Niedersachsen Ports GmbH & Co. KG
Throughput Capacity: Discharging: 20,000t/day
Loading: 10,000t/day
Total Storage: 465,000t silo and flat storage
Vessel Size Limitation: Max draught inward bound: 12.2m
Max draught outward bound: 11.9m
Crushing, Drying, Mixing, Milling, Rough-Grinding, Aspirating available. Self service truck loading. Transport organisation national, international, multimodal, Cerfiticated: GMP B2, B3 (2007) B4.1, B4.2, B4.4, B4.5, B5, Q+S, Öko-VO 834/ 2007.
IFS, AEO Certificate.

Bremen
J. Müller Weser GmbH & Co.
Cuxhavener Straße 12
Bremen 28217
Contact: Mr Matthias Seidel
T: + 49 421 38773 300
F: + 49 421 38773 319
E: matthias.seidel@jmueller.de
W: www.jmeuller.de

Emden
EVAG Emder Verkehrs und Automotive
Gesellschaft mbH
Schweckendieckplatz 1
Emden
Lower Saxony 26721
Contact: Mr Torsten Meinke
T: + 49 4921 895 150
F: + 49 4921 895 5150
E: torsten.meinke@evag.com
W: www.evag.com

Hamburg
Diamant Mühle Hamburg GmbH
Trettaustrasse 49
Hamburg 21107
Contact: Ms Gusco
T: + 49 40 75 109 01
F: + 49 40 75 109 131
E: info@diamant-mehl.de
W: www.diamant-mehl.de

Hamburg
Eichholtz GmbH
Rossweg 20
Hamburg 20457
T: + 49 40 741 39 00 0
F: + 49 40 741 39 00 21
E: info@eichholtz.de
W: www.eichholtz.de

Hamburg
GTH - Getreide Terminal Hamburg (GmbH & Co.KG)
Eversween 11
Hamburg D-21107
Contact: Mr Kay Boehmer
T: + 49 40 75106 121
F: + 49 40 75106 133
E: k.boehmer@getreide-terminal.de
W: www.getreide-terminal.de
Import: Yes
Export: Yes
Port Authority: HPA, Hamburg Port Authority
Throughput Capacity: 255,000 metric tons
Total Storage: 67,000sqm
Vessel Size Limitation: 270.0m length; 42.0m b; 12.3m draught
Handling and storage of grain, feedstuff, green coffee. Producing of malt.

Hamburg
HaBeMa Futtermittel GmbH & Co KG
Pollhornweg 25
Hamburg D - 21107
T: + 49 040 752705 0
F: + 49 40 75 27 05 33
E: kontakt@habema.com
W: www.habema.com

Hamburg
Louis Dreyfus & Cie. GmbH
Fehland Str 3
Hamburg D-20354
T: + 49 40 35 50 20 0
F: + 49 40 34 14 86
E: ldhamburg@llouisdreyfus.fr
W: www.louisdreyfus.com

Hamburg
Louis Hagel (GmbH & Co. KG)
Eversween 19
Hamburg 21107
Contact: Mr Philip Hagel
T: + 49 40 751651
F: + 49 40 7533440
E: info@louis-hagel.com
W: www.louis-hagel.com

Hamburg
NHG - Neuhof Hafengesellschaft mbH
Köhlbrandstraße 3
Hamburg D-21107
Contact: Mrs Kleinschmidt
T: + 49 40 752 7070
F: + 49 40 752 2512
E: info@neuhof-hafen.de
W: www.neuhof-hafen.de

Hamburg
Rhenus Midgard GmbH & Co. KG, Terminal Hamburg
2. Hafenstr. 4
Hamburg 21079
Contact: Mr Peter Steinmeyer
T: + 49 40 766 003 27
F: + 49 40 766 003 59
E: peter.steinmeyer@de.rhenus.com
W: www.rhenus.com

Hamburg
Silo P. Kruse Betriebs-GmbH & Co. KG
Blumensand 31 - 33
Hamburg D - 21107
Contact: Mrs Kleinschmidt
T: + 49 40 75206 0
F: + 49 40 75206 206
E: info@silo-p-kruse.de
W: www.silo-p-kruse.de

Nordenham
Rhenus Midgard GmbH & Co. KG
Midgardstr. 50
Nordenham 26954
Contact: Mr Michael Appelhans
T: + 49 4731 81209
F: + 49 4731 81258
E: michael.appelhans@de.rhenus.com
W: www.rhenus.com

Nuremberg
Hafen Nürnberg-Roth GmbH
Rotterdamer Str 2
Nuremberg
Bavaria
90451
Contact: Mr Harald Leupold
T: + 49 911 6429 418
F: + 49 911 6429 410
E: h.leupold@gvz-hafen.com
W: www.gvz-hafen.com

Rostock
Bulk Terminal Rostock GmbH
Liebherrstraße 3
Rostock D-18147
Contact: Mr Günter Fett
T: + 49 381 6662 120
F: + 49 381 6662 575
E: guenter.fett@portofrostock.de
W: www.portofrostock.de

Rostock
Getreide Service Rostock GmbH
Am Getreidehafen 3
Rostock, D-18147
Contact: Mr Karsten Lentz
T: + 49 381 6662 580
F: + 49 381 6662 505
E: karsten.lentz@portofrostock.de
W: www.portofrostock.de
Import: Yes
Export: Yes
Location: German Baltic coast
Total Storage: 400,000t
Vessel Size Limitation: Max 100,000dwt
1x ship loader loading 1,000tph
2x ship unloaders handling each 300tph

Ghana
Takoradi
Takoradi Port Authority
Ghana Ports Authority
PO Box 708
Takoradi
Contact: Mr J E Quanash
T: + 233 31 24073
F: + 233 31 22814
E: takoradi@ghanaports.net
W: www.ghanaports.gov.gh

Honduras
San Pedro Sula
Terminales de Cortes, S.A de C.V
Blvd del Norte 150 mts este
Puente Rio Blanco
Apartado Postal 298
San Pedro Sula
11111
Contact: Mr Juan Zelaya
T: + 504 551 7011
F: + 504 551 7000
E: gmanager@termisa.com
W: www.termisa.com

India
Haldia
TM International Logistics Ltd.
Finger Jetty Road
Chiranjibpur
Haldia
East Midnapore(WB), 721604
Contact: Mr K.L Bhowmick
T: + 91 3224 252150
E: kb_hal@tmilltd.com

Karnataka State
New Mangalore Port Trust
Panamburg
Karnataka State
Mangalore, 575 010
Contact: Mr Shri P. Tamilvanan
T: + 91 824 240 7300
F: + 91 824 2408390
E: nmptchairman@sify.com
W: www.newmangalore-port.com

Mumbai

J.M. Baxi & Co
Sapt Building
2nd Floor
18 J.N. Heredia Marg
Ballard Estate
Mumbai 400 001
Contact: Mr John C. Alexander
T: + 91 22 2270 3779 / 82
F: + 91 22 2210 3629
E: jca@jmbaxi.com
W: www.jmbaxi.com

Indonesia

Jakarta

Tanjung Priok
PT (Persero) Pelebuhan Indonesia II
Jalan Raya Pelabuhan No 9
Tanjung Priok
Jakarta 14310
Contact: Mrs Lani
T: + 62 21 430 1080
F: + 62 21 437 2933
E: priok@inaport2.co.id
W: www.priokport.co.id

Tanjung Priok

Bogasari Flour Mills Terminal
Tanjung Priok
Contact: Mr Joko
T: + 62 31 329 3082
F: + 62 31 329 1843
E: lagansa@bogasariflour.com
W: www.bogasariflour.com

Ireland

Cork

Port of Cork Company
Custom House Street
Cork
Munster
T: + 353 21 462 5375
F: + 353 21 427 6484
E: moconnor@portofcork.ie
W: www.portofcork.ie

Cork

Ringaskiddy Deepwater Terminal
Port of Cork Company
Custom House Street
Cork
Contact: Captain Michael McCarthy
T: + 353 21 4273125
F: + 353 21 4276484
21 4276484
E: info@portofcork.ie/ mmccarthy@portofcork.ie
W: www.portofcork.ie
Import: Yes
Export: Yes
Location: South Coast of Ireland
Ownership: Port of Cork Company
Port Authority: Port of Cork Company
Throughput Capacity: 600,000 tonnes
Total Storage: Private stores
Vessel Size Limitation: 250m and 12.5m draught
The Port is equipped with 4 harbour cranes with average throughput of 2,000 tph.

Dundalk

Dundalk Harbour Commissioners
Harbour Office
40 Quay Street
Dundalk
Co Louth
Contact: Captain Frank Allen
T: + 353 42 9334096
F: + 353 42 35481
E: dundalkport@eircon.net

Greenore

Greenore Port Limited
Greenore
Co Louth
Contact: Mr Patrick Savage
T: + 353 42 9373666
F: + 353 42 9373668
E: agency@greenore.net
Import: Yes
Export: Yes
Location: East Coast of Ireland. Mid-way between Dublin and Belfast
Ownership: Privately owned
Port Authority: Greenore Port Limited
Throughput Capacity: Handles 500,000 Bulk Materials annually
Total Storage: 25,000sqm adjacent to Port. 50,000sqm within 20Km.
Vessel Size Limitation: LOA 190m 32m Beam; Draught 7m Fore 10m Aft.

Kinsale

Henry Good Limited
Waterlands
Kinsale
Co Cork
Contact: Mr Roger Dale
T: + 353 21 4772300
F: + 353 21 4772548

Kinsale

Kinsale Harbour Commissioners
Harbour Office
Pier Road
Kinsale
Co Cork
Contact: Capt. Phil Devitt
T: + 353 21 477 2503
F: + 353 21 477 4695
E: kharbour@iol.ie
W: www.kinsaleharbour.com
Import: Yes
Location: South Coast of Ireland (15nm west of Cork Harbour)
Ownership: Kinsale Harbour Commissioners
Port Authority: Waterland Shipping & Warehousing Co Ltd
Throughput Capacity: 150,000t (about 80 - 100 ships p.a.)
Total Storage: No Storage on quay (shipped to Waterland Shipping's warehousing 1 mile away).
Vessel Size Limitation: Max LOA 96m, 5.5m forward draught on spring tides.....adjusted for neap tides.
Berthing only at High Water.
NAABSA berth
Vessels lie partly aground at low water.

Israel

Herzeliya

Kopco Ltd
Sha'ar Ha'ir South Building
22 Ben Gourion Street
Herzeliya 46785
T: + 972 99 51 18 18
F: + 972 99 51 18 19
E: kopco@ldnegoce.com
W: www.louisdreyfus.com

Italy

Genova

Terminal Rinfuse Genova SpA
Palazzina Uffici
Calata Rubattino
Genova 16126
Contact: Mr Vittorio Barzilai
T: + 39 010 248 8620
F: + 39 642 6403
E: vittorio.barzilai@terminalrinfuseitalia.it
W: www.porto.genova.it

Ravenna

Louis Dreyfus Italia SPA
Piazza Kennedy 3
Ravenna
48100
Contact: Mr I Dravenna
T: + 39 0544 48 43 11
F: + 39 0544 21 73 30
E: ldravenna@ldnegoce.com
W: www.louisdreyfus.com

Savona

Authorita Potuate di Savona
vai Gramsci
Savona 17100
Contact: Mr Agostino Ghiglione
T: + 39 01982 5541
F: + 39 01982 7399
E: authority@porto.sv.it
W: www.porto.sv.it/english/The-Port/Port-s-Ope/Terminalis/Rinfuse-So/savonasilos.htm_cvt.htm#

Torre Annunziata (NA)

SOLACEM Spa
Molo di Levante - Interno Porto
Torre Annunziata (NA)
Naples 80058
Contact: Dr Giuseppe Rocco
T: + 39 081 8621199
F: + 39 081 8615991
E: direzione@solacem.it
W: www.solacem.it
Import: Yes
Export: Yes
Location: South West side of Italy , between Naples and Salerno
Ownership: Port is State owned , Solacem 100% Private enterprise
Throughput Capacity: 55,000 tons , with daily capacity of 5,000 tons
Total Storage: In addition to above silo's , 3 sheds with 7 metallic regrigitated cooled compartments for a total of 6,500sqm equivalent to 65,000 cubic meters.
Vessel Size Limitation: Quay: 500m , 40m wide pier , vessel draught between 6-8.6m which will increase to 11m in the near future.
New quays, dredging, new road from motorway to port will be established in near future, general cargo, roro, breakbulk can be handled already today.
All cargo operation is authorized and approved by PLC.

Venezia

T.M.B SRL Venezia
Zattere 1401
Venezia 1-30123
T: + 39 041 533 4484
F: + 39 041 533 4570

Jamaica

St Catherine

Port Esquivel
c/o WINDALCO (West Indies Alumina Company)
PO Box 2
Old Harbour
St Catherine
Contact: Mr Earl Patterson
T: + 1 876 983 9301
F: + 1 876 983 2215
E: paj@portjam.com
W: www.portjam.com

Japan

Kagoshima City

Pacific Grain Terminal
4-20 Nanei
Kagoshima City
Contact: Mr Shigeichi Koriyama
T: + 81 99 268 8291
F: + 81 99 269 5553

Kamisu-City

Kanto Grain Terminal Co. Ltd
2-3 Higashi Fukashiba
Kamisu-City
Ibaraki-ken 314-0103
Contact: Mr H Omori
T: + 81 299 92 6531
F: + 81 299 92 6548
E: h.oomori@kanto-grain.co.jp
Import: Yes
Location: Kamisu-City, Japan
Ownership: Toyota Tsusho Corp, Maruben Corp, Mitsubishi Corp.
Throughput Capacity: 1x Pneumatic unloader - 400tph
2x Mechanical unloader - 400tph
Chain conveyors & bucket elevators 400tph loading into silo via 3 routes, 200tph louding out to feed factories and trucks via 8 routes.
3x Hoppers 5 Mt loading in 9x 2.5 Mt loading out.
Total Storage: Concrete silo with steel plate lined and steel silo.
135 bins, 176,881t for corn, sorghum, barley etc
15 bins, 16,264t for soybean meal etc.
Site area 29,865sqm
Vessel Size Limitation: Max length 280m, Max depth 13m, Max DWT 65,000 (Panamax)

Kenya

Mombasa

Grain Bulk Handlers Ltd
Grain House
Beira Road
Shimanzi
PO Box 80469
Mombasa
Coast 80100
Contact: Mr Mujtaba Jaffer
T: + 254 7030 17000
F: + 254 7030 17444
E: gbh@grainbulk.com
W: www.grainbulk.com
Location: Port of Mombasa, Kenya
Ownership: Majority owned Kenyan Company
Port Authority: Kenya Ports Authority (KPA)
Throughput Capacity: 3,500,000mtpa
Total Storage: 225,500mt (140,000mt in bulk & 85,000mt in bagged)
Vessel Size Limitation: Max LOA: 249m Draught 10.5m
ISO 9001:2008 and ISPS Code Compliant. Member of IAPH.
Currently constructing additional bulk storage silos of 55,000MT.

Latvia

Riga

Riga Central Terminal
15 Eksporta Street
Riga LV-1170
Contact: Ms Kristine Vizule
T: + 371 673 295 46 / + 371 673 29816
F: + 371 6732 6501
E: Kristine.vizule@rigact.lv
W: www.rigact.lv

Ventspils

Ventspils Grain Terminal
41 Dzintaru Street
Ventspils LV 3602
Contact: Mr Vladislavs Safranskis
T: + 371 6 366 8802
F: + 371 366 8850
E: vgt@vgt.lv
W: www.vgt.lv
Export: Yes
Location: Ventspils Freeport, Republic of Latvia, EU
Ownership: Private stock company
Port Authority: Ventspils Grain Terminal
Throughput Capacity: 2.5 million tpa
Total Storage: 12 storage bins for 72,000t
Vessel Size Limitation: Max 75,000dwt, Max LOA 228m, Max Beam 32.4m, Max Draught 14.2m
Deep-water and ice-free grain export terminal with following technological facilities:
·Deep-water berth for handling Panamax vessels
·Ship-loader with 1`500tph loading capacity;
·Railway wagon and truck discharger.

Lithuania

Klaipeda

BEGA, Stevedoring Company
Nemuno st. 2B
Klaipeda
LT - 91199
Contact: Mr Aloyzas Kuzmarskis
T: + 370 46 395 500
F: + 370 46 380 384
E: bega@bega.lt
W: www.bega.lt
Import: Yes
Export: Yes
Location: West of Lithuania on the East Coast of Baltic Sea
Ownership: Private Company (Closed Joint Stock Company)
Port Authority: BEGA Stevedoring Company
Throughput Capacity: 400,000tpa of grains, 5,000 tonnes per 24 hours
Total Storage: 22,000 cubic meters, five different kinds of grains can be stored
Vessel Size Limitation: 11.5m draught, up to 60,000dwt
The storage complies with the requirements of Plant Protection Inspection, Food and Veterinary Service. The main activities are certificated according to ISO 9001 and ISO 14001. Cargo forwarding, customs clearing.

Klaipeda

Joint-Stock Stevedoring Company
Klaipedos Smelte
Nemuno Street 24
Klaipeda 5804
Contact: Mr Eduardos Gawushkinas
T: + 370 46 496306
F: + 370 46 496246
E: info@smelde.lt

Klaipeda

Klaipeda Stevedoring Company (KLASCO)
Zauerveino Street 18
Klaipeda
LT-92122
Contact: Mr Audrius Pauža
T: + 370 46 399101
F: + 370 46 399066
E: info@klasco.lt
W: www.klasco.lt
Import: Yes
Export: Yes
Location: East Coast of the Baltic Sea
Ownership: Private company, the second largest enterprise in the

"Achemos Grupe" concern
Port Authority: JSC Klaipeda Stevedoring Company (KLASCO)
Throughput Capacity: 2.5 million mt
Total Storage: 105,,000t in 9 warehouses
Vessel Size Limitation: "Panamax"-type vessel (14m depth at the berth, draught of 13.m)
KLASCO operates 5 terminals: - General cargo; Ro-Ro; Liquid fertilizer; Bulk grain; Bulk fertilizer.

MALAYSIA

JOHOR

Bulk & Breakbulk Terminal
Johor Port Berhad
PO Box 151
Wisma Kontena
Pasir Gudang
Johor
81707
Contact: Captain Mohd. Slim Mohd. Din
T: + 607 251 7994
F: + 607 251 7993
E: slim@johorport.com.my
W: www.johorport.com.my
Import: Yes
Location: Pasir Gudang, Johor, Malaysia
Ownership: Johor Port Berhad
Port Authority: Johor Port Authority
Throughput Capacity: Dry bulk: 4.9mt
Total Storage: 86,000sqm (shed/fully covered)
Vessel Size Limitation: Wharf 260m/*13m/60,000dwt (*possible at 13.5m program during high tide)
7 quay cranes, service available 24hr around the clock (berth/unberth, marine, pilotage,operation etc) trimming, cargo salvage, transhipment etc.
Tide range during Spring 3.0m, Neap 0.5m to 1.5m.

PULAU INDAH

Westport Malaysia
Kelang Multi Terminal SDN BHD
PO Box 266
Pulau Indah
Port Kelang
42009
Contact: Mr Nathan
T: + 60 3169 4047
F: + 60 3169 4119
E: info@westportmalaysia.com.my
W: www.westportsmalaysia.com/

MALTA

PAOLA

Kordin Grain Terminal Company Ltd
PO Box 25
Paola
PLA 01
Contact: Mr Alex Agius
T: + 356 2360 4112
F: + 356 2360 4180
E: aagius@maltanet.net
W: www.kordingrain.com.mt
Location: Valletta Port Central Mediterranean
Ownership: Local Government
Port Authority: Kordin Grain Terminal
Throughput Capacity: 400,000
Total Storage: 90,000t
Vessel Size Limitation: Max LOA 220m, Max Draught 14.6m, 80,000dwt

MEXICO

ALTAMIRA

Terminal Maritima de Altamira, SA de CV
Altamira
Tamaulipas
89608
Contact: Ing. Rogelio Maya Moncada
T: + 52 833 260 1138
F: + 52 833 260 1142
E: tmamexplus@infosel.net.mx
W: www.atpaltamira.com.mx
Import: Yes
Location: Gulf of Mexico
Port Authority: Capitania de Puerto
Throughput Capacity: 10,000t per day.
Total Storage: 12,420sqm or 70,000t grain
Vessel Size Limitation: 11.58m depth, 225m length, 60,000 dwt

PUEBLA PUE

Compromex Sa de CV
Piaxtla No. 2
Col. La Paz
Puebla Pue 72160
T: + 52 22 273 7000
F: + 52 22 273 7010
E: ldmexico@louisdreyfus.com
W: www.louisdreyfus.com

MOZAMBIQUE

MATOLA

Stema Sarl Grain Terminal
Lingamo 729
Matola
Maputo
1940
Contact: Mr Silvino Moreno
T: + 258 21 721 762 / +258 21 722770
F: + 258 21 721 763
E: stema@stema.co.mz
W: www.stema.co.mz
Import: Yes
Export: Yes
Location: Lingamo 729, Matola, Mozambique
Throughput Capacity: 250tph unloading, 500tph loading
Total Storage: 45,000t
Vessel Size Limitation: Draught 9.5m

NORWAY

OSLO

Unikorn AS
PO Box 472
Sentrum
Oslo N-0105
Contact: Mr Arne Johannessen
T: +47 2331 8418
F: +47 2331 8429
E: arnej@unikorn.no
W: www.unikorn.no

STAVANGER

Stavanger Havnesilo
Nedre Banegt 60
Potsboks 1569
Kjelvene
Stavanger 4004
T: + 47 51 89 10 45
F: + 47 51 89 04 40

PHILIPPINES

MANILA

Asian Terminals Incorporated
A Bonifacio Drive
Port Area
South Harbor
Manila
Contact: Mr Suhail Al Banna
T: + 63 2 528 6000
F: + 63 2 527 2467
E: webmaster@asianterminals.com.ph
W: www.asianterminals.com.ph

MARIVELES

Mariveles Grain Terminal (MGT)
Baseco Compound
Mariveles
Bataan
2106
Contact: Mr Ruel S Lagtapon
T: + 63 47 935 4930 ext 215

F: + 63 47 935 4338
E: ruell@asianterminals.com.ph
W: www.asianterminals.com.ph
Location: South tip of the Bataan Peninsula by the mouth of Manila Bay.
Ownership: Asian Terminals Inc.
Throughput Capacity: 8,000-10,000tpd
Total Storage: 110,000t in silos. 70,000t in warehouses
Vessel Size Limitation: Panamax size. Average draught 14.5m.

POLAND

GDYNIA

Baltic Grain Terminal

Indyjska 2 Street
Gdynia
81-336
Contact: Mr Marek Kwiatkowski
T: + 48 58 627 4372
F: + 48 58 621 5544
E: btztrade@btz.gdynia.pl
W: www.port.gdynia.pl
Import: Yes
Export: Yes
Location: Baltic Sea
Ownership: ADM + CEFETRA
Throughput Capacity: 1mtpa
Total Storage: 50,000t
Vessel Size Limitation: LOA - 245m, Draught - 11m, dwt - 60,000

GDYNIA

Maritime Bulk Terminal Gdynia Ltd

ul. Weglowa 4
Gdynia
81-341
Contact: Mr Andri Grobelski
T: + 48 58 621 5780
F: + 48 58 621 5354
E: eim@mtmg.gdynia.pl
W: www.mtmg.gdynia.pl
Import: Yes
Export: Yes
Location: North of Poland on the Baltic Sea
Port Authority: Port of Gdynia Authority SA
Throughput Capacity: Approx. 3,500,000t various commodities per year
Total Storage: 15,066sqm in 3 warehouses
20,000cbm in four-chamber warehouse
74,348sqm open storage
Vessel Size Limitation: Dutch quay: LOA 300m, Draught 13m
Swedish quay: LOA 300m, Draught 10.4m
Silesian quay: LOA 250m, Draught 8.6m

SZCZECIN

Andreas sp. z o.o.

St Oder 72
Szczecin
71820
Contact: Mr P Andreas
T: + 48 91 453 8691
F: + 48 91 421 5914
E: p.andreas@andreas.szczecin.pl
W: www.andreas.szczecin.pl

SZCZECIN

Przedsiebiorstwo Uslug Portowych

Elewator EWA S-ka z.o.o.
ul Hryniewieckiego 26
Szczecin
70-606
Contact: Mr Wojciech Kazmierczak
T: + 48 91 4 308266
F: + 48 91 4 624165
E: sekretariat@elewator-ewa.szczecin.pl
W: www.elewator-ewa.szczecin.pl
Location: Szczecin Port on the river Odra
Total Storage: 50,000 sq. tonnes of warehouse capacity
Vessel Size Limitation: Quay of 220m length and 9.1m depth
The largest silo at the Polish coast

SZCZECIN

Rolsped Sp. Ltd

St Wimming pool 15/17
Szczecin
70-660
Contact: Mr Krzysztof Wejt
T: + 48 91 462 3210
F: + 48 91 462 3163
W: www.rolsped.com.pl

SZCZECIN

Szczecin and Swinoujscie Seaports Authority

ul Bytomska 7
Szczecin
70-603
Contact: Mrs Katarzyna Malinowska
T: + 48 914 308 139
F: + 48 914 624 145
E: k.malinowska@port.szczecin.pl
W: www.port.szczecin.pl
Import: Yes
Export: Yes
Location: North - west part of Poland
Ownership: PUP Elewator Ewa sp. z o.o.
Port Authority: PUP Elewator Ewa sp. z o.o.
Throughput Capacity: Loading and discharging of vessels is performed at a maximum rate of: 12,000 tonnes per day for grain, 4,500 tonnes per day for feed
Total Storage: Total silo capacity of 55,000t (73,000cbm capacity)
Vessel Size Limitation: Quay: 220m long with 9.15m draught
Ships up to: 215m long 20,000dwt
Bigger ships can be partly unloaded/loaded in the port of Swinoujscie.
There are three other silos, of total storage capacity 15,000t, located in the port of Szczecin. The silo is road and rail linked with computerised weighbridges. New grain terminal with silo is being constructed in Swinoujscie - projected capacity 15,000t - 18,000t.

WARSAWA

Louis Dreyfus Polska ZOO

10 Kossaka Street
Warsawa
01-576
T: + 48 22 869 08 25
F: + 48 22 869 91 25
E: ldwarsaw@ldnegoce.com
W: www.louisdreyfus.com

PORTUGAL

AVEIRO

Socarpor (Aveiro) SA

Av. Dr. Lourenço Peixinho, 15-5B
Apartado 593
Aveiro 3801-901
Contact: Capt Ferreira Jorge
T: + 351 234 378 790
F: + 351 234 378 791
E: socarpor@socarpor-aveiro.pt
W: www.socarpor-aveiro.pt
Import: Yes
Location: SOGRAIN – Agri-Bulk Terminal, Solid Bulk Terminal – Porto de Aveiro, Portugal
Port Authority: APA – Administração do Porto de Aveiro S.A.
Total Storage: 60,000 tons in steel silos
Vessel Size Limitation: LOA 150; Draught 9,5.
As from 2014 LOA 180; Draught 9,5.

BARREIRO

Barreiro Terminal - Atlanport

Sociedade de Exploração Portuária, S.A
Largo Alexandre Herculano
Complexo Industrial da Quimiparque
Apartado 5109
Barreiro
2831-904
Contact: Eng Ramalho de Nascimento
T: + 351 21 206 6610/11/12
F: + 351 21 206 6629
E: atlanport@atlanport.pt
W: www.ete.pt/Grupo/Empresas/Atlanport_E.htm
Location: Barreiro
Throughput Capacity: 673,000tpa
Total Storage: 19,528sqm
Vessel Size Limitation: Quay with depth 10.5m (ZH)

LISBON

APL - Administration of Port of Lisbon

Rua da Junqueira, 94
Lisbon
1349-026
Contact: Mr Fernanda Silva
T: + 351 21 361 1023
F: + 351 21 862 0308
E: fpsilva@portodelisboa.pt
W: www.portodelisboa.pt/
Location: Lisbon, Portugal
Throughput Capacity: 250,000tpa solid bulk
300,000tpa general cargo
Total Storage: 15,000sqm covered
5,500sqm uncovered
Vessel Size Limitation: Quay with depth 7m (ZH)

LISBON

Iberol - Sociedade Iberica de Biocombustíveis

e Oleaginosas, SA
Av. Frei Miguel Contreiras
54-2
Lisbon 1700-213
Contact: Snr João Rodrigues
T: + 351 21 843 1660
F: + 351 21 849 1446
E: joaorodrigues@iberol.com.pt
W: www.iberol.com.pt
Import: Yes
Location: Alhandra, Portugal
Port Authority: A.P.L - Lisbon
Throughput Capacity: 546,000tpa
Total Storage: 50,000t
Vessel Size Limitation: Quay with depth 5m.
Terminal supplied by barges and small vessels.

LISBON

Poço Bispo Multipurpose Terminal - TMPB

ETE - Empresa de Tráfego e Estiva, S.A.
Largo do Corpo Santo, 21
Lisbon
1200-129 Lisboa
Contact: Engº António Jordão
T: + 351 211 128 048
F: + 351 211 128 052
E: tmpb@ete.pt
W: www.ete.pt/Grupo/Empresas/Ete_E.htm
Location: Lisbon
Throughput Capacity: 1,100,000tpa for bulks
Total Storage: 10,100sqm covered, 9,950sqm uncovered
Vessel Size Limitation: Quay with depth 7.5m (CharDatum)
Floating cranes with 12,000tpd capacity and 45,000 tons barge capacity for bulk.

LISBON

Silopor - Empresa De Silos Portuários, SA

(Trafaria Bulk Foodstuffs Terminal)
Rua das Matas Nacionais
Lisbon
2825-867 Trafaria
Contact: Mr Carlos Silva
T: + 351 21 392 3260
F: + 351 21 290 3269
E: carlos.silva@siloporcom
W: www.silopor.com
Location: Port of Lisbon (West coast of Portugal)
Port Authority: APL - Administracos do Porto de Lisboa
Throughput Capacity: Unload up to 18,000tpd. Load up to 10,000tpd.
Total Storage: 200,000t vertical storage at Trafana.
100,000t vertical storage at Beato.
Vessel Size Limitation: At Trafaria Grain Terminal: Draught 14.5m. At Beato Grain Terminal; LOA 180m, Draught 7.5m

LISBON

Sovena - Oilseeds Portugal, SA
(Palença Bulk Foodstuffs Terminal)
Palença de Baixo - Apartado 24
Lisbon
2801-801Almada
Contact: Mr Henrique Teles Feio
T: + 351 21 294 9000
F: + 351 21 294 9019
E: henrique.feio@sovena.pt
W: www.sovenagroup.com/
Import: Yes
Location: Palença, Portugal
Port Authority: APL
Throughput Capacity: 1,600,000tpa
Total Storage: 90,000t for solid bulk
Vessel Size Limitation: Quays with depths of 16m (ZH)

LISBON

TPB - SILOPOR SA
(Beato Silopor Terminal)
R. Cintura do Porto de Lisboa
Lisbon
1900-263 Lisboa
Contact: Mr Veiga Lopes
T: + 351 21 392 3300
F: + 351 21 868 3896
E: silopor@silopor.pt
W: www.silopor.pt
Import: Yes
Location: Lisbon
Throughput Capacity: 1,200tph
Total Storage: 120,000tpa
Vessel Size Limitation: Quay with depths of 8.0m (ZH)
Max LOA; 180m

TRAFARIA

Trafaria Terminal - Silopor
Rua das Matas Nacionais
Trafaria
2825-867
Contact: Mr Carlos Silva
T: + 351 21 392 32 61
F: + 351 21 392 32 69
E: carlos.silva@silopor.com
W: www.silopor.pt
Import: Yes
Export: Yes
Location: Lisbon Harbour; South bank of Tagus River
Ownership: Portuguese State
Port Authority: APL - Administração do Porto de Lisboa
Throughput Capacity: Intake: 15,000tpd
Outloading: By Ship or Barge; 10,000tpd, By Truck; 7,000tpd
Total Storage: 200,000t in vertical bins
Vessel Size Limitation: Quays with depths of 17.5m (ZH). Can receive Panamax and Capesize vessels.
Terminal ISPS Certificated; HACCP implemented; Food safety management system ISO 22000:2005.
Terminal permanent contact: + 351 917819345

VILA FRANCA DE XIRA

Alhandra Terminal- Cimpor Industria de Cimentos SA
Centro de Produção de Alhandra - Praçeta Teófilo de Araújo Rato, Apartado 1
Vila Franca de Xira
2601-908 Alhandra
Contact: Dr Raul Caldeira
T: +351 21 311 8142
F: + 351 21 950 1912
E: cpa@cimpor.pt
W: www.cimpor.pt
Location: Alhandra, Portugal
Throughput Capacity: 430,000tpa
Vessel Size Limitation: Quay with depth 5m (ZH)
Terminal is supplied by barges.

QATAR

DOHA

Qatar Flour Mills Co
PO Box 1444
Doha
1444
Contact: Mr Tarique Mohammad
T: + 974 4415000
F: + 974 4438137
E: qfmmgmt@qatar.net.qa
W: www.qatarflourmills.com
Import: Yes
Location: Near Doha Port
Ownership: Share holding company listed on the Doha Stocks Market
Port Authority: Doha Port
Total Storage: 65,000t
Vessel Size Limitation: LOA 175 max, Draught 8.2m max

ROMANIA

AGIGEA

Silotrans SRL
Constanta Port - South
Agigea
Dobrogea
907015
Contact: Mr Djordje Krkljus
T: + 40 241 743350
F: + 40 241 743250
E: ConstantaSilotrans@chsinc.com
W: www.chsinc.com
Import: Yes
Export: Yes
Location: South East Coast of Romania
Ownership: CHS Inc. 96%; Schenker Romtrans SA 4%
Port Authority: NC Administratia Porturilor Maritime SA - Constanta
Throughput Capacity: 1,800,000tpa
Total Storage: 108,000t
Vessel Size Limitation: Draught 12.5m; LOA 250m
Unloading / loading vessels, barges, railcars, trucks. Handling capacity rate 800tph.

CONSTANTA

Comvex SA
Incinta Port Dana 80-84
Constanta
900900
Contact: Mr Viorel Panait
T: + 40 241 639 016
F: + 40 241 639 010
E: viorelpanait@comvex.ro
W: www.comvex.ro

CONSTANTA

SC MINMETAL SA Constanta / Romania
Incinta Port
Berth 64
Constanta
900900
Contact: Mr Ghebaur Liviu
T: + 40 241 639 035
F: + 40 241 639091
E: office@minmetal.ro
W: www.minmetal.ro
Location: Romania
Total Storage: Open storage spaces for bulk merchandises, with a storage surface of 113,500sqm
Vessel Size Limitation: Length 1,208m, Depth 10.4m to 12.5m

SAUDI ARABIA

DAMMAM

Arabian Agricultural Services (ARASCO)
Dammam - Al-Khobar, Coastal Road
PO Box 6977
Dammam
Eastern
31452
Contact: Mr Abdulaziz Abdulla Al-Fayez
T: + 966 3 859 1171
F: + 966 3 859 4474
E: a.alfayez@arasco.com
W: www.arasco.com
Import: Yes
Location: Eastern Province Saudi Arabia
Ownership: Saudi
Port Authority: King Abdulaziz Port Dammam
Throughput Capacity: 4 million tpa
Total Storage: 200,000 t grains in silos & flat stores
Vessel Size Limitation: 60,000dwt

JEDDAH

AJWA Port Services Co.
PO Box 16645
Jeddah 21474
Contact: Mr Saleh N Al-Fadhli
T: + 966 264 712 50
F: + 966 264 704 25 / 906 06
E: snalfadhli@ajwa.com
W: www.ajwagroup.com
Import: Yes
Location: Jeddah Islamic Port & Yanbu Commercial Port. Saudi Arabia
Ownership: MBI Group
Port Authority: Saudi Port Authority
Throughput Capacity: 2.5 million tonnes
Total Storage: 450,000 sqm; 140,000 tonnes bulk
Vessel Size Limitation: Panamax
Other services include, aspiration, fumigation, mold treatment. Bagging (up to 1 ton). Can receive bulk (any type of grain) and deliver bag for re-export at competitive rate.

SINGAPORE

SINGAPORE

Lorentzen & Stemoco Singapore Pte Ltd
No. 3 Phillip Street
#14-03 Commerce Point
Singapore 048693
Contact: Mr Stuart Frost
T: + 65 6224 3439
F: + 47 2252 7861
E: lordry@lorstem.no

SLOVENIA

KOPER

Luka Koper d.d.,Dry Bulk Cargo Terminal
Vojkovo Nabrežje 38
Koper SI-6501
Contact: Mr Ivan Peric
T: + 386 566 56 511
F: + 386 566 56 509
E: ivan.peric@luka-kp.si
W: www.luka-kp.si
Import: Yes
Export: Yes
Location: Slovenia
Ownership: 51% State Slovenia, 49% private ownership
Port Authority: Luka Koper, d.d.
Throughput Capacity: approx. 450,000t
Total Storage: Flat storage 60,000t and vertical silo 60,000t
Vessel Size Limitation: Panamax limited 60,000t ; draught -14m
We handle various kinds of cereals, fertilizers and feeding-stuff (soybeanmeal and pellets)

SOUTH AFRICA

DURBAN

Bidfreight Port Operations (Pty) Ltd
PO Box 900
Durban
4000
Contact: Ms Belinda Kruger
T: + 27 31 274 2400
F: + 27 31 205 4116
E: marketing@bidports.co.za
W: www.bidports.co.za
Port Authority: National Ports Authority – Durban, South Africa
Total Storage: Warehousing 17,630sqm (approx.); Quayside 8,200sqm

DURBAN

South African Bulk Terminals LTD
101 Maydon Road
Maydon Wharf
Durban
KwaZulu Natal
4001
Contact: Mr Koos Smith
T: + 27 31 327 5048
F: + 27 31 304 6794
E: koos.smith@sabulk.co.za
W: www.bidvest.co.za
Import: Yes
Export: Yes
Location: East Coast of South Africa
Ownership: Bidvest Group Ltd
Port Authority: National Port Authority of South Africa – Durban
Throughput Capacity: 3mtpa
Total Storage: RBT terminal 150,000t (grain basis)
DBS terminal 69,500t (grain basis)
Vessel Size Limitation: RBT terminal – LOA 225/draught 9.6m
DBS terminal – LOA 255m/draught 12.5m
Bulk handling of maize, rice, wheat, oilcakes, fertilizers, soda ash and calcium fluoride. Limited vegetable oil.

EAST LONDON

S A Port Ops East London Grain Terminal
P O Box 101
East London 5200
Contact: Mr Terry Taylor
T: + 27 43 700 1200
F: + 27 43 700 2319
E: terry.taylor@transnet.net
W: www.transnetnational portsauthority.net

SOUTH KOREA

INCHON

Korea Silo Company Pier 7
3 1-KA Puksung-Dong
Chung-Gu
Inchon
T: + 82 32 763 3211
F: + 82 32 763 9178
E: marcello_b@yahoo.com
W: www.koreasilo.co.kr

ULSAN

Port of Ulsan Public Piers 1&2
Ulsan District Maritime and Port Authority
139-9 Maeam-dong
Ulsan
Contact: Mr Jeong Chang-won
T: + 82 52 228 5500
F: + 82 52 228 5549
W: www.ulsan.mltm.go.kr

SPAIN

BARCELONA

Ergransa
22B Contradic Est Wharf
Barcelona
Contact: Mr Jordi Archs
T: + 34 93 2954580/4433716
F: + 34 93 442 20 28
E: gerencia@ergransa.es
W: www.ergransa.es

BARCELONA

Ergransa Terminal
11 Muelle Contradique
Barcelona
Contact: Mr Jorge Arch Miquel
T: + 34 93 295 45 80
F: + 34 933 173 042
E: gerencia@ergransa.es
W: www.ergransa.es

BARCELONA

Moyresa Molturacion y Refino SA
23A Oest Wharf
Port of Barcelona
Barcelona
08039
T: + 34 934 43 40 00
F: + 34 934 41 05 16

MADRID

Ership S.A.U
5th Floor
Lagasca 88
Madrid
28001
Contact: Mr Jorge Alvargonzalez
T: + 34 91 4263400
F: + 34 91 5757565
E: jorge.alvargonzalez@ership.com
W: www.ership.com

MADRID

Sesostris S.A.E.
Edificio Eurocentro
C/Capitan Haya UM 1-Planta 14
Madrid
28020
T: + 34 91 514 12 00
F: + 34 91 514 12 41
E: ldmadrid@ldnegoce.com
W: www.louisdreyfus.com

MARIN

Ceferino Nogueira SA
Avenida Oresnse 1-B
Marin
Pontevedra
36900
Contact: Mr Ceferino Nogueira Garcia
T: + 34 986 88 0600
F: + 34 986 88 4776
E: info@nogar.es

SANTA CRUZ DE TENERIFE

Port Authority of Tenerife
Avenida Francisco La Roche No 49
Santa Cruz de Tenerife
Canary Islands
Contact: Mr Manuel Fernandez del Castillo
T: + 34 9 22 605400
F: + 34 9 22 605479
E: comercial@puertosdetenerife.org
W: www.puertosdetenerife.org

Tarragona

Berge Maritima
Tarragona
Contact: Mr Daniel Vega
T: + 34 977 55 05 00
F: + 34 977 48 43 82
E: dvega@berge-m.es
W: www.berge-m.es

Tarragona

Codemar-Iberbulk
Muelle de Castilla, s.n.
Tarragona 43004
Contact: Mr Luis Fernández
T: + 34 9 77 21 5273
F: + 34 9 77 22 98 53
E: lfernandez@codemar-iberbulk.es
W: www.codemar-iberbulk.es
Import: Yes
Export: Yes
Location: North East of Spain in the Mediterranean Coast. South of Barcelona. Distance to Barcelona 100km
Ownership: Private Ownership
Port Authority: Port Authority of Tarragona
Total Storage: About 34,000 sm covered flat stores.
Vessel Size Limitation: Limitation according to the public information by the Port Authority of Tarragona.
Conveyor belts running from quayside to three of five flat stores in our facilities at the Muelle de Castilla yard.

Tarragona

Euroports Iberica TPS
Aptdo. Correos 839
Tarragona 43080
Contact: Mr Javier Herrera
T: + 34 977 22 22 19
F: + 34 977 22 04 59
E: jherrera@europortsiberica.com
W: www.euroports.com
Import: Yes
Export: Yes
Location: North East of Spain on the Mediterranean Coast
Ownership: 100% private owners
Port Authority: Tarragona Port Authority
Throughput Capacity: 1,000,000t
Total Storage: 25,000sqm inside port
20,000sqm outskirts of port
Vessel Size Limitation: Panamax type vessels
We provide all vessel, merchandise and port services

Tarragona

Silos de Tarragona SA (SITASA)
Muelle Castilla s/n Ap.160
Tarragona 43080
Contact: Mr Antonio Garcia
T: + 34 977 25 95 00
F: + 34 977 25 95 30
E: agarcia@silostgna.com
W: www.silostgna.com

Sultanate of Oman

Muscat

Oman Flour Mills Co SAOG
PO Box 566
Ruwi-112
Muscat
Contact: Mr Ali Habaj
T: + 968 24711155
F: + 968 24714711
E: flour@omantel.net.om
W: www.omanflourmills.com
Import: Yes
Export: Yes
Location: Middle East
Ownership: 51% by the government and the rest by public share holders.
Port Authority: Port Services Corporation

Sweden

Helsingborg

Lantmännen, Farmers Assoc.
Massgodsleden
Helsingborg 252 25
Contact: Mr Claes Nilsson
T: + 46 42 19 57 00
F: + 46 42 14 87 86
E: claes.nilsson@lantmannen.com
W: www.lantmannen.se
Port Authority: Port of Helsingborg

Västerås

Mälarhamnar AB
Box 3013
Västerås 720 03
T: + 46 221 34900
F: + 46 221 34939
E: bo.eriksson@malarhamnar.se
W: www.malarhamnar.se

Switzerland

Basel

Rhenus-Alpina AG
Basel
Contact: Ms Claudia Bracher
T: + 41 61 639 33 33
F: + 41 61 639 34 66
E: info@rhenus.ch

Basel

Ultra-Brag AG
Südquaistrasse 55
Basel CH-4019
Contact: Mr Beat Heydrich
T: + 41 61 639 72 00
F: + 41 61 639 72 10
E: info@ultra-brag.ch
W: www.u-b.ch

Taiwan

Taipei

Eastern Media International Corporation
8th Floor
Yu Tai Enterprise Building
368 Fu Hsing South Road
Section 1
Taipei 106
Contact: Mr Michael LY Pan
T: + 886 2 2755 7565
F: + 886 2 2702 8079
E: spokesman@emic.com.tw
W: www.emic.com.tw

Thailand

Bangpli

S.P. Intermarine Co., Ltd
150/90 Moo 3 Soi Wongsepad
Teparak Road (Km.10)
Bangpli Yai
Bangpli
Samutprakarn 10540
Contact: Mr Krithep Suwajanakorn
T: + 662 385 5335
F: + 662 385 5910
E: info@spintermarine.co.th
W: www.spintermarine.co.th

The Netherlands

Amsterdam

Maja Stuwadoors Rotterdam
PO Box 57196
Amsterdam
1040 BB
Contact: Mr Arie Holleman
T: + 31 20 684 2194
F: + 31 20 684 7024
E: info@majastuwadoors.nl
W: www.majastuwadoors.nl

Amsterdam

OBA - Bulk Terminal Amsterdam
Westhavenweg 70
Amsterdam 1042 AL
Contact: Mr Hans Mattheyer
T: + 31 20 587 3750
F: + 31 20 611 6908
E: hans.mattheijer@oba-bulk.nl
W: www.oba-bulk.nl
Import: Yes
Export: Yes
Location: Port of Amsterdam
Port Authority: OBA Bulk Terminal Amsterdam
Throughput Capacity: 2 million tpa for agribulk
Total Storage: 25,000sqm covered storage (total storage 600,000sqm)
Vessel Size Limitation: Draught 17.2m saltwater, Beam 45m, LOA no restriciton
OBA is GMP Plus HACCP and ISO 9001certified.
Terminal operates floating cranes (upto 50 tons) and weighing towers as well as shore cranes via weighing house for loading of barge/coaster/trucks/railcars.

Rotterdam

European Bulk Services (EBS) BV
Elbeweg 117, Port number 5820
3198 LC Europoort-Rotterdam
P.O. Box 1204
180 AE Rozenburg
Rotterdam
Zuid Holland
3180 AE
Contact: Mr Taco de Vries
T: + 31 181 258 147
F: + 31 181 258 154
E: sales@ebsbulk.nl
W: www.ebsbulk.nl
Location: Rotterdam Europoort II Terminal
Port Authority: Havenbedrijf Rotterdam N.V.
Total Storage: 90,000t capacity
Vessel Size Limitation: Draught 16.5m, further no restrictions
E.B.S. is a dry bulk terminal operator, we handle all kinds of agribulk but do no ex- or import grain ourselves.
2nd Location: Rotterdam Botlek Sint Laurenshaven Terminal
Total Storage: 50,000 tons; Draught 14m

Rotterdam

Meneba
Posbus 5149
Rotterdam 3008 AC
Contact: Ms Wendy de Vos
T: + 31 10 4238911
F: + 31 10 4238625
E: w.devos@meneba.com
W: www.meneba.com

Rotterdam

Nethgrain BV
Cometongebouw
Westblaak 92 - Westblaakbouw
Rotterdam 3012 KM
Contact: Mr Jean Gandar
T: + 31 10 41 104 85
F: + 31 10 41 304 32
E: jean.gandar@ldcommodities.com
W: www.louisdreyfus.com

Rotterdam

Van Uden Stevedoring
Gustoweg 68
(Port number 385)
Rotterdam 3029 AS
Contact: Mr Gerard de Jong
T: + 31 10 476 0171
F: + 31 10 476 1927
E: g.dejong@vanudenstevedoring.nl
W: www.vanuden.nl

Rozenburg

EP Shipping & Trading BV
PO Box 1050
Rozenburg 3180 AB
Contact: Mr Eddy Van de Wijngaart (snr)
T: + 31 181 402 788
F: + 31 181 402 689
E: eps@epship.nl
W: www.epship.nl

Schiedam

Nieuwe Waterweg Silo
Nieuwe Waterwegstraat 53-55 (Port 542-543)
Schiedam 3115 HE
Contact: Mr Jan Maasdam
T: + 31 10 427 12 30
F: + 31 10 473 75 73
E: jmaasdam@nwssilo.nl
W: www.nwssilo.nl
Port Authority: Port number 542-543
Total Storage: 4500 m/t of Cereals
Vessel Size Limitation: 120m length, 25m width, 8 - 9m draught
Transhipment of all Dry bulk cargoes

Stiens

EMG-Silo Groningen
PO Box 22
Stiens 9050 AA
Contact: Mr Sjoerd De Vries
T: + 31 566 625710
F: + 31 566 625711
E: sj.devries@tell.devries.nl
W: http://www.feedlogistics.nl/

Vlaardingen

Rotterdam Bulk Terminal (R.B.T.) B.V.
Schiedamsedijk 16
Vlaardingen 3134KK
The Netherlands
T: +31 102 343 555
F: +31 102 342 185
E: info@rbtrotterdam.com
W: www.rbtrotterdam.com
Contact: Mr Boris Sviderski
Title: Sales Manager
Import: Yes
Export: Yes (coasters only)
Location: The Netherlands, Port of Rotterdam, Harbour no. 610. at the North Side of the New Maas river.
Ownership: 50% HES Beheer B.V. / 50% Maja Stuwadoors B.V.
Port Authority: Port of Rotterdam
Throughput capacity: 850.000 ton
Total storage capacity: 6 steel silos. Each silo 12.000m^3 / c.a. 855 m^2. 1 shed of 20.000 m^3 / 3.537m^2; Total storage capacity 92.000 m^3.
Vessel size limitation: Max LOA 229, Draft 11,35 m, Max beam 32m, Max Airdraft 14.50 m.
Certification: GMP, ISO 9001.
Transhipping and storage: Grain, Corn, Barley, Wheat, Soya beans, Sorghum.

Trinidad & Tobago

Port of Spain

Port Authority of Trinidad and Tobago
1 Dock Road
Port of Spain
Contact: Mr Kelvin Harris
T: +1 868 625-2644
F: + 1 86 627 266
E: kelvinh@patnt.com
W: www.patnt.com

Turkey

Instanbul

Sesos Pazarlama
Mim Kemal Oke Cad.
No. 9 Kat. 4
Instanbul
Nisantasi 80200
T: + 90 212 296 60 55
F: + 90 212 225 46 42
E: ldistanbul@ldnegoce.com
W: www.louisdreyfus.com

Istanbul

Toros Tarim Sanayi ve Ticaret
Ceyhan Terminal
Tekfen Tower, 19th Floor
4 Levent
Istanbul
Marmara 34394
Contact: Mr Aydin Erdemir
T: + 90 212 357 02 02 ext. 284/286
F: + 90 212 357 02 31
E: aydin.erdemir@toros.com.tr
W: www.toros.com.tr
Import: Yes
Export: Yes
Location: South of Turkey on the Eastern Mediterranean Coast
Ownership: Private Ownership
Port Authority: Botas Porth Authority
Throughput Capacity: 22 million tons annually (all dry bulk and general cargos)
Total Storage: 60,000 tons capacity for grain silos
- 1,5 miilion tons open field for coal and other dry bulks
- 100.000 tons capacity for fertiliser
- 225.000 cbm for petroleum products
- 100.000 cbm for chemicals
Vessel Size Limitation: Max vessel draught 13.5m. Max 110,000dwt.
The quays have belt-conveyors connection to/from grain storage depots, have loading/unloading capacity of around 10,000-15,000 tonnes per day, depending on the gravity of the grain.

Istanbul

Toros Tarim Sanayi ve Ticaret
Samsun Terminal
Tekfen Tower, 19th Floor
4 Levent
Istanbul
Marmara 34394
Contact: Mr Aydin Erdemir
T: + 90 212 357 02 02 ext. 284/286
F: + 90 212 357 02 31
E: aydin.erdemir@toros.com.tr
W: www.toros.com.tr
Import: Yes
Export: Yes
Location: North of Turkey on the Black Sea
Ownership: Private Ownership
Port Authority: Samsun Porth Authority
Throughput Capacity: 7 million tons annually
Total Storage: - 140.000 tons capacity for fertilisers
- 1,5 million tons open field for coal and other dry bulks
- 80.000 cbm for chemicals
Vessel Size Limitation: Max draught 19.5m, Max 65,000dwt
Conveyors only for fertilisers from ships to the warehouses. Other commodities are transported by trucks from ships to storage.

UAE

Dubai

Dubai Port World
PO Box 17000
Dubai
Contact: Mr Abdul Rahim Al Qassim
T: + 971 4 881 5555 ext 237
F: + 971 4 881 6354
E: AbdulRahim.alQassim@dpworld.com
W: www.dpworld.ae/

UK

Ayr

Ayr
ABP Port Office
Ayr
Ayrshire KA8 8AH
Contact: Mr P Creswell
T: + 44 1292 281 687
F: + 44 1292 287 787
E: ayr@abports.co.uk
W: www.abports.co.uk

Barrow upon Humber

New Holland Bulk Services
PO Box 1, Old Ferry Terminal
New Holland
Barrow upon Humber
South Humberside DN19 7SD
Contact: Mr James Lyne
T: + 44 1469 531 102
F: + 44 1469 531 966
E: james.lyne@newhollandbulkservices.co.uk

Boston

Lingrain Services Ltd
The Dock
Boston
Lincs PE21 6BJ
Contact: Mr Tony A Drew
T: + 44 1205 366 484
F: + 44 1205 368242
E: tony.drew@centaurgrain.com
Location: East coast UK (The Wash)
Ownership: Private company
Port Authority: Sanders Stevens Ltd
Total Storage: 46,000t all in bins
Vessel Size Limitation: 120m LOA, Max 13.6m beam, draught to suit tides

Bristol

The Bristol Port Company
St Andrews House
St Andrews Road
Avonmouth
Bristol
Avon BS11 9DQ
Contact: Mrs Jullie Gough
T: + 44 117 982 0000
F: + 44 117 982 0698
E: julie.gough@bristolport.co.uk
W: www.bristolport.co.uk
Import: Yes
Export: Yes
Location: South West England
Ownership: Privately owned
Port Authority: Bristol
Total Storage: Silo/flat store
Vessel Size Limitation: Portbury - Panamax
Avonmouth - Beam 29m

Grangemouth

Leith Docks
Forth Ports PLC
Carron House
Central Dock Road
Grangemouth
Scotland
SK38TY
Contact: Mr Alan C Burns
T: + 44 131 555 8750
F: + 44 131 555 1212
E: alan.burns@forthports.co.uk
W: www.forthports.co.uk

Hull

Frontier Agriculture Ltd
King George Dock
Hull
HU9 5PR
Contact: Mr Tony Greendale
T: + 44 1482 701281
F: + 44 1482 784891
E: tony.greendale@frontierag.co.uk

Ipswich

Clarksons Port Services
Sentinel Terminal
East Bank
Cliff Quay
Ipswich
IP3 0BS
Contact: Mr Julian Scott
T: + 44 1473 254435
F: + 44 1473 254438
E: Julian.Scott@clarksons.com
W: www.clarksons.com
Import: Yes
Export: Yes
Location: East Coast of England
Port Authority: Associated British Ports

Ipswich

The Grain Terminal (Ipswich) Ltd
Cliff Quay
Ipswich
Suffolk 123 OBG
Contact: Mr Tim Capey
T: + 44 1473 250461
F: + 44 1473 233212
E: info@grainterminal-ips.com
W: www.ipswichgrainterminal.com/

Liverpool

Mersey Docks & Harbour Company
Maritime Centre
Port of Liverpool
Liverpool
Merseyside L21 1LA
Contact: Mr Dean Hammond
T: + 44 1928 508555
F: + 44 151 949 6300
W: www.merseydocks.co.uk
Import: Yes
Export: Yes
Location: Northwest coast of UK
Ownership: Mersey Docks and Harbour Co
Port Authority: Mersey Docks and Harbour Co
Throughput Capacity: 32 million tonnes inc 2.3m tonnes grain & AFS
Total Storage: Grain storage 180,000t
Vessel Size Limitation: Max length 292m, 32.6m beam, 12.8 draught
Port of Liverpool is the UK's largest grain and AFS port.

Liverpool

Royal Seaforth Grain Terminal
Royal Seaforth Dock
Liverpool L21 1JD
Contact: Mr Colin McLoughlin
T: + 44 151 949 6201
F: + 44 151 949 6461
E: colin.mcloughlin@peelports.com

Nottingham

Hull Bulk Handling Ltd
Fernwood House
Fernwood Drive
Main Road
Watnall
Nottingham
NG16 1LA
Contact: Mr Charles Holehouse
T: + 44 11 593 893 78
F: + 44 1482 784 895
E: charles.holehouse@fernwood.co.uk
W: www.hullbulk.co.uk
Import: Yes
Export: Yes
Location: Port of Hull, North East coast of England
Ownership: Private limited company
Port Authority: Associated British Ports
Throughput Capacity: 3 million tonnes per annum
Total Storage: No covered storage available. 40 acre open air stock ground available for all bulk products.
Vessel Size Limitation: LOA: 196 metres
Draught: 10.4m
Beam: 25.5m
Max dwt: 31,000t approx.
Terminal is rail & road connected, and operates on a SHINC basis

Rye

Rastrum Ltd
Rye Wharf
Harbour Road
Rye
East Sussex TN31 7TE
Contact: Mr Rod Chapman
T: + 44 1797 224778
F: + 44 1797 223650
E: rodc@ryewharf.co.uk
W: www.ryewharf.co.uk
Export: Yes
Location: South East England on the South coast
Ownership: Rastrum Ltd
Port Authority: Rye Wharf
Throughput Capacity: 200tph
Vessel Size Limitation: Up to 84m in length (2,000t Cargo)

Southampton

Solent Stevedores Ltd
King George V Dock
Western Avenue
Western Docks
Southampton
Hampshire SO15 0HH
Contact: Mr Stuart Cullen
T: + 44 1453 544 449
F: + 44 1453 549 149
E: stuart@solentstevedores.com
W: www.solentstevedores.co.uk

Southampton

Southampton Grain Terminal Ltd
Gate 4 Berth 36
Test Road
Eastern Docks
Southampton SO14 3GG
Contact: Mr Richard Pollard
T: + 44 2 380 334433
F: + 44 2 380 330657
E: richard.pollard@sgtsilos.co.uk
Export: Yes
Location: South of England
Port Authority: Associated British Ports
Throughput Capacity: 500,000t plus
Total Storage: 28,000t in concrete silos
Vessel Size Limitation: Panamax type

Tilbury

Port of Tilbury London Ltd - Grain Terminal
Tilbury FreePort
Tilbury
Essex
RM18 7EH
Contact: Mr Peter Ward
T: + 44 1375 852485
F: + 44 1375 852250
E: peter.ward@potll.com
W: www.forthports.co.uk/ports/tilbury/
Import: Yes
Location: South East of England on the River Thames
Throughput Capacity: Up to 2 million tonnes
Total Storage: 120,000t
Vessel Size Limitation: Up to 60,000t loaded/discharged, Draught 12.5m
ISO 9002 Accredited, AIB (American Institute of Bakers) approved for hygiene, TASSC approved for storage handling and testing of UK combinable crops, ability to handle specialised sensitive grain cargoes with full computerised traceability system. Largest import/export terminal in the UK.

Ukraine

Mariupol

Mariupol Sea Commercial Port
99, Admiral Lunin Avenue
Mariupol
Donetsk Region
87510
Contact: Mrs Irene Bulusheva
T: + 380 629 538 692
F: + 380 629 538 660
E: mail@marport.net
W: www.marport.net

Odessa

Transinvestservice (TIS) Ltd
50 Chapayev Str
Vizirka Village
Kominternovo District
Odessa
67543
Contact: Mr Andrey Stavnitser
T: + 380 482 300 711
F: + 380 482 300 735
E: mail@tis.ua
W: www.tis.ua
Import: Yes
Export: Yes
Location: Yuzhny, Ukraine (45km from Odessa)
Ownership: TIS is a 100 % private stevedoring company owned by foreign investors
Port Authority: TIS
Throughput Capacity: 5 million tpa
Total Storage: 380,000t in silos and flat storage
Vessel Size Limitation: Capesize accepted. Draught 14m. Up to 130,000dwt

Uruguay

Montevideo

Corporación Navios S.A.
Juan Carlos Gomez 1445 esc 701
esquina 25 de Mayo
Montevideo
Montevideo
11.000
Contact: Mr Pablo Soler Brusa
T: + 598 2 9163310
F: + 598 2 9162874
E: psoler@naviosterminals.com
W: www.naviosterminals.com
Location: Nueva Palmira, west of Uruguay in the Uruguay river front of Paraná Delta
Ownership: Navios Corporation
Throughput Capacity: 3 million tpa
Total Storage: 280,000t of grain
Vessel Size Limitation: Panamax loaded at 32 feet

Montevideo

T.G.U.S.A Uruguayan Grain Terminals
Rondeau Ave 1908 .5
Montevideo 11800
Contact: Mr A Deambrosi
F: + 598 2929 0603
W: www.tgu.com.uy

Nueva Palmira

Terminal Nueva Palmira
Ruta 12km
Nueva Palmira
F: + 598 4544 8120
W: www.tgu.com.uy
Import: Yes
Location: Nueva Palmira on the Uruguay river.
Throughput Capacity: 2005: 850.000 MT
17,000 tpd. Wheat base.
Total Storage: 70.000 tons. Wheat base.
20 vertical concrete silos (only for grains) and 2 horizontal silos (for grains and/or sub-products)
Vessel Size Limitation: Panamax type

Rio Negro

Terminal Fray Bentos
Puerto Fray Bentos
Rio Negro
F: + 598 4562 7428
W: www.tgu.com.uy
Import: Yes
Location: Uruguay
Port Authority: Puerto Fray Bentos
Throughput Capacity: 2005: 60,000 MT
6,000 tpd. Wheat base
Total Storage: 20.000 tons. Wheat base.
18 vertical concrete silos (only for grains) and 1 horizontal silo (for grains and/or sub-products)
Vessel Size Limitation: Panamax type

USA

Albany

Albany Port District Commission
Administration Building
Port of Albany
Albany NY 12202
Contact: Mr Rich Hendrick
T: + 1 518 463 8763
F: + 1 518 463 8767
E: fwkeane@portofalbany.com
W: www.portofalbany.com

Ama

ADM Gromark-Destrehan
PO Box 120
Ama LA 70031
Contact: Ms Ruth Sacra
T: + 1 504 431 8245
F: + 1 504 431 7275
E: ruth_sacra@admworld.com

Baltimore

Rukert Terminals Corp
2021 S. Clinton St
PO Box 5163
Baltimore
MD
21224
Contact: Mr John Coulter
T: + 1 410 276 1013
F: + 1 410 327 2315
E: john@rukert.com
W: www.rukert.com

Breakbulk SOUTH AMERICA

PROJECT CARGO, HEAVY-LIFT & RO-RO LOGISTICS
CARGA DE PROJETO, PROJETOS ESPECIAIS & RO-RO

4-5 December 2012 · São Paulo, Brazil
Centro Fecomercio de Eventos

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Leandro Fondacaro
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lfondacaro@ubmbrazil.com.br
+55.11.4689.1935 ext 2133

Michael Fine
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mfine@ubmbrazil.com.br
+55.11.4689.1935 ext 2096

Christian Thompson
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cthompson@breakbulk.com
+1.281.416.4672

Adrian van Beuningen
Europe
avanbeuningen@breakbulk.com
+32.2.808.4355

Gary Tang
Asia
gtang@breakbulk.com
+852.2585 6199

register at breakbulkevents.com

Beaumont

Beaumont Bulk Terminal Inc
1399 Carroll Street
Beaumont
Texas 77701
Contact: Mr Rusty Harris
T: + 1 409 839 4888
F: + 1 409 835 0838
E: dahrel_harris@kindermorgan.com
W: ww.tgsgroup.com

Brunswick

Marine Port Terminals Inc
225 Newcastle Street
Brunswick
GA 31520
Contact: Mr David Proctor
T: + 1 912 264 4044 x238
F: + 1 912 267 6352
E: dproctor@logistec.com

Corpus Christi

Boyd-Campbell Company
210 S.Carancahua
Suite 620
Corpus Christi
Texas
78401
Contact: Mr Sonny Boyd
T: + 1 361 884 9321
F: + 1 361 884 9067
E: agency@boyd-campbell.com

Corpus Christi

Public Elevator
PO Box 2229
Corpus Christi
TX 78403
Contact: Mr Ed Altemus
T: + 1 361 882 1456
F: + 1 361 882 1998

Darrow

Cooper/Consolidated
PO Box 242
Darrow
LA
70724
Contact: Mr Ed K Laurendine
T: + 1 251 431 6156
F: + 1 225 473 6161
E: ed.laurendine@coopertsmith.com
W: www.coopertsmith.com

Decatur

ARTCO
4666 Faries Parkway
Decatur
IL 62526
Contact: Mr Kevin Van Meter
T: + 1 217 424 5556
F: + 1 217 451 4122
E: kevin.vanmeter@adm.com
W: www.admworld.com

Decatur

Kinder Morgan Terminals - Decatur
Lower River Regional Office
7116 Highway 22
PO Box 625
Sorrento
LA 70778-0625
Contact: Mr Gene Taft
T: + 1 7084581330
F: + 1 225 675 8259
E: gene_taft@kindermorgan.com
W: www.kindermorgan.com/bulk_terminals/

Duluth

AGP Grain Limited
602 Arthur Avenue
Duluth
MN
55802-2602

Grain silos at the Port of Vancouver, USA.

Contact: Mr Mike Kylmala
T: + 1 218 722 0538
F: + 1 218 722 0076
E: info@agp.com
W: www.agp.com/

Duluth

General Mills Elevator A
200 Garfield Ave.
Duluth
MN 55802
Contact: Mr Douglas Christiansen
T: + 1 218 722 7759
F: + 1 218 727 7956
E: doug.christiansen@genmills.com

Elizabeth River

Kinder Morgan Elizabeth River Terminals
4100 Buell Street
Chesapeake
VA 23324
Contact: Ms Jennifer Darden
T: + 1 757 543 0335
F: + 1 757 543 8936
E: jennifer_darden@kindermorgan.com
W: www.kindermorgan.com

Fresno

Penny Newman Grain Co
PO Box 12147
Fresno
California 93776
Contact: Mr Mike Nicoletti
T: + 1 559 448 8800
F: + 1 559 448 0500
E: mike@penny-newman.com

Galveston

Farmland Elevator G
3100 Wharf Rd
PO Box 2647
Galveston
Texas 77553
T: + 1 409 763 6447
F: + 1 409 763 8608

Gretna

Associated Grain Terminals
848 Behrman Hwy
Gretna
Louisiana 70053
Contact: Mr Bill Sullivan
T: + 1 985 536 4520
F: + 1 985 536 4521
E: bill@associatedterminals.com
W: www.associatedterminals.com

Houston

Public Elevator 2
PO Box 2562
Houston
Texas
77252-2562
Contact: Mr James Jackson
T: + 1 713 671 7100
F: + 1 713 670 2564

Humble

P&O Ports Texas, Inc.
5810 Wilson Road
Suite 220
Humble
Texas
77396
Contact: Mr Norman Lamb
T: + 1 832 615 7201
F: + 1 832 615 7250
E: norman.lamb@portsamerica.com
W: www.portsamerica.com
Location: Port of Galveston, Texas
Port of Beaumont, Texas
Port of Houston, Texas
Ownership: None
Port Authority: Port of Galveston, Texas
Port of Beaumont, Texas
Ports America is the largest stevedore and terminal operator in North America.

Kalama

Harvest States Elevator
400 Toteff Road
Kalama
Washington
98625
Contact: Mr Lance Helgeson
T: + 1 360 673 2011
F: + 1 360 673 5101
E: lance.helgeson@chsinc.com

Kalama

Peavey Elevator
2211North Hendricks Drive
PO Box 1008
Kalama
Washington 98625
Contact: Mr Steve Oakes
T: + 1 360 673 3900
F: + 1 360 673 3910

Lake Charles

Lake Charles Harbor & Terminal District
PO Box 3753
150 Marine Street
Lake Charles
LA 70602
Contact: Mr Dan Loughney
T: + 1 337 439 3661
F: + 1 337 493 3528
E: marketing@portlc.com
W: www.portlc.com
Export: Yes
Port Authority: Port of Lake Charles
Total Storage: 185,800sqm
Vessel Size Limitation: 13 Ship Berths and 12m draught

Mandeville

Consolidated Terminals & Logistics Company
PO Box 249
Mandeville
LA 70470-0249
Contact: Mr Brent C Mahana
T: + 1 985 871 4403
F: + 1 985 867 3509
E: Brent.Mahana@cgb.com
W: www.ctlconline.com
Export: Yes
Location: Mississippi River
Port Authority: Port of South Louisiana
Throughput Capacity: 15 million tons
Total Storage: Barge storage only, unlimited
Vessel Size Limitation: Small Capesize
Mid-Stream weigh Rig "America"

Maumee

Kuhlman Corporation
1845 Indian Wood Circle
Maumee
Ohio 43537
Contact: Mr Steve Smigelski
T: + 1 419 897 6000
F: + 1 419 897 6061
E: ssmigelski@kuhlman-corp.com
W: www.kuhlman-corp.com
Location: Maumee River
Port Authority: Toledo-Lucas County Port Authority
Throughput Capacity: Max loading speed of 60,000 bushels
Total Storage: Nearly 3 acres under roof storage in large warehouse with segregated bins. Fourteen acres of outside dock storage on the Maumee River.
Vessel Size Limitation: Seaway draft. Over 600 feet of berthing space on the Maumee River.
Rail loading and unloading facilities on the Norfolk-Southern Railroad with easy access to CSXT and Canadian National Railroads in Toledo

Maumee

The Andersons - Maumee Grain Marine facilities
Kuhlman & Edwin Drive
General offices
PO Box 119
480 W. Dussel Drive
Maumee
Ohio
43537
Contact: Mr Jim McKinstray
T: + 1 419 891 6565
F: + 1 419 891 6513
E: jim_mckinstray@andersonsinc.com
W: www.andersonsinc.com
Import: Yes
Export: Yes
Location: Maumee, Ohio
Port Authority: Toledo-Lucas County Port Authority
Throughput Capacity: Max loading speed of 60,000 bushels at each facility
Total Storage: 1 million tonnes total storage capacity
Vessel Size Limitation: Seaway draught. Can accommodate vessels up to 1,000 feet.
Served directly by NS rail with 65 & 100 car track loading capacity Kuhlman Drive and Edwin Drive marine terminals, respectively.

Milwaukee

Continental Grain Elevator
960 East Bay Street
Milwaukee
Wisconsin
53207
T: + 1 414 482 1900
F: + 1 414 482 1733

Mobile

FGDI LLC - ASPA Pier D Grain Elevator
Mobile

Alabama
Contact: Mr Lamar Willis
T: + 1 251 432 2211
E: lamarw@fcstone.com
Ownership: Port of Alabama Authority

Oakville

The Andersons
500 Oakville Road
Oakville
IN
47367
Contact: Ms Dawn Betancourt
T: + 1 765 288 1951
F: + 1 765 288 4176
E: dawn_betancourt@andersonsinc.com
W: www.andersonsgrain.com

Omaha

Hansen-Mueller Company
12231 Emmet Street
Omaha
NE 68164
Contact: Mr John W. Orr
T: + 1 402 491 3385
F: + 1 402 491 0645
E: john@hmgrain.com
W: www.hmgrain.com
Import: Yes
Location: Houston, TX and Toledo, OH
Port Authority: Houston Port Authority and Toledo Port Authority
Total Storage: 135,000 metric ton capacity - Houston
70,000 metric ton capacity - Toledo
Vessel Size Limitation: Panamax, 12.2 m draught

Philadelphia

Agway
3501 S C Columbus BLVD
Pier 122 South
Philadelphia 19148
Contact: Mr George Moore
T: + 1 215 467 5861
F: + 1 215 467 5874
E: wh63man@cropworks.com
W: www.agway.com

Portland

Columbia Grain Elevator
1300 SW 5th Avenue
Suite 2929
Portland
Oregon 97201
Contact: Mr Amer Badawi
T: + 1 503 224 8624
F: + 1 503 241 0296
E: web-info@columbiagrain.com
W: www.columbiagrain.com
Export: Yes
Location: Pacific Northwest
Ownership: Operated by CGI
Port Authority: Port of Portland
Total Storage: 110,000t
Vessel Size Limitation: None, subject to change

Portland

United Harvest LLC
200 S W Market Street
Suite 1830
Portland
OR 97201-5722
Contact: Mr Burke Wood
T: + 1 503 944 1960
F: + 1 503 205 3198
E: bwood@ugcpdx.com

Reserve

Associated Terminals LLC
1342 Highway 44
Reserve
Reserve
Louisiana 70084
Contact: Mr Bill Sullivan
T: + 1 985 536 4520
F: + 1 985 536 4521
E: bill@associatedterminals.com
W: www.associatedterminals.com
Location: Lower Mississippi River Mile 56.8 and 57.8 buoys (Mid Stream)
Ownership: Privately Owned by Associated Grain Terminals
Port Authority: Plaquimines
Throughput Capacity: Direct from river barge: 800-1000 n/t per hour
Total Storage: N/A 1350 metric Tons in 5 tanks
Vessel Size Limitation: Panamax
Facility loads directly from River Barge to Vessel offering USDA certified weights and samples as well as limited blending and storage capabilities. With floating derricks facility can discharge grain from vessel to river barge.

Seattle

Stevedoring Services of America
1131 SW Klickitat Way
Seattle
WA
98134
T: + 1 206 623 0304
F: + 1 206 623 0179
E: info@ssamarine.com
W: www.ssofa.com

St Louis

Bunge St Louis
PO Box 28500
St Louis
Missouri
63146
Contact: Mr Roy Tomson
T: + 1 314 292 2000
E: bna.ebusiness@bunge.com
W: www.bungenorthamerica.com

Superior

Cenex Harvest States
41 Dock St
PO Box 518
Superior
WI 54880
Contact: Mr Lance Helgeson
T: + 1 715 392 4734
F: + 1 715 394 6926
E: lance.helgeson@chsinc.com

Superior

Peavey Company - Connor's Point Elevator
400 N Mail Street
PO Box 937
Superior
WI 54880
Contact: Mr Mick Sertich
T: + 1 715 392 9853
F: + 1 715 392 9874
E: msertich@conagragrain.com

Tacoma

Stevedoring Services of America
1980 Milwaukee Way
Tacoma
WA 98421
Contact: Mr Bob Luxa
T: + 1 253 383 1763
F: + 1 253 272 9570
E: robert.luxa@ssamarine.com
W: www.ssamarine.com

Toledo

ADM Grain Company Ltd
1301 Miami St.
Toledo
Ohio
43605
Contact: Mr Tim Henady
T: + 1 419 324 0800
F: + 1 419 324 0791
E: tim_henady@admworld.com
W: www.admworld.com
Import: Yes
Export: Yes
Location: Northern Ohio, (East side of Lake Erie)
Port Authority: Toledo - Lucas County Port Authority
Throughput Capacity: 2,000tph
Total Storage: 9,500,000 bushels
Vessel Size Limitation: All St. Lawrence Seaway vessels
Served by CSXT Rail Road

Toledo

Midwest Terminals of Toledo International, Inc
3518 St. Lawrence Drive
Toledo
OH
43605
Contact: Mr Jason Lowery
T: + 1 419 897 6868 ext 211
F: + 1 419 691 7016
E: jason.lowery@mwtti.com
W: www.midwestterminals.com
Location: Mouth of Maumee River
Port Authority: Toledo-Lucas County Port Authority
Throughput Capacity: Max loading speed of 60,000 bushels
Total Storage: Outdoor storage and over 600,000 total sq. ft. of warehouse- 1/5 temperature controlled 335,000+ sq. ft. bonded
Vessel Size Limitation: Seaway draught
Five gantry plus one mobile crane, dry bulk conveyor system, heavy material handling equipment. On dock rail serving all berths. Comprehensive security system. Foreign Trade Zone.

Vancouver

Vancouver-United Grain Elevator
1927 Elevator Way
Vancouver
Washington
98660
Contact: Mr John Todd
T: + 1 360 693 1521
F: + 1 360 694 1986
E: jtodd@unitedharvest.com

Wilmington

Metro Ports
348 Shipyard Blvd
Wilmington
California
NC 28412
Contact: Mr Ted Winter
T: + 1 310 816 6545
F: + 1 310 816 6521
E: james.dillman@metports.com
W: www.metsteco.com

Venezuela

Maracaibo

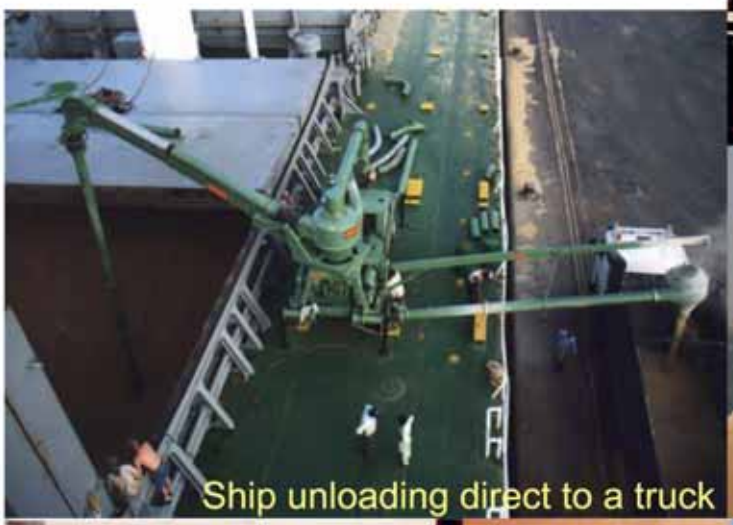
Guasare Coal International
Av 93, entre Calles Ay 78
Sector 5 de julio
Edificio Banco Ind
Piso 9
Maracaibo
Zulia
4001
Contact: Ms Lorena Soto
T: + 58 261 797 3831
F: + 58 261 797 0146
E: lsoto@carbozulia.com.ve

www.NEUERO.com

MOBILE PORT EQUIPMENT - EXAMPLES OF USE

Unloading a ship or barge and loading trucks


Using a mobile hopper


Ship unloading direct to a truck


Using a pressure cyclone


Unloading Wagon and loading a ship


Transhipment from barge to ship

Flexible, reliable, multiple use
- can be moved quickly to new location
- fast delivery and installation
More information at www.neuero.de/en/gsd

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200 million GT

As the world's economy grows and changes, our industry is faced with ever greater challenges. At ClassNK, our understanding of these challenges and our commitment to helping the maritime industry secure a safer future has made us the leader in ship classification. In May 2012, we became the first classification society in history to have more than 200 million gross tons on our register, and as the world's largest classification society, we are dedicated to ensuring the continued growth and development of the maritime industry around the world. Learn more about our efforts to build a better future for shipping and shipbuilding at www.classnk.or.jp

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ClassNK 200 million GT First in Class

www.classnk.or.jp