DCi DRY CARGO international

ISSUE NO.161 JULY 2013

FEATURES

- Iron Ore Trades
- Focus on Petcoke
- Bulk Unloading
- Inspection & Sampling
- Shipboard Cranes & Grabs

The world's leading and only monthly magazine for the dry bulk industry

VERSTEGEN

GRAB
MORE
MORE
GRAB

Verstegen Grijpers B.V. • P.O. Box 1014 • 3430 BA Nieuwegein • The Netherlands
tel: +31-30-6062222 • fax: +31-30-6060657
email: info@verstegen.net • website: www.verstegen.net

New NEUERO 400tph M400-AL Multiport unloader, at Kakinada Port in India. This unit, for the unloading of alumina, began successful operations in 2013. It is equipped with a 12-tonne auxiliary payloader winch and the new Turbo Power, and offers low power consumption and high efficiency.

NEUERO Industrietechnik
Neuerostr. 1 - 49324 MELLE – GERMANY
T: +49 5422 95 03 0
E: tk@neuero.de
W: www.neuero.de

PUBLISHERS
Jason Chinnock
jason@dc-int.com
Andrew Hucker-Brown
andrew@dc-int.com

EDITORIAL
Louise Dodds-Ely Editor
louise@dc-int.com
Jay Venter Deputy Editor
editorial@dc-int.com
Samantha Smith Directories
directories@dc-int.com
Stephanie Hodgkins Office Manager
accounts@dc-int.com

SALES
Lourens van Emmenis Sales Director
sales@dc-int.com
Matthew Currin Senior Sales Executive
sales2@dc-int.com

CORRESPONDENTS
Brazil **Patrick Knight**
Canada **Ray Dykes**
India **Kunal Bose**
Asia **David Hayes**
Europe **Barry Cross**
Malaysia **Wira Sulaiman**
Philippines **Fred Pundol**
South Africa **Iain McIntosh**
Thailand **David Turner**
UK **Maria Cappuccio**
UK **Michael King**
UK **Richard Scott**
USA **Colby Haines**
USA **Walter Mitchell**

ADMINISTRATIVE OFFICE
Business Publishing International
Corporate House, 11 Sinembe Crescent
La Lucia Ridge, South Africa, 4051
Tel: +27 31 583 4360
Fax: +27 31 566 4502
Email: info@dc-int.com

HEAD OFFICE
Trade Publishing International Limited
Clover House, 24 Drury Road,
Colchester, Essex CO2 7UX, UK
Tel: +44 (0)1206 562560
Fax: +44 (0)1206 562566
Email: info@dc-int.com
Website: www.dc-int.com
ISSN 1466-3643

AUGUST 2013 issue

featuring...

Coal's continuing solid performance

A large part of global dry bulk seaborne trade expansion currently taking place is concentrated in the iron ore and coal sectors. Within these sectors, two countries, China and India, are the biggest growth drivers. Yet, elsewhere, many other importers of the same and other commodities are increasing their imports, and a grain trade pick up seems to be emerging.

The latest IMF update, published several weeks ago, continued to suggest that the world economy will underperform in 2013, followed by an improvement next year. Global GDP growth is forecast at just over 3% this year, a sluggish performance and well down from almost 4% in the previous twelve months. In 2014 a step up to a 3.8% advance could be seen, assuming that China keeps growing at around 7.8% annually.

Coal

Recent calculations by Australia's Bureau of Resources and Energy Economics put this year's growth in world coal trade at 3.3%. Other forecasters are more optimistic, pointing to the possibility of a 5–6% increase. A crucial aspect is what happens to Chinese and Indian import demand.

Indications of import buying trends in the first half of 2013 have been mostly positive. China's coal imports in the January-June period were reportedly 13% higher than in last year's same period, at 158.6mt (million tonnes). India's upwards trend also apparently persisted. However, prospects for the near term are not altogether clear. China's economy has shown signs of slackening and, recently, measures to discourage foreign purchases of low-quality coal grades were proposed.

Iron ore

Among key importers of iron ore, contrasting influences were prominent in the past six months. Pig iron production at blast furnace mills was lower in the European Union and South Korea. But in Japan a moderate increase was achieved, while in China robust expansion occurred.

A further phase of the downwards trend in the EU saw first half 2013 pig iron output reduced by 2%, compared with the previous year's same period, to 46.4mt. South Korea's total was 6% lower, at 19.6mt. Conversely, Japan's volume rose by 3%, to 41.5mt and Chinese production was 357.5mt, a vigorous 7% rise. The outlook also is mixed with, in particular, a possibility of extended weakness in Europe.

Grain

Potential for higher grain and soya imports into China seems to have improved recently. As well as envisaging higher soyabeans purchases, USDA analysts are pointing to greatly expanded wheat and corn import demand during the 2013/14 crop year now beginning. These additional quantities could provide a substantial boost for world trade.

According to the forecasts, soyabeans crushing mills in China could raise their imports to 69m, a 10m or 17% increase, reflecting lower stocks and strong soyameal and oil consumption. China's wheat and coarse grains imports are now expected to double to 18m, despite predictions of a larger domestic grain harvest this summer. But there have been some reports of crop damage from heavy rainfall, and government reserves of milling wheat have fallen.

Minor bulks

Some estimates suggest resumed growth in global bauxite/alumina seaborne trade during 2013, after a reduction to around 105mt last year. Primary aluminium output in North America and China rose in this year's first half, benefiting raw materials consumption, although Europe's output was lower.

Bulk carrier fleet

The world bulk carrier fleet is still being greatly expanded by high newbuilding deliveries. While these are well below the past year's volume, a total of over 70m dwt could be completed in 2013 as a whole, as shown in table 2. During the first half of this year, based on Clarksons figures, newbuilding deliveries reached 35.1m dwt (428 ships). Scrapping, amounting to 12.9m dwt, offset over one-third.

TABLE 1: KEY ASIAN SEABORNE COKING COAL IMPORTERS (MILLION TONNES)

	2008	2009	2010	2011	2012	2013
Japan	80.7	65.6	76.6	68.7	70.5	73.0
South Korea	19.7	16.0	23.4	25.9	25.7	25.0
Taiwan	10.4	9.4	10.2	10.7	10.5	10.5
China	6.8	34.5	47.3	44.7	53.6	68.0
India	29.0	29.0	35.0	33.0	35.5	38.0
Total of above	**146.6**	**154.5**	**192.5**	**183.0**	**195.8**	**214.5**

source: various & BSA 2013 estimates * *estimate*

TABLE 2: BULK CARRIER NEWBUILDING DELIVERIES (MILLION DEADWEIGHT TONNES)

	2008	2009	2010	2011	2012	2013
Handysize (10-39,999 dwt)	3.0	5.0	8.4	9.3	9.8	6.5
Handymax (40-59,999 dwt)	6.4	10.3	17.9	20.0	17.3	13.0
Panamax (60-99,999 dwt)	6.4	7.0	15.4	23.7	29.6	28.5
Capesize (100,000 dwt and over)	8.6	21.0	38.6	45.6	41.9	27.0
Total	**24.4**	**43.3**	**80.3**	**98.6**	**98.6**	**75.0**
% change from previous year	-1.2%	+77.5%	+85.6	+22.8%	+0.0%	-23.9%

source: Clarksons & BSA 2013 estimates * *estimate*

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

Late payments highlight need for reform of India's sugar industry

India's 50m sugarcane growers are angry that at one point of the current season that started in October 2012, factories owed them approximately Rs125bn ($2.5bn) for their supplies of cane. Mounting unpaid cane bills have remained a recurring phenomenon in the Indian sugar economy depending on market prices of the sweetener. Such unpaid bills now stand liquidated to a good extent. But the development for which factories cannot be held responsible once again underpins the need for further reforms in the industry, particularly by way of returns to farmers for their cane supplies brought in alignment with prices that sugar fetches in the market. The system is working well in Thailand and several other countries. There is no reason why such price linkages between cane and sugar and other by-products like bagasse burnt electricity and ethanol should not put the Indian sugar industry on an even keel," says Om Prakash Dhanuka, a former president of Indian Sugar Mills Association (ISMA).

The agonizing wait by farmers for cane payments was because sugar prices have stayed well below production cost of the sweetener on supply glut. India, the world's second-largest sugar producer after Brazil but its leading consumer, is having three consecutive years of bumper sugar production, including at least 24.6mt (million tonnes) in 2012/13, leaving factories with huge inventories at all times. Consulting firm Kingsman SA has forecast production in India next season falling to 22.2mt mainly on account of a likely 10% to 15% deficit in cane output in Maharashtra, the country's largest sugar milling state. The global sugar production in the 12 months starting October 2013, according to Kingsman, will be 177.9mt compared to an earlier estimate of 178.5mt and an expected 182.2mt in the current season. Sugar output in Brazil, Russia and the European Union in 2013/14 season will also be smaller than forecast earlier. But any reduction in sugar surplus resulting from production contraction next season will be more than compensated by 11.8mt of global production in excess of demand in 2012/13.

Many other Indian industry officials join Dhanuka in a chorus of protest that large imports facilitated by "low customs of 10% when the challenge is to cope with surplus resulting from high local production three years in a row" have created an "unprecedented cash flow crisis for millers" making it impossible for them to discharge their cane bills settlement obligation in time. Barring a few factories in Maharashtra and Karnataka where cane prices determination have got something to do with returns from sugar and where rate of recovery of sugar from cane is a few percentage points higher than Indian average, the industry is going deeper and deeper in losses. Lending banks are treating sugar accounts with suspicion and they are no longer available to finance cash losses of sugar factories. Sugar companies have ceased to find favour with rating agencies and investors have no appetite for their shares. According to Dhanuka, since the 2012/13 season beginning, nearly 2.5mt of sugar of foreign origin raw sugar and also some white sugar from across the border Pakistan have been received at different Indian ports.

As the local industry is bleeding profusely, director general of ISMA Abinash Verma says, "our stocks are ample and with the monsoon progressing well, Indian sugar production in 2013/14 is expected to be good as well. So a prohibitive import duty needs to be imposed." ICE raw sugar futures are doing a shade below 17 cents a pound. Refineries close to ports in India found it highly profitable to import raws and process them into white and sell it in the local market. But all this is to the detriment of local millers and farmers. With their back to the wall, factories belonging to the private, government and cooperative sectors went on pressuring New Delhi to raise customs duty to a level that would make imports unviable. Under pressure from cane-growing states also, the government raised import duty on sugar to 15% from 10%. A government official says the higher duty coupled with major value depreciation of Indian currency will be discouraging of imports. The National Federation of Cooperative Sugar Factories, which was pitching for customs duty of at least 30% has reasons to remain unhappy. So also has Dhanuka who says, "the government has not only acted late but has done too little." Prime minister Manmohan Singh wants the sugar industry to break voodoo spells of high and low production cyclicality. Large imports in bumper production times are certainly not going to help the cause of the industry.

Kunal Bose

US government denies that it is 'anti-coal'

The US government is not waging a 'war on coal' but rather expects it to still play a significant role, US Energy Secretary Ernest Moniz said in late June, rejecting criticism of President Barack Obama's climate change plan.

Obama recently tried to revive his stalled climate change agenda, promising new rules to cut carbon emissions from US power plants and other domestic actions including support for renewable energy. The long-awaited plan drew criticism from the coal industry, which would be hit hard by carbon limits, and Republicans, who accused the Democratic president of advancing policies that harm the economy and kill jobs. Environmentalists largely cheered the proposals, though some said the moves did not go far enough.

Obama "expects fossil fuels, and coal specifically, to remain a significant contributor for some time," Moniz said, adding that the way the US administration is "looking at it is: what does it take for us to do to make coal part of a low carbon future?" He noted that would include higher-efficiency plants and new ways of utilizing coal.

Senator Joe Manchin, a Democrat from West Virginia, the No. 2 US coal mining state after Wyoming, said that Obama had "declared a war on coal," and the industry said the rules threatened its viability.

Moniz acknowledged there could be winners and losers but that economic models belie "the statement that there are huge economic impacts" from controlling greenhouse gases.

"Quite the contrary. We expect that this is going to be positive for the economy," he said.

Obama said he had directed the Environmental Protection Agency to craft new emissions rules for thousands of power plants, the bulk of which burn coal and which account for roughly one-third of US greenhouse gas emissions.

Bulk connections

Iron ore trades

shipping markets greatly affected by China's iron ore requirements

Iron ore at the Port of Hamburg (© Port of Hamburg Marketing/Lindner).

The health of China's economy will be the critical factor determining global iron ore prices, trade flows and seaborne demand in the short and medium term, writes Michael King

The most recent fluctuations in Chinese iron ore demand illustrated once again just how much sway the country's steel makers have on the global iron ore and shipping markets. In June, Drewry's Capesize Demand Index increasing by over 80% compared to May, helping pull up the Drewry hire Index by 229 points. The catalyst for the resurgence was a sudden burst of Chinese ore importing. Iron ore benchmark prices also surged reaching over $130 per tonne in July, up from $110 per tonne in May but still some 17% lower than the 2013 high watermark for prices achieved in February. These short-term peaks and troughs further reinforced just how dominant China has become in the iron ore trade as its steel sector has mushroomed over the last decade or more.

In 2012 the global seaborne iron ore trade, representing some 40% of total seaborne tonnage shipped in bulk carriers, totalled 1,110mt (million tonnes), up 4.8% compared to a year earlier. China, one of the few importing countries that registered an increase in demand during 2012, accounted for a whopping 745.4mt of the total, up 8.6% compared to 2011. China now imports around three quarters of its iron ore requirements and accounts for 64% of total world iron ore imports. By contrast, Japan in second place imports a relatively measly 132mt.

The clout of Chinese steel markers was also evident as iron prices oscillated during 2012. While prices generally headed downwards as more supply came to market, particularly from Australia, the depreciation was marked by violent volatility which was almost entirely due to changes in Chinese steelmakers' behaviour. For example, when prices fell from just under $120 per tonne in August 2012 to below $90 a month later, most of the lurch was attributed to Chinese producers reducing steel and iron ore inventories in a bid to lower costs as margins deteriorated. Brief upturns in spot prices occurred when Chinese buyers returned to the market.

With Chinese demand so critical to global iron ore trade, the latest economic figures emerging from the world's second-biggest economy were viewed with dismay by traders. China's manufacturing activity fell to a nine-month low in June according to one purchasing managers' index (PMI) produced by HSBC. A shortage of credit, rising input costs and a change of policy to reduce reliance on exports under the new regime headed by President Xi Jinping were cited by analysts as major contributors to the downbeat outlook.

This has seen some analysts downgrade forecasts for Chinese GDP growth this year, sparking fresh concerns about steel production levels and, therefore, iron ore demand. HSBC has now cut its forecast for GDP growth in China this year to 7.4% from 8.2%. Others expect economic output growth to fall below 7% in the second half of this year after slowing to 7.7% in Q12013, from 7.9% the previous quarter.

MAJOR STEEL-PRODUCING COUNTRIES 2012

		(million tonnes)		
1.	China	716.5	6. South Korea	69.1
2.	Japan	107.2	7. Germany	42.7
3.	United States	88.7	8. Turkey	35.9
4.	India	77.6	9. Brazil	34.5
5.	Russia	70.4	10. Ukraine	33.0

(source: www.worldsteel.org)

MAJOR STEEL-PRODUCING COMPANIES 2012

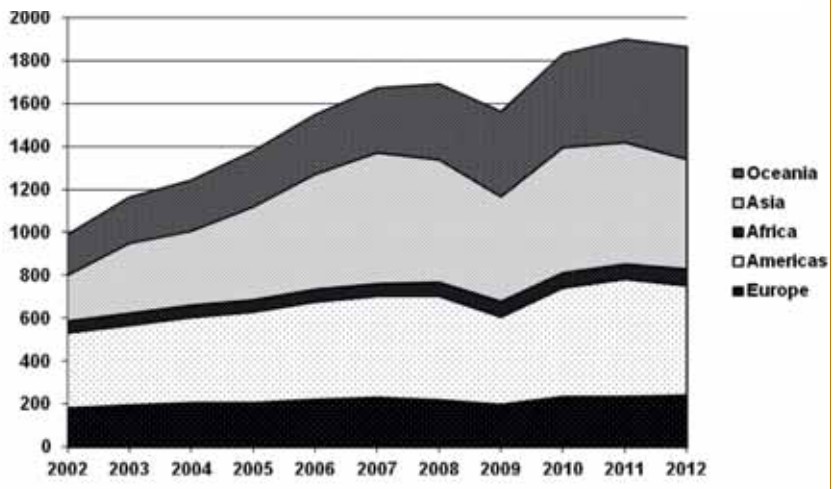
		(million tonnes)
1.	ArcelorMittal	93.6
2.	Nippon Steel & Sumitomo Metal Corporation	47.9
3.	Hebei Group	42.8
4.	Baosteel Group	42.7
5.	POSCO	39.9
6.	Wuhan Group	36.4
7.	Shagang Group	32.3
8.	Shougang Group	31.4
9.	JFE	30.4
10.	Ansteel Group	30.2

(source: www.worldsteel.org)

"We expect the official PMI to drop below 50 in July as policy tightening continues to affect the economy," Nomura analyst Wendy Chen said. "The weak PMI reinforces our view that there is a 30% chance that GDP growth may drop below 7% in Q3 or Q4."

Xianfang Ren, an economist with IHS, said GDP growth in China of less than 8% for five straight quarters was "a clear sign of distress". He added: "We are especially concerned about the rather significant downslide of investment growth, led by real estate investment. The construction sector could see lots of headwinds coming forth in the second half if there is no marked change in policy course.

Iron ore world production (million tonnes)



source: Raw Materials Group

"Uncertainties remain huge with the domestic construction sector and external demand, and we expect China's growth could slip even further to below 7.5% in the second half, and whole-year growth might come in just around the targeted 7.5% or lower."

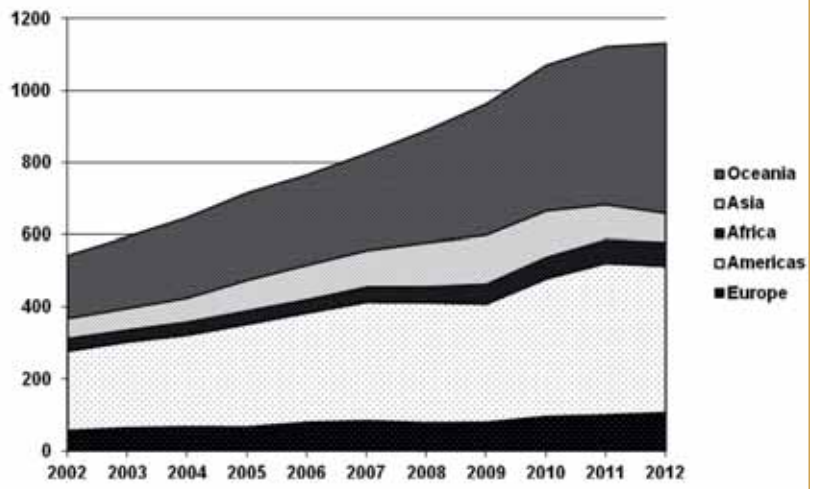
The outlook for next year is even more concerning. Nomura forecasts that China's GDP growth will slip from an expected 7.4% this year to 6.9% in 2014 and warns there is a 10 to 20% chance that growth could fall below 6% next year.

The World Steel Association anticipates a rise in world steel use by 2.9% in 2013, followed by an increase of 3.2% in 2014, but the WTA also believes China's growth rate will slow as the economy focuses more on consumption rather than capital investments that require steel.

Indeed, analysis by the United Nations Conference on Trade and Development (UNCTAD) suggests that Chinese GDP growth rates and therefore steel demand are in fact undergoing a profound change which will limit growth rates in the years ahead. But while Unctad says there are several good reasons to expect slower Chinese growth in the future, this does not automatically mean that a slowing down of Chinese growth would dramatically reduce iron ore import demand.

In its latest report — *The Iron Ore Market 2012–2014* — Unctad argues that the composition of GDP growth will probably prove more important than the rate of growth in deciding China's iron ore imports. "China is entering a period of adjustment where the share of investment in the economy will fall and the share of consumption rise, at the same time as production is reoriented towards the domestic market rather than exports," said the report. "The shift is likely to lead to slower growth in Chinese demand for steel and other raw materials. It should be noted, however, that the shift is

Iron ore world export (million tonnes)

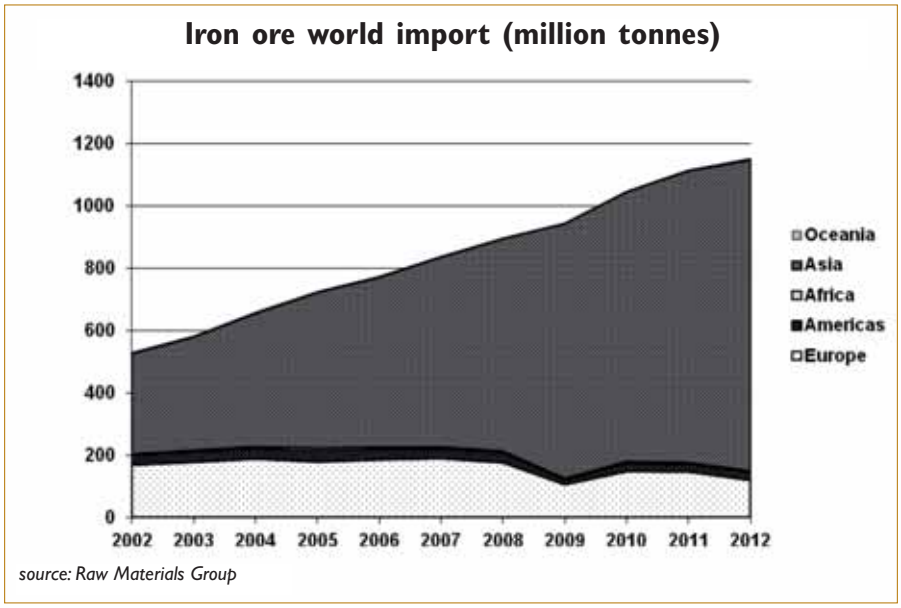


source: Raw Materials Group

happening later than expected and its effects may be less dramatic than thought.

"We project annual growth in China's crude steel production to be 5% over the period 2013–2015, while steel production in the rest of the world would grow at a rate of 3.1% per year."

The question for international suppliers is to what extent slower Chinese GDP and steel production growth will translate into demand for iron ore imports. What is clear is that the iron content of China's domestic ore continues to decline and producers have become less responsive to price increases than in the past as costs have mushroomed and margins been shaved. This has seen the market share of imports increase from around 30% in 2009 to between 60–70% in most months in the last year. Unctad expects the trend to continue.



source: Raw Materials Group

"Domestic Chinese iron ore producers will have great difficulties increasing output beyond present levels, no matter what expansion targets may be set," said the report. "This constraint is of crucial importance for the way the world iron ore market will behave in the next few years."

Unctad expects Chinese ore use to increase from 1863mt in 2012 to about 1930mt in 2013 and then climb to 2010mt in 2014. A rising reliance on imports and better demand from non-Chinese markets will help offset any decline in Chinese steel production growth rates in terms of seaborne iron ore demand.

The upshot, according to Unctad, will be a relatively "tight" world iron ore market for several years but one in which prices will most likely decline as new production comes on stream. "Chinese steel demand will grow considerably slower than during the past decade, while demand in the rest of the world will pick up, in spite of the uninspiring macroeconomic outlook in the Euro zone," said the report. "This means that world steel demand and production will increase at rates that are high in a historical perspective but nevertheless lower than during the previous decade."

Iron ore at the Port of Hamburg

Aerial view of the iron ore facilities at the Port of Hamburg (© Port of Hamburg Marketing/Lindner).

In the first six months of 2013, seaborne throughput of iron ore via the Port of Hamburg reached 5.04mt (million tonnes). This is almost the same volume as at the same time last year — a fall of just 0.9%.

Compared to the first three months of this year, throughput in the second quarter grew by 9.5% to 2.6mt.

Besides coal, the unique, fully automated HANSAPORT terminal in Hamburg is the biggest terminal operator for the handling of iron ore.

Via the Port of Hamburg, the steel mills of northern Germany are fed with iron ore (and coking coal) coming from Norway, South America, South Africa, Canada and Sweden. The heaviest block trains in Europe — up to 6,000 tonnes — are in operation in the port's hinterland, which guarantee at raw material between the Hamburg terminals and the steel mills.

Handling iron ore at the Port of Hamburg (© Port of Hamburg Marketing/Lindner).

CHINA MONTHLY IMPORTS OF IRON ORE

(million tonnes)

	2011	2012	2013	% change 13/12
January	69.0	59.3	65.5	10.5
February	48,6	65.0	56.4	–13.2
March	59,5	62.9	64.6	2.7
April	52,9	57.7	67.2	16.5

Source: The TEX Report and China Iron and Steel Association (CISA)

Exactly how tight markets will be, and how low prices will fall, will be decided also by the rate at which producers increase output. The recent declines in international prices and new regulations requiring banks to increase their capital ratios and avoid risks have seen a number of projects put on hold or delayed. This has been the case even in Australia, where producers have been aided by the recent decline in the Australian dollar (the currency in which costs such as wages and taxes are paid) against the US dollar (the currency of iron ore sales transactions). BHP, example, estimates that its annual profit could be bolstered by as much as US$110 million for each one-cent gain in the U.S. currency against the Australian dollar.

According to Unctad, as of May 2013 the total new iron ore mining project pipeline contained 771mt of new production capacity due to come on stream between 2013 and 2015. Of this total around 306mt fell into the 'certain' category, 230mt was deemed 'probable' and 235mt 'possible'.

Some 32% of the projects were located in Oceania, 29% in Latin America, 13% in Africa, 11% in both Europe and Asia, and 4% in North America. The dominance of Oceania and Latin America, and specifically Australia and Brazil, is evident in the breakdown of the 'certain' projects — 37% and 43% are located in the two continents, respectively.

"In general, in any given year not all 'certain' projects will make it and not all of the 'probable' ones will become a mine in the period stated by the company handling the project, but the delay rarely exceeds three years," concludes Unctad. "Most of the 'possible' projects will not make it on time but many will actually get going."

On average some two thirds to three quarters of the projects announced are eventually completed. This translates into 390-580mt of new capacity coming on stream in the period through 2015, with 500mt thought the most likely total by Unctad.

"Given the present circumstances of higher uncertainty in combination with increased difficulties to get finance for mining projects, we will probably see some start up dates being pushed, but as the long term market situation still looks fairly OK, quite a few of these projects will probably be taken forward," said the report. "Under our relatively conservative assumptions of demand, about 230mt would actually be needed. While this implies that a surplus will develop over the next three year period, we are not prepared to make a conclusion that the iron ore market is facing imminent reversal."

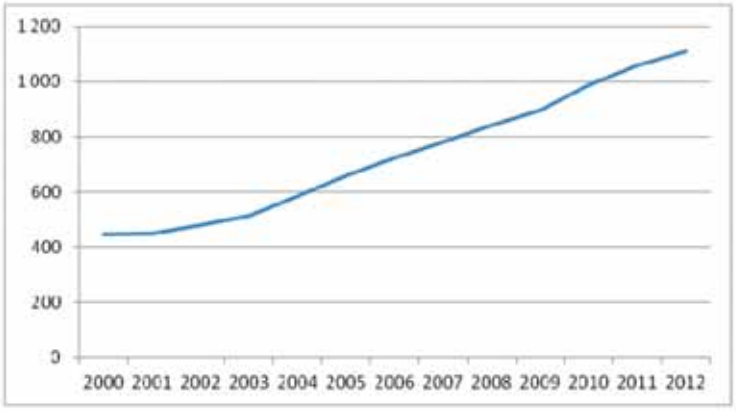
Unctad bases this conclusion primarily on the existence of two mechanisms which place a cushion under prices. Firstly, large iron ore producers can implement their expansion plans with a great deal of flexibility. And secondly, a considerable segment of the Chinese iron ore mining industry, probably as much as 150mt of annual capacity, would close if prices were to fall dramatically below present levels.

"We believe that while the market is certainly moving towards a balanced supply and demand situation, equilibrium will only be reached towards the end of this year," said its report. "The market will remain tight, and the next few years will be characterized by a gradual adaptation of supply, by way of addition of new capacity, to a continuously growing demand.

"Prices, while continuing to decline, will stay sufficiently high over the next couple of years to keep the Chinese iron ore mining industry operating at lower, but not disastrously low levels of output. That is, between 200 and 250mt.

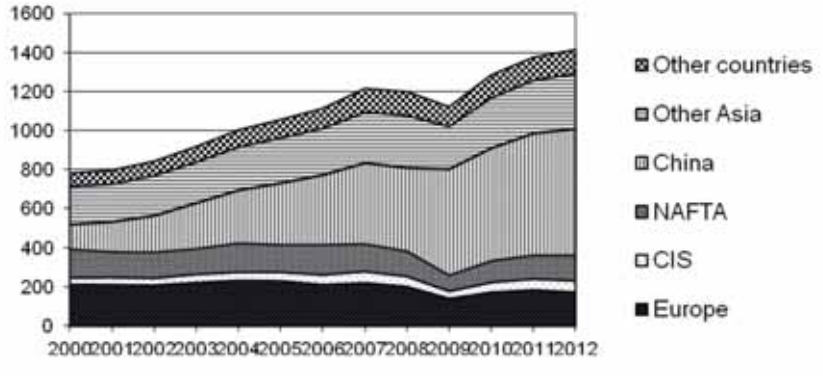
"For the medium to long term we will most probably see a slow fall in

Seaborne iron ore trade 2000–2012 (million tonnes)



source: Raw Materials Group

Apparent world steel use (million tonnes)



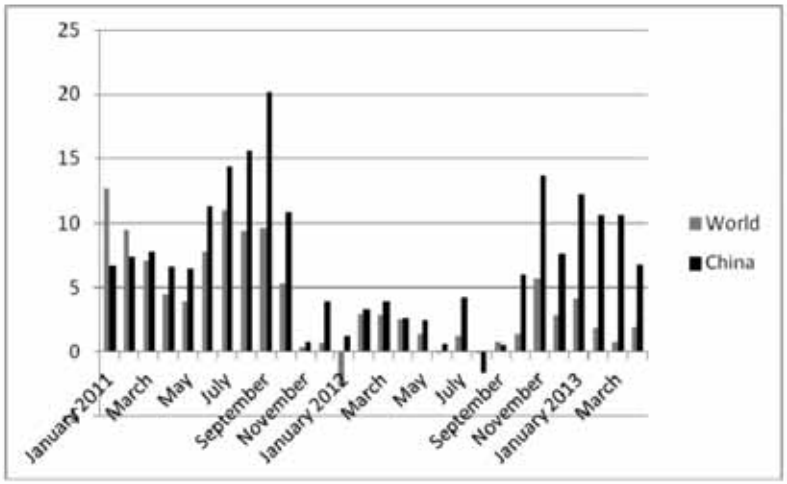
source: World Steel Association

Chinese iron ore production. Consequently, prices will remain at levels that must be considered high from a historical perspective, with a floor at around US$100-–20 per tonne delivered in China."

But despite the optimistic outlook from Unctad which offers some hope for shipowners in a dire market for ocean freight rates, this needs to be put into context. As Drewry points out, even though a sustained period of higher demand for Chinese ore saw a huge bounce in Capesize rates in June and early July, this only "brought hires up to levels that only slightly exceed daily breakeven levels — operating cost plus capital component — for modern Capesize vessels."

Miners, it would seem, are far better placed than ship owners to reap profits if, as expected, demand for iron ore imports from China rises in the years ahead.

Monthly crude steel production — world & China
Jan 2011 – Apr13 (year on year percentage change)



source: World Steel Association

Mine closures and 'mindless' policies severely hamper India's iron ore exports

Irony is on display in its cruellest form as India very richly endowed with iron ore resource found its exports of the mineral slipping from a high of 117mt (million tonnes) in 2009–10 to 18.37m tonnes last year, *writes Kunal Bose*. The twist in the tale is Indian steel mills close to ports and without mine linkages are constrained to make imports of the mineral due to serious dislocations in production and supply in some major iron ore bearing states. The Federation of Indian Mineral Industries (FIMI) is quoted saying "India is likely to import 1mt of iron ore each month this fiscal year." A good portion of Indian imports is in the form of pellets bearing a significant degree of value addition to iron ore. India's ore production climbing to a high of 219mt in 2010–11 on the back of rising export demand, almost exclusively from China, and domestic sales were down to 140mt in 2012–13. This is much in contrast to the scene in Australia and Brazil where large investments in anticipation of future demand in operating mines expansion and opening of new mines remain the order of the day.

Indian export setback has seen stocks at mines pithead rising to 124mt, including 104mt of ore fines causing environmental issues, space constraints and cash flow problems for mines. But why have fines such a preponderantly big share of pithead stocks? This is because fines are co-produced with lumps and constitute around 70% of mined ore. More importantly, the domestic demand for fines as of now is limited and 92% of Indian exports of ore are in the form of fines. A collapse in exports in the past few years has, therefore, led to the building of mountains of fines at mines sites. According to FIMI president HC Daga, mines closure in Karnataka and Goa — combined with mindless policy moves subjecting iron ore to penal export tax and railway freight (for ore destined for exports), which is over three times higher than on other commodities — has done iron ore producing and exporting groups in. Ore containing 62% iron from eastern parts of the country (Orissa and Jharkhand) marked for exports will have "railway freight and export tax together constituting as much as 72% of freight on board (FOB) realization." Daga says as Indian iron ore miners contend with "exceptionally high taxes and cess and logistics costs," they — unlike their peers in Brazil and Australia — are working on wafer-thin margins.

From no export duty at all to 5% on fines and 15% on lumps in December 2009 to a uniform 20% in March 2011 and further to 30% nine months later, the government was found in haste in flexing its fiscal muscle to discourage overseas sales of iron ore. Many find reasons to suspect that high export duty was the result of the government capitulating to sustained intensely hard lobbying by local steelmakers. Steel industry captains from Chandra Shekhar Verma (chairman of Steel Authority of India Limited) to Hemant Nerurkar (CEO of Tata Steel) have used every forum to extol the virtues of conservation of a resource (in this case iron ore) which is finite. Their argument runs along the lines that India — on course to become the world's second-largest producer of steel — will need all its iron ore that is either proven or probable. Local value addition whenever that happens is to be preferred over exports of iron ore, they argue. The logic is, however, lost on steelmakers that value addition to the raw material and resource export can be done simultaneously to the benefit of the economy, particularly some of the country's remotest corners where development and livelihood are entirely mines dependent. Some miners indulging in practices like deposit slaughtering, polluting environment and tax dodging led the governments of Karnataka and Goa states to put a blanket ban on iron ore mining and export of the mineral. Now following rulings by the Supreme Court Karnataka mines are returning to production in slow paces. In the meantime, however, India had lost big chunks of the export market and the vacuum created by it had been filled mainly by Australia and Brazil.

Indian steelmakers and miners are arrayed in two contesting camps with arguments and counterarguments about long-term availability of iron ore in the context of the country's growing steel capacity flying thick and fast. The winning argument "reserves are a function of exploration. More mining and exploration will invariably lead to discovery of more resource,"

is that of Daga. His point is reinforced by UN Framework Classification of mineral resources saying India's iron ore resources stood at 28.52bn tonnes as of April 2010. In the three years preceding, India though had mined 997mt of ore, its iron ore resources were up 3.227bn tonnes and all of that the preferred kind hematite. This is as it should be. The reason "India being part of Gondwanaland has plentiful reserves of iron ore awaiting exploration and be proved. Australia, belonging to the same Gondwanaland, has seen accretion of its iron ore resource from 15bn tonnes in 1980 to 40bn tonnes in 2005. The magic, as I say, is in mining and exploration," argues FIMI secretary general RK Sharma. The point is further illustrated by what happened in Goa. At the time of its liberation from Portugal occupation by the Indian army in 1961, the Geological Survey of India estimated Goa's iron ore resources at 350mt to be exhausted in 20 years. "In reality, Goa, since its unification with India, had exported around 1bn tonnes of ore. Not only that, as of April 2010, the shore based state has its resources lifted to 927mt," says Sharma.

India is gnawed at by very high current account deficit, that is, foreign exchange outgoings on imports far exceeding income from exports. Logically, the situation will demand of the government not to load export tax and railway freight on iron ore to an extent as to stifle its sales abroad. But the government in the case of iron ore capitulated to hard lobbying by the steel lobby. Not that there are no dissentions in the government. The mines ministry, which went on record saying that enough iron ore was stored under Indian earth to take care of requirements of the domestic steel industry for the next up to 200 years, did not find export tax hike to its liking. "In the three years to 2011–12, the country's earnings from iron ore exports were $26.7bn. But as exports started falling sharply, foreign exchange earning opportunity lost in the last three years could be as much as $17.5bn," according to Daga.

India's conservationist policy — in many eyes disincentivizing of iron ore exports is a demonstration of resource nationalism in practice — has caused annoyance to China, the world's biggest producer of steel and also by far the largest importer of ore. In this year's first half, China raised year-on-year imports of iron ore by 5.1% to 384.29mt at a value of $51.2bn. The average price of ore imports was $133.2 a tonne, down $6.3 a tonne. The country's ore imports last year amounted to 743.55mt when its steel production was up 3.1% to 716.5mt giving it a hefty share of 46.3% of world output. Unfortunately, India, because of its warped position on ore exports has failed to take advantage of growing Chinese demand. India's commerce ministry data show that the value of the country's ore exports to China was down sharply from $9.1bn in 2010/11 to $1.7bn in 2012-13. No wonder, India's trade deficit with China has widened to an alarmingly high level of $40.77bn in 2012/13.

In its pursuit to reduce its import dependence on the three major mining groups — namely, Anglo Australian Rio Tinto and BHP Billiton and Brazilian Vale — China adopted a three-pronged strategy. First, in spite of its low quality ore and high cost of its mining and preparation for use, it went on raising domestic production. The cost factor now has forced China to put a caveat that mines below a certain size will be progressively decommissioned. Earlier, the Chinese target was to produce 760mt of finished ore out of a total excavated amount of 1.5bn tonnes in 2015. Second, China remains on the prowl to buy iron ore assets in all continents with particular focus on Africa and also acquire equity stakes in mines ventures in Australia and elsewhere with provision of imports in line with ownership level. Third, where India has proved to be a disappointment, China is proactively trying to build procurement centres away from the mining triumvirate which control close to 60% of global seaborne trade in iron ore.

In the meantime, a debate raging in India is about choosing the ideal route for allocation of mineral deposits, coal and iron ore in particular, to aspirant groups. Since the country has been rocked more than once in recent times over ministers and officials not playing fair in allocation of deposits, opinion is gaining ground that in auctions are to be found the antidote to corruption. Daga has joined the debate with some incontrovertible arguments against deposits auction. "I have reservations about auctions since these are to lead to concentration of deposits in a few hands creating ground for cartelization. Be sure, if some extraordinarily rich groups corner resources by paying top dollar without a good idea of the size, quality and mineralogy of deposits, they will from the very start selectively take out the best grades of iron ore from mines without care for lower quality mineral for a quick recovery of their investments. Why should there be concerns about first-come-first-serve system of mines allocations if rules are well laid out, governance is proper and authorities are denied discretionary powers?" argues Daga. In any case, the two countries Uzbekistan and Kyrgyzstan which tried resources allocation through auctions have reasons to regret the decision.

Brazil's Vale expands output in bid to reclaim share of world trade

Vale seeks to regain share of world ore trade lost in recent years by increasing output from 320mt (million tonnes) to 450mt in next five years, in an unstable market, *writes Patrick Knight.*

Predicting the future of the iron ore market has rarely been as difficult as it is this year.

On the supply side, the fast growth of recent years in demand from China, now the destination of about 70% of the ore traded worldwide — and more than half of that shipped from Brazil — encouraged most of the world's largest mining companies and numerous newcomers to embark on major expansions.

If all the projects were completed as planned, more than 300mt would be added to output by just the four leading companies in the next two or three years, 100mt of that from mines in Brazil alone.

On the demand side, concerned with getting the runaway economy under control, by curbing the growing threat of inflation and avoiding a financial crisis, the Chinese authorities are taking steps to discipline leading industries.

Most notable of these is steel, where capacity at the hundreds of mills, most state-owned and very high cost, exceeds demand by at least 25%.

The Chinese economy is expected to grow by little more than 7.5% this year far from the heady 9–10% of some years. Work on building the infrastructure has been cut back and efforts made to curb speculative house building, the leading user of steel. In such a situation of flux, it is not surprising that the price of iron ore has fluctuated wildly. It has ranged from the low of $86 per tonne late last year, below the cost of production at numerous mines, not least many in China itself and the $160 per tonne of early this year, when companies rushed to rebuild depleted stocks.

EXPORT OF IRON ORE BY COUNTRY, '000 TONNES

Country	2012	2011	2010	2009	2008	2007
China	169,940	164,500	152,561	150,158	96,357	105,026
Japan	31,171	37,335	37,422	23,355	35,767	31,217
Germany	9,266	12,414	20,927	10,807	25,575	24,281
S. Korea	15,721	14,229	11,902	9,410	12,926	10,321
Netherlands	14,032	15,666	6,952	3,561	5,983	5,246
France	8,017	7,106	8,110	4,686	11,188	13,229
UK	6,150	7,224	7,814	7,194	7,507	6,693
Italy	9,869	11,567	8,041	4,665	10,788	11,366
Belgium	2,364	1,672	3,612	923	8,219	8,045
Argentina	7,267	9,334	7,608	3,229	6,932	5,752
United States	470	919	1,143	565	2,901	3,573
Spain	3,526	4,049	3,798	2,204	4,167	3,981
Taiwan	4,918	5,227	4,700	2,393	4,158	4,325
Bahrain	4,056	7,005	6,180	3,890	7,965	1,470
Saudi Arabia	1,672	4,426	5,964	3,484	4,892	2,886
Egypt	2,592	2,897	2,716	3,950	2,356	2,567
Philippines	6,746	3,045	2,290	933	4,235	4,161

Source: Sinferbase

BRAZIL'S ORE EXPORTS TO CHINA

Year	'000 tonnes
2012	169.9
2011	164.5
2010	152.6
2009	150.2
2008	96.4
2007	105.0
2006	80.2
2005	58.7
2004	46.3
2003	41.0
2002	27.2
2001	28.6
2000	16.8
1999	14.7
1998	10.5

Source: Sinferbase

The price settled at about $120 per tonne in June this year, but many analysts suggest it will fall again as the year progresses and could average little more than $85 a tonne during 2014.

Vale, which produced about 320mt of ore in 2012, when it was the world's largest producing company, continues to forge ahead with expansions.

Vale needs to add substantial new capacity if it is to maintain its traditional share of the world ore market, particularly in Asia, which the company has lost to competitors in the past few years. Output at its mines in Minas Gerais and Para states has remained unaltered at about 300mt since 2006, while that of companies in Australia has forged ahead.

Vale chief executive Murilo Ferreira notes that if demand were to increase by a modest annual rate of about 3%, half that of recent years, an extra 40mt would be needed each year to keep pace.

In addition to that, about 50mt will be needed to replace output from high cost mines which cease operations when the ore price falls below $100 per tonne.

About 40mt is to be added to output at the 25 year old Serra Norte mine at Vale's large Carajas complex in the state of Para, taking output there to 120mt by the end of 2014.

Now that permission has been granted to start on the mine workings at the brand new Serra Sul project in the Carajas complex, an additional 90mt will be added to Vale's total production from 2018. The new mine will be 'truck-free' with ore taken from workings to processing plants along a 150km network of conveyor belts.

In addition to much more being produced at the Carajas project, where total output will rise from the 100mt of the past few years, to more than 230mt by 2017/18, advances in processing technology will allow Vale to make use of the some of the huge stock of lower grade ores which have been put on one side in many of its mines in Minas Gerais state during the past 20–30 years.

About $6 billion dollars is being spent in installing new processing equipment able to upgrade ore with an iron content of 40–50%, far below the normal 66% plus of most Vale ores. This ore will be improved sufficiently to allow it to compete with the higher grade ores from Carajas and Vale's other mines in Minas Gerais.

Vale expects to be producing a total of about 450mt of ore by 2018 at the two mining complexes, where ore can be produced for $35–50 a tonne.

The fact that Brazilian ports are 45 days' sailing time from China, now the destination of more than 50% of the ore shipped from Brazil, compared with the 10% of the total which went to China just 12 years ago, is a major handicap. Its leading competitor, Australia, is much nearer.

On the positive side, the Chinese authorities have now scrapped the ban on the thirty-five 400,000-tonne capacity Valemax ships, designed specially for the Chinese trade, but previously forbidden to moor and unload at ports in China.

The first ore from the new mine being developed by the Anglo American company in Minas Gerais, which will travel from the mine to the port of Acu in slurry form along a 522km pipeline, the longest such line in the world, is due to be loaded in late 2014.

The Anglo American mine should produce about 26.5mt of ore a year initially, output rising to 90mt a year at a later stage. Again most of this ore will go to China and elsewhere in Asia.

Until a decade ago, countries in Europe bought about 40% of all the ore shipped from Brazil. These days, less than 20% of the total shipped goes to countries such as Germany, Italy, the Netherlands, Spain, the United Kingdom and France. With the economies of most countries in Europe growing little, if at all, this situation is unlikely to change soon.

Anglo-American is now looking for a partner to take a substantial share in its new mine, which together with the pipeline and new port, is expected to cost at least nine billion dollars to build. At least 1,500 way leave permissions had to be negotiated with landowners on the route of the pipeline. As a result, the mine will eventually cost five times the original estimate of $2.2 billion dollars.

Despite the high cost of Anglo's mine, it will certainly go ahead. But there are doubts about the future of a mine also planned for Minas Gerais by the increasingly troubled MMX group, the value of whose shares has collapsed in recent weeks.

The MMX group is controlled by Eike Batista, son of a Vale chief executive of two decades ago.

It is reported that Glencore is the most serious contender for MMX assets, although the Dutch-owned Trafigura group also

seems to be interested.

A mine planned for Bahia state by a company from Kazakstan, is also now in doubt.

The soaring cost of labour, land, transport and all other inputs in Brazil, means that to install a tonne of capacity by an industry there now costs virtually three times as much as it did 12 years ago. The sharp rise in costs has greatly reduced the profitability, and sometimes even competitiveness of Brazilian dry commodities such as ore and pulp.

Brazil still has a competitive edge in countries in the Middle East which have taken advantage of the fact that energy is extremely cheap there and as an insurance against the day when their reserves of oil decline, to build new steel-making capacity.

A decade ago, 70% of the ore used by Brazil's own 35mt a year capacity steel industry, came from mines owned by Vale. But with the company's output stagnant and foreign markets steadily more attractive than selling in Brazil, that share has now fallen to about 40% of the total used.

All Brazil's leading steel companies, led by the National Steel Company, CSN, but also including Usiminas and Arcelor Mittal, soon to be joined by Gerdau, have sought to become self sufficient in ore to cut costs.

It remains to be seen whether Vale will win back the customers it has lost in Brazil, once its output has increased and it has some spare ore, as chief executive Mr Ferreira hopes.

CSN aims to become a major exporter, but is not finding this easy. A fall in output at its large Casa da Pedra mine, forced the company to buy some of the ore it had contracted to export from other smaller miners.

Good news: China has now scrapped the ban on the 35 Valemax ships, designed specially for the Chinese trade, but previously forbidden to moor and unload at ports in China.

Although the recent fall in the ore prices may at first sight appear bad news, very few mines are able to deliver a tonne of ore for less than $100–120. So when prices fall below that level, numerous mines in many countries cease operating when that happens, not least many in China.

This opens the way for the larger, lower cost mines such as those of Vale and the companies with mines in Australia, to fill the gap.

A tonne of ore can be produced for less than $50 at most mines in Brazil. And even though it may cost considerably more than that to get the ore from a mine to a port in Brazil, get it loaded onto a ship and taken to its destination in Asia, Europe or the Middle East, the final delivered cost can still be less than $100 per tonne. Few competitors can match this.

So even though the mining companies are not now so profitable as they were a couple of years ago, and have ceased to be the darlings of investors, most of the largest half a dozen are still profitable enough to bear the cost of the huge amounts opening a new mine and the associated infrastructure.

In the past few years, an average of about 100mt of ore was shipped each year from mines in India. Because India is relatively close to China, its ore provided serious competition for ore from Brazil and Australia as well.

But increasing amounts of ore will be needed by India's own fast growing steel industry. So the government there has taken steps to limit ore exports.

Not only have exports virtually ceased, 400.000 tonnes of ore were exported by Brazilian companies to India last year.

During the years expansionist Roger Agnelli was chief executive of the Vale company, a period when the price of a tonne of ore rose from little more than $20, to more than $100, and with the encouragement of the Brazilian government, which holds a golden share in the company, prohibiting its sale to a foreign company, Vale embarked on a series of projects and investments in numerous countries most outside its core business.

Amongst investments were coal mines in Colombia and Mozambique, fertilizer projects in Canada and Argentina as well as in Brazil itself, interests in pig iron and steel products, products in the aluminium complex and power stations.

Following the selection of long term Vale employee, the more cautious Murilo Ferreira as president of the company, Vale has either sold, or reduced investments in many of these projects, with priority now being given to its core business once more.

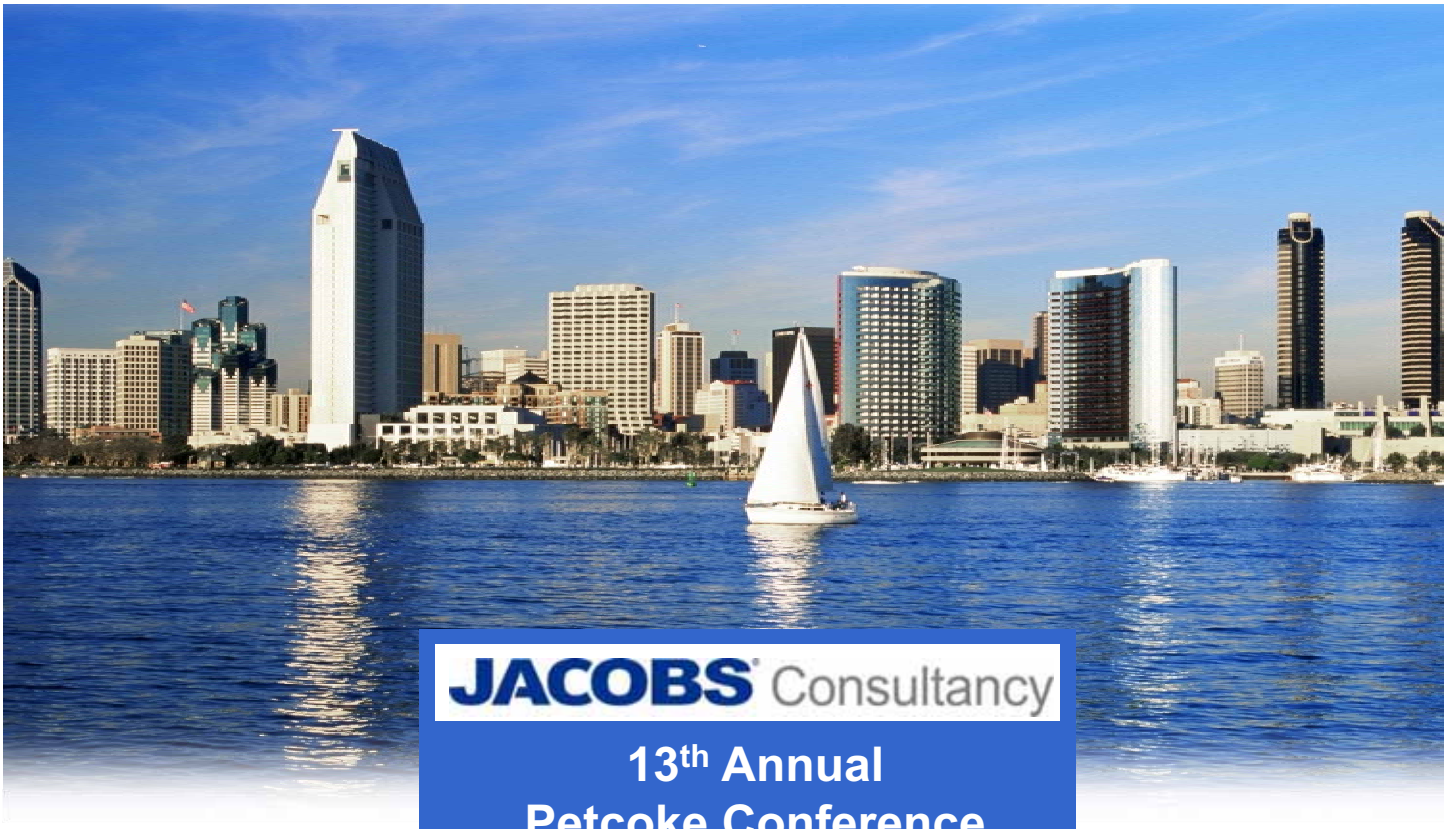
The Brazilian congress is soon to consider a new mining code, in which it is proposed that royalties are to be increased by an average of about 50%, from the 2% per tonne, to about 4%. This modest increase has come as a relief to mining companies, who point out that Brazilian ore already suffers from the disadvantage of being further from most customers than that of its leading competitors. It is also planned for the time between planning permission to develop a new mine and the decision to go ahead, will be much shorter in future. DCi

BRAZIL'S IRON ORE EXPORT

(tonnes, earnings and $US per tonne)

Year	tonnes '000	US$ '000	US$/tonne
2012	326.528	30.895.3	105.35
2011	330.989	41.817.3	126.35
2010	310.931	28.911.9	92.98
2009	266.040	13.246.9	49.79
2008	281.682	16.538.4	58.71
2007	258.509	23.887.8	53.73
2006	244.594	11.754.2	48.06
2005	223.378	9.415.1	42.15
2004	200.923	4.992.7	24.85
2003	184.442	3.796.6	20.58
2002	170.015	3.293.8	19.37
2001	155.741	3.062.9	19.67

Source: Sinferbase



Band 31 st Annual Petcoke Industry Reception

San Diego, California
February 14-15, 2014

Jacobs Consultancy hosts its 13th Annual Petcoke Conference at
The Westin Gas Lamp Quarter Hotel in beautiful San Diego, California.

For more details stay tuned to www.petcokes.com.

For over 30 years Jacobs Consultancy's Carbon Group has been the world's leading authority on petcoke and other carbon products. With a focus on studies involving fuel-grade and calcined petcoke, coal tar pitch, and other carbon products, Jacobs Consultancy also issues multiple publications, including its flagship subscription service, the **Pace Petroleum Coke Quarterly©**, which is recognized as the authoritative source of objective analyses for the petcoke industry.

JACOBS Consultancy

Phone: +1 832 351 7828 Fax: +1 832 351 7887
E-mail: petcokes@jacobs.com
Website: www.petcokes.com
Twitter: www.twitter.com/petcoke

Asia rising for petcoke market

Ben Ziesmer & Frank Wilson, Jacobs Consultancy

Petroleum coke (petcoke) prices have been surprisingly stable over the past 15 months, in contrast to the volatility of the preceding four years. Over 2008–2011, the petcoke market experienced extreme fluctuations, driven by various events, starting with the economic crisis in late 2008/early 2009 and the subsequent worldwide recession (see USGC/Caribbean Market Fuel-Grade Petroleum Coke Prices chart on p16). Starting in the second quarter of 2009, the emerging markets of India and China brought in new demand, causing US Gulf Coast (USGC)/Caribbean petcoke prices to recover. As 2010 proceeded, increased demand from Latin America and Turkey combined with rising steam (thermal) coal prices helped petcoke prices climb further. Late in 2010 petcoke prices rose to the point where, combined with much higher ocean freight costs of transporting USGC petcoke to Asia versus Europe, it was very difficult for petcoke to compete against Asian steam (thermal) coal, and export volume from the US Gulf Coast to Asia decreased. In 2011, supply outpaced demand in traditional markets, again driving USGC/Caribbean petcoke prices lower so petroleum coke could once again compete in Asia.

Since early 2012, the market has been in a state of dynamic equilibrium, in which anaemic demand in traditional markets has been offset by faltering supply. In this precariously balanced market, when there is sufficient demand in traditional markets, petroleum coke prices rise to levels that are uneconomic for Asian customers; when supply exceeds demand in traditional markets, petcoke prices decline to a point at which they become attractive for Asian customers.

Petroleum coke's price volatility is due, in large part, to the fact that it is a by-product. Therefore, there is no supply-side response to its price. Petroleum coke production does not increase when petcoke prices are high; conversely, low petcoke prices do not cause producers to reduce production.

Background

Petroleum coke is produced as a by-product in many — though not a majority of — oil refineries. Crude oil is first processed in an atmospheric distillation unit, followed by a vacuum distillation unit. The heavy residuum exiting the bottom of the vacuum tower (i.e. vacuum tower bottoms, or VTB) can be used to make asphalt, blended with some light products such as diesel to produce residual fuel oil (RFO), or used as coker feed (see Simplified Coker Block Flow Diagram on p16).

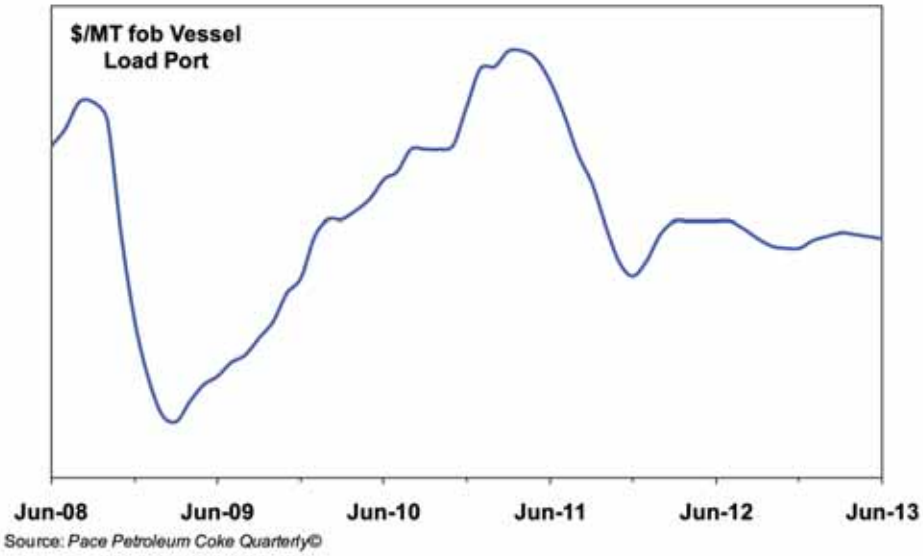
Traditionally, cokers are installed in oil refineries to convert VTB and other heavy residual oils into higher-value light transportation products (e.g., gasoline, jet fuel, and diesel fuel). Until recently, a coker almost invariably increased refinery profitability because the yield of high-value transportation fuels is maximized and production of low-value RFO is minimized. While the coking process has been in use since the 1930s, petcoke production has seen its largest growth following 1990 because worldwide light transportation petroleum product demand has grown faster than RFO demand. Cokers have been and continue to be the preferred refining technology that allows the refining industry to reduce its production of RFO per barrel of crude oil processed, and bridge the gap between light product

and RFO demand growth.

Additionally, beginning in the late 1990s, two new factors have been driving the construction of cokers:

- crude oil purchase cost reduction — coking units allow a refinery to process lower-cost, heavy, sour crude oils. This was the driving force for the nine new or expanded cokers installed on the US Gulf Coast from 1996–2004, and for many other coker projects currently under construction.
- ultra-heavy crude oil production — cokers are used in upgraders that produce various grades of synthetic crude oil (SCO) from bitumen or ultra-heavy crude oils. This type of upgrader exists in Venezuela where ultra-heavy Orinoco Belt crude oil is upgraded and exported as lighter crude oils, and in Canada where upgraders are used to produce SCO from the bitumen derived from Alberta oil sands.

USGC/Caribbean market fuel-grade petroleum coke prices



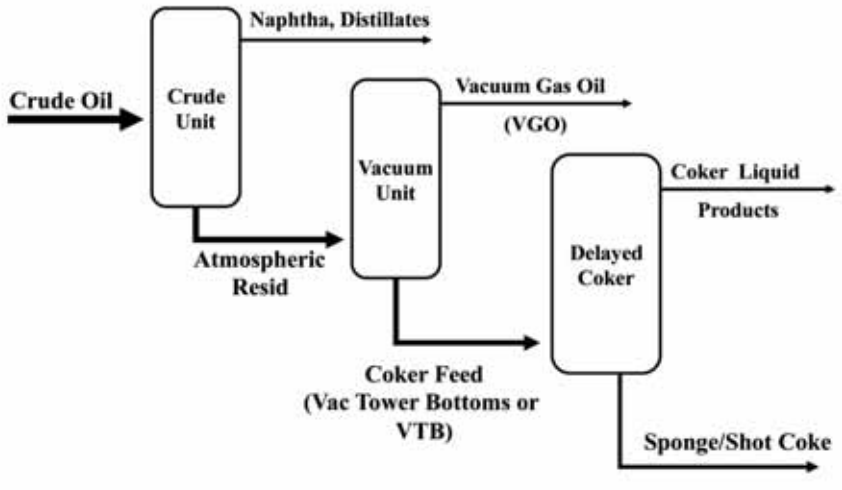
Source: *Pace Petroleum Coke Quarterly©*

There are two general applications for petcoke: one as a carbon source and the other as a heat source. The former requires better quality (e.g. low sulphur and metals) and commands higher prices. Green petroleum coke is usually upgraded by calcination when it is used as a carbon source. Petcoke that has been calcined is referred to as calcined petroleum coke (CPC). The largest market for CPC is in the production of anodes for aluminium smelting; other uses for CPC are in the production of carbon electrodes for electric arc furnaces, titanium dioxide (TiO_2) production, and as a recarburizer in the steel industry. About 25% of the petroleum coke produced is sold into these higher value-added markets for higher-quality petroleum coke; the remainder of the petcoke is sold into the fuel market, where it almost always competes with coal.

Production

Worldwide petcoke production increased ~3.5% in 2012, to a record 117mt (million metric tonnes), primarily due to coking capacity additions. However, production has been growing slower than would be indicated by new coking capacity additions, as many cokers during 2012 and early 2013 ran below capacity due to weak coking economics. Jacobs Consultancy calculates coking economics for different regions (e.g. US Gulf Coast, US West Coast, Northwest Europe) by comparing the margin generated by a refinery equipped with a coker and a refinery that does not have coker, utilizing models that are representative of refineries in a particular region. These models are complex and many factors affect coking economics, but, as discussed previously, the primary purpose of a coker is to destroy VTBs, thereby reducing production of RFO (e.g. No. 6 fuel oil, bunker oil). Thus, the most important factor driving coking economics is the price of RFO relative to the price of crude oil.

Simplified coker flow diagram

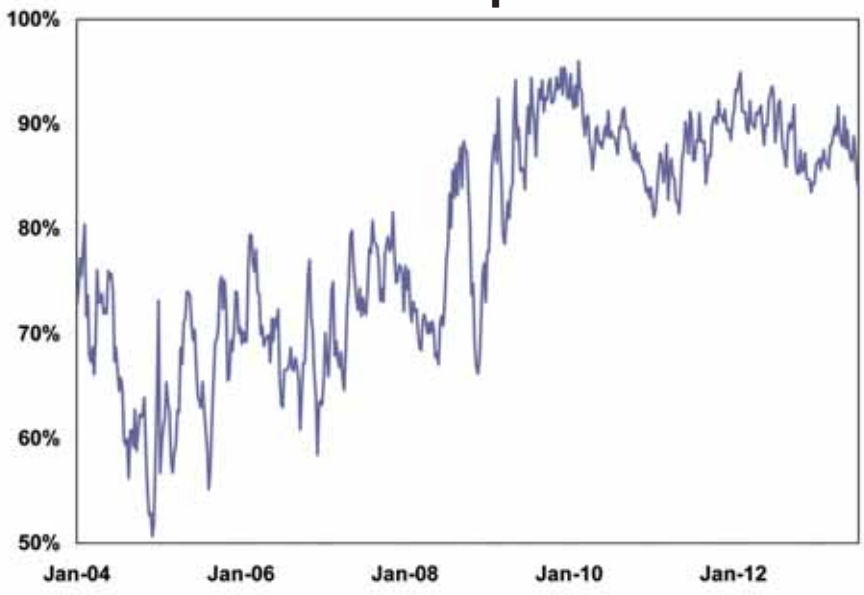


Prior to the recession that began in 2008, RFO prices were 50–80% of that of crude oil, but since 2009 they have been 80–95% of the price of crude oil (see High Sulphur Residual Fuel Oil Price/Crude Oil Price chart on p17).

Several factors have contributed to this changed pricing dynamic:

- in response to reduced global oil demand and to minimize the loss in revenues, oil producers preferentially reduced heavy oil production because heavy oil sells at lower prices than light oil. Light oil produces less VTBs; therefore, there is less residuum available to produce RFO or to be used as coker feedstock.

High sulphur residual fuel oil price/ crude oil price



- China's economy — and its demand for ocean shipping of imports and exports — recovered more quickly than the rest of world, comparatively increasing demand for bunker fuel.
- Japan increased its use of RFO for power generation as oil-fired electric power generation was ramped up to help compensate for the shutdown of the Japanese nuclear power industry in the wake of the Tohoku Tsunami and subsequent Fukushima Daiichi Nuclear Power Plant accident.
- There is increased availability of light, sweet African and other crude oils in the world market as increased US shale oil production displaced these imported crude oils in the United States. The increase in light oil supply lowered its price relative to heavier oil, making it more widely used and thus reducing the amount of residual fuel that normally would be used as feedstock to cokers.

Longer term, we expect cokers to once again become profitable because demand for lighter fuels in developing countries like China and India is continuing to increase. Further, the (non coking) use of residual fuel oil will stagnate at best as there are virtually no RFO-fired power plants being constructed, and others are being decommissioned or reconfigured to fire alternative feedstocks. Thus, light product demand will grow faster than RFO demand, and it is this demand growth imbalance that will ultimately cause cokers to once again become consistently profitable refinery production units.

Petcoke — a seaborne market

Shipping is the primary transportation mode for petroleum coke, given its need to be transported significant distances to reach end consumers. The United States, the world's largest petroleum coke producer, exported over 75% of its fuel-grade production in 2012. Additionally, virtually all of the petroleum coke produced by Caribbean cokers is exported. The US and Caribbean producers account for 90% of the fuel-grade petroleum coke that is involved in seaborne trade because petroleum coke produced in other parts of the world (e.g. Europe, India) is almost always used domestically. In addition to green petroleum coke exports, 60% of US CPC production was exported in 2012.

Asia rises!

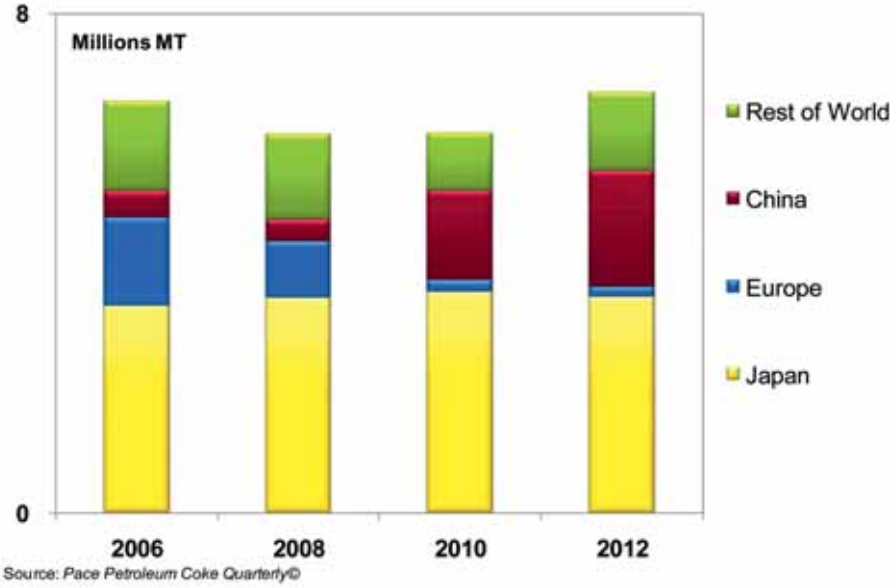
For decades, the primary destination for US West Coast (USWC) petcoke production was Japan, followed by Europe. However, in the last few years the market has changed dramatically with Asia—especially China—becoming an extremely important market. Over the past year, China has displaced Europe as the second-largest market for USWC petroleum coke exports (see US West Coast Petroleum Coke Export Destinations chart below).

Similarly, Europe and Latin America historically were the dominant markets for USGC exports, but Asia has become increasingly significant, now rivalling Latin America as an outlet for USGC petcoke exports (see US Gulf Coast Petroleum Coke Export Destinations chart on p19).

Transportation cost critically important

Transportation costs have become more important as petroleum coke has moved to more distant Asian markets. For example,

US West Coast petroleum coke export destinations



Source: *Pace Petroleum Coke Quarterly©*

Distribution hub for petroleum coke

Stevedoring company Rotterdam Bulk Terminal (R.B.T.) B.V. operates a dry bulk terminal in the port of Rotterdam (harbour 610). Founded in 1999, it handles a wide range of cargoes, such as agricultural commodities, biomass, industrial minerals and coal.

Due to its specialization in bulk handling and warehousing, the company is a reliable partner for petroleum coke traders, producers, users and any other party involved in logistics.

The terminal is able to allocate in its storage facilities nearly all types of petroleum coke. For covered storage, there are about 60,000m³ of storage space available. Such a

volume is spread among 40 different units. Every unit is a bunker type storage, which is unlike the flat storage, can be effectively used, filling nearly 92–98% of its volume. At the same time, the wall separation between every unit allows storage without product or dust contamination.

For green delayed petcoke, the terminal can provide about 1.6 hectares of paved territory. Open storage is 3.5m below ground level, which gives better wind protection for small cargoes. When piles of up to 16m in height are required, dust protection measures are taken.

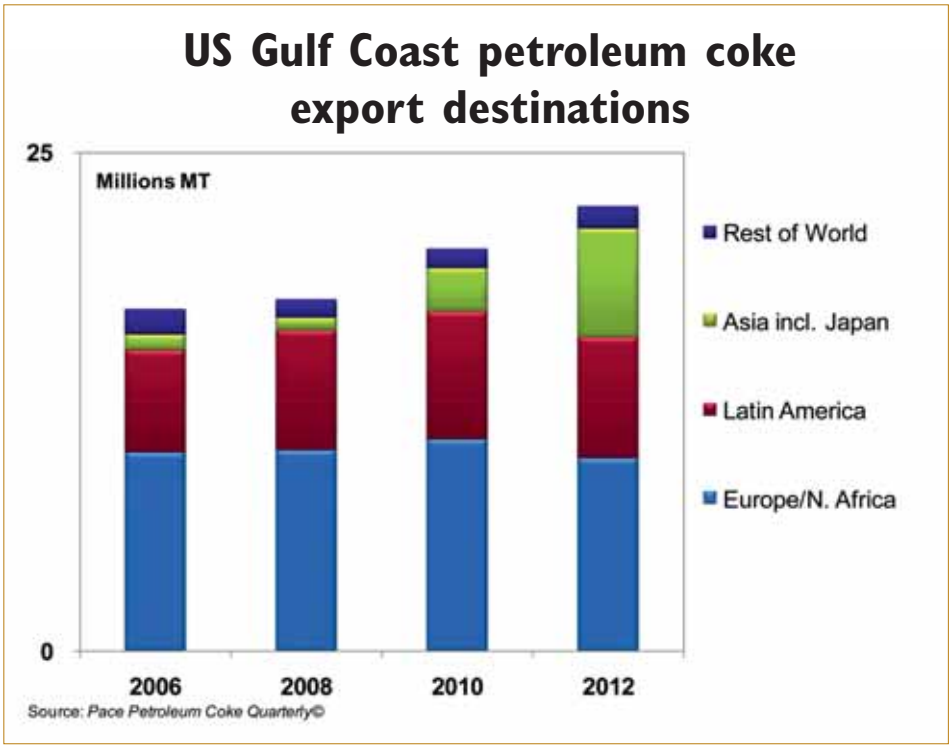
Two gantry cranes, providing 100% lifting capacity at every point, are R.B.T.'s second advantage in striving for the cost and time efficiency. Loading and unloading of cargo is done with help of cranes only, eliminating the need for riding. With a span of 162m and over the water reach of 42m, R.B.T. can make use of a single crane both for direct transshipment, or for filling up the storage. The crane railing system completes the efficiency picture, as nearly 90% of the terminal can be

served with just two cranes.

With a draught of 11.35m, the storage location can be effectively used for either import or export operations.

In the current market conditions, such flexibility and location support sales strategies and guarantee security stocks for efficient production.

Ownership of Rotterdam Bulk Terminal (R.B.T.) B.V. is in hands of two companies: H.E.S. Beheer B.V. (50%) and Maja Stuwadoors (50%). Both companies directly or indirectly specialize in bulk handling and storage that assure that its customers' cargo is in good hands.



ocean freight cost can equal, or even exceed, the FOB load port price of USGC petcoke into China, India, or other distant locations. As petroleum coke prices increase, it becomes harder for USGC petcoke to compete against coal in distant markets such as India or China.

The start-up of new coking capacity in or near the traditional USGC/Caribbean petroleum coke export markets is also impacting the ability of this petroleum coke to compete in these traditional markets, pushing petroleum coke to new export markets in Asia. Repsol started up two new large cokers (Cartagena and Bilbao, Spain) that produce high-sulphur fuel-grade petroleum coke. This petroleum coke production can easily displace USGC material into the European/Mediterranean petroleum coke market due to its significant transportation cost advantage. Two new cokers are scheduled to start-up in Saudi Arabia in 2013 and 2014. These cokers will have significant transportation advantages compared to USGC cokers into the Mediterranean and Asian petroleum coke markets.

Burgeoning demand in India

Petroleum coke demand in India could increase by as much nine million metric tonnes/annum (mtpa) due to gasification and circulating fluidized bed (CFB) boiler projects. Reliance Industries Limited is constructing a $3+ billion petcoke and/or coal-fuelled gasification project adjacent to its Jamnagar refining and petrochemical complex. The gasification project will consume approximately 6mtpa of petroleum coke and/or coal. Additionally, India-based boiler manufacturer Thermax Limited has received an order for the design, manufacture, and commissioning of nine CFB boilers. The boilers, which will generate steam for power generation and process use at two petrochemical complexes located in India, are expected to be fully operational by 2015, and are being designed to burn petroleum coke and/or coal. Jacobs Consultancy calculates that these nine CFB boilers could burn close to 3mtpa of petcoke if they are all fuelled with 100% petroleum coke.

The Venezuela enigma continues

There are four projects in Venezuela — PetroMonagas (formerly Cerro Negro), PetroAnzoátegui (formerly Petrozuata), PetroCedeño (formerly Sincor), and PetroPiar (formerly Hamaca) — that produce SCO from super-heavy Orinoco Belt crude oil/bitumen. Each project has an upgrading plant, located in the Port of Jose, where coking technology is utilized to produce SCO from bitumen. The petroleum coke produced from these upgraders tends to be lower-sulphur (i.e. 4.0–4.5% S, dry basis) material and is exported through two petcoke terminals located at the Port of Jose. Combined, these four projects produce enough petroleum coke to account for 25% of the USGC/Caribbean petcoke market seaborne trade. However, these terminals have performed poorly for several years, loading far fewer vessels than they had in the past. This has caused a shortfall in petroleum coke supplied to the market, helping to support prices despite continued weak European demand. Due to their lower sulphur levels, Venezuelan exports are especially important for the lower-sulphur portion of the USGC/Caribbean petcoke market (the overall USGC/Caribbean petcoke market typically ranges from 4.0–7.0% sulphur, dry basis).

While petcoke terminal performance lagged, it was necessary for the Orinoco upgrading projects to place millions of tonnes of petroleum coke into storage. We continue to receive reports that petroleum coke terminal loading performance is going to improve because there is interest in reducing the petcoke storage piles to generate export revenue and to reduce fugitive petcoke dust concerns. However, terminal performance has not yet improved. In June there was hope that a third terminal,

consisting of floating cranes for transloading petcoke from barges to vessels, would begin operations, but we now understand that this facility has been further delayed for additional permitting.

Alberta Oil Sands

Sharply lower crude oil prices in 2009, in the wake of the collapse in the energy and financial markets in late 2008, caused many Alberta oil sands projects in Canada to be delayed indefinitely or deferred. However, with the recovery in oil prices, many projects have restarted or are actively considering restarting. Many Alberta oil sands projects will blend the bitumen they produce with diluents such as hydrocarbon liquids recovered from natural gas processing (resulting in a refinery feed stream known as dilbit) or with SCO (producing a refinery feed stream known as synbit) to produce a blended refinery feed that can meet pipeline viscosity and gravity specifications. The dilbit or synbit will be very heavy, with high VTB content, requiring refineries to have substantial coking capacity to process the crude oil. This Canadian heavy oil is driving coking capacity additions in the US Great Lakes area — BP (Whiting, IL), Phillips 66 (Wood River, IL), and Marathon (Detroit, MI) — and may drive more coking capacity additions in the future. In addition, the controversial Keystone Pipeline, if built, will connect the Hardisty Terminal in Alberta, Canada, to Houston and/or Port Arthur, Texas, allowing 800,000+ barrels/day of heavy Canadian crude oil/refinery feed to flow to USGC refineries. Even with the substantial coking capacity additions in the Great Lakes area of the United States, the US Gulf Coast will continue to be the centre of US petroleum coke production and the source of exports.

Shale oil

US crude oil production has increased from 5 million bbl/day in 2008 to 6.5 million bbl/day in 2012. The US Energy Information Agency's latest Short-Term Energy Outlook forecasts US crude oil production reaching 8.2 million bbl/day by the end of 2014, driven by continued rapid development of tight (shale) oil.

The tight oil produced to date has been almost exclusively light crude oil. Light crude oil produces very little VTBs, reducing the need for coking capacity. Through 2012, the impact of increased shale oil production on US petroleum coke production has been minimal, as new shale oil production has displaced light-sweet crude oil imports. However, as tight (shale) oil production increases, it is likely to displace imports of heavier crudes since light-sweet crude imports into the USGC have fallen below 80,000 bbl/day and there is little light-sweet crude import left to displace.

In a larger context, shale deposits are found in many locations around the world. However, recent experience in Poland indicates that not all shale oil deposits are economic to develop with current technology. Thus, there is a great deal of uncertainty regarding the impact of shale oil production on world petcoke markets.

Summary

The Asian market has become a very important market for seaborne fuel-grade petroleum coke, and Asia's importance is likely to grow in the future. There are a number of uncertainties that will either directly or indirectly impact the fuel-grade petroleum coke market. Some of these uncertainties are fairly typical and straightforward, such as economic growth, international steam (thermal) and coking (metallurgical) coal pricing, and ocean freight rates. Other factors are less obvious and potentially more significant. These include:

- how many Japanese nuclear generating units return to service and on what time schedule? It is our understanding that approximately 25% of Japan's nuclear power generating capacity has applied for permission to restart with hopes they will be operating before the end of 2014.
- how much heavy Alberta crude oil will be able to be delivered to USGC refineries? Approval of the Keystone XL pipeline is obviously a key factor, but rail transport and other pipeline options are being developed.
- how fast will shale oil production increase? How many other countries will be able to produce significant quantities of shale oil? What impact will increased shale oil production have on petroleum coke production?

While small compared to many other dry bulk or energy commodities, the petroleum coke field continues to evolve and provide business opportunities. DCi

About the authors

Ben Ziesmer (Senior Consultant)

Contributing editor to Jacobs Consultancy's *Pace Petroleum Coke Quarterly*, with an in-depth background in the power sector, including experience in procurement, operations, environmental compliance, and engineering. He has been the project manager for numerous studies involving the fuel-grade petroleum coke market, environmental issues, and power generation.

Frank Wilson (Senior Consultant)

Frank Wilson brings years of experience and an in-depth knowledge of the petroleum, chemicals, and energy industries to the Carbon Group. He is a contributing author for the *Pace Petroleum Coke Quarterly* and is involved with single-client studies of the global fuel-grade and anode-grade petroleum coke markets. Prior to joining Jacobs, he was a Petroleum Coke Marketing Manager for ExxonMobil.

Jacobs Consultancy Inc. has published the *Pace Petroleum Coke Quarterly© (PCQ)* since 1983. The *PCQ* has been published monthly since 1984 and is considered the worldwide authoritative source for petroleum coke market information.

American steel exports increase

Stockpiles of steel at the Port of Portland.

Steel exports from the USA increased in May over April by 11.6% according to government data. "Exports of American-made steel increased in May primarily due to improved shipments to our NAFTA partners and other countries in the Western Hemisphere. Exports increased slightly to Asia and declined to Europe. While the increase in May is encouraging, economic conditions in many international markets are in turmoil, especially Asia and the EU, making it difficult to conclude that the May data are the beginning of a positive trend at this point," said David Phelps, president, AIIS (American Institute for International Steel).

For the first five months of 2013 compared with 2012, exports declined by 11.3%. "The data show that US exports declined to all international markets for the first five months of the year compared to the same period of 2012. These data reflect a pattern of weakness in 2013, especially in the NAFTA and other Western Hemispheric markets. The declines are substantial, even for the smaller markets, such as the EU and Asia. Economic weakness in many of our trading partners clearly is having a negative impact on the US's steel export trade," concluded Phelps.

Total steel exports in May 2013 were 1.163mt (million tonnes) compared with 1.041mt in April 2013, an 11.6% increase, and a 7.9% decrease compared with May 2012. According to year-to-date figures, exports decreased 11.3% compared with 2012 or from 6.106mt in 2012 to 5.418mt in 2013.

The American Institute for International Steel is the only steel related association which supports free trade. The Institute accomplishes its mission through advocacy, networking, communications and education.

STEEL EXPORT ANALYSIS (NET TONNES)

	May 2013	April 2013	% change	May 2012	% change
Total	**1,162,654**	**1,041,388**	**11.6**	**1,262,540**	**–7.9**
Canada	590,236	533,881	10.6	555,904	6.2
Mexico	343,467	340,993	0.7	344,358	–0.3
EU	33,880	47,391	–28.5	131,632	–74.3
Russia	1,212	858	41.3	783	54.8
Turkey	1,827	1,362	34.1	1,176	55.4
Brazil	14,100	4,867	189.7	5,672	148.6
Venezuela	2,598	5,442	–52.3	19,195	–86.5
Ecuador	1,170	1,917	–39.0	629	86.0
Argentina	339	685	–50.5	908	–62.7
Colombia	25,620	6,826	275.3	20,666	24.0
Trinidad & Tobago	466	1,736	–73.2	3,699	–87.4
Peru	22,666	5,587	305.7	39,150	–42.1
Chile	1,759	1,342	31.1	1,389	26.6
Dominican Republic	30,406	1,119	2617.2	20,550	48.0
Panama	6,513	5,158	26.3	6,679	–2.5
Other Western hemisphere	19,069	17,532	8.8	25,400	–24.9
Africa	10,462	6,706	56.0	16,118	–35.1
Australia	1,794	2,068	–13.2	3,021	–40.6
China	8,505	7,156	18.9	10,690	–20.4
Korea	3,268	3,574	–8.6	4,797	–31.9
India	7,904	5,954	32.8	11,432	–30.9
UAE	12,056	2,572	368.7	3,193	277.6
Pakistan	2,191	3,129	–30.0	5,198	–57.8
Singapore	2,238	3,162	–29.2	2,293	–2.4
Vietnam	1,338	2,193	–39.0	542	146.9
Japan	1,696	1,347	25.9	2,551	–33.5
Taiwan	1,398	6,765	–79.3	6,263	–77.7
Other Asia	13,547	13,938	–2.8	17,011	–20.4
Others	929	6,128	–84.8	1,641	–43.4


Our lineup, your
team
When you turn to the Associated Terminals team for your cargo handling and logistic needs, you can rest assured. With a portfolio of locations and services equipped to handle and store your cargo along the Lower Mississippi River, we have it covered.
ASSOCIATED TERMINALS
www.associatedterminals.com

Goldman Sachs accused of hoarding aluminium

The world's biggest metals market, the London Metal Exchange (LME), and US banking giant Goldman Sachs are being sued over alleged anti-competitive and monopolistic behaviour concerning aluminium storage, the Hong Kong stock exchange says.

The suit was filed in a US district court in the state of Michigan on 1 August by aluminium company Superior Extrusion.

According to a statement released by the Hong Kong Exchanges and Clearing, which bought LME last year, the Michigan-based plaintiff accuses LME and Goldman Sachs of "anti-competitive and monopolistic behaviour in the warehousing market in connection with aluminium prices." The exchange said that after an initial assessment made by LME's management "the suit is without merit and LME will contest it vigorously."

Goldman Sachs also said, in a statement, it would vigorously contest the accusations which it called without foundation, noting that "aluminium prices are down 40% from their peak in 2006."

Complaints have mounted recently over delays in accessing aluminium stocks stored in warehouses, resulting in added costs that have led to an increase in prices.

In the lawsuit, Superior Extrusion charged that LME and Goldman Sachs "have generated hundreds of millions of dollars per year in storage revenues during their regime of artificially high storage rates and grossly inefficient and artificially long delays in loading out aluminium."

Last month, an official of brewing company MillerCoors told a Senate panel that aluminium consumers last year paid an additional $US3 billion ($3.4 billion) in expenses because of delays in delivering aluminium from storage facilities controlled by large financial players including Goldman Sachs.

The LME, through which 80% of trading of industrial metals is conducted, approves and licenses storage facilities for the traded commodities, while Goldman Sachs has a warehousing unit.

At the beginning of July, the LME launched a three-month consultation process to try to reduce the delays.

Russian pulp and paper mill to shut

The Baikal Pulp and Paper Mill is to be shut down in a victory for environmental campaigners.

The move to shut the Baikal Pulp and Paper Mill has far more hope of success than previous attempts, it is believed.

"We have made a decision to close down the Baikal Pulp and Paper Mill gradually and transfer output to other enterprises," said deputy prime minister Arkady Dvorkovich.

"This is a complex process, but it can be completed in several years."

Other accounts suggested the mill — the target of 'green' campaigners for more than two decades — would be axed 'within a year'.

The mill was blamed for serious pollution in Baikal, the world's oldest and deepest lake, a UNESCO World Heritage Site holding 20% of the planet's unfrozen fresh surface water.

The decision will be seen as a blow to the 2,000-strong workforce living around Baikalsk.

Now state-run national development bank Vnesheconombank (VEB) has taken over a majority of the plant's debt from Alfa Bank. VEB will now seek to relocate many of the workers.

It could take four to six years to liquidate the mill's accumulated waste.

It is not the first time the Kremlin has announced a decision to halt production. In Soviet times, the Gorbachev government announced it would close in 1993, a decision that was overtaken by the collapse of the USSR.

One day it is hoped to see the site of the plant redeveloped as a tourist complex.

The move has far more hope of success than previous attempts, it is believed.

In April 1987, one report stated: "The Politbureau of the CPSU Central Committee set the targets for re-orienting the Baikal pulp-and-paper mill, for effecting large-scale measures at other enterprises in this area to prevent the contamination of Lake Baikal and the airspace in this zone.

"It is envisaged to extend the network of tourist bases there and simultaneously to create such conditions for developing tourism and rest and recreation facilities for the population, which guarantee the preservation of landscapes, plant and animal life... the Politbureau made these decisions with a view to protecting and rationally utilising the natural resources of Lake Bailkal."

A 1991 deadline to clean-up the mill was never met, with too many other enterprises depending on its pulp.

The mill became the target of a more assertive ecological movement after the collapse of the Soviet Union. In 1997, Greenpeace blamed 'poisonous chemical waste' from the mill for the death of unique Baikal seals. "Sewage from a local pulp mill is the only possible source for that," said campaigner Ivan Blokov.

India's paper industry's green initiatives start to pay off

India's paper industry has begun to gain significantly due to its focus on energy saving and water conservation, according to K.S. Kasi Viswanathan, Chairman of PaperTech 2013.

Speaking at the conference hosted by the CII and Green Business Council held in Hyderabad in the middle of July, Viswanthan, who is also the deputy managing director of Seshasayee Paper & Boards Limited, said that several steps initiated to save on power and water consumption about five years have begun to yield excellent results.

"This process will continue to make the country's paper and pulp industry world class," he said.

The changes in one part of the world are impacting the sector around the world. While this is a challenge, it provides new opportunities for industries willing to progress with the changing energy scenario.

Paper demand continues to be good but the sector players are faced with difficulty in securing raw material requirement. About 60% of paper made in the country is from wood, 35% from waste paper and 5% from sugar bagasse. India is faced with the challenge of meeting the raw material requirement, Sehsasayee said.

The paper industry has managed to bring down its energy consumption by about 20% in the last five years. From an average energy consumption of 1,700kWh per tonne, it has now come down to 1,300kWh per tonne. The government's 'Perform Achieve Trade' scheme has also encouraged the industry to change, he said.

Referring to recent developments, he said, "Tamil Nadu for instance now expects industry to use about 6% of energy requirement from the solar energy sector. This is a good move but will take time to take shape."

"While paper as a commodity will always be in demand in some form or the other, the focus has been to improve internal efficiency in production and bring down reliance on fossil fuels and focus on renewable energy," Sanjay Singh, Vice President IPMA and Divisional Chief Executive, ITC PSPD, said.

A. Chandra Sekhar Reddy, Member Secretary, Energy, Government of Andhra Pradesh, said that the State Government was planning to provide incentives to energy-efficient industries.

Double A invests $6.1m to upgrade Thai pulp plant

Pulp and paper company Double A has entered the dissolving pulp market in response to significant growth in the market and the global demand in many enterprises. Double A (1991) Public Company Limited, is a fully integrated pulp and paper mill. Located in Thailand's central plains in the province of Prachinburi, the mill began operating in 1995 and has an annual capacity of 600,000 tonnes of pulp and 600,000 tonnes of paper.

Double A has invested US$6.1 million to upgrade its pulp production line in Thailand to supply the world's textile industry with high quality and sustainable raw material from KHAN-NA.

The demand for high-purity cellulose, also known as dissolving pulp, has substantially increased during the last few years. The growing demand for dissolving pulp in the market is attributed to a consistent growth of regenerated cellulose fibre production, largely initiated by an increasing demand in China and other Asian countries. In 2012, global demand for dissolving pulp, a viable alternative for cotton, has reached 6mt (million tonnes). The favourable trend is expected to continue in the next two years with an annual growth rate of 9%. Global demand is projected at 6.9mt in 2014 and thus dissolving pulp will prevail during the next decade.

Dissolving pulp, a bleached wood pulp with a high cellulose content of more than 90%, is a key material used to manufacture viscose staple fibre (VSF) or rayon. More than 80% of the world's dissolving pulp is converted to viscose rayon fibre, which is used in dresses, jackets, suits, socks, neckties and other garments.

Asia, specifically China, will continue to be the world's biggest market for dissolving pulp as a viable substitute for cotton with special applications in rayon fibre for the textile industry. This is due to the limited domestic supply of fibre, increased production of garments and the short supply of cotton.

China is the world's largest production base of viscose fibre. In 2012, 60% of world's total viscose fibre output was produced by China. Production is expected to grow by 10% therefore demand for dissolving pulp will also rise, making China a key market to Double A.

Double A has invested US$6.1 million to upgrade its pulp production line in Thailand using modern technology from Finland. The machine will commence commercial production at the beginning of 2014 with 175,000 tonnes annual capacity. The first 100,000 tonnes output will be exported to China.

Double A's dissolving pulp is sourced from sustainable Paper Tree from KHAN-NA, its proprietary sustainable fibre-sourcing programme. Paper from KHAN-NA reduces carbon dioxide emissions and improves rice farmer's income.

First dip in FIBC EU imports since 2009

The European Flexible Intermediate Bulk Container Association (EFIBCA, Bad Homburg, Germany) has announced that EU FIBC imports dropped in 2012 by 2.3% to €331m. In contrast, the industry total value in 2011 was €339m.

The news comes as perhaps a small jolt to the industry as ever since the deep economic slump of 2009, the numbers had rebounded in 2010 and made gains every year since. It remains to be seen whether the industry can find its way back to the robust results from 2008 of €358 m.

The drop of exports to the EU impacted the absolute production figures of the world's six largest exporting nations to the EU though Turkey managed to consolidate its stronghold as leading FIBC exporter to the EU with a small increase in 2012 with a supply share of about 40%. India was not far behind at 35% followed by China with 11%. Bangladesh and Serbia managed to hang on to their positions and remained at 5% and 3% respectively. Thailand lost market shares and fell out of the 'top six' list altogether.

Updates on Rio Tinto's Q2 2013 aluminium production

Bauxite and alumina

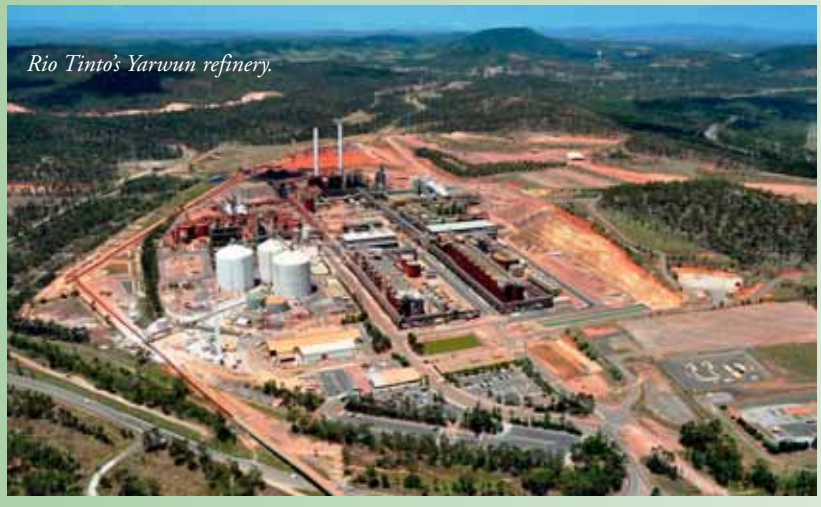
Rio Tinto Alcan's Q2 bauxite production was 21% higher than the Q2 of 2012. Strong operational performance has driven higher volumes at Weipa in line with increased bauxite requirements from the expanded Yarwun refinery and increased third party demand.

Rio Tinto Alcan's H1 alumina production was 7% higher compared with the same period in 2012 with greater alumina refining capacity at Yarwun. The impacts of ex tropical cyclone Oswald experienced at both Queensland refineries in the Q1 of 2013 have adversely impacted production in the H1.

Pacific Aluminum's alumina production was 30% lower than the Q2 of 2012. This followed the shutdown of one of three digestion stages at Gove in late February after inspections identified concerns about the weld integrity on some heat exchangers. These are being refurbished or replaced to bring the digestion stage back on line by the end of the Q4. The temporary shutdown is expected to reduce full year alumina production by 700,000 tonnes compared with 2012. Pacific Aluminum's full year bauxite production is expected to be in line with 2012. Bauxite exports are being increased to offset the impact of reduced requirements for alumina production.

Aluminium

Rio Tinto Alcan's Q2 aluminium production was 15% higher than the same period in 2012, reflecting the resolution of the lockout at Alma and the restarting of production following the power outage at Shawinigan. Production at Alma reached full capacity in the first quarter of 2013. Pacific Aluminium and other aluminium production was 6% lower than the H1 of 2012 due to the impacts of the Lynemouth smelter closure in March 2012 and the divestment of the Sebree smelter effective from 1 June 2013.



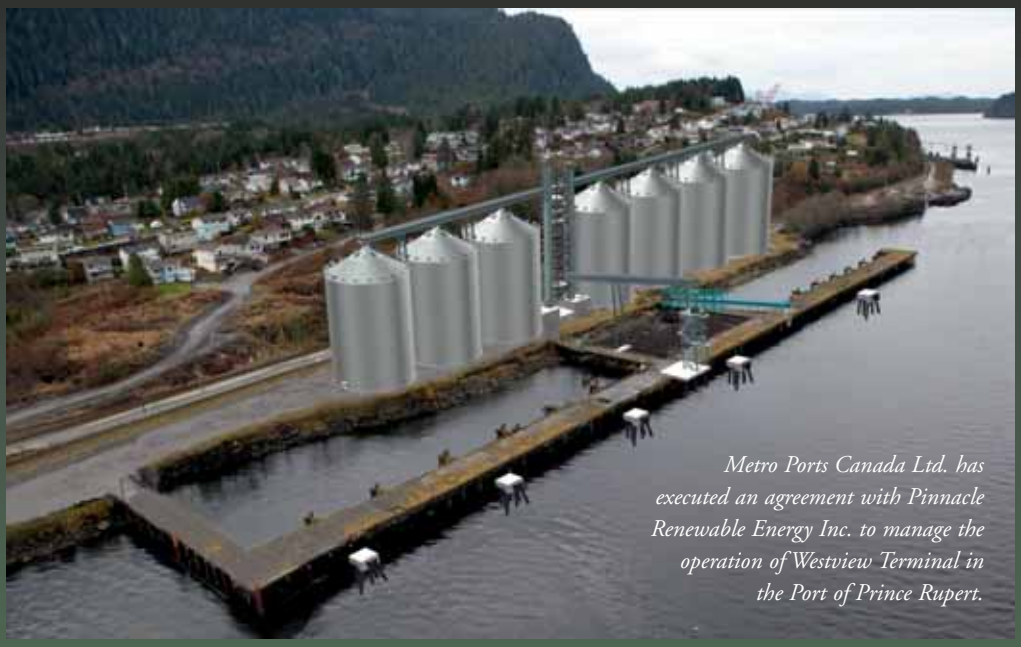
Rio Tinto's Yarwun refinery.

2013 production guidance

In 2013, Rio Tinto Alcan's share of bauxite, alumina and aluminium production is expected to be 34mt (million tonnes), 7.3mt and 2.5mt, respectively. In addition, Pacific Aluminium and other aluminium assets that have been identified for divestment or closure are expected to produce approximately 8mt of bauxite, 2mt of alumina and 1.1mt of aluminium.

Metro Ports Canada Ltd. secures new business in British Columbia

Metro Ports Canada Ltd., a Newfoundland and Labrador company that is wholly owned by Nautilus International Holding Corp., has executed an agreement with Pinnacle Renewable Energy Inc., a British Columbia company, for managing the operation of Westview Terminal, a wood pellet railcar receiving, storage and vessel loading facility in the Port of Prince Rupert.



Metro Ports Canada Ltd. has executed an agreement with Pinnacle Renewable Energy Inc. to manage the operation of Westview Terminal in the Port of Prince Rupert.

Metro Ports Canada is headed by president James Dillman, with vice president Rob Waterman handling the day-to-day oversight.

James Callahan, chairman, president & CEO of Nautilus International Holding Corp., commented on the company's expansion.

"Metro Ports Canada is most pleased to bring its services to the west coast of Canada," Callahan said. "It is a satisfying achievement to have the Nautilus companies continuing their international expansion."

Pinnacle Renewable Energy Inc. is a privately held company and the largest producer of wood pellets in the world and the largest exporter of pellets to Europe and Asia from Canada. Pinnacle Renewable Energy Inc. currently owns and operates six pellet plants across British Columbia with a production capacity in excess of 1.2 million tonnes annually.

The Westview Terminal wood pellet export facility is designed specifically to receive wood pellets transported by rail from production plants in the interior of British Columbia, store in purpose-built storage silos, and load into bulk ocean vessels destined for overseas markets. The Westview Terminal includes a private rail siding, a high-speed railcar unloading system, state-of-the-art safety and monitoring systems, and a high-capacity shiploader, capable of accommodating Panamax class vessels up to 75,000dwt. The Westview Terminal was designed and engineered to meet strict environmental standards.

About Nautilus International Holding Corp.

Nautilus International Holding Corp., headquartered in Wilmington, Calif., maintains oversight of various subsidiary companies concentrating in stevedoring, terminal operations, agency, logistics, third party claims administration and risk management. The companies of Nautilus International Holding Corp. excel in providing outstanding services to various market segments. These subsidiaries include Metro Ports, a contract stevedoring and marine terminal operator specializing in dry and wet bulk materials, breakbulk cargoes, forest products, wind energy, and a variety of other marine cargoes; Metro Cruise Services LLC and Metro Shore Services LLC, which jointly provide a full suite of services to the passenger cruise industry; and Metro Risk Management LLC, which specializes in claims administration and other risk management services.

About Metro Ports

Metropolitan Stevedore Co., established in 1923 in Southern California and with business roots dating back to the 1850s Gold Rush era through its original San Francisco parent corporation, California Stevedore and Ballast Co., is celebrating its 90th anniversary. Through the years, Metropolitan Stevedore Co. became known as Metro so in 2008 the decision was made to use Metro Ports as the new brand for the various key operating companies of Wilmington, Calif.-based Nautilus International Holding Corp. Those key companies included Metropolitan Stevedore Co., Southeast Crescent Shipping Co., Southeast Maritime Services LLC (which holds the Savannah International Terminal), and Cape Fear Bulk LLC. In 2011, Texas-based Suderman Contracting Stevedores, Inc. was acquired and recently rebranded as Metro Ports.

About Pinnacle Renewable Energy Group:

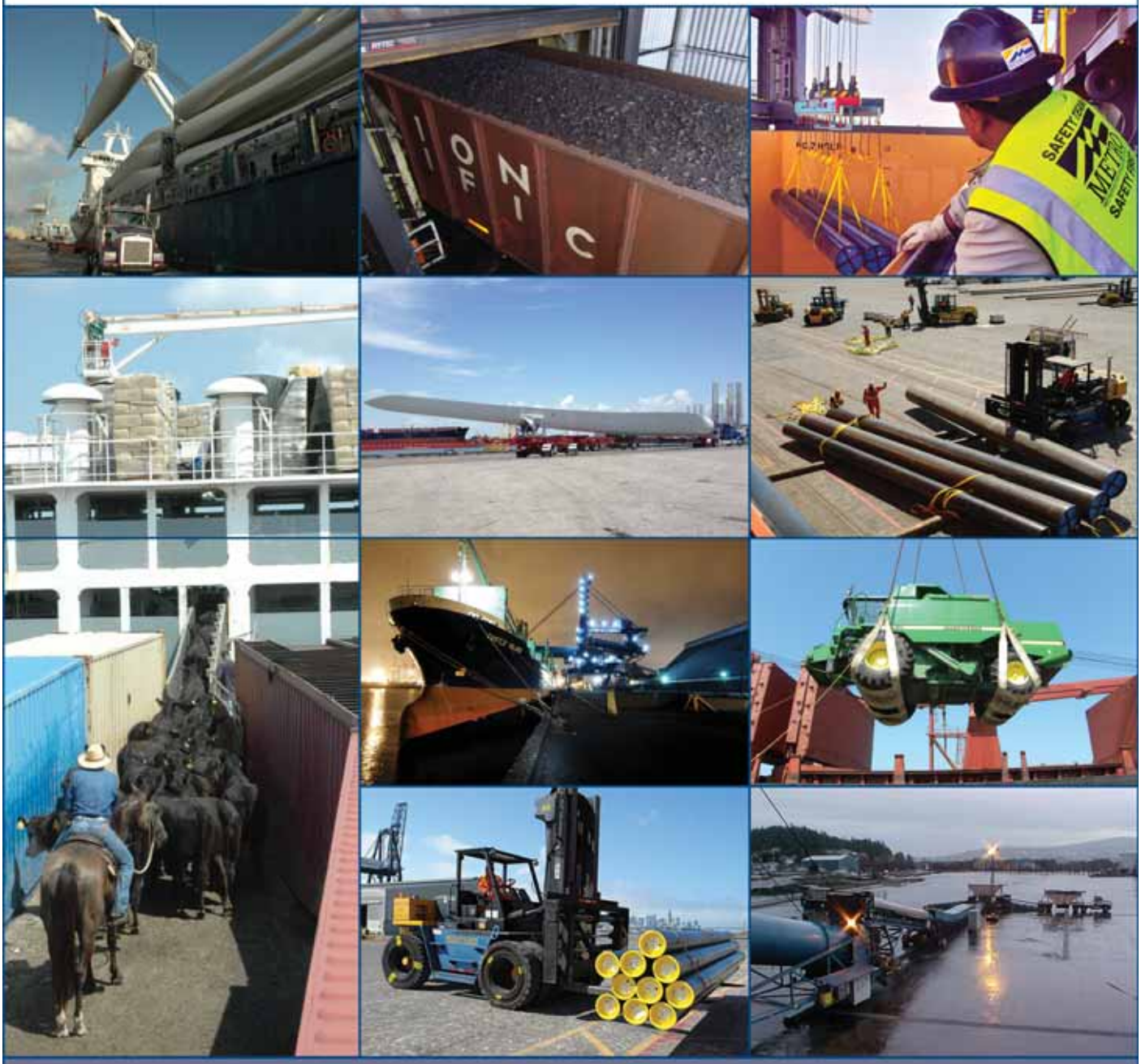
Pinnacle Renewable Energy Group, a private company founded by the Swaan family of Quesnel, has been in operation for more than 20 years. It is the longest-established pellet producer in Western Canada. Located in the heart of the lumber industry in central B.C., Canada, Pinnacle has access to an excellent and abundant source of raw materials.

Pinnacle produces a variety of products carrying its name, including softwood pellet fuel, animal bedding and natural sorbent. It also produces custom products for companies in their packaging. A large portion of its production is for the bulk domestic and overseas market.

METRO PORTS - General, Project and Bulk Cargo Experts

Pictures tell stories.

And Metro Ports' pictures show its vast range of cargo-handling expertise. Metro's professional staff provides our clients with quality stevedoring and terminal operations. Whatever your cargo, from autos to wood pellets, call us.



METRO PORTS

Corp.: 310.816.6500
www.metroports.com
info@metroports.com

Innovative Bulk Handling Solutions

Nectar®

Bulk Discharge • Bagging • Expediting • Consultancy • Terminal Management

For all your Bulk Solutions contact us now

+44 1708 386 555 marketing@nectar.co.uk www.nectargroup.net

1 Ashton Gate, Ashton Road, Harold Hill, Romford, Essex RM3 8UF United Kingdom

Quolls could quash Rio Tinto's plans for Australian bauxite mine

Australian conservationists have called on the country's Federal Environment Minister Mark Butler to halt Rio Tinto's planned South of Embley bauxite mine on Cape York after the discovery of a third rare species in the region.

Rio staff have found 24 endangered northern quolls on their lease about 10km from current mining operations at Weipa.

The company proposes to extend its operations at a mine south of the nearby Embley River where new species of a crab, shrimp and sea snake have been discovered, marking the area as a biological hotspot.

The discovery of endangered northern quolls has led wildlife activists to protest against Rio Tinto's proposed bauxite mine.

The Federal Government has approved Rio's revised Environmental Impact Statement for the South of Embley mine but the environmental authority for the project has yet to be finalized following an objection lodged by the Wilderness Society in the Queensland Land Court.

Society spokesman Tim Seelig said the South of Embley mine represented an unacceptable threat to significant ecosystems, to rare and newly discovered species and to the Great Barrier Reef where increased shipping would occur as bauxite was hauled to Gladstone.

"We are calling on ... the minister to halt this mine and to ensure that the ecologically significant animals, plants and landscapes of this amazing area of Cape York are properly protected," Dr Seelig said.

"Who knows what other species will be found in this area? Claims that mining operations will be set back from sensitive area buffers become meaningless when Rio Tinto can't be sure what species are actually on the site or where they might be located."

A spokesman for Butler said the department was talking to Rio Tinto about the quolls.

"It's early days. We're getting advice about this," he said.

Rio Tinto has promised to protect the quolls but the find could turn into a tricky issue.

Because of their endangered status, northern quolls are protected under the Environmental Protection and Biodiversity Conservation Act.

If Rio decides to go after the resources where the quolls are found, it could mean a further environmental impact assessment on a project that has been under way for 50 years.

Its revised EIS states: "Given the decline of the species on Cape York Peninsula and the apparent perilous state of the species in the region, any population of northern quoll located on Cape York Peninsula would be regarded as an important population under the meaning of the EPBC Act ..."

Dr Seelig said the priority for the federal and Queensland governments should be to protect the extensive natural and cultural values found throughout the Peninsula.

In 2009, scientists found 151 vertebrate species in acidic bauxite springs at the proposed Cape Alumina mine on the Wenlock river, north of Weipa.

It led to a major conservation battle over the project proposed for the Steve Irwin Reserve, which was bought in part with Commonwealth funds organized by former prime minister John Howard.

Last June, State Environment Minister Andrew Powell moved to wind back Wild Rivers environment protection for the Wenlock, which in essence will mean mining will be allowed much closer to the waterway.

Welsh steelworks vows to clean up its act

A steelworks in Wales has promised to clean up its act after complaints about dust pollution from residents, who say the UK's current hot weather is making matters worse.

People in the Port Talbot area said there had been a 'massive' fallout of black dust from the giant Tata Steel plant during the last seven weeks.

With temperatures soaring locals said particles were not dissipating and were coating homes, cars and gardens.

Tata said it had taken action and was confident the situation would improve.

Port Talbot is the steel giant's second largest plant in Europe, employing thousands of workers.

Natural Resources Wales (NRW) revealed it had received a number of reports during the recent warm weather from residents concerned about the pollution.

A spokesman for Tata Steel said, "In tackling the matter of dust emission in the long term, we have a air quality action plan which includes multiple initiatives all designed to reduce ambient dust levels and we will be working with other relevant companies to reduce what is generated from the steelworks site."

But the spokesman said it was always more challenging in dry weather.

He said the company monitored dust levels closely and was scrutinized by NRW and the local authority.

NRW said its officers had inspected the steelworks and it was confident it had identified the part of the site which was generating the dust.

"We've agreed an action plan with Tata Steel Ltd and we expect the company to make improvements to reduce the amount of dust coming from the site," said an NRW spokeswoman.

"If we don't see satisfactory progress made at the site we will consider if further measures are necessary."

SAVE THE DATE!

Find insight to a world of opportunity.

Breakbulk SOUTH AMERICA

PROJECT CARGO, HEAVY-LIFT & RO-RO LOGISTICS
CARGA DE PROJETO, PROJETOS ESPECIAIS & RO-RO

September 2-5, 2013 • Renaissance São Paulo Hotel, São Paulo, Brazil

Attend the Breakbulk South America Congress 2013 to learn and network with cargo owners, forwarders, carriers and ports that have a vested interest in South America's project & traditional breakbulk cargo. The Breakbulk South America Congress will consist of a General Session focused on topics of importance to the breakbulk & project cargo logistics community, networking time with cargo decision makers plus workshops that will help you do your job more effectively.

New for 2013! The Krabbendam Heavy Lift MasterClass (September 4-5, 2013) will provide advanced technical application of the Best Practices in Handling Heavy Lifts Safely.

Richard Krabbendam, a heavy lift specialist on land and offshore, is a globally renowned trainer with 37 years of experience in this field. He is the founder of Krabbendam Advisory Service and has been a heavy lift specialist with Jumbo Offshore for many years. A Master of Mechanical Engineering from Delft University of Technology, he has worked with Big Lift and Mammoet and was co-founder of ITREC.

Meet new business prospects and take home strategies to help you improve your South American logistics. **Unlock a world of opportunity - register today at www.breakbulk.com.**

Sponsored By:

CANADA'S ATLANTIC GATEWAY | LA PORTE CANADIENNE DE L'ATLANTIQUE

W&W WALLENIUS WILHELMSEN LOGISTICS

ORION

Official Publication:

Breakbulk
PROJECT CARGO, HEAVY-LIFT & RO/RO LOGISTICS
A Publication of the Journal of Commerce

www.breakbulk.com

Tenova Pyromet cold commissions furnaces in India


SMAL Furnace, India.

Tenova Pyromet, part of Tenova Mining & Minerals, has successfully completed cold commissioning of two 33 MVA ferromanganese/silicomanganese furnaces for SARDA Metals and Alloys (SMAL) in India, entrenching its position as a world class furnace designer, with extensive experience in the Indian ferroalloys market.

Awarded in 2010, the contract from SMAL covered supply of the full electrode columns and automatic furnace controller (AutoFurn™), as well as the full basic plant design. This greenfield development near Vishakhapatnam includes its own 80MW captive power plant, and the generated capacity will be distributed between the two furnaces and the local power grid. Plans for the world class plant include an extensive greenery project and a rain water harvesting dam, which will reduce the plant's overall carbon footprint, making it one of the most environmentally friendly plants in India.

In carrying out the project, Tenova Pyromet drew on its operational plant experience as well as on its state-of-the-art software tools, including the latest 3D CAD, FEA and CFD software, to take full account of the characteristics of the client's raw material in the development of the critical furnace dimensions.

Mass and energy balance models enabled the study of the effects that input changes, such as different raw materials, would have on the process. The process design was complicated by the need to blend the lower manganese-content Indian ores with other higher grade manganese ore from South Africa or Australia, in a "two-step" process route required to produce 78% high carbon ferromanganese and silicomanganese with 65% manganese.

Tenova Pyromet's unique understanding of the different mineralogies of the South African, Australian and Indian ores, enabled an optimized process to be designed, in conjunction with use of Tenova Pyromet's submerged arc furnaces and furnace controllers. Optimization included not only the process but, as the mass and energy balance models are directly linked to financial models, also the project NPVs, IRRs, break even and cash flows, in conjunction with changes in input costs, assumptions, input raw materials and process parameters. These models were used 'live' to be able to find the best solution for the client's specific situation.

The Tenova Pyromet electrode columns designed and supplied to SMAL offer exceptional operational availability and power efficiency, with features including a robust lower electrode system with protection for key equipment, and a modular arrangement for easy maintenance. The slipping device, a market leader in electrode control, has a clamping shoe configuration that is able to exert adequate pressures on the electrode casings, reducing the risk of casing buckling/damage.

Tenova Pyromet's AutoFurn™ is used to automate the furnace, controlling electrode movement and the transformer. By prioritizing the alarming convention, it is possible to operate these large plants with a lean workforce.

The raw material handling systems to feed the furnaces makes use of a recent Tenova Pyromet development, the rotary conveyor, which feeds the furnace charging feedbins. By being able to rotate both clockwise and anti-clockwise, the rotary conveyor reduces lag time between charging of each bin.

"The advantage of Tenova Pyromet's extensive capability and wealth of operational plant experience is clearly demonstrated by the fact that all our furnace designs exceed contracted performance guarantees, and comply in all safety and environmental aspects," says Sachin Arjun, Project Manager, Tenova Pyromet.

Tenova Pyromet has worked with both the private and state sector ferroalloy industry in India since 2004, when it was contracted by Nava Bharat Ferro Alloys Limited to design and supply the electrode column and electrode seals for its 24 MVA silicomanganese furnace. Besides significant repeat work from Nava Bharat, it has also since worked for a number of other leading companies, including Steel Authority of India Ltd (SAIL), Indian Metal & Ferro Alloys Limited, Visa Steel and Visa Bao Limited.

Tenova Pyromet is a leading company in design and supply of high capacity AC and DC furnaces and complete smelting plants for production of ferroalloys, base metals, slag cleaning and refining. Tenova Pyromet also designs and supplies equipment for material handling and pre-treatment, alloy conversion and refining, granulation of metal, matte and slag, furnace off-gas fume collection and treatment, and treatment of hazardous dusts and waste. Tenova Pyromet has several technologies to reduce operating costs and increase production power consumption.


Electrode columns installed at SMAL, India.

Tenova Mining & Minerals is a total integrated solutions provider to the global mining, bulk materials handling and minerals beneficiation and processing sectors, offering innovative technological solutions and full process and commodity knowledge across the mining industry value chain.

Tenova is a worldwide supplier of advanced technologies, products, and engineering services for the iron & steel and mining industries.

Mondi launches individually traceable bag solution – the SmartID Bag

The need for more precise tracking of goods is gaining increasing importance. Producers need to fight forgery and product theft, they have highly sophisticated supply chains and they want to provide consumer-oriented micro-marketing. These trends create new challenges for accurately tracing goods and packaging. Tackling this challenge, Mondi Industrial Bags now offers a solution with a unique code on each bag: the SmartID Bag.

On June 7, the SmartID Bag was presented at the Austrian packaging conference 'impackt 2013'. So how does this work? And how does each part of the supply chain benefit? "It's a great new concept for industrial bags," enthuses Claudio Fedalto, sales and marketing director of Mondi Industrial Bags. "Each bag gets its own unique code, printed by Mondi, which allows the bag to be identified throughout the value chain — all the way to the consumer," he explains. "This opens a wealth of information and opportunities!" Fedalto adds. The unique code on each SmartID Bag allows each party along the value chain – from the filler and the distributor to the end user – to upload and access predefined information stored in a database that is related to that code. To access this information the code is simply scanned with a smartphone.

"The concept is very flexible," says Christian Anselmi CEO of Antevorte, the technical project partner. "The sky is the limit! How much information is stored in the database and how much data is made available through the code on the SmartID Bag is entirely up to the customer," he explains. "It's easy to set up and the online app provides the information stipulated by the customer," Anselmi states.

Mondi has developed a range of services that can be offered to fillers and other stakeholders further down the value chain so that all parties can benefit from this solution.

Authentication

Benefiting from the value of a strong brand, product forgery has become an increasing problem. The SmartID Bag can prove to the buyer that the content of the bag is genuine and corresponds to the actual quality sold.

Traceability

Some sectors, such as the pharmaceutical industry, are already required to track all of their products through the production line. The SmartID Bag allows this concept to be extended to other industries — tracing packaging and components of all filling goods. This tracking can be done both backwards and forward in a monitored supply chain. It can be in response to legal requirements for certain filling goods or simply to give the filler tight control over their products and components.

Supply chain optimization

Consumers' needs are moving faster and faster, which requires suppliers to be highly flexible and reactive. With the SmartID Bag products can be monitored along the value chain, for example monitoring of stock volumes at the point of sale. This allows users to immediately react to temporary or regional differences in sales by meeting the demands of customers.

Targeted marketing

Information is key and additional transparency helps suppliers provide exactly the products a customer needs. To fulfil this they need to know more about the customers. SmartID Bag can provide more detailed data on the buyer for micro marketing. With this knowledge the offer can be adapted to the customer and present various types of additional information when the code is scanned, for example suggest complementary products, inform on regional campaigns, adapt language support, videos, etc. It's a great possibility to get fillers and distributors closer to the customer and build up direct communication.

Customer loyalty

SmartID Bag can also offer added value to increase customer loyalty, for example promotions for regular buyers recognized via smartphone. This added value can be provided by the filler or distribution channels, for example in do-it-yourself markets.

Pasha Stevedoring & Terminals L.P.

Understanding and meeting its customers' needs and working cohesively as a team to provide exceptional customer service at all times are the keys to Pasha Stevedoring & Terminals' continued success and growth.

The company

PST is a privately held, professional cargo-handling company that provides expert vessel loading and unloading services for the global maritime transportation industry in the ports of Los Angeles, San Diego and Long Beach, California.

A wholly owned subsidiary of The Pasha Group, PST is the third largest independent West Coast terminal operator, holding several long-term leases with the port.

A teamwork approach that works

Everything that PST does revolves around a teamwork approach,

both internally and externally. It is one of the cornerstones of PST's operating philosophy. The company has partnered with customers on many levels to ensure their success. PST has taken its expertise globally, instructing loading ports of the most efficient stowage methods to use in order to save costs and increase production upon discharge on the US West Coast. Working with a customer and the railroad, PST designed a better, safer railcar for carrying specialized heavy steel slabs. It also worked with the federal government to write a security plan implemented at port facilities across the nation.

As breakbulk specialists, PST has combined its talents and decades of hands-on experience in the field of general and heavy-lift cargo with its container capabilities to operate the only true omni-terminal in the Port of Los Angeles.

The omni-terminal

The omni-terminal concept involves a terminal designed to accommodate a multitude of commodities in addition to standard ocean-going containers. PST's team of professionals maintains the highest productivity, while offering customers the flexibility necessary to accommodate such a diverse range of cargo. As has been PST's experience, a vessel could require that it lifts a 428-tonne petroleum cracker or 125ft-long refinery reactor, and then immediately revert to handling containers or bundles of steel or forest products.

Proactive, interactive and innovative

PST maintains a proactive, interactive and innovative reputation in all its vessel and terminal operations, equipment design, alternative fuels testing, and physical safety and security issues.

Industry and community

PST is proud of the achievements of its management staff and steady workforce. Further, it is dedicated to continuing its active role in the industry, and supporting the community in which it does business. DCi

Pasha Stevedoring & Terminals Handles All Cargo All The Time

Pasha Stevedoring & Terminals excels in handling steel, breakbulk, agricultural products, containers, and heavy-lift/project cargo, with supporting Omni-terminal operations and expert diversification in international vessel loading.

Delivering personalized solutions for faster, safer shipments.

PORT OF LOS ANGELES • PORT OF SAN DIEGO • PORT OF GRAYS HARBOR

(310) 835-9869 / www.psterminals.com

BEUMER autopac: simultaneous loading and palletizing

Using the turning device, the BEUMER autopac brings the bags into the proper position. (All photos: BEUMER Group GmbH & Co. KG).

From the packing machine straight to the truck bed

With the BEUMER autopac, BEUMER Group has a system in its portfolio that loads bagged materials like cement directly from the packing machine onto the truck bed. The bags are palletized automatically in stacked rows or patterns. The system is particularly efficient in emerging market nations, where the transshipment of bagged bulked goods is increasing and labour costs are climbing.

The BEUMER autopac simultaneously loads and palletizes bagged goods, such as cement or other material — without needing pallets. Therefore, it is suitable for use in countries were no pallets are available, or where their use is uncommon. In rows or stacking patterns with a pre-selected number of layers, the BEUMER autopac works quickly and effectively. Depending on the performance class, the system stacks between 2,400 and 3,000 50kg bags per hour. The loading height, including the height of the truck bed, can be up to 3.5 metres (for a platform height of 5 metres). The user has flexibility in forming the layers, dependent on the bag dimensions and the proper width-to-height ratio. The BEUMER autopac can be used adaptively to handle bags of various materials.

The bags are automatically loaded and palletized – even when no pallets are available.

Gentle and efficient handling

The user can move the BEUMER autopac to its starting position from the control desk. Then, the user defines the number of rows or layers and enters the number of bags to be loaded. The loading process then happens automatically. For each layer, the control program recalculates the height setting. This eliminates readjustments. The machine can load bags in double patterns of five or ten bags. In order to attain the highest possible degree of stability for the whole load on the truck, and in order to optimally utilize the truck bed, two mirror-inverted layers are always palletized next to one another. The bags are flattened by the loading process using two stacked belt conveyors, which releases the air from the bags. After being positioned, the bags are also pressed by the loading head, which makes the stack more compact and more stable. The bag feeding lines can be adjusted to the installation conditions. Corresponding technical solutions are available for variable conveying lines. The bags are handled gently. Unlike on the systems from other suppliers, where bags are suctioned and lifted, the bags are not deformed by the BEUMER autopac. This is primarily advantageous when loading woven fabric bags, because it prevents the bags from breaking and stops material from being suctioned up into the vacuum filter. An electronic counting device ensures that the truck is not loaded too lightly or too heavily.

The trucks are always ideally loaded. The stable load units facilitate secure road transport.

In contrast with loading and palletizing systems from other manufacturers, the BEUMER autopac is equipped exclusively with electrical drive units in its standard design. This drive concept means significantly less maintenance costs for the user. On the vacuum drive units and hydraulic drive units from other manufacturers, leaks that pollute the load and the system are inevitable. Additionally, the energy-intensive vacuum pumps and hydraulic drive units require additional cooling units, a fact that is clearly reflected in the purchase and operating costs, as well as in energy consumption.

With the energy-efficient electrical drive units, the BEUMER autopac provides high levels of availability and economical operation. The 3000 model uses just 0.15 kilowatts per hour at full capacity. The drive units and machine parts are clearly arranged and easily accessible. Due to its simple design, the BEUMER autopac is service-friendly and dependable. The robust construction of the system can withstand exposure to extreme environmental conditions and has proven itself a hundred times over. With a track width of 5.5 metres between the loading lines, the BEUMER autopac is also extremely space-efficient.

For an ambitious growth strategy

The Dangote Group, headquartered in Lagos, Nigeria, has been operating 15 BEUMER autopac systems in its factories since 2004; an additional 81 machines are either being assembled, have been delivered, or are on order. Africa is an emerging continent where the demand for cement is steadily increasing due to rapid population growth. The cement company has an ambitious growth strategy. In order to compete with global leaders in cement manufacturing and be duly prepared for an upcoming construction boom, Dangote is striving for a high degree of automation with the solutions from BEUMER. Dangote maintains a fleet of more than 5,000 trucks, some of which have very high rooflines with wind deflectors. Therefore, the inner clearance height near the BEUMER autopac is 4.8 metres. Due to the tall ceiling height, the experts at BEUMER had to modify the systems. For example, they extended the lowerable conveyor. More powerful, frequency-controlled drive units are used. Also, the performance of the BEUMER autopac will be enhanced to load and/or stack the required quantities of cement bags.

In rows or stacking patterns with a pre-selected number of layers, the BEUMER autopac works quickly and effectively.

BEUMER Group

BEUMER Group is an international manufacturer of systems for conveying, loading, palletizing, packaging, sortation and distribution. Together with Crisplant a/s and Enexco Teknologies India Limited, BEUMER Group employs about 3,200 people and achieves an annual turnover of about €500 million. With its subsidiaries and sales agencies, BEUMER Group is present in many industries worldwide. DCi

Alco Iron & Metals

relying on two new SENNEBOGEN 825 material handlers

Two new SENNEBOGEN 825 M are in operation at Alco's recycling yards in the San Francisco region.

It all started with just a quarter-acre site in San Leandro, CA in 1953. Now, in its 60th year Alco Iron & Metal Company runs a network of four scrap-processing locations throughout the greater San Francisco region. The newest machines in the Alco recycling yards are two SENNEBOGEN 825 M rubber-tyred scrap handlers.

Still owned by the same family, Alco Iron & Metal is spread out over 35 acres in four separate locations in Northern California and currently employs more than 200 employees.

A COMPLETE CIRCLE IN METALS – PROCESSED WITH THE SENNEBOGEN 825 M

Unlike many recycling businesses, Alco is engaged in the full circle of metal and iron services. Along with collecting and processing both ferrous and non-ferrous metals, Alco takes on demolition projects, which provide a primary source of materials for recycling. The company is also a large distributor of new structural steel, aluminium and copper. Backed by its service ethic, the scope of Alco's metal interests creates opportunities to grow within its own customer base, as both a seller and a buyer of their customers' metal

The newest machines in the Alco recycling yards are SENNEBOGEN 825 M rubber-tyred scrap handlers. "Our facilities here (in Vallejo) and in Stockton are very similar," Kari Fletcher, manager of the Vallejo yard explains. "They are both 15-acre paved sites. We buy ferrous metals at the rear of the yard and we make our non-ferrous purchases in the building at the front of the yard. At any time, we could need our material handler to move right to the opposite end of the yard. We were looking for wheeled machines for their mobility, and SENNEBOGEN won out. It's very helpful being able to bring the SENNEBOGEN 825 M right into our warehouse."

At the Stockton yard, general manager Jerry Lynch sees his 825 M as more than a scrap handler. "We have a lot of jobs that need equipment like this, so we use the SENNEBOGEN as a "utility" type of machine. It gives us the versatility we need to be flexible. It can load different containers and move material in the yard. Or we can put it on a truck to help process material on a demolition site."

SPEED, SIMPLICITY, SERVICE

Until now the Stockton yard still relies on older tracked equipment for much of the day-to-day loading work. But there can be seen a growing role for the 825 M. The tracked equipment tears up the concrete, but some material has to be moved over 100 yards. The SENNEBOGEN 821 M can go 12mph without damaging the yard. Its speed and ease of handling lets it step into multiple uses. The machines were delivered and are services by SENNEBOGEN distributor, Bejac Equipment. They just show up, and are there to help.

Alco's scrap handling operators are experienced with various makes and models of equipment. They praise the visibility from the elevating cab and from the safety cameras strategically placed on the machine. The high-resolution monitor allows them to see their working area. They have also mentioned how the wheels make it much easier for them to get around the yard. Operators also say it just feels more rugged — they have a real sense of quality and stability in their machines. DCi

Mondi continues expansion

bag specialist grows in popularity in the MENA region

In 2000, Mondi Industrial Bags started its business operations in the Middle East & North Africa (MENA) region by acquiring plants in Lebanon and Jordan. Today, the plant network has grown to seven plants in six countries spanning from Morocco to Iraq. In just over a decade the MENA region has become an important pillar of Mondi's industrial bags business. As a key international player in the region Mondi sells around ~600 mio paper bags supported by a unique production and service network. Mondi Industrial Bags is fully committed to the region and is working on further local growth and investment opportunities.

New greenfield investment in Iraq

Mondi recently started full production at its new industrial bags plant in Sulaimaniyah, northern Iraq. Together with local partner, Kaso Group, this greenfield project is set to strengthen Mondi's industrial bags business in the expanding Middle East. This is the first industrial bags plant in Iraq, and will serve the growing cement industry driven by the intense rebuilding activities in the country.

Thomas Ott, COO of Mondi Industrial Bags says, "we are proud of the successful launch of our new greenfield plant in Sulaymaniah. It is an important strategic step in strengthening our network in the region." This project also coincides with Mondi's strategy to support its customers' expansion in emerging markets through delivering paper bags with international quality standards. "Having Mondi's industrial bags plant close to our cement factories strengthens our long-term business relationship and is important for good logistics and supply management," states Rozhgar Barzan, procurement sourcing manager at United Cement Company – Lafarge Iraq. "Iraq is now one of the Middle East's growing countries and the construction industry is helping to rebuild the nation," explains Abdel Hafez Abki, managing director of Mondi Kaso Iraq. "The new plant further strengthens Mondi as a reliable industrial bags

Mondi facility in Iraq.

When Mondi Morocco introduced a new production line in 2010, it was unique in the region. With a production capacity of 360 bags per minute, it was then the fastest of its type in the world.

partner in the region and we are already preparing the setup of a second line allowing us to double our output next year," he adds proudly. One of Mondi's most important partners Omar Ismail, managing director of Mass Iraq Co. for industrial investment says: "We are pleased with the start-up of Mondi's bags factory in Iraq and are looking forward to further constructive co-operation between both companies."

State of the art equipment — a benchmark in productivity and quality

In May 2010, Mondi Morocco started operating a new production line, which at the time was unique in the region. The Windmöller & Hölscher AM 8105 tuber and AD 8300 bottomer with a production capacity of 360 bags per minute was the fastest of its type in the world. Within its first year of operation, the Moroccan team achieved world records in the production of high-performance two-ply bags — and set new standards not only in the region. "Our team has managed to get the best out of the new bags line within a short period of time helping us to serve the regional market even better," says Hicham Jalal, managing director of Mondi Industrial Bags Morocco.

Customers benefit from further investment in equipment

After the successful introduction of the modern production equipment in Morocco in 2010 a new line is now being planned for the industrial bags plant in Jordan. "With these production lines we are able to satisfy the growing demand for paper bags from the cement industry in the region," explains Ott. "But not only efficient production is important — offering the right quality of paper and the best bag construction is crucial," he adds. "Our local teams are able to reliably produce optimally performing bags made from high-porosity paper to ensure fast de-aeration and a dust-free filling process. In addition, we can provide a widened range of possible industrial bags innovations. That's an interesting plus for our customers!"

Setting new industrial bag standards

Together with its local customers Mondi Industrial Bags is fostering the introduction of high performance sack kraft paper and optimized bags constructions. With these changes, fillers can improve filling speed and drastically reduce dust at the filling station. "With the support of Mondi Oman LLC, United Cement Company has successfully optimized the 50kg bag construction by changing from a three-ply 70gsm semi-extensible to a two-ply 90gsm high porosity paper. United Cement Company and Mondi are currently jointly working on a further reduction to a two-ply 85gsm high porosity bag," explains Faisal Shehab, CEO, United Cement Company (Bahrain). Improved paper bags thus have a positive impact on the cost structure through enhanced productivity and lower packaging cost. "In the current competitive market conditions, cost control is a key issue. Mondi Oman LLC has co-operated successfully with Ras Al Khaimah Cement to improve the bag construction without any compromise on the bag performance during the filling process and in the market," explains Robin De Beer, general manager of Ras Al Khaimah Cement Company (United Arab Emirates).

Introducing new features

Mondi has also introduced further innovative bag constructions in these regional markets. The Easy Open Bags, for example, feature an integrated tear-open strip at the bottom of the bag. This allows the user to easily open the bag and quickly release the content. Fillers can get one step ahead in making their customer's lives easier by already thinking about how their bags will be opened. "The Easy Open feature on the bags supplied by Mondi Oman to Dry Mortar Company has allowed us to successfully differentiate our product in the Saudi market by way of this unique selling point," says Nikolai Domeyer, marketing director of DMC Dry Mortar Company (Saudi Arabia).

About Mondi Industrial Bags

Mondi Industrial Bags, a business segment of Mondi's Europe & International Division, is a major international producer of industrial paper bags, selling around four billion bags per year. Thanks to its broad range of bag specifications, Mondi Industrial Bags serves major industries including cement and building materials, chemicals, food, feed and seed. The business segment operates a dense sales and service network, the specialized filling equipment department Natro Tech, as well as its Bag Application Centre, where researchers develop and test innovative packaging solutions. DCi

*Smart*ID Bag.

Get your bag connected.

More about Mondi's SmartID Bag:

Each **SmartID Bag** is equipped with its own unique code for identification. With this code fillers, distributors and end users can benefit from additional information or services such as proof of authenticity, exact tracing, optimised supply chains, targeted marketing or customer loyalty programs. Contact us at **info.bags@mondigroup.com**

SOLUTIONS.
FOR YOUR SUCCESS.

www.mondigroup.com

mondi

BRUKS

highly engineered solutions for the breakbulk and bulk markets

A BRUKS' stacker/reclaimer, handling woodchips, at an energy plant.

BRUKS is a wholly owned subsidiary of JCE Group AB, a Sweden-based investment company with interests in companies operating in several industrial sectors.

BRUKS is an international mechanical-engineering company, which develops, manufactures and markets machines and systems for the wood-processing industry. Its customers are sawmills, board and pulp mills as well as energy suppliers all over the world.

BRUKS is operating in a market characterized by very strong competition and increasing demands from customers.

For each of the eight market segments the group targets, it can offer a comprehensive product range.

Pulp and Paper

Machines and complete plants for wood fibre production and handling in pulp and paper — including hogs, mills, Tubulator conveyors as well as large drum and disc chippers as core products.

BRUKS supplies complete stockyard equipment and systems for most bulk materials. Equipment and systems range from the smallest semi-automated systems to the largest fully automated systems including open storage and closed or covered storage configurations.

Sawmill

Machines and complete plants for wood residue handling in sawmills — including drum and disc chippers, chip screens, conveyors and butt-end reducers as core products

Bioenergy

Machines and complete plants for processing and handling wood fibre materials, wood fuels and other fuels within the bioenergy sector — including chippers, screens, hogs, Tubulator conveyors, various storage solutions, shiploaders and receiving stations as core products.

Biofuels

Machines and equipment for industry segment of Biofuel.

Mobile chippers

Mobile chipping enables cost-optimized harvesting of renewable energy in the form of energy wood from the forest. The fuel

Bed Dryer serves forest products market

The BRUKS Bed Dryer is an environmentally friendly low-temperature dryer for chips, sawdust, bark and the like.

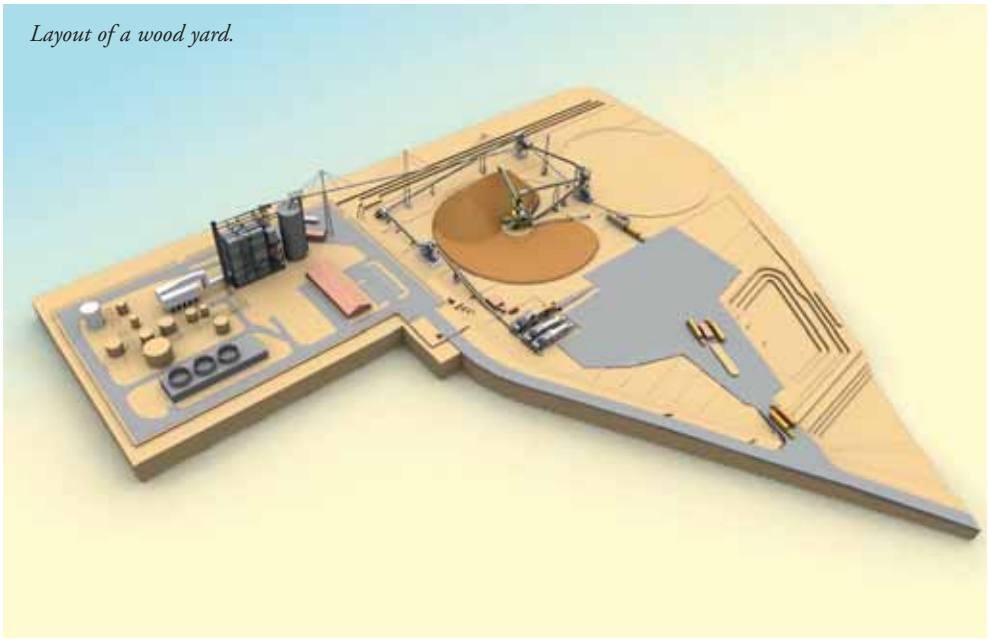
Controlled air supply during continuous feeding and moisture monitoring ensures reliable drying results. Mode of operation: an infeed auger spreads the material evenly across the dryer's entire width. A flow of 80–110°C hot air coming from below passes through the slowly advancing bed of material. The moisture inside the material bed moves higher and higher.

At the end, the top layer having not reached the desired moisture content is skimmed off by means of a vertically adjustable auger.

supplied to energy providers has a low moisture content, a high degree of purity and a perfectly adapted product size, in addition to coming from a sustainable system that is not competing with the recovery of wood for sawmills, pulp and board mills.

As chipping operations can take place right in the forest or close to it, the product to be transported (in the form of chips) has such a high density that hauling weight capacities can be fully utilized, thus minimizing transport cost as compared to the transport of logging slash or parts of trees with their low-density volume.

Layout of a wood yard.



BRUKS' equipment for bulk terminals includes shiploaders.

BRUKS' truck dumper in operation.

Panel board

Machines and complete plants for wood fibre production and handling in Panel Board– including flakers, hogs, mills, Tubulator conveyors as well as large drum and disc chippers as core products.

Bulk materials handling

BRUKS supplies complete stockyard equipment and systems for most bulk materials. Equipment and systems range from the smallest semi-automated systems to the largest fully automated systems including open storage and closed or covered storage configurations.

Bulk terminals

Machines and complete plants for processing, storing and handling bulk material in bulk terminals — including Tubulator conveyors and various storage solutions and shiploaders.

Recent activity

Contractors opinion on new Mobile Chipper 806

BRUKS presented its new chipper, BRUKS 806, at ElmiaWood in June. A pilot 806 STC chipper has been in the care of a contractor for almost three months.

Peter (the driver) has operated chippers for almost 20 years and got a real fresh kick at the controls of the new 806: "Now it's fun again to run chippers!"

Asked what he thought was the biggest difference compared with the older chippers he said: "High capacity, unbelievably strong, 'torque-y' engine, low fuel consumption, about 0.3 litres per cubic metre of chips."

Peter adds that he hopes he won't get the old chipper back – he wants to keep chipping with the 806!

BRUKS Klöckner wood preparation system for a pellet plant in Southern Germany

Bruks Klöckner completed the erection and commissioning of a complete wood preparation system for the pellet plant of JUWI Dotternhausen in Southern Germany last year, where it produces 30,000 tonnes of pellets and 15,000 tonnes of briquets per year.

The scope of delivery of Bruks Klöckner includes the feeding and screening equipment and a hammer mill to prepare fines for the following pelletizing process.

Research & development

The BRUKS Group maintains a high level of research and development (R&D) investment. New products are developed continuously, often together with its customers to answer their needs.

Most important for BRUKS is the performance of its products, which must be top performers, market leaders and obtain the very best results. This is a top priority in BRUKS' R&D efforts.

PPG Protective and Marine Coatings: antifoul and cargo hold protection

PPG Protective and Marine Coatings is a major supplier of a wide range of premium paints and coatings to the marine industry, including the bulk handling sector, *writes Sijmen Visser, Global Marketing Manager M&R, PPG Protective and Marine Coatings*. Over the last few years, its SIGMASHIELD and SIGMACOVER systems for bulkers have gained momentum and recognition. The outstanding properties of these systems have been proven in specific tests developed for the harsh conditions to which cargo hold coatings are exposed. Both in internal and third party lab testing the coating systems have been proven to meet stringent requirements. The extensive experience in practice and track record of the product are proving the excellent performance of these products.

Sijmen Visser.

The SIGMASHIELD system results from the combination of an excellent anti-abrasive top coat, SIGMASHIELD 420, combined with a top anticorrosive product, SIGMASHIELD 220. This combination is the ultimate solution for bulk carriers. The outstanding resilience of this system to a wide range of cargoes ensures the bulker operators long lasting protection of their assets.

Alternatively, PPG also offers SIGMACOVER 350 for its cost conscious customers, a product suitable for most cargoes that combines good anticorrosive performance as well as good anti-abrasive properties.

Staying competitive in the market

The marine coatings industry has experienced a period of intense product innovation over the last 25 years, responding both to regulation and the changing needs of shipowners. With fuel accounting for 50% or more of daily operating costs, shipowners are increasingly expecting their coatings to contribute positively to potential cost savings as well as meeting environmental obligations such as reducing VOC (volatile organic compound) emissions.

PPG consolidates its premium products around three main technologies; silicone-based, biocide-free fouling release coatings, silyl acrylate antifouling coatings which offer hydrolysing, self-polishing and self-smoothing properties and zinc acrylate antifouling coatings that offer distinguished premium properties and at the same time being copper-free. All three technologies score highly in reducing environmental footprint and lowering operational expenses.

Evolving with the times

Antifouling coatings technology has evolved over the past ten years, in some part due to technological advances, but also because of the very real need for vessel operators to reduce fuel costs whilst continuing to optimize voyage efficiency. One of the technologies that makes up our premium antifouling offer is that of silyl acrylate-based products. In fact, silyl-acrylate technology is at the forefront of the drive to reduce fuel costs for vessel owners and operators.

PPG's SIGMA SYLADVANCE range offers self-smoothing properties and high levels of fouling protection. In recent case studies, the reduction in frictional drag on vessels coated with SIGMA SYLADVANCE has been proven to deliver measurable fuel savings and significant emission reductions for a number of customers.

The newest anti-fouling product from PPG is SIGMA SYLADVANCE 700 which has been recently launched. SIGMA SYLADVANCE 700 is a high performance antifouling designed specifically for ships working at medium to high rates of operation and medium speeds. Its parent product, SIGMA SYLADVANCE 800, has been used on a wide range of vessel types for both newbuilding and maintenance/repair projects by a number of operators worldwide, including Piraeus-based shipmanager Chandris (Hellas) Inc.

Getting the right hold coating has a huge impact on the effectiveness and cost-efficiency of bulk handling operations.

When Chandris sought to upgrade the hull coating on the 2007-built *VLCC Ellinis*, it came to PPG, looking for a solution that would be suitable for worldwide trading on a demanding operational schedule. PPG applied SIGMA SYLADVANCE 800, which not only contributed positively to the hydrodynamics of the ship's hull by reducing hull frictional drag, but also reduced the total amount of fuel consumed, increasing overall efficiency.

Have Engine - Will Travel

Diesel-Hydraulic Grapple
Model DHSG

Our new Hydraulic Grapple with its self-contained diesel engine gives you the freedom to use on any crane. It connects easily and is operated by radio remote control to offer you the ultimate in flexibility.

- Engine models up to 150HP
- Air or water cooled engines to match your environment
- Removable bottom hatch for easy engine access and maintenance
- High-strength, wear-resistant alloy steel tines
- 50 Gallon Fuel Tank will run over a continuous 12 Hour Shift
- Environmental food grade hydraulic fluid option

Available Now for Rent or Purchase.

Anvil Attachments
Hawco · Pro-Line · Owen · Yaun · Williams · Drott

Log on to INFO.anvilattachments.com/diesel for videos and more information or contact us today at 225-654-8222.

Shipboard equipment

Jay Venter

Diverse bulk handling solutions with Liebherr ship cranes

Liebherr Maritime Cranes

Liebherr Maritime Cranes is a division of the Liebherr Group which specializes in cargo handling solutions for ports as well as for shipping and transshipping and the offshore industry.

Products include fixed and rail-mounted cargo cranes, ship-to-shore container cranes, mobile harbour cranes, rubber tyre gantry cranes, rail mounted stacking cranes, straddle carriers, reachstackers, ship cranes, floating cranes and offshore cranes.

www.guvengrab.com

güven
grab & machine

GÜVEN KEPÇE MAKİNA
İÇ ve DIŞ TİCARET LİMİTED ŞİRKETİ
Factory & Head Office
Nazım Hikmet Caddesi 536 Sokak No.:9
41420 Akseköyü - Çayırova - Kocaeli / TURKEY
Phn:+90 262 743 88 58 pbx
Fax:+90 262 743 11 41
info@guvengrab.com
www.guvengrab.com

CBG cranes are designed for rapid and efficient turnover of coal, ore and all types of bulk cargo.

Shipboard and floating cranes

Liebherr cranes offer practical solutions for various types of vessels including container vessels, bulk carriers, heavy lift, multi purpose and reefer vessels as well as tailor-made solutions for barges and transshippers.

The range of deck cranes includes wire luffing and cylinder luffing cranes as well as four-rope grab cranes, gantries and heavy lift cranes.

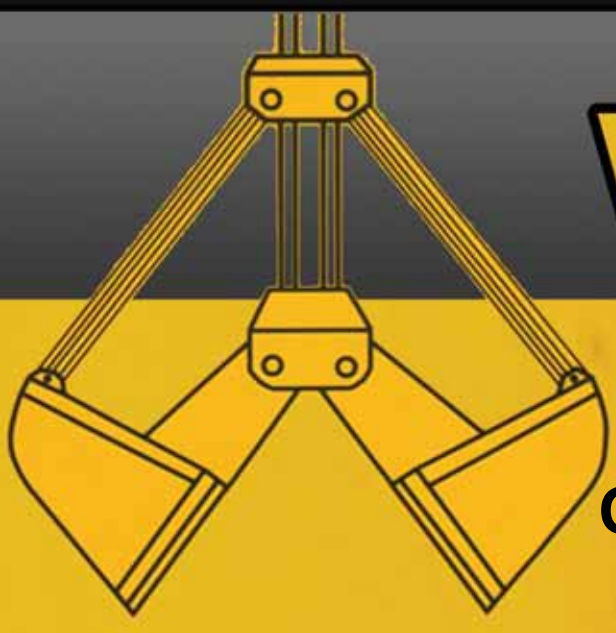
Liebherr ship cranes for bulk handling

CB Cranes

CBB cranes are wire-luffing cranes designed for bulk and container handling with the following advantages:

- hydraulic control instead of electronic;
- jib brackets are directly integrated in jib beam for higher rigidity;
- significantly reduced forces and operating costs due to advanced reeving concept;
- wire sheaves inside beam for better protection;
- unobstructed view from the driver's cabin due to improved position of first jib bracket;
- more space for easier access and maintenance in the slewing column;
- electric power pack in compact design and 'Liebherr Load Sensing Control' reduce maintenance costs. Three hydraulic pumps for smooth control during simultaneous motion;

ORTS GmbH turns 40 this year!



www.or

The best link

Orts GmbH Maschinenfabrik,
Schwartauer Str. 99
D-23611 Sereetz
Germany

ORTS GmbH

ts-grabs.de

between ship and shore.

Tel: +49 451 395 850
Fax: +49 451 392 374
Email: sigvard.orts-jun@orts-gmbh.de

The MPG double girder grab deck cranes are especially designed for use on board transshippers where high turnover rates and continuous operation are required.

- main components inside crane housing for better protection;
- jib fall-back prevention for improved safety; and
- higher FEM classification than a standard deck crane.

CBG CRANES

CBG cranes are designed for rapid and efficient turnover of coal, ore and all types of bulk cargo and have the following characteristics:

- use of a four-rope grab enables high cargo turnover;
- specially designed to enable continuous crane operation;
- the special geometry allows for a horizontal load path in luffing operation;
- wide rope field for stabilizing the hook ensures safe operation and cargo handling; and
- maintenance free hydraulic luffing arms, chrome-nickel plated, which reduce operating and maintenance costs.

MPG DOUBLE GIRDER GRAB DECK CRANES

The MPG double girder grab deck crane is especially designed for use on board transshippers where high turnover rates and continuous operation are required:

- *less wear* and therefore longer lifetime of ropes due to special positioning of the hoisting winch at the end of the grab rotating arms;
- four independent drive systems ensuring *continuous operation* with full load and reduced speeds, should a fault occur;
- driver's cabin is positioned on the underside of the grab rotating arms allowing for *unrestricted view of the hold*;
- Liebherr's own Litronic Robot control (LRC) and Dynamic Anti-Collision System (DACS®);
- extended driver's cabin is positioned on the underside of the upper arm allowing *unrestricted views of the hold* on both vessels;
- no luffing ropes/mechanism meaning *less maintenance* and *increased stability* in offshore operations (no bouncing) and *significant reduction in grab swing* during slewing; and
- reduced crane height leading to *low centre of gravity.*

CBW CRANES

CBW cranes are designed for cargo and container handling and are distinguished through the following characteristics:

- low height enabling improved visibility from the vessel's bridge;
- low weight and centre of gravity for improved ship stability and increased cargo capacity;
- wide rope field at the hook allowing for safe and stable cargo handling (anti-swing device);
- jib arranged above operator's cabin, which provides unrestricted vision for the crane driver to deck and cargo hold;
- maintenance-free hydraulic luffing arms, chrome-nickel plated which reduce the operation and maintenance costs;
- boom is firmly supported at all boom angles due to the double acting hydraulic rams; and
- short minimum radius enables cargo to be positioned immediately beside the crane.

Liebherr Maritime Cranes currently employs more than 3,500 employees worldwide and has four state-of-the-art production sites in Killarney (Ireland), Nenzing (Austria), Sunderland (Great Britain) and Rostock (Germany). In addition, Liebherr Maritime Cranes operates eight fully owned sales companies and is additionally represented in more than 30 mixed sales companies worldwide.

The Liebherr Group

Established in 1949, the Liebherr Group today is a leading manufacturer of heavy engineering and lifting equipment, but also supplies innovative user-oriented products and services in many other fields.

The family-owned enterprise employs more than 38,000 people in over 130 companies worldwide.

Liebherr's product range covers earthmoving machinery and material handlers, mining equipment, mobile cranes, construction cranes, mixing technology, domestic appliances, maritime cranes, aerospace and transportation systems, machine tools and automation systems as well as high-performance components for mechanical, hydraulic and electrical drive and control technology. Liebherr operates hotels in Ireland, Austria and Germany.

The Group's holding company is Liebherr-International AG in Bulle, Switzerland, which is entirely owned by members of the Liebherr family.

MacGregor electric cranes & hatch covers for China Navigation's new vessels

CNCo's new 22,000dwt multi-purpose vessels have been designed to provide efficient, flexible freight solutions.

Four new 22,000dwt multi-purpose vessels for China Navigation have been designed to provide efficient, flexible freight solutions; they will feature variable frequency drive electric cranes and hydraulically-operated hatch covers from MacGregor, part of Cargotec.

China Navigation Company's (CNCo) four new *Chief*-class 22,000dwt multi-purpose vessels ordered from Zhejiang Ouhua Shipbuilding Co Ltd (Ouhua), on Zhoushan Island in China, will each feature three 60-tonne variable frequency drive (VFD) MacGregor cranes and hydraulically-operated MacGregor hatch covers. The order was booked in the second quarter 2013 order intake.

The vessels are scheduled for delivery in late 2014 and first quarter 2015 and the contract includes options for an additional 2+2 vessels.

CNCo is the deep-sea ship-owning and operating arm of the Swire group of companies and is wholly-owned by the group's parent company, John Swire & Sons. The new vessels will operate for Swire Shipping's liner division, trading between Australia and Papua New Guinea; they have been specifically designed to meet the particular demands of this trading route. CNCo says the ships' design focuses on cargo handling speed and fuel efficiency; they will offer maximum versatility, with the capability to carry a wide range of cargo including breakbulk, over-dimensional and heavy-lift project cargoes up to 120 tonnes, in addition to meeting the route's general cargo requirements.

"The cranes' enhanced efficiency is mainly attributable to faster and more accurate load positioning which reduces the time spent in port, along with a 30 to 35% reduction in power consumption compared to electro-hydraulic cranes," says Svante Lundberg, sales manager for MacGregor cargo cranes. MacGregor hatches, cellguides and fixed fittings solution combines cargo areas with hydraulic folding hatch covers both on weatherdeck and tween deck with areas of lift-away hatch covers on weatherdeck and cellguides in hold. This arrangement creates unique cargo handling solution by offering versatile cargo stowage options for these ships.

"We have enjoyed a successful working relationship with CNCo over a number of years," says Lundberg. "CNCo pioneered the use of our electric cranes and this new order builds on several new ship series to feature our efficient cargo handling equipment."

CNCo also has a series of twelve 39,500dwt bulk carriers under construction at Chengxi, in China. These vessels will be equipped with 48 electrically-driven bulk versions of MacGregor VFD cranes.

In 2011, Cargotec received orders from CNCo for electric cranes, hatch covers, cellguides and fixed fittings for eight multi-purpose (S31 Class) 31,000dwt vessels currently being built at Zhejiang Ouhua Shipbuilding, scheduled for delivery by August 2013.

Shanghai Janus Grab Co., Ltd's remote control grabs prove to be popular

Shanghai Janus Grab Co., Ltd (Janus Grab) is a high-tech enterprise, engaging in design, R&D, and the manufacture of different kinds of grabs. Janus Grab has highly-educated professionals in such areas as steel structure, hydraulic, and electrical, with more than ten years — or even decades — of experience in grab design and manufacturing.

In order to keep the products' competitiveness, Janus Grab continuously improves and optimizes its products by cooperating with such well-known universities in China as Tongji University and Shanghai Maritime University.

The grabs Janus Grab has developed have five series with more than 60 types, which have reached the advanced international level, and have a leading position in China. Janus Grab's grabs are available in such places as domestic and foreign ports, vessels, thermal power plants, steel mills, and environmentally friendly garbage burning plants, covering more than ten industries including railway, chemical industry, cement, paper industry, and dredging. To date, Janus Grab has won customers in many countries and regions, such as United States, Japan, Russia, Singapore, Indonesia, Greece, Mexico, Venezuela, Brazil, Chile, Australia, and Hong Kong.

Recent grab deliveries

4 PCS REMOTE-CONTROL GRABS WERE DELIVERED TO BULK VESSEL IN TANGSHAN PORT

16 April, 2013: four remote-control grabs were delivered to bulk vessel in Tangshan port by a Greek ship company.

4 PCS REMOTE-CONTROL LEAK-PROOF GRABS ARE WORKING AT A MEXICAN PORT

25 May, 2013: four remote-control leak-proof grabs are working at a port in Mexico.

4 PCS REMOTE-CONTROL GRABS WERE DELIVERED TO BULK VESSEL IN SINGAPORE PORT

10 June 2013: four remote-control grabs were delivered to a bulk vessel in Singapore port.

Ocean voyages

Remote control grabs

Janus's remote-control grab is an efficient tool for loading and unloading bulk cargo. The grab can close by lifting up the hook of crane and open by remote control in the air without any additional power. The hydraulic and electric parts use the plug-in modular design, are easily maintained and repaired, and are suitable for ship ocean voyages. The electrical system and hydraulic system have a water proof design, which protects from waves and rain.

Each bulk grab is tested strictly by immersing it into water for 24 hours. The grab uses less energy; a full battery can be used for more than 80 hours. Easy operation, the crane does not need any other auxiliary equipment.

The remote-controlled grabs are widely used in bulk vessels, ports, and are exported in batches.

Motor-hydraulic bulk grab

Motor-hydraulic bulk grabs have hydraulic power and control systems, the hydraulic power systems are imported from Europe and the USA. These grabs use constant output pumps and servo systems. The flow of the pump can change by itself according to working pressure. When the pressure reaches the max pressure, the flow is almost zero, so it can reduce the overflow, and reduce the temperature rise of oil. The cable rollers are an improved design, the temperature rise of rotating parts will be no higher than 35°C when it is on full load working, which ensures the grab can work continually.

Touch-down grabs

Touch-down grabs are single rope grabs, so must be put on the ground, cargo or hopper when opened. After the crane lifts up, the grab will open by itself. The grab has buffers, which can reduce the impact when it opens.

The opening and closing system is simple, so it has low fault rate.

Hand-pull grab

To open the hand-pull grab, the towing string need to be pulled, then the grab can open in air. The grab has buffers, which can reduce the impact when it opens. The towing string can be pulled to an 180° angle, and the string won't touch the holding steel ropes.

Continual research and development

Janus is committed to the research and development of various kinds of high-tech grabs, mainly for export, including the wireless remote control grab, the motor-hydraulic grab, and the large dredging grab. Among these, the wireless remote control grab is the most popular grab for vessels, for its brilliant performance of uninterrupted work of 24 hours, and for its simple structure and low failure rate. The wireless remote control grab has reached an advanced domestic and international level, and has earned praise from many users, much favoured by overseas users. Through continuous improvement of the hydraulic system and the cable reel system of its motor-hydraulic grabs, Janus has effectively controlled the oil temperature and the roll, and therefore has ensured the grab of uninterrupted work of 24 hours.

The grabs Janus has developed have stable and reliable performance, and have passed the accreditation from such certification bodies as CCS, NK, BV, LS, SGS.

Mack thinks big to keep pace with ship's gear

Mack Manufacturing's focus on building buckets to match the higher-capacity cranes of today's ships has not only turned heads up and down America's waterways, but the world at large.

The company was among those recently recognized by Alabama Gov. Robert Bentley for excellence in international trade. "These companies are taking advantage of the tools available to them to serve customers all over the world," Gov. Bentley said of the eight Governor's Trade Excellence Award recipients. "The Export Alabama Alliance is connecting Alabama companies with exciting new opportunities, and that's good business for this state."

A family-owned and operated company founded in northern Minnesota in 1942, Mack began as a welding company to support the forestry and mining industries, but quickly reinvented itself as a crane attachment manufacturer specializing in material handling. Today, this focus is highlighted by Mack's expanding range of clamshell buckets and grabs for the stevedoring industry, particularly well serviced from the company's current base on Alabama's Gulf Coast. Of Mack's annual sales, roughly 15% can be attributed to direct exports.

"The 25-yard buckets used to be the largest size we produced for these applications," says Matt Davidson, Vice President of Sales & Marketing, "but we'll build them as big as our customers need. We have been receiving orders recently for ship-mounted cranes rated up to as much as 30 and 35 tonnes." The company recently commissioned a 40yd^3 bucket, painted in the crimson red of the NCAA National Champion University of Alabama Football Team.

Whereas smaller 'touch & go' buckets were once more common in use with ship cranes, Mack has found most shipbuilders and stevedoring firms today wish to adopt the company's single-line buckets. Gaining in particular popularity are Mack's self-contained, diesel-powered grapples and buckets with remote controls, an innovative market introduction which allow customers to handle materials with higher densities such as pig iron and HBI. "However, they still offer the simplicity and versatility you want on a ship's crane, compared to the electrically-powered units used by port facilities," says Davidson.

Mack also has a full range of medium-duty buckets recommended for off-loading bulk materials up to 100 lbs./ft^3, as well as light-duty buckets offering weight savings and lower costs for moving grains and similar materials under 60 lbs./ft^3.

With more than 30 years' experience supplying equipment for ships and ports, Mack works with customers to help them assess the optimum bucket size and type to match the equipment and cargoes they require. "Our goal is to move the maximum amount of material over the longest possible lifecycle," says Davidson. "That's how our customers get the best value from our products."

About Mack Manufacturing

Mack Manufacturing is a global leader in industrial material handling attachments, specializing in heavy-duty hydraulic grapples and buckets for overhead cranes and mobile equipment. Established in 1942, Mack continues to operate as a family-owned business committed to the development of highly-skilled welders, fabricators and support staff. Mack's head office facility in Theodore, Alabama, is fully equipped to complete every step of attachment manufacturing and remanufacturing tasks under one roof, from engineering to precision machining to final finish.

Buttimer and MTMG: design of soybean meal import terminal has commenced

On 18 July, Buttimer signed a contract with MTMG (Morski Terminal Masowy Gdynia Sp z o.o.), part of the ATIC Services Group, at a meeting in Gdynia, Poland. The contract was awarded to Buttimer, a materials handling engineering company, for the provision of a turnkey soybean meal handling import terminal, at the Port of Gdynia. The terminal will include Panamax vessel unloading, conveying, storage and dust-free out-loading to trucks.

The bulk terminal will provide first class materials handling services for the clients of MTMG. The awarding of the contract follows the successful delivery of a similar bulk handling terminal by Buttimer in 2012, at the port of Swinoujscie, for Bunge Poland.

Buttimer Group is a mechanical engineering company, with expertise in the design and installation of material handling systems for dry bulk products. The company provides mechanical handling solutions for sectors such as ports, food and beverage, mining and power generation. The group includes Buttimer Ireland, Buttimer Poland and Buttimer Bulk Engineering, which works on materials handling projects internationally.

Big decline in granite exports from Chennai

In 2012/13, the volume of export granite blocks at the port of Chennai dropped by nearly 50%. This was down to restrictions on the movement of granite blocks during the day, traffic congestion and the refusal to allow trucks carrying granite direct entry into the port.

In total, Chennai handled around 603,000 tonnes of granite as opposed to 1.198 million tonnes the previous year. In contrast, Krishnapatnam increased its traffic in this commodity from 670,000 tonnes to 990,000 tonnes.

Exporters are now seeking to use rail to transport blocks directly into the port, thereby avoiding having to use temporary warehouses in the city's suburbs. The port is sympathetic to this request and has identified a location on Jawahar Dock to build the relevant siding. *Barry Cross*

New iron ore project at Qingdao

A joint venture agreement has been signed in respect of a new iron ore terminal project at the Port of Dongjiakou in Qingdao, China. This encompasses the Qingdao municipal government, Cosco Pacific (25%), Tsingtao Port Group (30%), China Merchants Holding (25%) around the IMC group (20%). The terminal has two berths: one for vessels of 300,000dwt and one for vessels of 200,000dwt. Investment will be $619 million. *BC*

BCT reports traffic of 2.6mt

Baltic Coal Terminal, which is located at the port of Ventspils, in Latvia, handled 2.6mt (million tonnes) of coal in the first five months of the year, with volumes down 6.1% in the month of May, when 177,224 tonnes was handled.

The port mainly handles export coal from the Zarechnaya mine in Russia. In 2012, a total of 4.79mt of coal passed through the port, mostly en route to the UK, Germany and Poland. It has covered warehousing for 210,000 tonnes of coal.

Zeeland Seaports posts good throughput figures for first half year

Following a fall in maritime transshipment in the first quarter of 2013 (–3.3%), the Zeeland ports have ended the second quarter well up. The first half year therefore showed a positive trend. Imports and exports rose during these six months by 1.8% (+/- 290,000 tonnes) compared with the first half year of 2012.

In the first six months of 2013, there was a 2.8% increase in the volume of goods imported whilst exports fell by 0.8%. Total goods imported and exported was 16,805,035 tonnes.

Dry bulk throughput was up 1.5% compared with the first six months of 2012. Growth can be seen in agricultural products (4.3%), but the most marked increase was in the transhipment of raw minerals and building materials (64.4%). As in the first quarter, there was a fall in solid fuel throughput, mainly coal (–6.2%). There was also a decrease in the transshipment of fertilizers (–11.8%). The bankruptcy of Thermphos partly explains this decrease.

There was a decline in the handling of RoRo (–9.8%) and containers (–7.5%) in particular, and general cargo to a lesser degree (–1%). RoRo and containers are relatively modest sectors for the Zeeland ports, so these decreases have only a limited impact on total maritime transhipment volumes.

Economic conditions are still unfavourable and this is also affecting Zeeland Seaports and its clients. Despite this, Zeeland Seaports expects to equal its 2012 figures for maritime transshipment volumes, thanks to an active acquisitions policy and because a number of businesses in the Zeeland ports are expanding substantially despite the unfavourable economic situation.

Zeeland Seaports is, as Zeeland port authority, responsible for developing, managing, maintaining and operating the ports of Vlissingen and Terneuzen. The port area is located strategically at the mouth of the Western Scheldt and differentiates itself by the rapid access for shipping and the good, congestion-free connections with the European hinterland. Due to this strategic location, the Zeeland ports have been able to develop during the past 40 years into the third-largest seaport in the Netherlands.

Rail link for Abbot Point to stretch 300km

Adani Ports is to build a 300km-long railway from a new coal mine at Carmichael to the port of Abbot Point, in Australia. Originally, the company planned to build a spur from the existing rail network at Moranbah, but the new plans suggest that the branch line will commence around 100km west of this population centre, at Mistake Creek. *BC*

EMO – 40 years fully equipped to meet your expectations

Please visit emo.nl to monitor our progress.

LOOK TO THE FUTURE AND PLAN AHEAD

Since 1973, the EMO terminal in the Rotterdam port has been a major hub in transporting coal and iron ore from all over the world to the European hinterland. EMO has always been a reliable partner for its customers in helping to control these flows of goods by combining daily processes with a clear vision for the future.

EMO is able to accommodate the world's largest dry bulk vessels, and yet we never cease to look to the future and plan ahead – now more than ever! In 2012, we have strongly increased our storage and transhipment capacity and efficiency by commissioning five new, state-of-the-art projects: the seventh stacker reclaimer, the fifth unloader, the second fully automated coal wagon loader, a brand-new sea-going vessel loader along an innovative, new quay, and a high-tech operations centre. These projects ensure that we are fully equipped to enhance our safety, efficiency and sustainability performance, and to continue to serve you as a reliable partner in dry bulk transhipment in the coming decades.

EMO

energising your business

Bulk Terminal Amsterdam

Your partner for dry bulk cargoes into the main European Markets

- **Main Terminal:** quay length 1 .2 km with two berths/separate belt system for simultaneous discharge of two large coal vessels (up to Capesize) at a high capacity to the various stacking installations (3250 and 3850tph)
- **Terminal North:** quay length 350 meters / one berth for up to Capesize vessels
- Max vessel size: 1 7.80 meters draft swek, max beam 45 meters
- 4 gantry cranes (1 x 60 tons/1 x 50 tons/2 x 30 tons)
- Floating crane (50 tons)
- Coal storage capacity 3mio tons on 650,000m²
- Railcar loading facility; 25,000 tpd
- Two large ship (spout)loaders: 60,000 tpd at the Sonthaven for (push)barge combinations and seagoing vessels.
- Grab loading into barge/seagoing vessel at Main Terminal and Terminal North
- In ttl 9 heavy duty magnetic separators installed in all inward and outward bound conveyor belt routes, including the railcar loader. Board/board into barge barge/coaster also possible via the magnetic separators.
- Homogenising of various grades of coal whilst loading via the conveyor belt incl. weight assessment per quality
- Screening/crushing/mixing
- Covered storage capacity at Main Terminal in 5 sheds directly under reach of the grabs; ttl. 25,000m² for biomass, agribulk and minerals.

OBA Bulk Terminal Amsterdam

Westhavenweg 70, 1042 AL Amsterdam,
Managing Director: Hans Fylstra (hans.fylstra@oba-bulk.nl) +31 20 5873701
Manager Commercial Department: Hans Mattheyer; (hans.mattheyer@oba-bulk.nl) +31 20 5873750
Website: www.oba-bulk.nl

New fertilizer terminal for Ust-Luga in Russia

The ICT group is to build a general cargo and fertilizer terminal at the Russian Baltic port of Ust-Luga. It will be capable of handling 4mt (million tonnes) annually and should come to operation in 2016. The terminal will be linked to an adjacent carbamide plant along a dedicated corridor. The plant will produce synthetic ammonia and urea, having respective annual capacity of 350,000 tonnes and 1.2mt per annum.

BC

Entre Rios keeps port activities in the state

In the Argentinian province of Entre Rios, three ports have been working to move local produce, thereby ensuring that the state benefits from major investment it is made in its maritime infrastructure.

From Concepción del Uruguay, vessels follow the Uruguay River laden with consignments of up to 15,000 tonnes of bagged rice. At La Paz Marquez, barges use the same river to move soya bound for San Lorenzo. As for Diamante, this also handles consignments of around 30,000 tonnes of soya for Chinese importers.

The ability to use ports within the state has been helped by dredging of the River Uruguay to a depth of 23 feet, with the aim to eventually improve this to 25 feet. At the same time, the draught has been deepened at the port of Diamante and investment made in handling facilities at La Paz Márquez.

Uruguay River.

BC

stevedoring & warehousing rotterdam

- PROJECT CARGO
- INDUSTRIAL BREAKBULK
- 730 METRES QUAY LENGTH
- HEAVY LIFT STORAGE AREA
- HEAVY LIFT UP TO 1500 TONS

Lifting your cargoes faster

ISPS CERTIFIED

AEO-F CERTIFIED

shorecranes up to 208 tons

rhb
ROTTERDAM

Waalhaven n.z. 4
3087 BL Rotterdam
P.O. Box 55092
3008 EB Rotterdam
Portnumber 2157

TELEPHONE
+31 (0)10 429 94 33

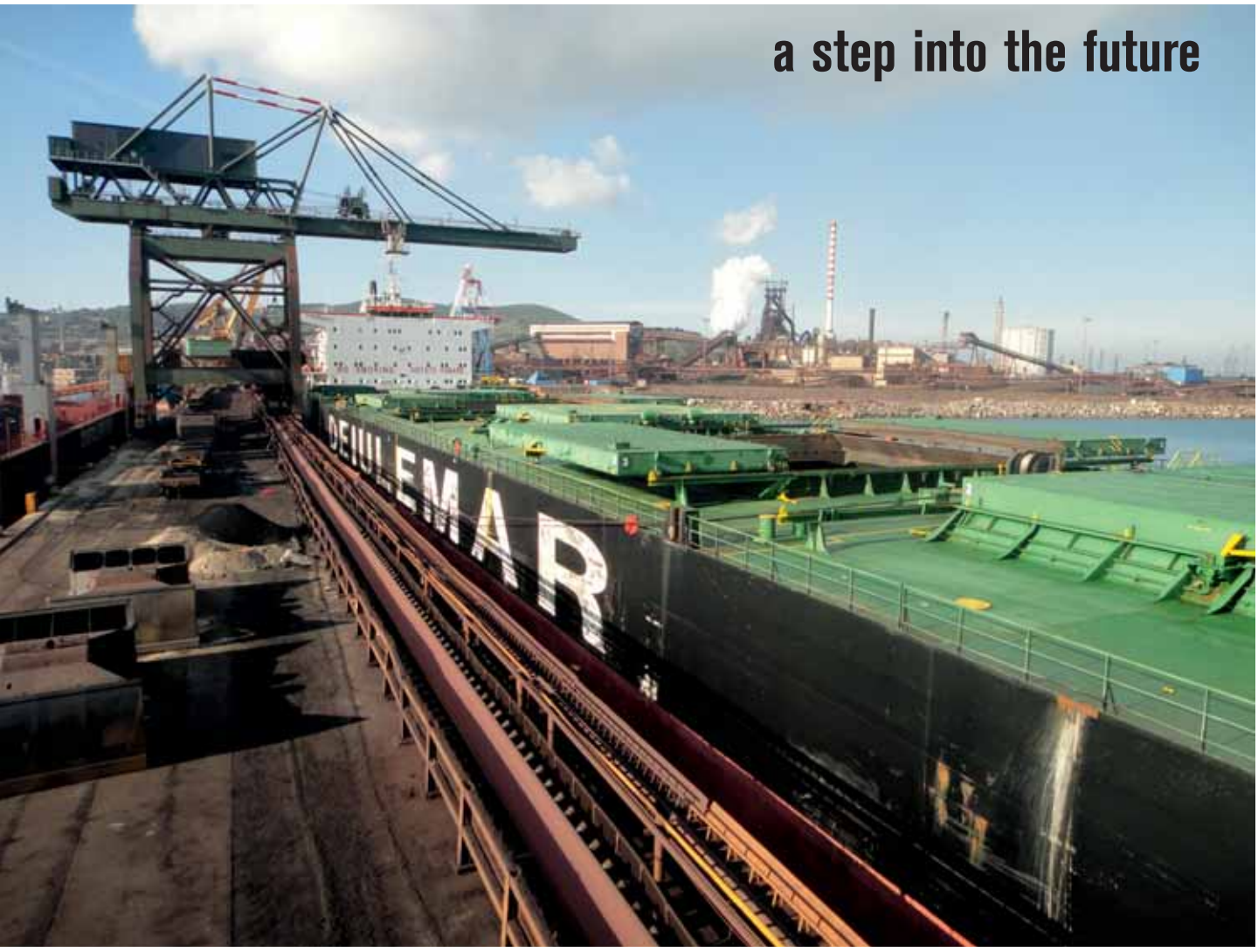
FAX
+31 (0)10 429 02 61

E-MAIL
office@rhb.nl

WEB
www.rhb.nl

The Port of Piombino

a step into the future



The port of Piombino is centrally located on Italy's Tuscan coast.

In 2012 more than three million passengers and over 900,000 vehicles passed through the port. In the same period, around 6mt (million tonnes) of goods were handled, of which 75% was made up of solid bulk cargoes from more than 500 bulk vessels.

Historically the port is linked to commercial and industrial traffic, characterized, although not solely, by solid bulk cargo and half-worked and other products from the steel industries.

Piombino is, in fact, an important industrial production area where the principal companies present belong to some of the most important multinational groups in the world.

Amongst these are:

- **Lucchini spa**: the largest steelworks producing long products (bars, rods, billets, rails), and the second largest in Italy after Taranto;
- **La Magona d'Italia spa**: Arcelor/Mittal group, the leading steel producer in the world. The factory produces flat galvanized and painted laminates;
- **Tenaris Dalmine**: Techint group, the factory specializes in producing pipes for thermo-sanitary plant; and
- in the hinterland of Piombino there are chemical factories of great importance, such as **Sol Industrie**, **Nuova Solmine** and **Tioxide**.

The port is engaged in industrial and commercial traffic with all the countries of the Mediterranean, Equatorial Africa, the Middle East and China, and North and South America, along with specialized ro-ro to and from Sardinia and passenger traffic with Elba and Sardinia.

The port has all the equipment necessary for handling all types of solid bulk cargo, notably:

- 2 × 25 ton overhead cranes;
- 5 × self-propelled cranes of 150-, 70-, 60-, 50- and 30-tonne capacity;
- 3 × derricks with 16- to 30-tonne capacity;
- 1 × 8-tonne swinging jib crane; and
- 1 × solid bulk cargo loader/unloader with 45-tonne capacity along with numerous other machinery.

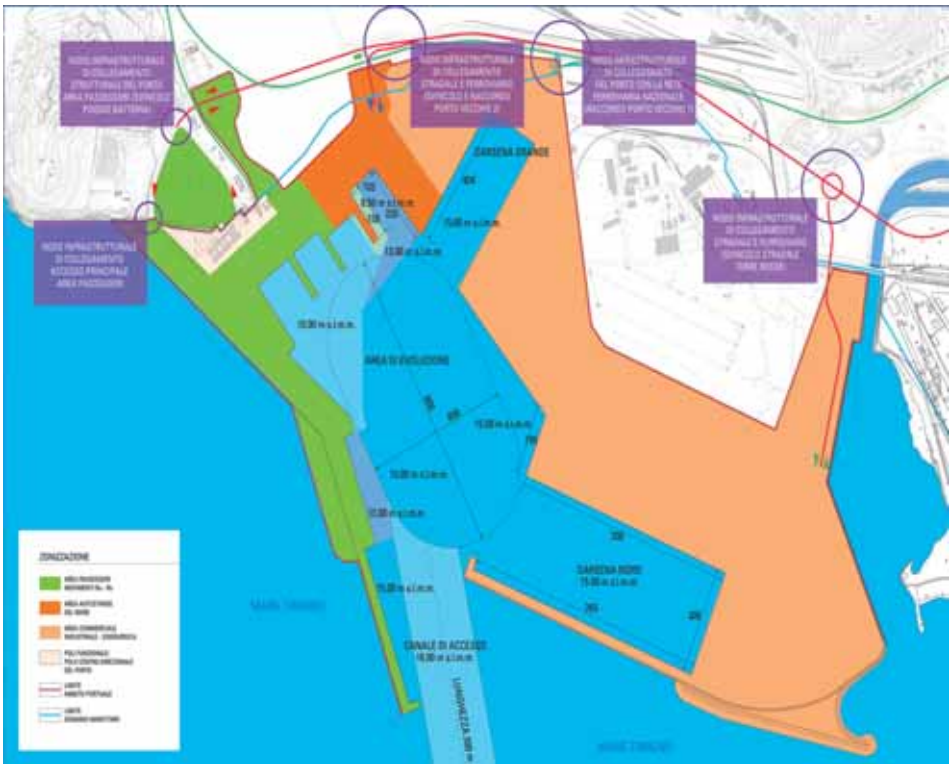
There is a variety of covered warehousing available in the port suitable for the storage of bulk goods. Also, some one and a half kilometres from the wharves, there is a dry port area of a total of 300,000 square metres connected to the road network, which remains to be equipped.

The new Port Regulatory Plan allows for development of the port, and this plan has recently been approved. This will result in a significant increase of available infrastructure.

The plan also covers access to the port, with adequate rail services and fundamental work to prolong the SS 398 dual carriageway into the port.

Opportunities exist for transport, logistics and terminal companies interested in developing their own terminal to be used for their activities, along with the possibility of setting up industrial and handling activities in the port and dry port areas.

There are also opportunities for companies working in the steel sector that are interested — either alone or in partnership with other companies in the area — in integrating or acquiring market share at European level, seeing Piombino as a hub for finished product and semi-worked product. It is also an ideal hub for others that intend to transform imported semi-worked product into finished articles, making use of the professional skills of working people with a long industrial tradition behind them.



Long-term concession/availability of the newly-constructed port structures will be offered, by way of administrative and financial evaluation, to those business operators (terminal operators, transport and logistics companies, steelworking and general industrial firms) who have undertaken entrepreneurial projects or participated in the project financing of the port structures as an integration to the available public finance. DCi

PLANNED INFRASTRUCTURE IMPROVEMENTS

	Current situation	New PRP
Length of wharves	2,300 Metres	5,750 Metres.
Port area	300,000m²	1,090,000m²
Depth	8–13m	13–20m

Jay Venter

ling Inspection, ar ction, analysis & s is & sampling Insp

Continual development drives successful growth for Inspectorate

This year Inspectorate, a Bureau Veritas company, has continued to build on its success and invest in the future. It has committed significant capital expenditure to reinforce its services to the dry cargo market, developing new laboratory facilities and innovative services, throughout its global network.

Richard Downs, Vice-President of Metals & Minerals Trade said "We are firmly committed to the continuous development and improvement of our business. Our global network and the nature of our client base gives us great confidence in making these investments."

Nowhere is this clearer than in the dry cargo market where Inspectorate has increased its capacity and geographic spread. An example of this is testing for Transportable Moisture Limit (TML). Inspectorate has developed its own internal accreditation system for TML testing and now offers the service in Indonesia, Spain, India, Peru, Estonia, the United States and Taiwan.

Recent developments in TML testing have included New Orleans offering the penetration test while Estonia has also added the Proctor Fagerberg test to its capabilities.

In other global developments Inspectorate is providing inspection and testing services to non-ferrous concentrate blending operations world-wide. Much of this work is based in Asia, where feed is tailor-made for the regional markets. This activity is expanding and Inspectorate is ideally placed to offer testing and inspection services throughout the mining to end-user supply chain.

In addition to expanding its port facilities Inspectorate Metals & Minerals is also making a significant investment in a new hub laboratory in Shanghai for the Asian region.

Due to come on line during Q3 2013, and based in the Baoshan district of Shanghai, the new 1,500m^2, state-of-the-art laboratory, will offer clients international standard assaying services.

The focus will be on high precision, commercial settlement assaying of iron, chrome, manganese and nickel ores, ferroalloys, non-ferrous concentrates and PGM bearing catalysts. Procedures will include 'wet classical' methods, aligned to national and international standards, complemented by instrumental procedures including Inductively Coupled Plasma (ICP) and X-Ray Fluorescence (XRF). There will also be a fully functional fire assay capability.

Davy Yuan the Inspectorate's manager in China said: "Inspectorate operates out of our main office in Shanghai, with regional offices in Tianjin and Guangzhou. From these bases (and our local branches) we cover all the coastal and inland ports throughout China. We have an absolute commitment to the Chinese metals and minerals industry to provide a comprehensive inspection service and we are very pleased to add a world class analytical laboratory to our offering."

Emphasizing the breadth of its commitment to developing new services for industry Inspectorate has been active in new fields such as electronic scrap testing. This is a rapidly growing market, as environmental legislation and metal prices drive the increase in collection and processing of secondary materials. Inspectorate has recently expanded its purpose built facility at its UK laboratory to cope with the increase in demand for this service.

Inspectorate's laboratory network has grown rapidly over recent years and maintained its reputation for integrity, quality, service and reliability. Continual improvement principles have provided the foundation for this success and will continue to drive the growth of its services in the future.

Sampling based on modern sampling theory

Alex Stewart International employs more than 1,200 people in over 45 countries and operates 17 laboratories, write *Mr. Graham Stewart and Mr. Kozo Matsumoto, Alex Stewart International Corporation*. Alex Stewart International provides its customers with independent verification of the quantity and quality of bulk commodity shipments, as well as geochemical analysis of mining samples for exploration projects. Core business services are for large international commodity trading companies within the agriculture, metals and mineral and oils and petroleum industries.

As a service company, one of Alex Stewart International's core business areas is the supervision of weighing and sampling of base-metal concentrates, where we consider it most important to rely on modern sampling theory, not on rule-of-thumb.

Total sampling variance is defined as:

- Primary variance of primary increments divided by the number of primary increments;
- + sample preparation variance + analytical variance divided by the number of replicate analyses.

In order to design any sampling scheme, first it is important to decide the target value of the total sampling variance.

Then a decision must be made on: primary variance of primary increments; sample preparation variance; and analysis variance.

Here, in fact in modern theory, there are two schools of thought;

- P. Gy's theory using the concept of variogram; and
- traditional theory stemmed from some of JIS standards.

Traditional sampling theory is based on the assumptions that each sampling point is statistically independent of all others and that analysis results at each point are subject to a normal standard distribution.

If this is not deemed to be the case, then it is better to follow Gy's theory.

Following Gy's theory, the required number of sample increments for each lot tends to be much less than the one established by traditional theory. However, at Alex Stewart International, it is believed that the truth lies in-between both theories and that considerable experience in actual shipments is vital.

Also, in actual shipments, correct determination of moisture content of any bulk cargo is extremely important. This point would seem self-evident, but in reality, contrary to expectation, it is rarely carried out at the loading point. Alex Stewart has considerable experience in this throughout the world.

Lastly, it should be emphasized that normally taking many samples will not resolve any sampling issues. Too many samples can create other serious difficulties in sample reduction. This issue will also have to be resolved based on theory and experience.

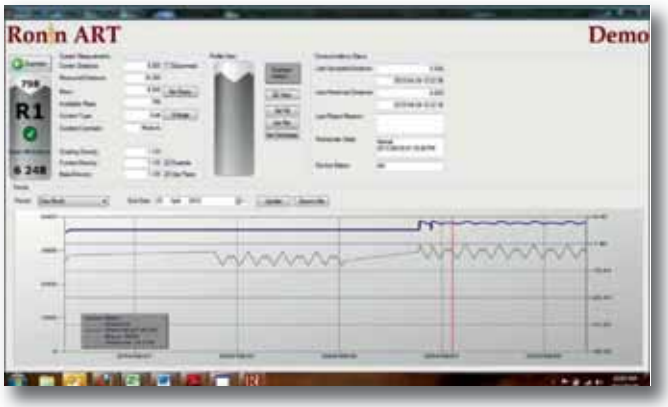
A new era of control with Ronin

Ronin's Art Software literally places the control at your fingertips.

Dry bulk commodities are notoriously difficult to quantify and then balance to book values on a weekly basis. It is a seemingly impossible task on a daily basis. With commodity prices continually on the rise, this level of control is no longer optional, especially so with high-value bulks such as minerals. Ronin has been designing, developing and manufacturing bulk inventory and risk management solutions for the past decade and it is uniquely positioned to provide solutions that will literally place that level of control over hard and soft bulk commodities right at its clients' fingertips.

Ronin provides bulk commodity inventory management solutions in Southern Africa, South America and the Middle East via subsidiary companies and appointed distributors. Currently the company has four subsidiary companies and approximately 40 appointed distributors. Ronin is experienced in all of the major mineral, metals and grain types as well as sugar and fertilizer. Additionally Ronin provides systems and services for silo bins, both flat and vertical stores as well as domes and open air stockpiles. The company's head office is in Johannesburg, where it maintains a 1,000m^2 facility inclusive of a machine shop and laboratory. Additionally it maintains offices in Buenos Aires, Cape Town and Richards Bay.

Ronin's proprietary ART software lies at the heart of its bulk inventory management solutions. It is this versatile software platform that provides the functionality required to assist with finance, collateral management, logistics, marketing and production. ART collects data from various inputs and then reflects site summaries, occupied and available tonnages, communication statuses, grades, 3D graphic representations and



histories. A dedicated ART computer integrated into a network also further enables the remote sourcing of up-to-date knowledge of stock locations, quantities, grades, sizing and histories at all times. Collected data is also readily available on excel spread sheets or via any other CSV files. Further

integration of Ronin's analytical solutions enables the ART software to also attribute weighted averages of bulk densities, moistures, sizing, calorific values or any other grading the client would like to utilize, to be applied every stockpile, dome, bunker or silo on the network. This enables current and weighted averaged grading/sampling data to be utilized and applied, providing greater accuracies of tonnages and grading figures. Ronin can provide the effective integration of systems that will enable daily reconciliations to be done between the book value and actual physical stock. Ronin also offers a moment-in-time solution with its AIMS survey service which is currently effectively utilized for stock verification purposes.

The company is also quite proud of the latest development at Ronin; the roll-out of its Artemis Enhanced Multi-Axis Architecture. Artemis is a 3D surface scanner that is able to source highly accurate 3D scans of large surface areas. By integrating the Jenoptic LDM-302 into this architecture the scanner can now source data points over much longer distances (up to but not limited to 300m) meaning that fewer units are required. The speed at which the LDM-302 laser accomplishes this task results in significantly shorter scanning cycles. Another benefit offered by the LDM-302 is that the Artemis Enhanced is capable of scanning during daylight hours. This is no small feat for a non-reflective, non-contact laser scanner.

A further tier of control is also available in the guise of Ronin's on-board weighing solutions. These further assist with stock handling and management on the logistics side of bulk commodity handling. These systems measure hydraulic pressure and converts the result into tonnages. Ronin's Loadmaster 9000i is trade approved in all EU countries and many other countries worldwide. Effectively eliminate unnecessary trips back and forth from the weighbridge and avoid overloading. Most of the units come with functionalities such as an internal databases for product and/or customer information, batch weighing capabilities, target weights, overload logging as well as tracking and telemetry. Ronin offers on-board weighing solutions for forklifts, tele-handlers, on- and off-road trucks and front-end loaders.

Real-time measurement of conveyed bulk materials for advanced process control

How does your operating strategy change when competition increases and commodity prices come under pressure?
How do you extract extra value from your process plant without major investment?
Did you know you could save millions of dollars per year with an ROI measured in weeks?

Measuring conveyed flows continuously, and using minute-by-minute results to make real time changes can improve many aspects of your plant's operation. Any processing operation using ore or concentrates as a feedstock needs to measure in order to control. Improved process control can provide major benefits such as: processing less waste, producing more consistent quality product, maximizing metal recoveries, generating less tailings and improving productivity. Each of these benefits individually can amount to millions of dollars per year in savings, and more representative reconciliations and metal accounting are other valuable and time saving advantages.

Process plant performance in the coal, cement and minerals sectors has been significantly improved through the application of Scantech's real time, full stream, non contact, multi-element analysers. Particle size and belt speed don't affect the analysis. Grade control need not stop at the haul truck. Analysers on conveyors at the mine (after the crusher) are used to divert increments of undesirable material, be it waste, low grade ore, or high deleterious content so it does not enter the process plant. Think of the savings in grinding costs, power, reagents, etc. Benefits really add up when that waste is replaced by good ore and the plant production increases for the same throughput. Ore of product quality, eg. in iron ore plants, is diverted to bypass the beneficiation plant. One customer consistently achieves over US$6 million per year in beneficiation cost savings alone by doing this and also maximizes plant capacity by only processing what needs to be upgraded.

Analyzers help plants blend ores to ensure consistent feed grade. Reducing ore quality variability can increase metal recoveries by up to 15% in copper operations. Another customer blends copper ores to maximize leach circuit capacity and achieved a payback of less than two months, reducing plant

New metals & minerals laboratory for Alex Stewart International Corporation

Celebrating its 35th Anniversary in 2013, Alex Stewart International announced the expansion of its new metal and mineral laboratory facilities at Sefton Business Park, Liverpool

"We have trebled our capacity and improved performance potential by investing in modern infrastructure, state of the art instrumentation and by recruiting additional experienced chemists." said Mr Alex Stewart, Chief Executive Officer, Alex Stewart International Corporation.

"We will continue to improve on all service aspects and are committed to offer all customers a first class, quality inspection and analytical service."

feed variability. They now use elements that weren't initially of interest (Fe and S) to control the mineralogy blend as well as copper content to further benefit their process.

Analysers can be used on conveyors throughout the plant. Beneficiation circuit feed and product streams, eg on jigs, ensure optimal recovery. Analysers help optimize additive control in cement plants and adjust metal concentrate chemistry pre-smelting or sinter basicity.

Measurement of product flows to stockpiles and load out flows to the train or ship are used to determine real time stock levels (tonnes and grade) and indicate shipment quality compliance with product specification requirements. Where necessary, products can be blended or bulk sorted to improve shipment quality for each customer.

The combination of accurate, continuous microwave moisture measurements with elemental data allows dry weight percent of each element to be reported in real time. Real time analysis allows mines to optimize processing operations. Detailed studies continue to be undertaken to help processing operations identify further improvement opportunities, eg. ore hardness through silica measurement to control grinding circuit feed rate and ore blend.

Scantech's core business is the development, supply and support of on-belt analyzers for the resources sector, world-wide. Scantech first supplied this technology to the coal sector in the early 1980s and has now developed analysers for the cement, minerals, power and steel sectors. More than 1,000 analysers designed and built in Australia have been sold in 55 countries. Customer service and product support is enhanced through remote access capabilities for all current models and experienced staff located in major regional locations. As a specialized supplier Scantech is able to customize analyser solutions, including application specific calibrations and support programs including site training and radiation services.

Scantech is a world leader in on-belt analysers for conveyed bulk materials, particularly in the minerals sector with applications and years of proven operational performance in a wide range of commodities such as iron ore, manganese, copper, zinc-lead and phosphate rock. Use Scantech's experience to your advantage.

Keeping bulk mould-free with Clariant

When transporting dry bulk cargo, moisture is often the enemy. Clariant, a global specialty chemicals company, has developed its Container Dri® II line, to address the issue of losses due to moisture-related issues such as mould. As the transport of dry bulk in containers increases in popularity — either loose or in FIBCs, Clariant's development is ever-more relevant.

- Container Dri® II line offers the broadest configuration choice of container desiccants;
- it fights 'container rain', protecting cargo across variations in humidity and temperature; and
- the patented desiccant formula aggressively absorbs three times its weight in moisture.

As more agricultural products are shipped overseas, patented Container Dri® II container desiccants from Clariant's Functional Minerals Business Unit, can protect valuable goods from the harmful effects of moisture during lengthy travel. The Container Dri II product line features a full array of configurations (bags, strips, poles, packs); a unique formulation that traps moisture in a no-spill gel; and the ability to reduce the dew point to avoid 'container rain'. This solution offers shippers unmatched flexibility, choice and performance.

For example, food shipments are expected to play a leading role in achieving US President Obama's goal of doubling global exports by 2015. Exporters are particularly looking to the Asian marketplace due to its increasingly affluent population that favours Western foods. However, long-distance intermodal shipments face significant challenges from the damaging effects of humidity, including mould, mildew and spoilage. Similarly, non-food shipments can face warpage and corrosion.

Especially as commodity prices increase, it is no longer an option for shippers to discard a portion of their valuable cargo, simply as a cost of doing business. It is important to customers' profitability and market image to avoid losses due to moisture.

Double protection from moisture

Container Dri II desiccants absorb up to three times its weight in moisture and, through an advanced formula, traps it as a thick gel. By aggressively absorbing moisture from the air, this technology reduces the dew point temperature below the surface temperature to prevent condensation from forming. With Container Dri II desiccants, the container's interior — and the cargo — remain dry.

Choice of configuration

Container Dri II container desiccants come in a range of configurations:

- **individual bags:** these 125 gram (g) bags can be spread throughout the container — or railcar — or adhered to slip sheets that can be easily placed atop cargo to evenly distribute absorption and protection.
- **strips:** adhesive strips can be placed inside corrugated grooves of shipping containers, which are especially helpful in extremely tight shipments to avoid contact with cargo or forklifts.
- **poles:** hung from the eye hooks of shipping containers, the 750g or 500g Container Dri II Pole is a rigid version that can be easily installed in a container. It positions the desiccant up high, out of the way of cargo and is optimally placed to capture humidity.
- **Container Dri II Plus:** also positioned high in a container, these large, 1,500g bags require fewer total bags. They are easily installed using the included carabiners that attach to a container's eye hooks.
- **Container Dri II Packs:** configured in a hard shell that can be suspended high in a container.

Clariant's Container Dri® II product line protects goods from moisture and 'container rain' during intermodal transport. (Photo: Clariant)

Typical applications include agricultural products, canned goods, automotive parts, powders, glass and wood.

Clariant is a global specialty chemicals company, based in Muttenz near Basel/Switzerland. On 31 December 2012 the company employed a total workforce of 21,202. In the financial year 2012, Clariant recorded sales of CHF 6.038 billion for its continuing businesses. The company reports in four business areas: Care Chemicals, Catalysis & Energy, Natural Resources, Plastics & Coatings. Clariant's corporate strategy is based on four pillars: managing businesses for profitability, research & development and innovation, growth in emerging markets, and repositioning of the portfolio.

The Expert for Loading systems

Material Handling Company

Loading systems
Level measuring instruments
Palletizers
Warehouse systems
Filling systems
Conveyor systems
Shiploader

SMB Group
best solution

SMB International GmbH
Friedrich-List-Str. 3-7 · D-25451 Quickborn
Phone +49 (0)4106/123 88-0
info@smb-group.de · www.smb-group.de

AUMUND India rebuilds the world's

Despite years of reliable service the 170m elevator installed at the Himachal Pradesh plant of Ambuja Cement in India finally succumbed to the stress of continuous operation, writes *N. Muthuswami, AUMUND Group*.

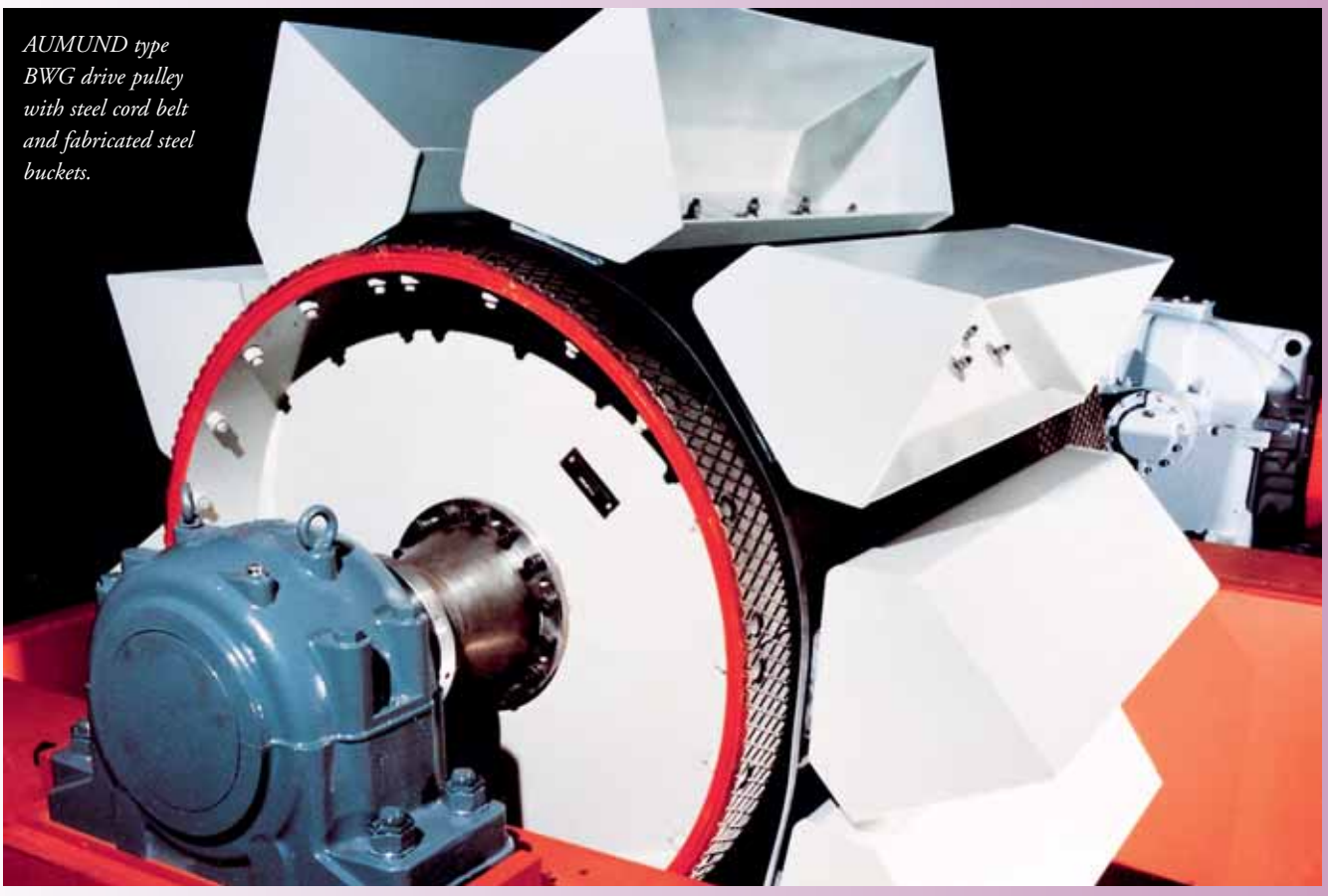
The elevator, installed in one of the largest and most modern cement works in India, worked 24/7, raising raw meal to the pre-heater tower at a continuous rate of 650tph (tonnes per hour).

Whilst the machine remained in service, a detailed inspection revealed a replacement belt would soon be required and the company decided to invite bids for the supply and supervision of installation of the necessary components on a scheduled preventative maintenance basis. At 170 metres centre distance, this is the highest belt bucket elevator installed in the world today and as such only a very few companies had the expertise to deliver a competent replacement service.

Originally, the machine was fitted with a steel cord belt of width 1,450mm and tension rating of 3,500N/mm. After passing the application data through their sophisticated computerized selection programme, AUMUND decided to offer an alternative based on its own design concept resulting in a belt width of 1,050mm and with a bucket size of 1,000mm at 430mm pitch.

The AUMUND belt concept is very different in that continuous close pitch longitudinal ropes are employed, without rope free bucket mounting spaces, with additional wire ropes running laterally across the width of the belt adding considerable lateral stiffness without significantly changing the belt longitudinal flexibility. This cross-stabilized construction gives improved stability to the belt with improved bucket fixing, the Achilles Heel of every bucket elevator and probably the most common cause of elevator failure, plus improved directional stability, and better tracking.

Typical AUMUND belt bucket elevator (ACC Gagal) raising raw meal to blending silo and pre-heater tower.



AUMUND type BWG drive pulley with steel cord belt and fabricated steel buckets.

highest bucket elevator

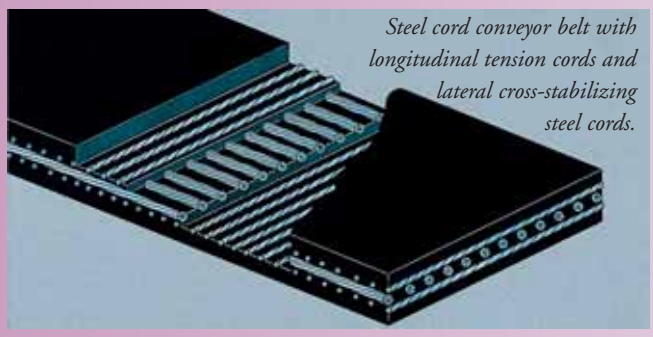
Using continuous wire ropes at close pitch both longitudinally and horizontally without rope free spaces gives maximum strength and stability but does require the bucket fixing is punched through the belt, steel ropes and all… Of course this is taken into account with the tension calculation and the ruptured ropes are ignored in the full belt width tension rating.

To make the necessary belt punching, AUMUND has developed a special punching machine design which gives clean fixing holes accurately aligned relative to the belt edge and at precisely the correct pitch. The belt is held in a cassette and advanced automatically under the punching frame using a precision encoder to measure the pitch. The belts are prepared at the AUMUND works in Germany and shipped to site at the exact required dimensions including a prepared joint and the required clamping strips.

AUMUND automated precision belt punching machine for all belt types including reel-in and reel-out belt cassettes.

In addition to the new belt the elevator will be fitted with new drive pulley including friction linings and rubber bucket mounting strips all to be supplied locally. The casings, inlet and outlet plus the complete drive unit will remain unchanged.

This is an excellent example of the AUMUND rebuild and refurbishment service offered across the equipment range including belt and chain elevators, pan and bucket conveyors plus plate feeders. A refurbished machine can be supplied with all new moving parts by AUMUND retaining often only the structural elements resulting in a substantially new machine with typically a 30% cost reduction compared to outright replacement. With minimum changes to the structural parts and chute works installation time is significantly reduced and machines may generally be upgraded to the AUMUND standard during a scheduled outage. Of course once upgraded in this way the client can expect the usual AUMUND dependability and access to service support and genuine AUMUND spare parts. Not only can existing life expired machines be upgraded in this way often at the same time AUMUND can wring additional performance opening the possibility of plant capacity improvement with minimum new investment.



Steel cord conveyor belt with longitudinal tension cords and lateral cross-stabilizing steel cords.

AUMUND elevator belt joint clamping plates during installation with wire rope belt.

SCHADE portal scraper for Tatarstan

In September 2014 SCHADE Lagertechnik GmbH, Herne, will for the first time supply a portal scraper for urea fertilizer with a span of 54m and a capacity of 300tph (tonnes per hour) to the Republic of Tatarstan. A decisive factor for the award of the contract was SCHADE's reputation in the fertilizer industry in Turkmenistan, Saudi Arabia and Egypt.

Two Japanese contractual partners and a Chinese contractor received the order from the Joint Stock Company Ammonia, Republic of Tatarstan to build the fertilizer plant. Just the award of the contract for the portal scraper was separately put out to tender based on the customer's wish and not incorporated into the overall package.

The new fertilizer plant will be erected in Tatarstan near Mendelejewsk, around 1,000km east of Moscow. It will be one of the largest plants in the world capable of simultaneously extracting ammonia and methanol from natural gas: 2,050tpd (tonnes per day) of ammonia or 1,382tpd ammonia and 668tpd of methanol. The process technology originates from Denmark and the Netherlands. Commissioning of the plant is scheduled for 2015.

Ammonia is a state-run enterprise which was jointly founded in 2006 by the Tatar government and the Russian Bank of Development and Foreign Economic Affairs (Vnesheconombank: VEB).

The demand for fertilizers is constantly increasing as a result of the global growth in population. Russia in particular is currently experiencing a rising demand for the replacement of fertilizer plants which were commissioned between 1980 and 1990. SCHADE would now like to expand its presence in the Russian fertilizer plant market.

Acquisition strengthens Cargotec MacGregor portfolio

Cargotec's MacGregor has entered into an agreement to acquire privately owned Hatlapa Group, merchant ship and offshore deck equipment provider, for an enterprise value of €160 million. Hatlapa's main products are a wide range of winches, steering gears, compressors, multi-deck-handler cranes, and other winch related handling equipment. The company's service business includes spare parts, maintenance, refurbishment and training. By acquiring Hatlapa, Cargotec will strengthen MacGregor's portfolio and market position and become a global leader in winches.

Hatlapa was founded in 1919 and is headquartered in Uetersen, Germany. Today, the company has 585 employees of which the majority is located in Germany, Norway and Asia. Its sales are expected to be around €120 million in 2013.

The company has production facilities in Germany and Norway for manufacturing strategically important components and products, but approximately two thirds of the production is outsourced to third parties.

"This acquisition is an important step in executing MacGregor's growth strategy and providing customer-focused solutions in both merchant shipping and offshore segments. The markets are consolidating and MacGregor wants to take an active part in this development. Hatlapa complements MacGregor's present offering and Hatlapa's strong position in winches will make us a leading player in global winch markets. We see a significant growth potential in offshore and are now better equipped to grasp those opportunities. Hatlapa has an excellent management with pioneering attitude similar to MacGregor. Together we make a strong team with good results. Hatlapa also provides excellent opportunities within services," says Mikael Mäkinen, President, MacGregor.

ContiTech purchases Legg Company

ContiTech Conveyor Belt Group, Northeim, is expanding its North American business by acquiring the conveyor belt manufacturer Legg Company Inc. based in Halstead, Kansas. Founded in 1964, the company owns modern production facilities and employs approximately 100 people. Production focuses on conveyor belts for industrial applications — e.g. in cement plants, paper mills, the food processing industry, and storage warehouses — as well as special-purpose belts for agricultural machinery.

"This acquisition means that in the future we will have our own production facilities for agricultural and industrial belts in the USA as well as an established sales network in the USA and Canada," says Hans-Jürgen Duensing, head of the ContiTech Conveyor Belt Group business unit. "This supports our expansion in the NAFTA region and supplements our production site in Mexico."

With this acquisition, ContiTech is widening its product range particularly in the fields of harvesters, straw cutters, silicone belts, flat belts, and — in particular — lightweight belts.

Closing of the transaction took place on 1 July 2013. Both parties agreed not to disclose the purchase price.

Bulk Material Handling Equipment for the Iron Ore Industry

Tenova TAKRAF is a key supplier of individual machines and integrated systems for handling bulk materials in mine stockyards, ports, power stations and metallurgical plants. Each project is approached from the end-user's viewpoint in order to deliver optimized solutions that meet and exceed requirements and expectations.

Complex material handling operations starting from train unloading via stockyard handling and blending to ship loading are handled on the basis of extensive experience and know-how in bulk handling. Stackers, Reclaimers, Stacker/Reclaimers, Scrapers, Ship Loaders and Ship Unloaders are reliably in operation all over the world.

tenova
MINING & MINERALS

TAKRAF

tenova
TAKRAF

Total technology solutions for mining, bulk materials handling and minerals beneficiation.

TAKRAF GmbH
Torgauer Straße 336
04347 Leipzig
Germany
Phone +49 341 2423 500
Fax +49 341 2423 510
takraf.sales@tenova.com
www.takraf.com
www.tenova.com

TENOVA is a worldwide supplier of advanced technologies, products and engineering services for the iron & steel and mining industries.

Caterpillar offers full line of SATCO processing and directional felling heads

Caterpillar Forest Products and SATCO Ltd. have signed an agreement that gives Caterpillar the rights to sell and support SATCO harvesting attachments and parts worldwide. Caterpillar is the exclusive distributor everywhere except Australia, New Zealand and Brazil, where SATCO products will be offered both through SATCO's distributors and select Cat dealers.

Headquartered in New Zealand, SATCO designs and manufactures a wide range of forestry attachments. "With this alliance, we can offer a full line of processing and directional felling heads for our FMs, track feller bunchers and the 501HD harvester," said Mike Duncan, Caterpillar Forest Products industry manager. "Cat dealers will offer a package fully supported by Caterpillar." Products will continue to carry the SATCO brand name.

Built to handle the rugged logging conditions in New Zealand and Australia, the beefy heads are constructed using high-grade materials. Hoses from the carrier to the head are routed through the linkage and are not exposed. This protects the hoses from damage and prevents them from over-bending causing premature failure.

The line includes seven processing heads and two directional felling heads. The processing heads range from a weight of 1,190kg (2,618 lb.) with a maximum cutting diameter of 635mm (25in) to 3,850kg (8,500 lb.) with a cutting diameter of 800mm (32in). The felling heads are continuous rotation with optimal single stem felling ranges of 305–508mm (12–20in) and 457–762mm (18–30in). SATCO also offers debarking configurations for its products, in addition to a specifically designed debarking processor head. All heads are designed to be matched with Cat Forestry Machines (FMs), track feller bunchers and the Cat 501HD harvester.

The computer system in the processing heads is simple and easy to use. Main valves are rated at 420 bar (6,100PSI) and can easily handle carrier pressures. Roller arm pins are 80mm (3+in). The heavy duty 3/4in main saw system features a 45cc saw motor and large diameter bearing for smooth cross cutting and felling of large diameter trees.

The directional felling heads are fully hydraulic with no electronics and have the same structural beefiness of the SATCO processing heads. Both heads can be used for shovel logging. One of the heads, the SAT420, can also be used to load trucks. Simple and strong, these heads are low maintenance and an economical first step up from manual felling.

Caterpillar Forest Products is a major manufacturer and worldwide marketer of timber harvesting, millyard, road-building and land management equipment. Products are marketed under the Cat, Prentice and CTR brand names through a global independent dealer network. The company operates plants in the Americas, Asia and Europe.

Caterpillar Forest Products is a division of Caterpillar Inc., manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives.

The company also is a major services provider through Caterpillar Financial Services, Caterpillar Remanufacturing Services, Caterpillar Logistics Services and Progress Rail Services.

Metso to deliver a complete crushing and screening plant to Colas Centre Ouest in France

Greenfield quarry plant will provide efficient, safe and environmentally friendly solutions for road construction

Metso will supply a complete greenfield quarry plant to the Colas Group in France. The large scale delivery includes primary, secondary and tertiary stations with service maintenance contracts for inspection and extended guarantees. The aggregate produced in the quarry is mainly destined for road construction. The value of the order will not be disclosed.

Metso's solution embraces the customer's high health and safety commitment with low environmental impact compared to less modern quarry plants. The state-of-the-art crushing and screening system incorporates substantial savings in energy, production, transportation and maintenance costs with safe and environmentally friendly solutions.

Metso's C160 jaw crusher.

Responsible partnership throughout the entire process

"Tailored solutions for high-end output, reduced costs with energy-efficient machines and automated treatment are the major benefits we are delivering to our customer with this supply. Colas wanted not just a supplier, but a responsible partner for their investment. We've set an ambitious target and we're confident in achieving it," sums up Philippe Portevin, Sales Director, France, Mining and Construction, Metso.

"It's been a long road but the spirit and close collaboration which has dominated this project from the outset supports our enthusiasm in concluding the contract today with Metso," commented the Colas Centre Ouest management team on the day of signature.

"Building a solid work relationship from feasibility to design has been key to the process bringing savings in time, efficiency and total cost of ownership to our customer," adds François Wintergerst, Business Manager, MPS Crusher Systems, Mining and Construction, Metso.

Metso's HP500 cone crusher.

The order is included in Mining and Construction's second quarter 2013 orders received with delivery scheduled for second quarter of 2015.

Latest application technology

The installation includes numerous Metso machines with the latest technology in hard rock applications: a C160 jaw crusher, a HP500 cone crusher, two HP6 cone crushers, more than 12 vibrating machines from TS, CVB and VF range completed with more than 2,000 metres of Metso conveyors.

The full engineering scope of the installation includes a truck loading station, automation and power, 2,000-tonne steel structures, plateworks, de-dusting, erection and commissioning for a targeted 1.5 million tonnes/year and equipped with 4,000kW installed power.

The Colas Group is a leader in the construction and maintenance of transport infrastructure. With 63,000 employees in nearly 50 countries on five continents, the Group performs 100,000 projects each year via 800 works centres and 1,400 materials production sites. In 2012, Colas posted €13 billion of consolidated revenue (44% outside of France). Net profit attributable to the Group amounted to €302 million.

Metso's mining and construction professionals specialize in always bringing the right technology, processes, machinery and services to our customers in the aggregates production, construction, mining and minerals processing and in metal and waste recycling.

Dust Free Pneumatic Ship & Barge Unloading

- *Grain*
- *Soybeans*
- *Small Seeds*
- *Corn*
- *Wheat*
- *Palm Kernel*
- *Barley*
- *Meal*
- *Urea*

Ship and Barge Unloading

150-600 MTPH

Christianson Systems offers flexible solutions for a wide range of material handling applications. State-of-the-art technology backed by over 50 years of experience assure that each machine is built with superior quality, construction, and design. Equipment recommendations are based on the customer's product, vessel size, capacity requirements, and power sources. By making the right choice, the customer will make the most of his money!

Christianson®
Pneumatic Conveying Equipment
www.christianson.com

Christianson Systems, Inc.
20421 - 15th Street SE
PO Box 138
Blomkest, Minnesota 56216 USA
+1-320-995-6141 Telephone
sales@christianson.com

Pit to Port

rapid deployment solutions from Telestack

Open pit link conveyors — 7 × TT643 mobile link conveyors feeding overland conveyor.

More and more of the critical resources needed now and in the future to satisfy global expansion are being mined in remote locations around the world. Often these locations lack adequate infrastructure to cost effectively get the commodity from pit to an inland river terminal/sea port.

As a consequence miners often have to invest heavily in infrastructure to get the material to the port and then onto the vessel. Even with the infrastructure in place, bottlenecks along this logistics chain can prevent the realization of export potential and the associated revenue streams.

Telestack has designed, manufactured and installed a number of rapid deployment solutions using a unique range of self-powered mobile conveyors and hopper/feeders that enable miners to quickly and cost effectively stack and reclaim material

Open pit stacking —TS 1542 radial telescopic stockpiling from fixed plant over gravity reclaim system.

Open pit reclaiming — tracked hopper reclaiming aggregate to overland conveyor.

Pit load out — rail/trucks/ barge — TU 515R tracked mobile truck unloader loading rail wagons.

at the mine, load it onto a rail wagon or truck to then transfer to the port, unload stack and reclaim it at the port and load a barge or sea going vessel.

Telestack rapid deployment solutions around the world are handling a wide variety of materials from heavy ores, to coal to biomass and tonnages of up to 3,500tph (tonnes per hour) often operating in extreme conditions; from the high temperatures of Africa to ice cold Siberia to the high altitudes of Chile.

Vessel sizes range from barges right up to Baby Cape and stockpile capacities can be as high as 400,000 tonnes of ore with a standard system and even higher for customized applications.

All Telestack's Rapid Deployment solutions are designed to ensure that:

a) the customer can very quickly be generating revenue streams as:

- lead times from the factory can be as little as 10 weeks;
- all machines are fully designed, assembled and tested at the factory prior to disassembly and packing into 40 foot containers and shipping;
- on-site assembly is typically one week and it does not require any on-site welding, on site electrical specialist services, or on-site specialist hydraulic services;
- mobile equipment often means less stringent planning requirements/restrictions so you can be up and running quicker than if using other 'stationary' solutions;
- users can quickly start exporting material from a new mine or a mine expansion project; and
- users can quickly create buffer stockpiles at the mine or at the port to help offset any unplanned downtime or bottlenecks.

b) operating costs are significantly less than traditional systems as:

- Telestack solutions are continuously loading as opposed to grabs/ wheel loaders/trucks coming back empty in the cycle;
- all machines are simple to operate, maintain, troubleshoot as there are no complicated electrics/electronics to manage and hydraulics can be kept to a minimum;
- simplicity ensures skill levels are not as demanding/costly as traditional material handling methods;
- all machines can run off diesel hydraulic power, diesel electric power via on-board generators or from electric power already available on site; and

Unloading at inland terminal/sea port from rail/truck/barge — hopper fed from grab crane.

Motor Driven Reels
- Monospiral and Level-Wind configurations
- Rugged and dependable magnetic coupler for dusty environments

Cable Festoon
- Corrosion-resistant, long-life rollers; precision sealed bearings
- Systems customized for the application
- Preassembled option, for easy installation

Cable Chain
- Rugged design for demanding environments
- Long operating life
- Custom-configured

Rugged Energy & Data Transmission Systems

Conductix-Wampfler has one critical mission: To keep your bulk material handling operations running 24 / 7 / 365. You need proven, worry-free energy solutions - and Conductix-Wampfler has them. Our systems provide reliable electric power and water to stacker/reclaimers, barge and ship loaders/unloaders, bulk conveyors, tripper systems, and gantry cranes. Conductix-Wampfler systems are rugged, low maintenance, and time-tested in tough, dusty environments. All products are backed by the largest sales and service network worldwide!

www.conductix.com

CONDUCTIX wampfler

DELACHAUX GROUP

❖ wear-and tear-parts are easily and quickly replaced

c) the customer can better adhere to environmental requirements as:

❖ all machines can have fully sealed transfer points to contain dust/spillage;
❖ dust is controlled via either suppression, containment or extraction;
❖ material is contained using under trays, side walls etc that are easily cleaned; and
❖ discharge chutes can be fitted to direct material into bottom of vessel.

Port stacking/reclaiming — 2 × TS 850 radial telescopic conveyors stockpiling coal in stockyard.

d) the customer can better adhere to health and safety requirements as:

❖ fewer operators are needed so less potential for human error;
❖ less movement of equipment is needed so less potential for human error; and
❖ higher risk activities such as having equipment/people within the hatch during loading is eliminated so less potential for human error.

e) Telestack helps reduce initial capital expenditure as:

❖ Telestack solutions are typically significantly cheaper to buy than mobile harbour cranes, stationary systems and the like;
❖ mobile equipment means there are typically significantly lower civil engineering and infrastructure costs;
❖ mobile self-powered equipment means the equipment can easily and quickly be moved around the mine or port eliminating the need for other equipment to move the Telestack;
❖ mobile means the customer can free up valuable real estate at the port or the mine;
❖ mobile equipment means it can be used at the mine or at the port or in transshipment from barge to ship; and
❖ mobile means that Telestack can easily link into existing material handling systems.

f) react quickly to changing economic/political conditions as:

❖ innovative designs mean it is very easy and quick to disassemble and pack into containers and can be ready to ship in as little as a week;
❖ equipment has excellent resale value as it can be shipped and re-sold globally; and
❖ can be re-sold into applications in sea ports, river terminals, mines, quarries, power stations, cement plants, steel mills etc

Telestack solutions are already working successfully in mines and ports around the world and especially in more remote locations in Africa, Asia and South America.

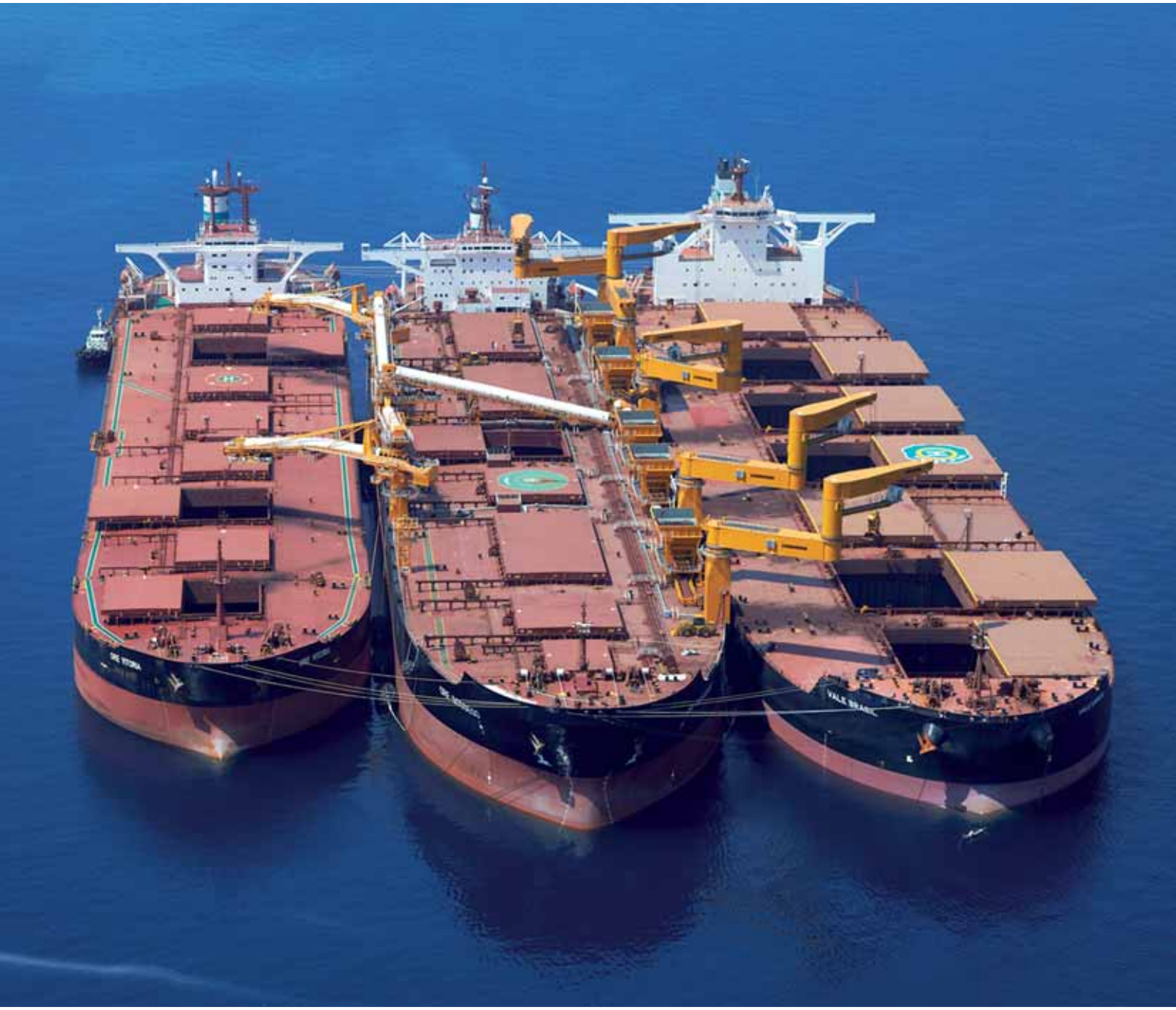
The company has a proven track record with companies such as BHP Billiton, Rio Tinto, Xstrata, Anglo American, London Mining Company, Arcelor Mittal, Jindal Steel, Suek, Mechel, and Norlisk Nickel. It has also worked on projects with many of the major EPC companies including Ausenco, Hatch, SNC Lavalin, Mott MacDonald & Mofatt & Nichol.

Telestack's ISO 9001:2008 certification demonstrates its commitment to helping ensure that its processes and procedures are robust to deliver what the client orders, on time and to the standards agreed. This applies not just to the equipment itself but also to the necessary documentation pre- and post-sales as well as aftermarket support in terms of technical assistance, spare parts, local agents etc. Everything is designed, manufactured, fully built and tested at Telestack's factory in the UK so it remains in complete control of the whole process reducing the potential for problems on site during installation

The costs of getting commodities out of the ground, to the port and onto the vessel are increasing if using traditional material handling systems. Telestack believes a different approach using self-powered mobile solutions can offer a more efficient logistics chain and thus help its customers achieve lowest delivered cost per tonne. DCi

Vessel loading – TS 1542 radial telescopic conveyor shiploading from HF1520 wheeled hopper feeder.

Experience the progress.



Liebherr-Werk Nenzing GmbH
Dr. Hans Liebherr Str. 1
6710 Nenzing/Austria
Tel.: +43 50809 41-280
ship.port.crane@liebherr.com
facebook.com/LiebherrMaritime
www.liebherr.com

LIEBHERR

The Group

Two Liebherr LPS 600s installed in Poland

new cranes set to improve efficiency at the Port of Gdansk

The recent installation of two LPS 600s in Poland underlines the strong demand for Liebherr's tailor-made portal solution. Both machines are equipped with the unique Pactronic® hybrid power booster and strengthen Liebherr's market position.

Two LPS 600s for dedicated bulk handling have recently been delivered and installed in the centre of the southern Baltic coast. Both cranes will soon start operation in the Port of Gdansk, Poland. The port handles various commodities and bulk material handling is of high importance as it accounts for more than 25% of the total cargo handling.

The operator of both LPS 600, Port Polnocny Co. Ltd PPS, opted for the recommended bulk handling configuration, which includes four-rope configuration with two 72-tonne winches and a boom length of 50 metres. Additionally, the installation of electric drives and Pactronic® allows for a very efficient and eco-friendly operation.

Awarded with the IBJ Crane of the Year Award in 2011, the LPS 600 is the strongest model of the product line. Based on the innovative Liebherr Mobile Harbour Crane concept, the portal construction is flexible in terms of rail span, number of wheels, power supply and portal height, ensuring that individual customer needs can be met. Thanks to its most up-to-date design, the LPS support system remains unrivalled in terms of stability and operational safety.

Moreover, both cranes are equipped with the unique Pactronic® hybrid drive system. Taking a major step towards low-emission but high-performance machines, Liebherr introduced Pactronic® in 2010. Awarded with the State Prize Clean Technology Austria, this cutting-edge hydraulic hybrid drive for cranes allows for a plus of 30% regarding turnover capacity. At the same time, Pactronic® leads to a reduction of fuel/energy consumption (litre/tonne) as well as CO_2 and exhaust emissions in the range of 30% depending on the operation. The hybrid drive system is virtually maintenance free as it just needs visible inspection every 10 years. Additional eco-friendly benefits of the system include 100% recyclability as well as less noise exposure. In total, Liebherr has delivered 11 mobile harbour cranes for highly efficient cargo handling to Polish ports, underlining its

Construction - Earthmoving

Agriculture - Forestry

Mining - Quarrying - Cement

Material Handling - Utilities

Marine - Port Installations

Water - Chemical - Recycling

Energy - Petrochemical

Plastics - Rubber

Pulp - Paper - Print

Food - Beverage - Tobacco

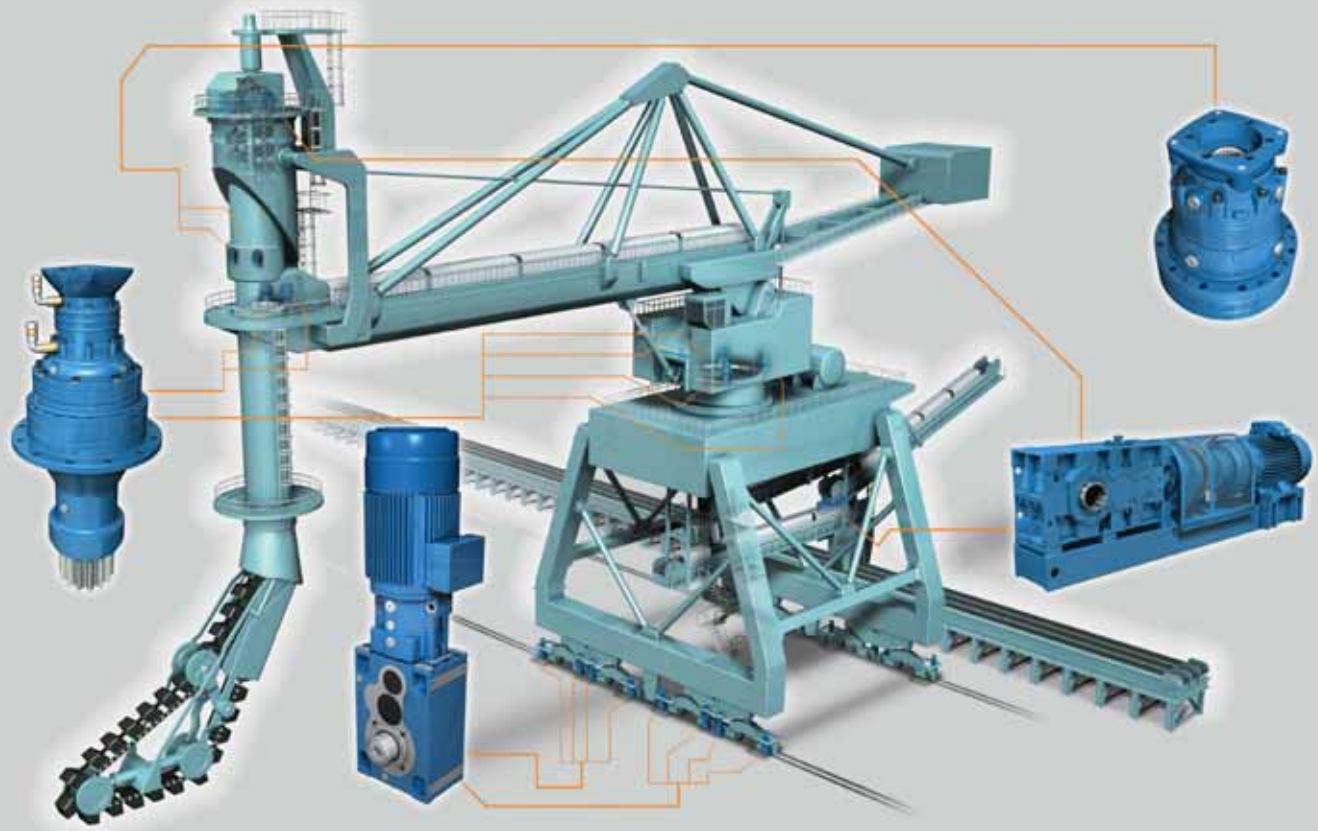
Industrial Equipment

brevini power transmission

www.brevini.com www.piv-drives.com

Solutions for ship unloaders

For many years, PIV Drives and Brevini Riduttori have been industry leaders in power transmission solutions for all kinds of marine, port and material handling applications. PIV and Brevini, both part of Brevini Power Transmission, offer a wide range of products: from standard modular gear reducers to custom solutions for special applications. Our unparalleled quality and reliability are acknowledged worldwide. Through a global sales and service network, we are proud to provide prompt delivery and excellent service.



PIV Drives GmbH - Justus-von-Liebig-Straße 3 - 61352 Bad Homburg - Germany
Tel. +49 (0)6172-102 0 - Fax +49 (0)6172-102 381 - info@piv-drives.com

strong position in the market. Further LHM deliveries are expected in the near future. Additionally, five ship-to-shore cranes, 14 rubber tyre gantry cranes and three reachstackers prove the popularity of Liebherr Maritime Cranes in Poland.

Liebherr Maritime Cranes

Liebherr Maritime Cranes is a division of the Liebherr Group which specializes in cargo handling solutions for ports as well as for the shipping and offshore industry. Products include ship to shore cranes, mobile harbour cranes, offshore cranes, ship cranes, rubber tyre and rail mounted gantry cranes, reachstackers and straddle carriers.

Liebherr Maritime Cranes currently employs more than 3,500 employees worldwide and has four state-of-the-art production sites in Killarney (Ireland), Nenzing (Austria), Sunderland (Great Britain) and Rostock (Germany). In addition, Liebherr Maritime Cranes operates eight fully owned sales companies and is additionally represented in more than 30 mixed sales companies worldwide.

Liebherr Mobile Harbour Cranes

Liebherr launched its first mobile harbour crane in 1974. Thanks to a clear focus on innovation and quality, today, Liebherr is a leading manufacturer in the mobile harbour crane sector.

With maximum lifting capacities from 42 tonnes to 208 tonnes, Liebherr offers a perfectly balanced range of mobile harbour cranes. More than 1,100 Liebherr mobile harbour cranes deliveries to over 90 countries allow for efficient cargo handling in ports across the globe.

The Liebherr Group

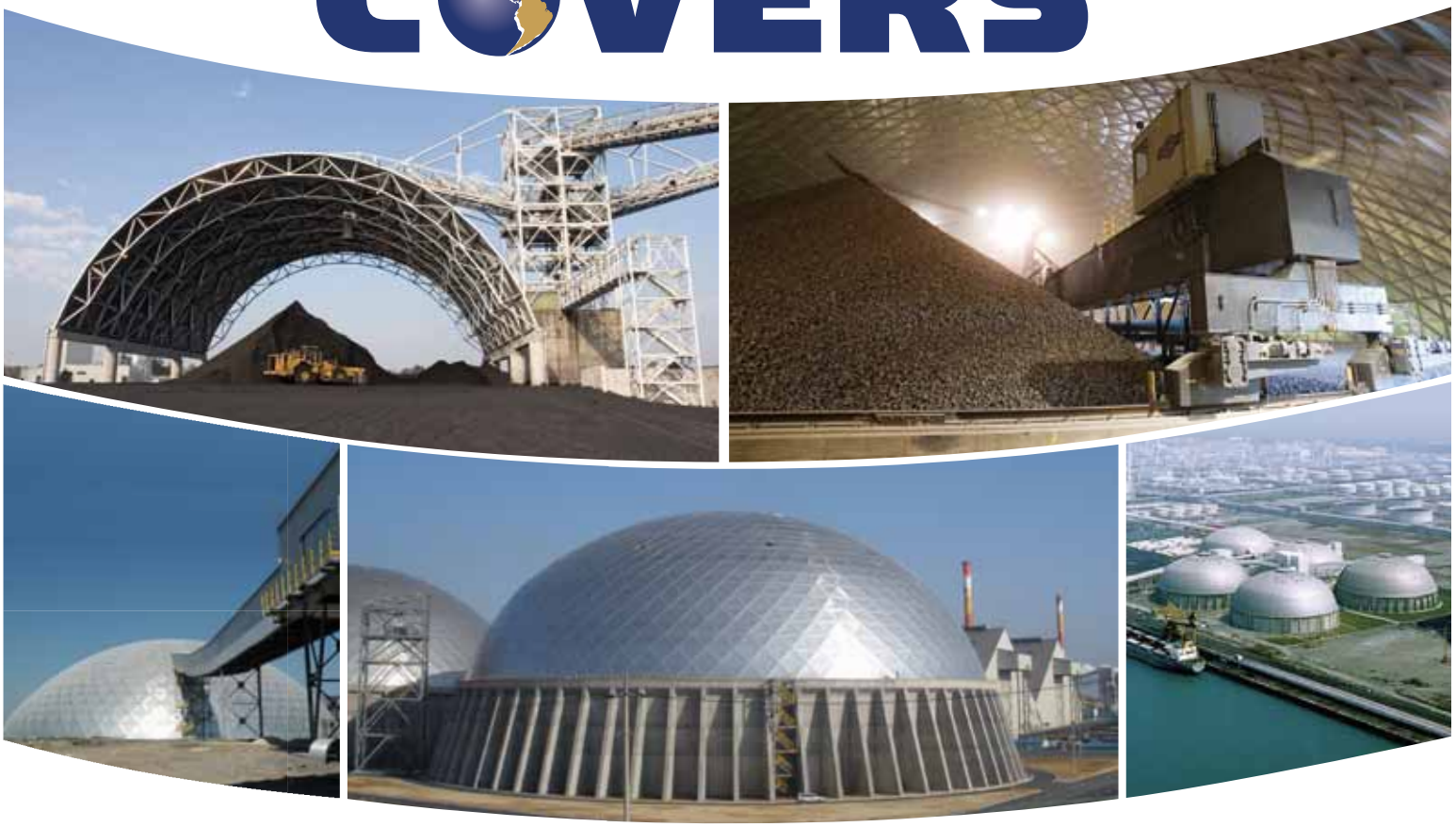
Established in 1949, the Liebherr Group today is a major manufacturer of heavy engineering and lifting equipment, but also supplies innovative user-oriented products and services in many other fields. The family-owned enterprise employs more than 38,000 people in over 130 companies worldwide.

Liebherr's product range covers earthmoving machinery and material handlers, mining equipment, mobile cranes, construction cranes, mixing technology, domestic appliances, maritime cranes, aerospace and transportation systems, machine tools and automation systems as well as high-performance components for mechanical, hydraulic and electrical drive and control technology. Liebherr operates hotels in Ireland, Austria and Germany.

The group's holding company is Liebherr-International AG in Bulle, Switzerland, which is entirely owned by members of the Liebherr family.

INTRODUCING THE GLOBAL LEADER IN COVER SOLUTIONS.

CST COVERS



TEMCOR CONSERVATEK®

SINCE 1964 • OVER 16,000 INSTALLED • OVER 90 COUNTRIES

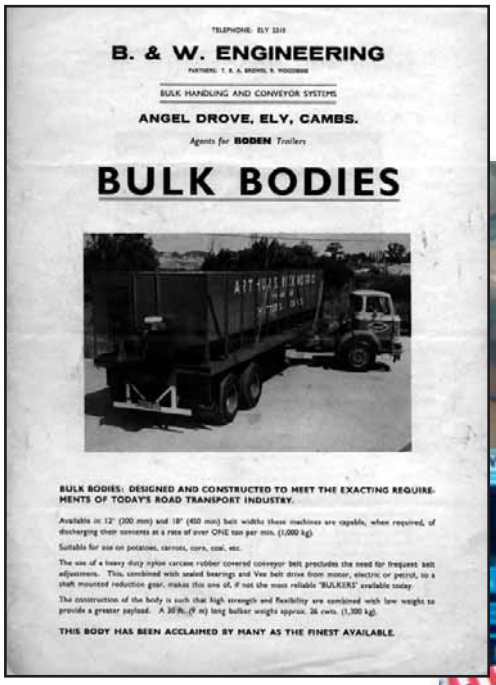
Dry Bulk Storage Solutions

- All-aluminum clear-span structures
- High strength-to-weight ratio
- Maintenance free – never rusts, rots, chips or solar degrades
- Economical installation – light weight translates to faster erection times and reduced erection costs
- Project support around the world

www.cstcovers.com

CST Covers | 498 N Loop 336 E | Conroe, TX 77301 USA | p: 936-539-1747 | f: 936-539-5355

Samson Materials Handling through the years


B. & W. ENGINEERING

BULK HANDLING AND CONVEYOR SYSTEMS

ANGEL DROVE, ELY, CAMBS.

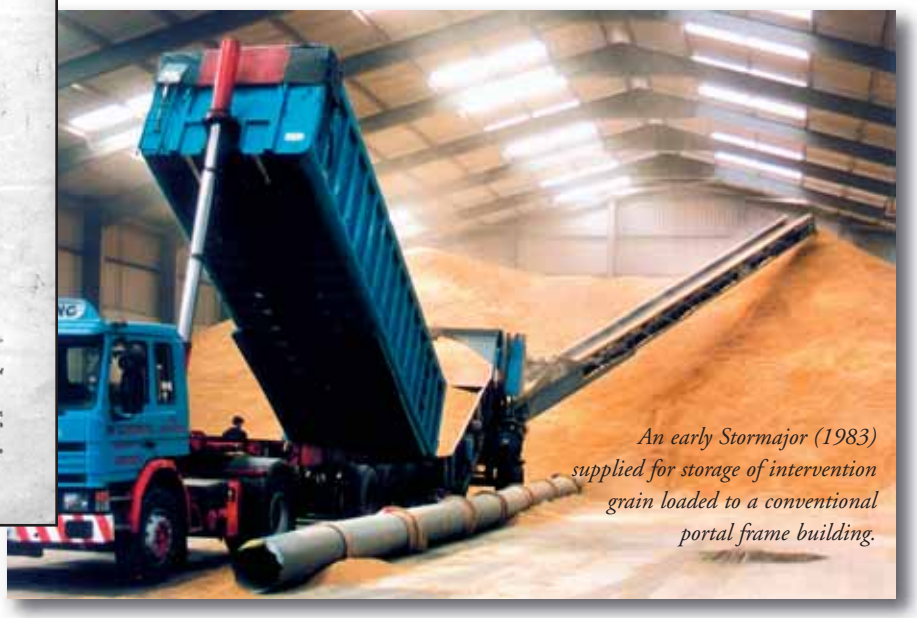
Agents for BODEN Trailers

BULK BODIES

BULK BODIES: DESIGNED AND CONSTRUCTED TO MEET THE EXACTING REQUIREMENTS OF TODAY'S ROAD TRANSPORT INDUSTRY.

THIS BODY HAS BEEN ACCLAIMED BY MANY AS THE FINEST AVAILABLE.

Above: B&W Engineering Belt Discharge Bulk Bodies, where it all began…


An early Stormajor (1983) supplied for storage of intervention grain loaded to a conventional portal frame building.

Tracing the history of B&W through to the formation of Samson Materials Handling

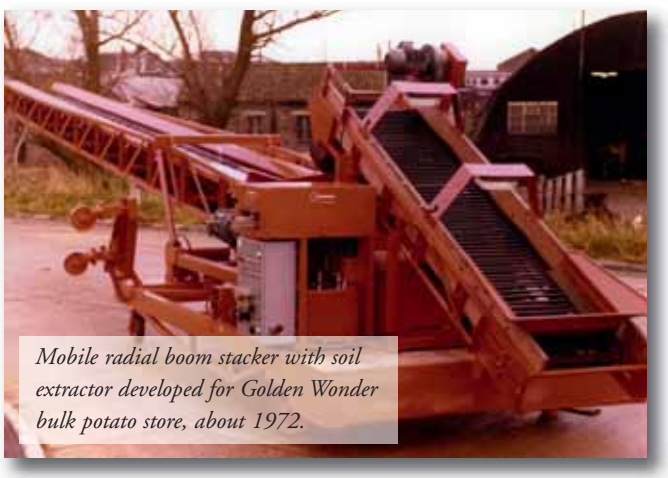
Samson Materials Handling Ltd. can trace its recent history directly to the formative company of B&W Mechanical handling Ltd. including the birth of its core products such as the Samson feeder and mobile shiploaders and stackers. However, its earlier history dates back to a partnership between Tom Brown and Raymond Woodbine, B&W Engineering, trading in premises rented from a local produce company.

Back in 1966 both partners put in £100 each to start the business. The owner of the original premises in Ely, Cambridgeshire, agreed a rent holiday, giving the business a chance to start trading and earning money without enormous overheads. The premises were basic, just 'Nissen' huts originally erected during WW II as temporary shelters — rusted to the point where there were more holes than roof and water ingress was a perennial problem.

In these early days B&W would do almost anything to earn money and this often included repairing elderly commercial vehicles and trailers and rebuilding the truck body or even making a new body if required. Of course, being in an agricultural area and working next door to a produce company brought B&W into close contact with the farming industry and potato haulage in particular where farmers were moving from bags to bulk and required suitable bulk trailers. For this operation, it was established practice by then to use a belt discharge bulk container comprising a fabricated steel body lined in timber with floors sloping to a central conveyor. B&W made many of these and the 'Potato Bulker' soon became B&W's first established product.

Bulk potato machinery became ever larger business as public taste for the potato crisp exploded and companies such as Golden Wonder and Smiths rapidly developed their production facilities. For some time, the Corby factory of Golden Wonder was the largest in the world with a storage capacity of around 250,000 tonnes. Potatoes have a short harvest season and the whole crop must be taken into storage within hours of lifting.

B&W's established connection with this trade opened many new doors both in the farming sector, to intake the crop to on-farm storage but also at the processor to intake very large volumes on an industrial scale… For Golden Wonder specifically B&W designed a new radial boom stacking system with integral intake soil extractor to receive material from the Potato Bulkers. The B&W Bulker had a belt width of 450mm (18") which was 50% wider than the norm at that time allowing a 50% increase in


Mobile radial boom stacker with soil extractor developed for Golden Wonder bulk potato store, about 1972.

Ideal Solutions for Port Facilities

- Equipment for solid bulk material handling
- Designed to meet customer´s needs
- High quality, excellent durability
- Reliability and short term delivery
- Shiploader retrofit and upgrading
- Dust aspiration systems

Sugar 3,000 t/h

Grain 1,500 t/h

Iron Ore - 4,000 t/h

Grain/Ore 1,000 t/h wood chips

Grain - 1,500 t/h

Grain - 2,500 t/h / wood chips

Kaolin 1,100 t/h

Grain - 1,500 t/h each tower

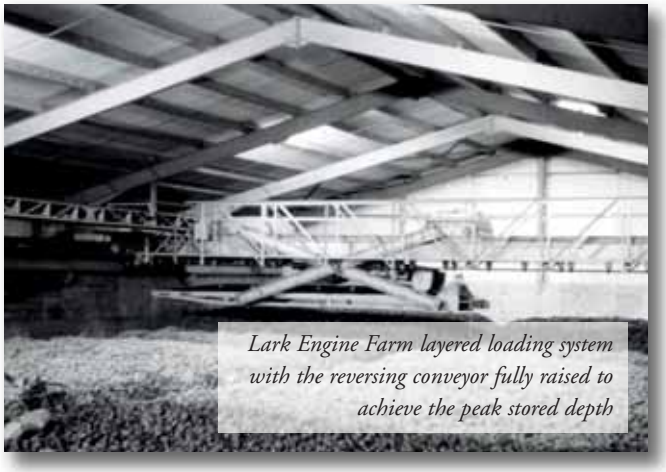
Dust trap - Upgrading

TMSA
Tecnologia em Movimentação

Porto Alegre/RS - Brazil
Phone: +55 51 2131-3333
E-mail: comercial@tmsa.ind.br
Website: www.tmsa.ind.br

CERTIFICATE SYSTEM ISO 9001:2008

Lark Engine Farm potato and onion store with overhead gantry layered loading system, about 1978.



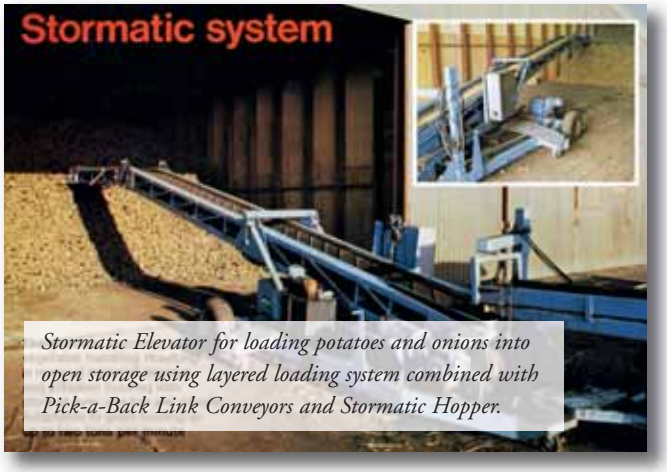
Lark Engine Farm layered loading system with the reversing conveyor fully raised to achieve the peak stored depth

output rate which flooded the standard storage conveyors hence driving demand for larger, more professional solutions which, naturally, B&W offered.

Of course Ely is in the fens and close by to the richest farmland in the UK where speciality crops such as lettuce and celery may be grown in vast quantity. Celery must be handled very gently to avoid breaking and the loose soil washed off for presentation in the fast developing supermarket business. B&W worked alongside local growers, such as G's Growers (G S Shropshire & Sons) and Greens of Soham, to develop celery handling, washing and packing systems. At one point it was attempted to mount a complete celery washing and packing line on a field rig, dirty celery in one end and boxed clean celery out the back… but the weight of water required defeated the project and the prototypes literally got stuck in the mud.

By 1975, B&W purchased land in Lisle Lane which at that time was outside the town and in an area zoned for industrial development. New premises were built on this freehold site. The site was subsequently developed with new offices and a new production hall. By 1990, the business had again outgrown the site. In 1991 B&W acquired the lease of the old hanger at Lancaster Way and moved to this new site during 1992 from which it traded till moving to the present premises.

It was John Green of Greens of Soham that put B&W on the road to develop the Samson™ feeder that became the backbone of the business many years later. It was in 1976, when the rest of the UK suffered a prolonged drought, in the fens water remained readily available and root crop growers flourished with potatoes and onions reaching record prices; this generated cash and encouraged the development of new machinery designs.



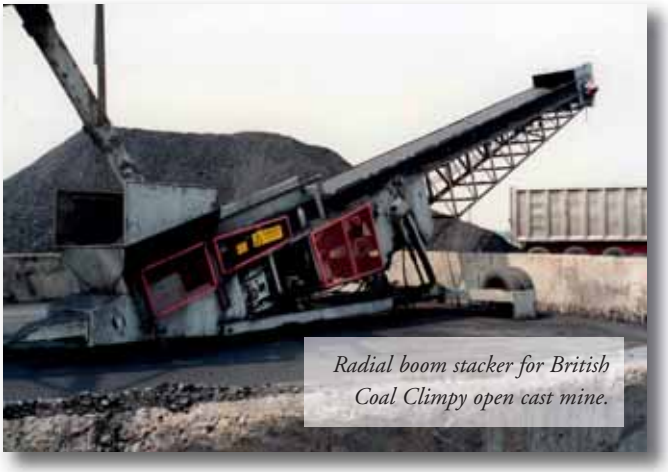
Stormatic Elevator for loading potatoes and onions into open storage using layered loading system combined with Pick-a-Back Link Conveyors and Stormatic Hopper.

Stormajor Hopper to receive potatoes and onions from farm trailers, the forerunner of the Samson.

Greens were very large in celery, potatoes and onions, with some 7,000 acres under cultivation, and in particular their farm storage systems were extensive and elaborate but none more so that the Lark Engine Farm storage facility built near Prickwillow

Quarry mobile stacker for Sure Equipment (Finlay).

Swivel boom stacker for Sure Equipment (Finlay) on test at an ARC sand and gravel quarry.



Radial boom stacker for British Coal Climpy open cast mine.

Field rig for Iceberg lettuce harvesting designed and built in conjunction with Marks and Spencer.

with machinery by B&W based on the concept of John Green — a visionary farmer, engineer and inventor. Even today this system is revolutionary but, back in 1978, it was truly futuristic using an overhead gantry system with variable angle decline conveyor and travelling, reversing, raising and lowering stacking out system.

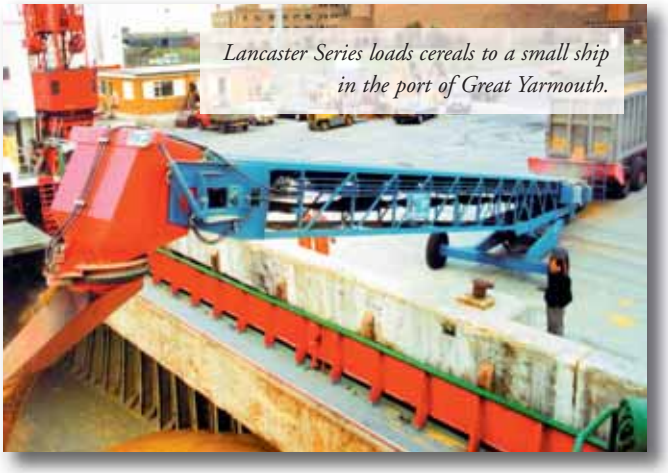
All of this was mounted to a scissor lift integral to the travelling gantry that supported the whole mechanism and, along with a travelling shuttle conveyor, allowed the gantry to traverse the full building footprint without any ground mounted equipment, working automatically and unattended. Onions must be dried, often using heated and dehumidified air blown through the ventilated floor, to avoid rapid deterioration. Using this new loading system, with the gantry moving up and down the 120m building, the stockpile could be built up in layers such that only one layer at a time need be dried and therefore the drying system could be scaled back often requiring only ambient air with considerable savings in energy input.

Whilst the Lark Engine project represented the pinnacle of the market B&W realized there was an opportunity to spread this concept to a wider audience using conventional ground based equipment and the Stormatic system was born. This comprised an intake hopper, known as the Stormatic, (now rebranded the Samson™) to receive the crop from farm tipping trailers, a soil extraction system to clean the crop and a line of Pick-a-Back conveyors (now called Link Conveyors) to deliver the crop to a radial boom elevator (now migrated to the Stormajor) located within the storage building.

The elevator had a long cantilevered radial boom such that the boom stacker plus the line of Pick-a-Back conveyors could be moved in and out to create the stockpile in layers mimicking the philosophy of the Lark Engine project but on a smaller scale and without the need for a dedicated building or any other fixed equipment. The core of the present Samson-MH product range may be traced back to these components in concept.

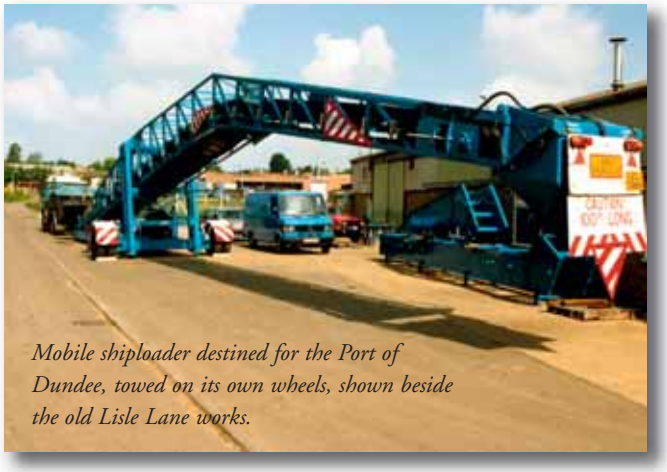
Loadmaster A/D Series universal mobile conveyor/stacker.

Loadmaster E Series loads a Grain-Flow wagon in the old Ely marshalling yard, now occupied by Tesco.



Lancaster Series loads cereals to a small ship in the port of Great Yarmouth.

First purpose-built mobile shiploader for Anglia Agricultural Merchants used at the Port of Kings Lynn for grain exports



Mobile shiploader destined for the Port of Dundee, towed on its own wheels, shown beside the old Lisle Lane works.

Combination of Samson™ and shiploader for export of general bulk cargoes but mainly cereals.

Having gained a reputation for innovative solutions B&W was approached by several companies to build specialized mobile equipment and in particular mobile harvesting rigs. At that time Iceberg Lettuce was becoming popular in the UK and Marks and Spencer (M&S) needed an alternative to the hugely expensive imports from California. It found a UK grower and approached B&W to design and manufacture the harvesting rigs, and variants of these may be seen still working in the fens, in Lancashire and in Scotland where the lettuces are now grown. All of these were bespoke products designed to suit the application and client demands but B&W was ambitious to manufacture a standardized product that could be 'stock-built' and sold through agents.

First shiploader supplied complete with integral Samson™ feeders in the Port of Aberdeen, supplied in 1987 and still operational in 2013.

A recent delivery to the Port of Great Yarmouth exporting cereals with integral Samson™ feeders and comprehensive dust control.

After a chance meeting with David Dowler, a Cotswold farmer with revolutionary ideas for land management, B&W pursued Dowler's prototype 'gantry' crop sprayer and tool carrier. Regrettably the market was not ready; a salutary lesson for all involved.

At around this time the root crop price bubble burst and B&W was looking around for another market to develop. It was approached by Sure Equipment, at that time a Finlay Screen distributor for the UK, to produce a range of mobile stackers to complement the Finlay mobile screener products. Finlay was independent and suffered competition from other Irish manufacturers with a product range including a swivel boom conveyor. B&W offered to build for Sure a range of mobile conveyors and stackers based on conventional designs plus a 'Swivel Boom' stacker with a 15m-long base boom with a 6m radial boom allowing 180° rotation. The products would be exclusive to Sure, branded as Sure Equipment products and marketed under the Sure Equipment name with product codes such as SEO Series, SET Series, SEM and so on.

This arrangement continued for a few years but never really developed into serious production as the product cost became prohibitive. The same story applied to the Link Conveyor

The ultimate shiploader produced by B&W and known as the Sterling Series including 4 Samson™ feeders with vertical elevation and radial/luffing outloading boom.

Stormajor with Samson 450 feeder section loads silica sands from tipping trucks to rail wagons.

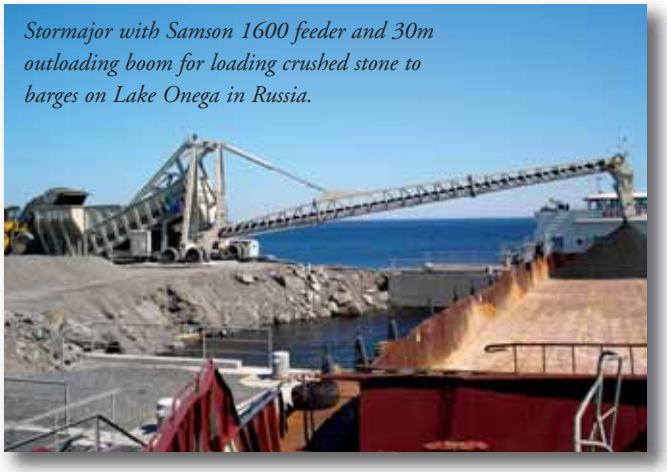
HOW WE OPTIMIZE YOUR MATERIALS HANDLING PROCESS?

THIS WAY!

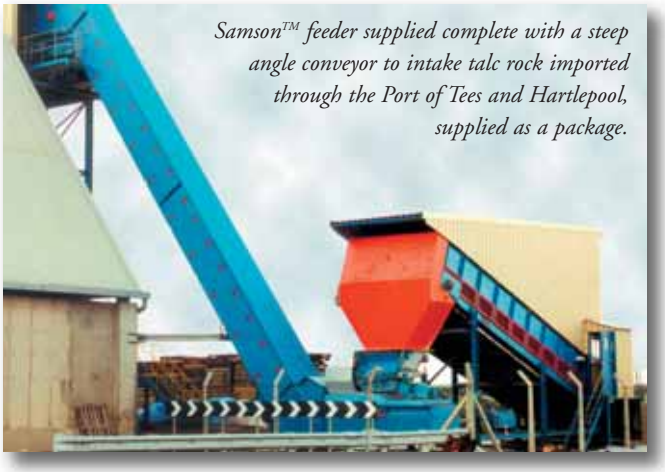
Operations everywhere rely on bulk materials handling systems for continuous performance. Sandvik has steadily developed into a technological frontrunner and leading global supplier of some of the world's most impressive machines for stockyards and other operations.
Rely on Sandvik to make your mining business more efficient and more competitive.

Join the movement towards The Future of Mining.
It's This Way: mining.sandvik.com

SANDVIK



Stormajor with Samson 1600 feeder and 30m outloading boom for loading crushed stone to barges on Lake Onega in Russia.



Samson™ feeder supplied complete with a steep angle conveyor to intake talc rock imported through the Port of Tees and Hartlepool, supplied as a package.

products for face crushing in mines and quarries which, at that time, although developed alongside Lokomo (now Metso) again proved to be too expensive manufactured in the UK. B&W only produced two more sets of Link Conveyors for a Tarmac quarry in the UK and a large mining operation in Spain but these were bespoke projects.

One notable order was taken for a bespoke stacker for the National Coal Board which, at that time, was the largest user of materials handling systems in the UK. This unit was supplied to the Climpy opencast mine near Glasgow and comprised a variable angle conveyor with a variable angle declining head mounted to a sub chassis carried on powered wheels set for radial travel and mounted at the tail to a slew ring.

In parallel, B&W had re-branded the agricultural Stormatic Hopper into the Samson™ Surface Feeder for industry and started the diversification of the Samson™ into many other sectors including clay, coal, minerals, stone and most importantly cereals. However, it was the cereals market was to be in the 1980s what the root crop industry had been in the previous decade. Thanks to the European Union Intervention Pricing Scheme UK growers were paid high prices for cereals and very soon production considerably exceeded demand, creating an immediate and extensive need for storage and eventually exports facilities. B&W reacted fast, and brought to the market the Loadmaster Series of mobile stackers plus the Stormajor formed out of mating a Samson™ feeder section with a Loadmaster conveyor boom onto a common chassis with slew ring allowing radial travel. With a design handling rate of 360tph (tonnes per hour) and a buffer holding capacity within the Samson™ trucks could be easily discharged in three minutes and with a truck total turnaround of about five minutes a single machine could average 2,500 tonnes per day. This was at a level way beyond anything else in the market and the Stormajor rapidly became the industry standard adopted by professional merchants, traders and the government controlled Intervention Grain Board.

Since there was no market for this grain in the UK the excess capacity could only be exported and for this level of surplus the existing port facilities were inadequate and capacity at the few permanent facilities such as Tilbury and Southampton was soon exhausted. What was needed was a mobile shiploader that could be used in any existing port without dedicated port infrastructure and, whilst the B&W Loadmaster Series could be used to load smaller vessels, it was clear larger equipment would be required.

With its experience handling cereals and with the expertise developed with large mobile conveyors in the quarry industry B&W was ideally placed to fill this gap in the market. Another local man, Joe Brand of Anglia Agricultural Merchants (AAM), had the vision to see where the market was moving and the courage to commission a bespoke mobile shiploader able to load ships at the port of Kings Lynn, the closest deep water port. B&W designed and manufactured the new unit incorporating twin feeder conveyors, to receive from two trucks simultaneously, plus powered travel and trimming systems to speed the vessel loading. The success resulted in the first order for the cement industry for RAK Cement (UAE) to export clinker, based on the AAM design but upgraded for the heavier and more aggressive material.

The mobile shiploader concept was then broadened to incorporate Samson™ feeders both to speed the average handling rate and to enable the equipment to load a range of materials including minerals and ores. The first machine was delivered to Aberdeen for cereals export rapidly followed by a unit to English China Clays of St Austell to export kaolin. So the connection with the minerals market began and the truck-to-ship concept was born — suitable for almost any type of dry bulk cargo extending loading rates to 2,000tph and vessel sizes to Panamax.

The 1980s were pivotal for B&W with the diversification in cereals and minerals plus the expansion of the Samson™ concept along with the development of a range of belt conveyor products allowing a package to be brought together incorporating a Samson™ plus the associated belt conveyors, including the 'Steep-Angle' and 'Kleen-Line' designs. B&W offered a semi-turnkey service and by maximizing the surface mounting benefits of the Samson™ was generally able to offer an alternative package, invariably at significantly less cost compared to traditional

Barge loading sands and aggregates using a fixed B&W conveyor system on the River Thames, see Canary Wharf in the background under construction.

British Steel (Tata) coal intake for the South Bank coke works, the first of the new Samson 800 Series supplied for main line material intake to the steel industry in 1997.

www.coaltrans.com/berlin

33rd Coaltrans berlin

world coal conference 2013

20-22 October 2013

Estrel Hotel & Convention Center, Berlin, Germany

1400+ DELEGATES 60+ COUNTRIES

Like us on Facebook
www.facebook.com/coaltrans

Join our Linked In group
Coaltrans Conferences Community

Follow us on Twitter
@CoaltransEvents

Lead Sponsor

Carbo One

Platinum Sponsors

ICHORCOAL distributed by HMS Bergbau AG

Xcoal ENERGY & RESOURCES

MECHEL Mechel Carbon

Gold Sponsors

COECLERICI

argus argusmedia.com

GVK

SGS

Port of Amsterdam

BULKTRADING SA

SWIRE CTM BULK LOGISTICS

TRENACO

Silver Sponsors

PD Co Lublin Coal Project

PLATTS McGRAW HILL FINANCIAL

QUEBEC STEVEDORING GROUP PORT OF QUÉBEC

oldendorff

Bronze Sponsors

airberlin MOBILITY PARTNER

CLYDE&CO

FCC

FLAME S.A. CONVENTIONAL & ALTERNATIVE FUELS

FORESIGHT ENERGY

fortbridge

MAREX SPECTRON

SSY

Standard Coal

UNICOAL AG

United Bulk Terminals

COALTRANS CONFERENCES
Bringing the global coal community together since 1981

Coaltrans Conferences

Tata Steel in Port Talbot iron ore intake to Samson 1600 commissioned 2013.

Loadmaster E Series built in 1985 and used in 2013 for loading wood pellets as biomass carbon neutral fuel direct from tipping trucks to ships.

competition. This was the business model that sustained B&W through to the millennium; based on the uniqueness of the Samson™ to add flexibility combined with traditional bulk handling solutions at a reduced the project cost without impinging on B&W's margins too much.

By year 2000 the Samson™ product had developed from the original 67kN conveyor chain handling carrots though to the latest 1,600kN versions able to intake iron ore and other heavy minerals from large mining dump trucks.

Notably in this period the first delivery of the new Samson™ 800 Series was to Heckett Multiserv handling slag at its Sheerness Steel operation but the critical order came from British Steel, now Tata, for the main coke intake to its South Bank coke ovens.

The surface-mounted Samson™ feeder replaced the whole of the existing underground hoppers and feeders and in total 13 belt conveyors were made redundant. In 2012 Tata purchased two more Samson feeders for the Port Talbot steel works the largest of which being the 1600 Series receiving iron or from large dump trucks.

Similarly the shiploader range had grown into a sophisticated product able to load vessels to Capesize and including many integral refinements such as powered travel and steering, integral trimming systems, integrated twin Samson™ feeders, dust control systems and on-board diesel gen-set plus complex automated control systems allowing truly autonomous operation. This on-going development culminated with the 'Sterling' series concept including vertical elevation and radial outloading boom and the first unit of this type was commissioned in 2002 at the port of Immingham.

In parallel the Stormajor™ radial boom stacker with integral Samson™ surface feeder was also developed into the industrial handling market both for stockpiling and barge loading heavy minerals, aggregates and crushed stone.

By the millennium the UK market for materials handling equipment had significantly reduced with the demise of British Coal and the consequent closure of practically all of the UK deep mines. In 1979, 130mt (million tonnes) of coal was being produced annually from 170 underground mines, but by 2010 the three remaining mines produced only 17mt. Whilst this in itself did not affect B&W, it did release a great deal of engineering capacity into the bulk materials handling business sector increasing the competition in a rapidly dwindling market. By this time also the European Union had dismantled its intervention purchase schemes and as a result the demand for export wheat evaporated releasing many mobile stackers and shiploaders into the second-hand market naturally depressing new sales.

B&W developed a marketing plan to develop export markets to replace the lost UK business and effective agents were appointed in Denmark, Israel and Spain particularly.

In 2002 AUMUND approached B&W to discuss first a marketing co-operation and ultimately the purchase of the company to be integrated to the AUMUND Group forming a UK division. With its penetration of the cement industry globally and sales/service centres in the core resource centred economies worldwide this was a heaven-sent match. In addition, the Samson™ fitted well into the AUMUND product range with considerable synergies not only in cement but also in mining and minerals opening enormous opportunities.

Before the AUMUND acquisition B&W had floundered with its attempts to expand international sales of its shiploader and Stormajor projects with the exception of a handful of projects. Overseas contracts are difficult to finance and with the shiploaders in particular becoming larger and more complex, with values in proportion, such equipment became very difficult to sell outside our home market in a harsh financial world. Here the strength of a truly international group opens doors that would be firmly closed to a small UK manufacturer.

So up to the present day B&W has become rebranded as Samson Materials Handling Ltd and the product range now extended to tracked machines plus telescopic systems for stacking and shiploading offered through a range of distributors and local agents.

Finally… it is interesting to see old machines such as the Loadmaster coming back to life for shiploading of wood pellets in Invergordon. Wood pellets, as carbon neutral fuel, are being imported into Europe, particularly the UK, for coal substitution in power plant and this market is likely to dwarf the cereals market that spawned the Loadmaster in the beginning. Luckily wood pellets behave very much like wheat and will flow through the 'Grain-Door' of standard tipping vehicles and as such do not require any special feeding device in this situation; adding considerably to the flexibility of this solution for barge and small shiploading.

It is important to say that throughout the formative development of B&W, particularly in the early days, it was usual to do business on a handshake and the philosophy was 'my word is my bond' and with trust on both sides contracts flowed smoothly. Whilst some key clients are mentioned herein it is certain without the support of all customers the business would have perished, a debt of gratitude is due to all.

In conclusion the history of Samson Materials Handling *née* B&W is an interesting evolution of a very small family business moving with the market and developing products that match the changing demands of the bulk materials handling industry it serves.

PLM
CRANES

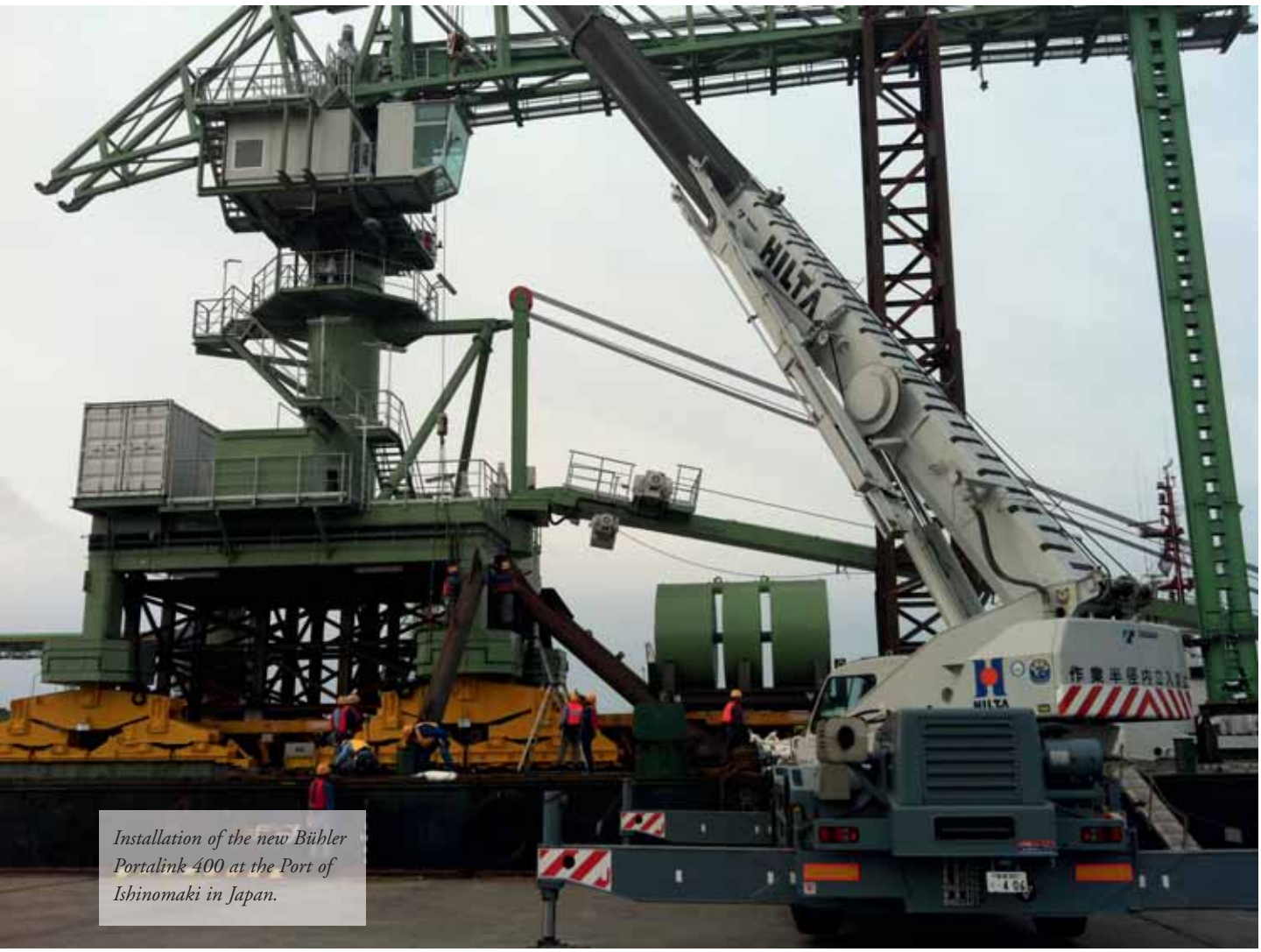
More than 60 years of experience in developing and offering customer solutions to the crane industry.
T: +31 (0)167 – 52 85 10
E: info@plmcranes.com
W: www.plmcranes.com

Technical Data

Type	PLM 6400
Year build	2013
Application	Pedestal mounted, floating hoist crane
Capacity	400 ton @ 20m
Boom length	60m – 70m
Total weight	583 ton
Main hoist (2x)	SWL 200 ton
Aux. hoist 1	SWL 20 ton (controlled free fall)
Aux. Hoist 2	SWL 20 ton
Tugger winch (2x)	SWL 3 ton
System	Diesel - Hydraulic
Yoke block (2x)	50° swivel angle (per yoke block)
Drivers cabin	Tiltable

Possibility to mount two (2) 20ft powerpack containers for piling on the crane construction

Bulk unloading



Installation of the new Bühler Portalink 400 at the Port of Ishinomaki in Japan.

Bühler mechanical ship unloader aids Japan's recovery from 2011 tsunami

Bühler's Portalink supports Ishinomaki Futo Silo in recovery

Ishinomaki Futo Silo K.K. Ishinomaki Miyagi district is based in an area which has been severely impacted by the historical tsunami March 2011, *writes Vincent van der Wijk, Product Manager*. Ishinomaki Futo Silo specializes in the feed industry storing a variety of products such as maize, wheat, barley, and various meals. The silo is based in the port of Ishinomaki and was directly in the impact zone of the 2011 tsunami. Ishinomaki Futo Silo has been fortunate that no damage to the silos has been made, but all the electric equipment and infrastructure has been destroyed by the water.

After the mobile networks had been restored, Ishinomaki Futo Silo pressed hard to get a temporary solution in place and ordered the necessary power generators and electrical equipment to be up and running again. Due to the fast response and delivery of equipment, business was been interrupted for 17 days and Ishinomaki Futo Silo could supply feedstock to its customers again and played a central role in supplying the much-needed feedstock to stockbreeders in the area.

With the last restoration work being completed in July 2013 on the pier conveyors and warehouse, Ishinomaki Futo Silo can again focus entirely on the business and its customers. Even though most of the customers have started operating again, feedstock currently handled is still 10% lower than before the tsunami struck Japan. However, full recovery of the feed business is progressing fast with most stockbreeders reaching pre-tsunami production levels again.

Ishinomaki Futo Silo is confident in a prosperous feed business and was already looking to expand its operations before the disaster which disrupted the business. To reduce costs and increase capacity, Ishinomaki Futo Silo considered replacing the old pneumatic unloader and Bühler was contacted as a supplier. Ishinomaki Futo Silo and Bühler visited two existing customers in Japan, both of which have a Portalink 600. The first visit was to the Portalink installed at Showa Sangyo K.K. Kashima; the second to Nisshin Butsuryu K.K. Isogo.

After the two reference visits, Ishinomaki Futo Silo was convinced of the unloader concept and especially of the vertical chain conveyer and associated low energy consumption.

One Source

Superior harbour solutions

Continuous Screw Type Ship Unloader, a most efficient and environmental friendly system for dry bulk unloading.

FLSmidth supplies reliable loading and unloading equipment om port handling equipment, including ship loaders, continuous ship unloaders (screw, bucket chain and pneumatic type), grab systems and complete stockyard and storing facilities; our solutions are engineered to master the most challenging demands in the most rigorous environments.

For further information please contact us at:
FLSmidth Material Handling • Tel: +49 6834 470-0
Email: wadgassen@flsmidth.com or
www.flsmidth.com

FLSmidth

Ishinomaki and its port during the devastating tsunami of March 2011.

Bühler recognized the need for fast response and visited Ishinomaki Futo Silo right after the tsunami. It proposed the Portalink 400 with specially designed earthquake absorbers integrated in the chassis. After carefully studying the test data of the earthquake absorber, Ishinomaki Futo Silo confirmed that it will be able to withstand even stronger earthquakes. The Portalink has a nominal capacity of 400tph (tonnes per hour) and can handle bulk carriers up to 70,000dwt. The power requirements per tonne are only 0.38kWh which is the lowest available on the market. With the automatic sink in function, operating the Portalink is easy and optimal product supply is ensured, resulting in a high efficiency level. To avoid costly movements to supply supporting equipment, the Portalink is equipped with a jib crane capable of handling loads up to 12 tonnes.

Ishinomaki and its port after the tsunami.

The new Bühler Portalink 400 on its way to the port of Ishinomaki.

About Ishinomaki Futo Silo

Ishinomaki Futo Silo was founded on 23 April 1968 and specializes in the unloading, storage and distribution of grain for the feed industry. Located in the Tohoku area in the port of Ishinomaki, it has a large customer base provides employment for 33 staff. Products handled are maize, milo, soybean meal, oil seed meal, barley, wheat, wheat bran, and DDGS.

About Bühler

Bühler is a global technology leader which specializes in the supply of equipment, systems and services for the conversion of renewable resources derived from food and synthetic substances into top quality functional products and materials. Bühler operates in over 140 countries and has some 10,000 employees worldwide. In fiscal 2012, the Group generated sales revenue of CHF 2,409 million.

Portalink 400, which has a nominal capacity of 400tph.

VIGAN

YOUR SOLUTION PROVIDER

Reliable handling solutions for dry agribulk cargoes

Pneumatic or Mechanical Ship Loaders & Unloaders
Port Equipment-Turnkey Projects

Most efficient hold cleaning

Mechanical CSU = up to 1,500 tons/hour

VIGAN ENGINEERING S.A. RUE DE L'INDUSTRIE, 16 ▸ 1400 NIVELLES (BELGIUM)
TÉL.: +32 67 89 50 41 ▸ FAX : +32 67 89 50 60 ▸ WWW.VIGAN.COM ▸ INFO@VIGAN.COM

Cargotec mobile unloader destined for South American grain handling facility

A Siwertell road-mobile ship unloader ensures a highly-efficient, flexible and dust-free bulk transfer operation.

A Siwertell 15 000 S road-mobile unloader will serve a grain-handling facility for an undisclosed owner in South America; it will deliver reliable bulk handling at rated capacities of up to 400tph (tonnes per hour).

In December this year Cargotec will deliver its largest model Siwertell road-mobile unloader to an undisclosed owner in South America. The Siwertell 15 000 S will be used to discharge soya meal, corn and wheat at rated capacities of 250tph to 400tph depending on the material being handled.

The order is for a trailer-based, diesel-powered unit fitted with double-bellows, a dust filter and Siwertell safety features appropriate for handling organic material. "Safety is of course a paramount consideration in modern industrial process," says Jörgen Ojeda, Siwertell sales director. "When handling organic material, dust mixed with oxygen and air can result in an explosive atmosphere inside the enclosed conveying system. Therefore, the Siwertell unloader's safety system monitors any potential hazard and is fully-equipped to minimize the risk of an explosion.

"The provision of dual loading bellows means that road transport units or rail wagons can be loaded sequentially without the need to interrupt the unloading process. This maintains the unloader's rated capacities throughout the discharge process," notes Ojeda. "Compared to a single loading bellows system, the through-ship capacity is increased by 25% to 30%. It is also possible to connect the outlet to almost any type of receiving land-based conveying system.

"This level of safety and efficiency, along with the quality of our products and our reputation as a reliable partner, secured this new order," he says.

The new unloader will be built at Cargotec's Siwertell production premises in Bjuv, Sweden. It will have a totally enclosed conveying system, which eliminates dust and any spillages.

Siwertell is a major force in dry bulk cargo handling. Siwertell products combine efficiency and flexibility with environmentally friendly technology. This ensures that they deliver maximum productivity with minimal environmental impact.

Siwertell solutions can handle virtually all dry bulk cargo. They can be delivered as complete systems or as separate components for use in almost any configuration that an operator requires. The Siwertell portfolio includes ship unloaders, road-mobile ship unloaders, shiploaders, conveying systems, and terminal designs. Siwertell products are supported by an extensive service organization with local representatives worldwide.

Siwertell is a Cargotec brand. Cargotec's sales totalled €3.3 billion in 2012 and it employs approximately 10,000 people. Cargotec's class B shares are quoted on NASDAQ OMX Helsinki under symbol CGCBV.

E-Crane: perfectly balanced ship unloading solution

The E-Crane is designed specifically for barge and ship unloading, and is a proven and trusted solution in many bulk material handling industries. Most dedicated systems for offloading coal, limestone and other bulk materials are costly, inflexible, and require an expensive, hard to maintain infrastructure. E-Crane's versatility, reliability and flexibility allows for tailor-made material handling solutions. These custom solutions, combined with E-Crane's modular design, make E-Crane the ideal equipment for any bulk handling application.

The standard E-Crane product line consists of five series of balanced hydraulic cranes (E-Cranes): 700 Series, 1000 Series, 1500 Series, 2000 Series, and 3000 Series. The E-Crane is placed firmly between production line excavators (or material handlers) and large scale dedicated unloading structures. Even the smallest E-Crane offers much more unloading capacity than the standard

excavator, while the larger E-Cranes compete with dedication systems in terms of production but come in at only a fraction of the installed cost with even less annual maintenance costs. The E-Crane series offers models with up to 50 tonnes duty cycle capacity and outreaches of up to 150ft (50m).

The E-Crane is a truly revolutionary material handling machine as its main design feature is a parallelogram style boom configuration which allows the machine to be in near perfect balance throughout its working range. This '4-bar' design allows gravity to work for you instead of against you, reducing

horsepower requirements and power consumption. The design of the E-Crane also allows for durability and longevity, taking structural fatigue and component life into account, making it the ideal solution for dedicated tasks like ship unloading that require repetitive cycles.

Case Study: Nova Scotia Power

A 2000 Series/Model 21382 GA-E E-Crane currently operates at the Nova Scotia Power facility in Port Hawkesbury, Nova Scotia. E-Crane and Nova Scotia Power (NSPI) worked with Montreal-based Savage CANAC Corporation to commission the crane on the dock at the Point Tupper Marine Terminal.

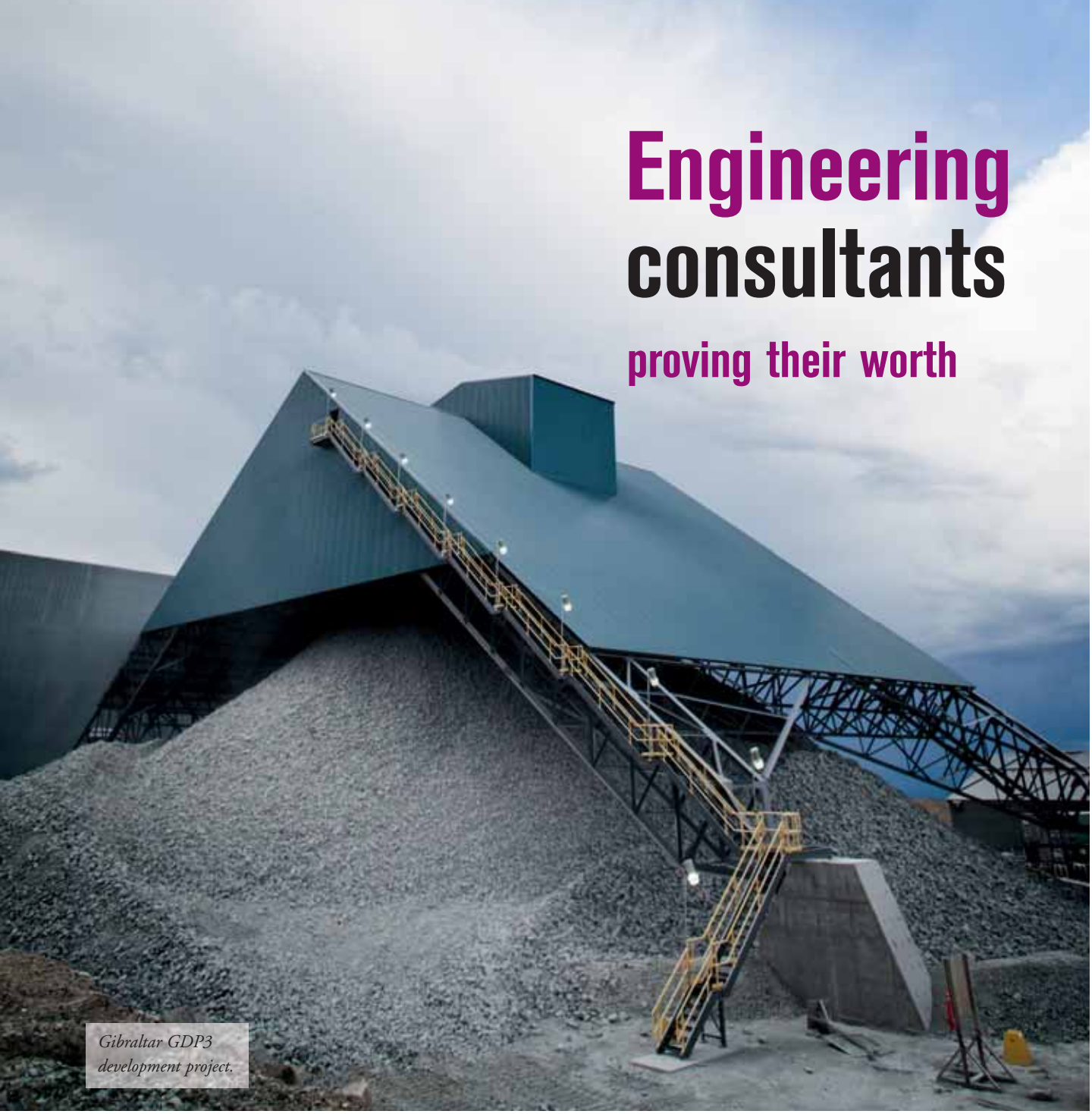
The marine terminal at Point Tupper is located directly on the shipping route between North America and Europe and is the deepest ice-free harbor in North America. This allows for ultra-large vessels carrying a variety of bulk cargo products to be unloaded at this terminal. The E-Crane on the dock is designed to unload panamax sized vessels using a 23m³ hydraulic coal grab. The E-Crane offloads these Panamax vessels with 50–70-second

cycles, achieving offloading rates of more than 1,000tph (tonnes per hour) 'through hatch'.

The E-Crane is mounted on a high portal rail undercarriage and features a connecting link to the receiving hopper. This link allows the hopper to travel along the rails with the E-Crane to assure a constant distance between the hopper and the crane for ease of operation. The dock itself is 134 metres long and 13.6 metres wide to accommodate a wide range of vessels. The small size of the dock was a limiting factor for the project, but the balanced design of the E-Crane allowed engineers to keep the dock size small. As there was no room to assemble the E-Crane on site, the E-Crane was put together on shore in Belgium and delivered to the site fully assembled with a total operating weight of 385,000kg. The entire crane was lifted onto a Jumbo Transport ship equipped with two, 800-tonne cranes, shipped, and then offloaded by the same vessel at the NSPI terminal. The E-Crane was successfully commissioned and continues to unload panamax sized vessels at high rates. NSPI operators are very happy with the E-Crane and enjoy operating it. DCi

Engineering consultants

proving their worth



Gibraltar GDP3 development project.

Engineering consultants are a vital link in the dry bulk commodity chain, offering expertise and practical solutions to the market. Their input varies from advising on the equipment needed to handle small quantities of bulk cargo, all the way through to the turnkey development of major ports.

Canada-based Ausenco is one of the major companies that offers engineering consultancy services. The company sets high global standards for leading edge engineering and project management services in the resources and energy sectors.

It is dedicated to delivering practical, fit-for-purpose solutions to complex problems that provide value to its clients, wherever they may be located. With 30 offices in 19 countries, it has the capability to deliver results for exciting projects in some of the world's most remote areas.

Ausenco offers its clients a complete end-to-end solution through our areas of expertise which include energy, environment and sustainability, minerals processing, transportation systems, infrastructure, pipeline systems, operations and maintenance, and ports and terminals.

Ausenco is also committed to having a positive impact on the world around. It believes that, only by working together and with its clients, its communities and its environment can it achieve more to make a genuine impact on the world around.

A few of Ausenco's most recent bulk-handling projects are detailed below.

Gibraltar Development Plan 3: Gibraltar Mines Ltd.

Location: **British Columbia, Canada**
Business line: **Minerals & Metals**
Client: **Gibraltar Mines Ltd**
Timeframe: **2011–2013**
Contract type: **Create (EPCM)**
Project Value: **$237m**

Ausenco provided engineering, procurement and construction management services for the third phase of the development and modernization of the Gibraltar copper-molybdenum mine, located in McLeese Lake, British Columbia, Canada. This project

Gibraltar GDP3 development project.

is known as the Gibraltar Development Plan 3 (GDP3) Project.

The GDP3 project has increased the milling capacity at the mine with minimal interruption to existing copper and molybdenum production. The project included the construction of a new stand-alone concentrator, which added an additional 30,000 tonnes per day to the processing capability.

The project incorporated additional primary grinding, secondary grinding, regrind, rougher flotation, cleaner flotation, concentrate filtration and tailings pumping capacity as well as various ancillary systems and upgrades.

A stand-alone molybdenum separation plant was also constructed to replace the existing molybdenum circuit; the new molybdenum plant has more than doubled the mine's molybdenum metal production, to approximately 2.5 million pounds per year. These modifications and upgrades have enhanced Gibraltar's operating flexibility and reliability and ensure that the mine continues to be an economic cornerstone for the region for years to come.

The GDP3 project increases the overall processing capacity to 85,000 tonnes/day with an annual copper production averaging 165 million pounds.

Achievements include:

- over 900,000 man hours without a lost-time incident;
- minimal interruption to existing production during plant shutdowns; and
- optimized existing site facilities and systems to provide cost-effective solutions.

Previous work performed by Ausenco for this project included an update to a 2008 Scoping Study for GDP3 incorporating process and layout optimizations made possible by the completion of the previous project phases.

Antamina EPC Project: Antamina concentrate export terminal

Location: **Huarmey, Peru**
Business line: **Process Infrastructure, Ports, Marine and Offshore**

Antamina project: shiploader.


Antamina project: overview.

Client: **Bechtel International as agent for Compañia Minera Antamina**
Timeframe: **1999–2002**
Scope: **Design and construction of concentrate loading port**
Services: **Planning, design, procurement, and construction**
Project Value: **$2.3 billion**

Ausenco executed an EPC development of the Antamina concentrate export terminal at Huarmey, Peru.

The terminal is capable of exporting 1,800,000 tonnes of copper and zinc concentrates annually. Facilities include receiving tanks for the slurry, treatment facilities, storage shed for 150,000 tonnes of concentrate, conveyors from the filter plant to the storage building and from the storage building to the ships, berth for ships up to 50,000dwt and associated infrastructure.

Ausenco performed the project engineering and procurement and formed a joint venture (Sandwell SSK) with SSK Montajes e Instalaciones S.A.C., a Peruvian–Chilean contractor to carry out the construction.

The project was executed under a PI (performance incentive) contract where the owner and contractor share underruns and overruns. The contract was completed three months ahead of schedule with an associated budget underrun.

As well, Sandwell SSK achieved the best safety record of the 40 contractors on the $2.3 billion Antamina mine/port project, having exceeded 3.5 million hours of work with only one lost time injury.

The project was successfully constructed to World Bank environmental management standards. Ausenco received the Consulting Engineers of British Columbia, Award of Merit for this project in 2002.

Dampier port upgrade: East Intercourse Island ore handling operations

Location: **Dampier Port, Western Australia**
Business line: **Process Infrastructure, Mining and Bulk Terminals**
Client: **Hamersley Iron Pty. Limited**
Timeframe: **2003**
Services: **Preliminary engineering, definitive cost estimates, construction planning, simulation modelling, construction**


Dampier port upgrade: iron ore handling operations.


Dampier port upgrade.

At the time of this study, Hamersley Iron's East Intercourse Island Terminal handled 35mt (million tonnes) per annum of lump and fine ore.

Train loads of 220 cars each carrying 105 tonnes, are bed blended by two travelling stackers. The ore is reclaimed by two bridge-type bucket wheel reclaimers at 8,000tph (tonnes per hour) and loaded into ships up to 350,000dwt. Fully laden ships up to 270,000dwt can depart at high tides.

The proposed new Yandicoogina Mine required handling a third type of ore and increased the port throughput to 65mt/year.

The definitive study by a Clough and Ausenco joint venture determined that upgrade of the East Intercourse Island Terminal is required to handle the third ore and increase shiploading efficiency.

The following upgrade construction was carefully planned to be completed in three phases, with minimal operational disruption:

- two new 220,000 t piles for live storage of 'Yandi' ore;
- installation of one new bridge-type bucket wheel reclaimer;
- construction of a lay-by berth; and
- increased capacity of reclaimers and shiploader to 11,000tph.

Extensive simulation modelling was done to confirm the railroad deliveries, upgraded throughput capacity and vessel total time in port and loading performance. Detailed design and construction was completed by the Joint Venture.

Corumbá project: river barges.

Ausenco successfully completed definitive engineering and was awarded an EPCM contract for the Corumbá Expansion Project.

The contract consisted of iron ore beneficiation and transportation of 10mt/year from the mine near Corumbá, Brazil to Capesize ships anchored in the Río de la Plata, Uruguay.

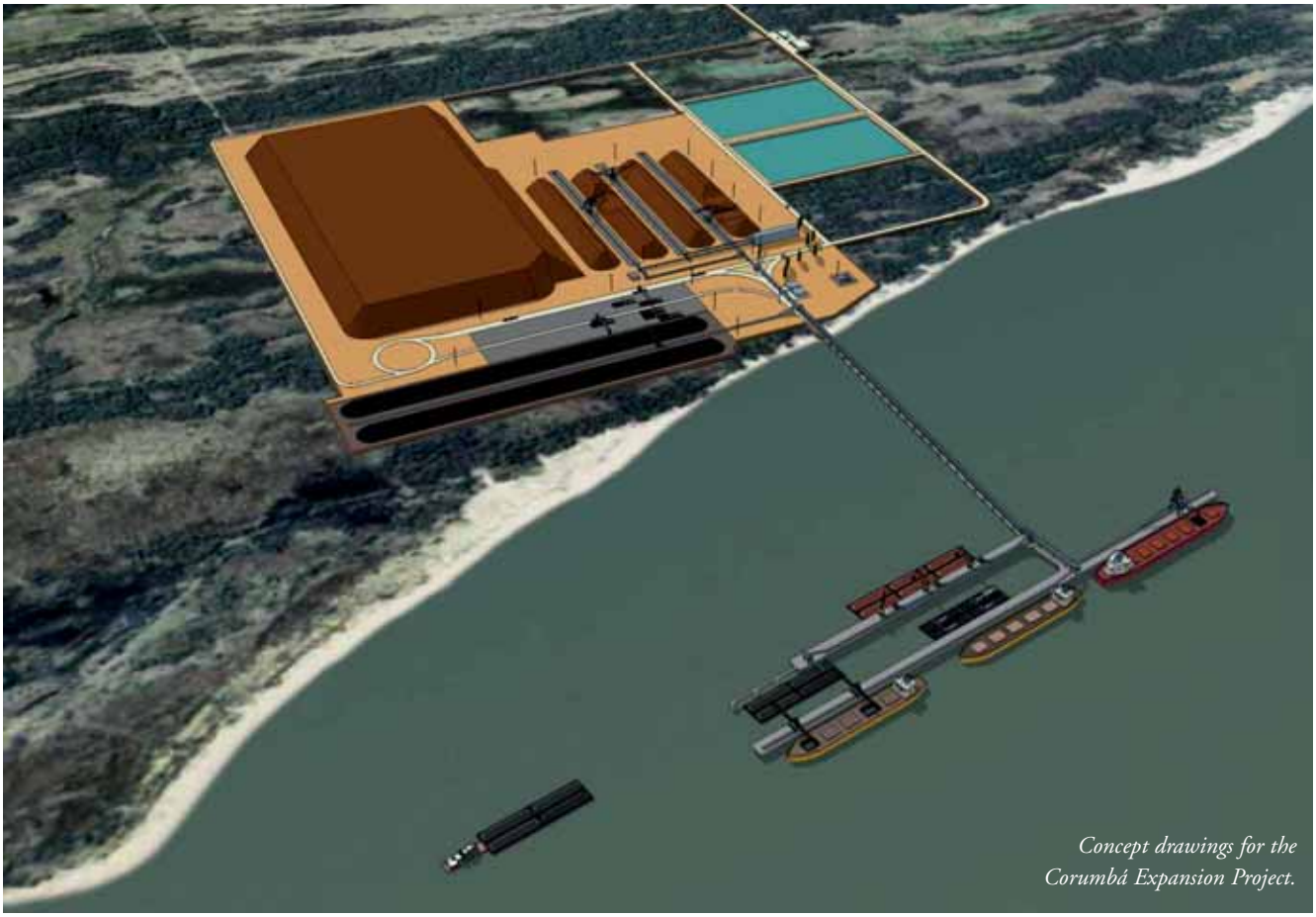
Expansion plans to increase production to 20mt/year were included. The project included:

- mining equipment fleet;
- beneficiation plant, complete with water supply;
- a 30-km overland conveyor with complex curves, from mine to river port;
- barge loading port with drying capability;
- 19 tugs, 200 new barges, vessel maintenance facility, and logistics for transport of the product 2,500km down the Paraguay and Parana Rivers;
- barge unloading and shiploading port on the Rio

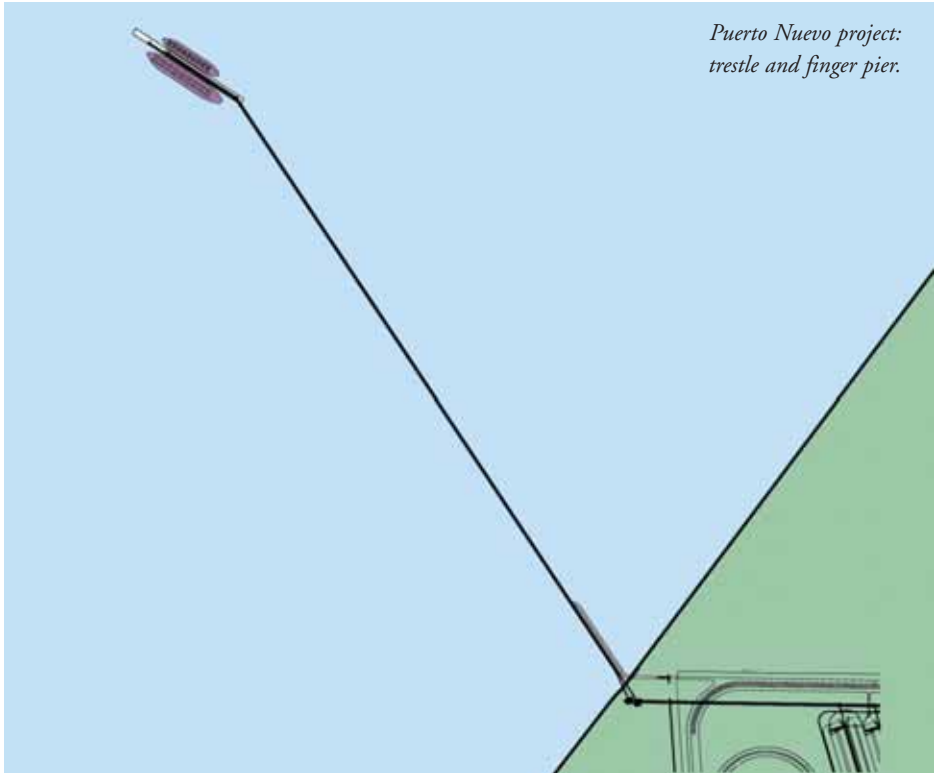
Corumbá Expansion Project: from mine to transshipment

Location: Brazil, Paraguay and Uruguay
Business line: Process Infrastructure, Mining and Bulk Terminals
Client: Rio Tinto Iron Ore
Timeframe: 2007–2008 (12 months of a 3-year contract)
Services: Owner's EPCM contractor for complete range of services from conceptual, pre-feasibility, and definitive engineering to procurement, contracting and construction management.
Scope: Iron ore beneficiation, overland conveyor from mine to river port, river port facilities, river vessels and logistics, ocean port facilities, shuttle vessels, transshipment.

Corumbá project: Rio Tinto truck carrying iron ore.



Concept drawings for the Corumbá Expansion Project.



Puerto Nuevo project: trestle and finger pier.

Uruguay; and

- Panamax shuttle vessels and transshipment facility transferring ore to Capesize vessels anchored off Punta del Este.

The Corumbá Project Assets were sold to Vale in 2009. EPCM started but was not completed.

Puerto Nuevo Marine Facilities: coal handling export terminal

Location: Cienaga, Magdalena, Colombia
Business line: Process Infrastructure, Ports, Marine & Offshore
Client: Prodeco S.A.
Timeframe: 2008–2010
Scope: Conceptual, basic, and detailed engineering

Ausenco developed the concept engineering, basic engineering, and detailed engineering for the coal terminal marine facilities. Ausenco also developed the scope and managed the site-specific studies, which covered all geotechnical, navigational, and met-ocean aspects of the project. The marine facilities would become the largest coal loading terminal in Colombia, handling up to 180,000dwt bulk carriers. The marine facilities were comprised of a 1.3km-long trestle supporting two conveyors and an access roadway, a finger-pier supporting a travelling shiploader and capable of accommodating two Capesize carriers at any one time, a tug mooring facility, and a 9km-long dredged access channel to accommodate the full range of design vessels.

Puerto Nuevo project: rendering of marine facilities.

US company offers wide-ranging engineering consultancy services

Jenike & Johanson is a major provider of bulk material engineering services, including engineering consultancy.

The company delivers engineered solutions to achieve reliable powder and bulk solids flow based on proven theories and decades of project experience.

Bulk materials and their flow properties are at the core of all Jenike & Johanson's work. Every one of its projects (7,500 to date) is truly unique. It offers its clients maximum flexibility in selecting services required to meet their bulk material handling needs. It does not follow the 'one size fits all' concept — which can be a dangerous pitfall in engineering. Decisions made during the feasibility and engineering stages of a project are critically important for its success. If your bulk solids systems are not engineered from the outset to handle the unique characteristics of your materials, process start-up time can be significantly delayed and design capacity may never be reached.

The company offers a wide range of services that effectively support various stages of a typical engineering project.

Jenike & Johanson's core services

- **site visit:** review process and equipment, collect critical design data;
- **bulk material testing:** characterize bulk material flow, conveying, or segregation behaviours;
- **conceptual & functional engineering:** design of silos, hoppers, feeders, chutes, stockpiles for reliable flow;

- **physical & analytical modelling:** model a unique process or develop/run a computational model; and
- **structural & mechanical engineering:** engineer key details for equipment for construction, fabrication.

Additional services

Jenike & Johanson can also provide:

- **peer reviews:** review of your material handling system or process design from solids flow basis;
- **education & training:** courses on theory/practice of effective bulk material handling and conveying;
- **expert witness & litigation support:** legal services involving liability, equipment failures, etc.;
- **bulk material testers:** equipment to measure powder flow properties and segregation potential; and
- **equipment:** customized material handling equipment that works from the start and has a long life

Case studies

Jenike & Johanson has given *Dry Cargo International* details of some of its recent case studies that relate to the dry bulk market.

1. Vessel analysis: ensuring metal concentrate cargo stability

INDUSTRIES: Powdered Metals, Mining & Minerals

The need

The 'Code for Safe Practice for Solid Bulk Cargoes' provides rules of safe practice for the shipment of bulk cargoes by ship. One of the rules is to ensure the materials in the holds have sufficient time to settle and are stable before proceeding out of port. Bulk cargo carriers have been known to list and even sink as a result of unstable cargo — especially in inclement weather.

The metal concentrate producer understood the risks and was aware of the concern. However the codes give no specific guidelines on how long to wait to ensure a fine, dry concentrate has properly settled and no longer presents a risk of being unstable. Waiting too long presents costly time lost at the port so there is substantial pressure to depart as quickly as possible. Therefore a thorough basis for determining a sufficient wait period was required.

NEEDS ADDRESSED: Solve or prevent poor flow, address process non-uniformity
BULK MATERIAL HANDLED: Metal concentrate
EQUIPMENT: Storage

The solution

Jenike & Johanson was commissioned to study the problem and provide a reliable method for setting the wait period. Its approach was to measure the relevant flow properties of the metal concentrate. It then used its proprietary SETTLE software to predict how long the vessel must stay in the port before sailing to ensure the cargo is stable. This required an understanding of hold sizes, filling behaviour, and the flow properties of the material. For their ships and filling approach, it recommended that the vessel remain in port for at least 24 hours after the last hold was filled.

The result

According to the client, there have been no reports of cargo shifts since adopting Jenike & Johanson's recommendations. The project has eliminated the risk and provided an engineered approach for the required wait period before setting sail.

2. 'CSL Innovator' self-unloading ship operates efficiently

Canada Steamship Lines — Toronto, Canada

INDUSTRIES: Mining & Minerals, Cement

MAIN BULK SOLIDS: Alumina, Cement, Coal, Iron Ore, Ore, Potash, Salt

The need

Built for world-wide ocean trade by Canada Steamship Lines (CSL), the *CSL Innovator* is a Panamax-class self-unloading vessel.

CSL's new vessel had to be capable of transporting and discharging a wide range of materials. Typical free-flowing products include grain, iron ore pellets, and aggregates. Cohesive products include wet ores, concentrates, and cohesive coals. Fine, dry, dusty products include alumina and possibly cement. Products that cake include salt, potash, and sugar. Many products are single sized, but others, like gypsum, can contain large, slabby lumps.

NEED ADDRESSED: Solve or prevent poor flow

BULK MATERIAL HANDLED: Cement, iron ore pellets, aggregates, wet ores, concentrates, alumina, salt, potash, coal

EQUIPMENT: Storage, gate

The solution

Personnel in Jenike & Johanson's office in Toronto, Canada, worked closely with CSL designing viable hopper and gate configurations.

Flow property results obtained for a very cohesive iron ore concentrate were used as the design basis material. Jenike & Johanson considered many gate design concepts, constructed working models and performed flow pattern tests. Eventually, it developed a new gate of the 'basket' or 'swing' gate type in conjunction with Consilium CMH Marine AB.

The result

The new ship, aptly named the *CSL Innovator*, has been in continuous service since September 1988. To date, the performance of the new hold configuration and gate design has been exceptionally good and has far exceeded industry expectations.

3. Fixing chute plugging problems at petcoke shipping terminal

INDUSTRIES: Mining & Minerals, Energy & Power

MAIN BULK SOLIDS: Coke

The need

A major US conglomerate ships petroleum coke throughout the Pacific Rim. Delays in the loading operation created by flow stoppages can disrupt schedules, leading to higher shipping costs.

The facility encountered severe plugging problems with the chutes that feeds into their main storage silos. These stoppages occurred in several chutes at conveyor transfer points. The water used in cleanups ended up in the silos, which increased the moisture content of the stored coke and thus created additional clean-up problems downstream.

NEEDS ADDRESSED: Solve or prevent poor flow, address process non-uniformity

BULK MATERIAL HANDLED: Petroleum coke

EQUIPMENT: Conveyor

The solution

Flow testing on various samples of petroleum coke allowed J&J engineers to evaluate the cause of chute plugging. A thorough review of the transfer chute system was performed. It was determined that the chute design needed significant modifications to maintain reliable stream flow.

A new chute geometry was developed, including a diverter (flop gate) feature. J&J was also contracted to develop mechanical fabrication drawings and supply of the new chute, which has several key features for maintaining sticky coal flow. Abrasive wear testing was also done by J&J to evaluate chute liner life.

The result

The petroleum coke handling system has been in operation for over three years with minimal downtime for maintenance.

About Jenike & Johanson, Inc.

Jenike & Johanson is a major global provider of powder and bulk solids handling, processing, and storage technology. Over the past 55 years, it has tested over 10,000 unique powders and bulk solids and worked on more than 7,500 projects, giving its team the broadest real-world and in-depth experience in the industry to address a wide variety of bulk material handling and engineering needs. DCi

RELIABLE

FEDNAV | Business Partner

FEDNAV

HWY H2O

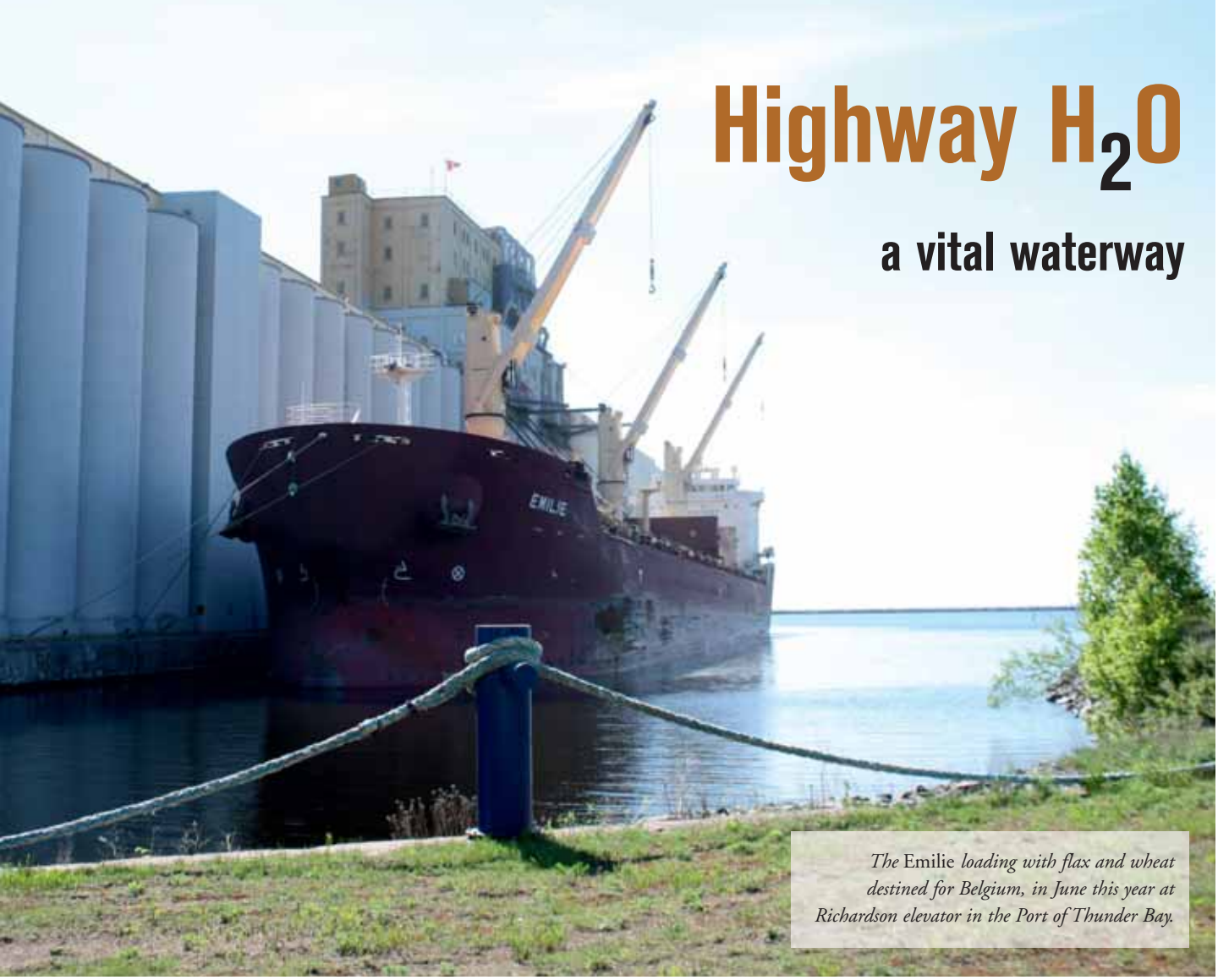
Winner of Bulk Ship Operator of the Year
at the International Bulk Journal Awards

ibj AWARDS 2012

fednav.com

Highway H_2O

a vital waterway



The Emilie *loading with flax and wheat destined for Belgium, in June this year at Richardson elevator in the Port of Thunder Bay.*

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

Virtually every commodity imaginable moves on the Great Lakes Seaway System. Annual commerce on the System exceeds 200 million net tonnes (180 million metric tonnes), and there is still ample room for growth. Some commodities are dominant:

- iron ore for the steel industry;
- coal for power generation and steel production;
- limestone for construction and steel industries;
- grain for overseas markets;
- general cargo, such as iron and steel products and heavy machinery; and
- cement, salt and stone aggregates for agriculture and industry.

The primary carrier vessels fall into three main groups: the resident Great Lakes bulk carriers or 'Lakers'; ocean ships or 'salties'; and tug-propelled barges. US and Canadian lakers move cargo among Great Lakes ports, with both nations' laws reserving domestic commerce to their own flag carriers. Salties flying the flags of other nations connect the Lakes with all parts of the world.

To realize the magnitude of this commerce, consider the impact of some typical cargoes:

- one 1,000ft-long Great Lakes vessel carries enough iron ore to operate a giant steel mill for more than four days;
- a similar 'Super Laker' carries enough coal to power Greater Detroit for one day; and
- a Seaway-size vessel moves enough wheat to make bread for every resident of New York City for nearly a month.

For every tonne of cargo, there are scores — often hundreds — of human faces behind the scenes. On board, there are the mariners themselves, while shore side there are lock operators and longshoremen, vessel agents and freight forwarders, ship chandlers and shipyard workers, stevedores and terminal operators, Coast Guard personnel and port officials, railroad workers and truck drivers — a wide web of service providers.

Opened to navigation in 1959, the St. Lawrence Seaway part of the system has moved more than 2.5 billion metric tonnes of cargo in 50 years, with an estimated value of more than $375 billion. Almost 25% of this cargo travels to and from overseas ports, especially Europe, South America, the Middle East, and Africa.

From Great Lakes/Seaway ports, a multi-modal transportation network fans out across the continent. More than 40 provincial and interstate highways and nearly 30 rail lines link the 15 major ports of the system and 50 regional ports with consumers, products and industries all over North America.

Environmental and social impacts of marine transport

For more than 200 years, the marine shipping industry has been an integral part of the Great Lakes economy.

The Great Lakes and the St. Lawrence River combine to form the longest deep-draught navigation system in the world, extending 3,700 kilometres (2,300 miles) into the North American heartland. The system includes the five Great Lakes and their connecting channels, as well as the St. Lawrence River

Seaway monthly traffic results June 2013

Traffic (in thousands of tonnes)	Montreal-Lake Ontario Section				Welland Canal Section				SLSMC - Combined Traffic			
	Year to Date		Change from 2012		Year to Date		Change from 2012		Year to Date		Change from 2012	
	2012	2013	Tonnes	%	2012	2013	Tonnes	%	2012	2013	Tonnes	%
Total Cargo	10,493	8,896	- 1,597	-15.22%	10,476	10,180	- 295	-2.82%	13,335	11,789	- 1,546	-11.59%
All Grain	2,231	2,163	- 68	-3.07%	2,155	2,047	- 108	-5.02%	2,324	2,223	- 101	-4.35%
Iron Ore	3,900	2,732	- 1,168	-29.95%	2,550	2,710	160	6.26%	3,900	3,312	- 588	-15.09%
Coal	953	762	- 191	-20.04%	1,769	1,605	- 164	-9.27%	1,769	1,605	- 164	-9.27%
Dry Bulk	1,473	1,347	- 126	-8.58%	2,646	2,342	- 305	-11.51%	3,291	2,670	- 622	-18.88%
Liquid Bulk	1,215	1,281	66	5.44%	939	1,064	125	13.35%	1,328	1,362	34	2.55%
General Cargo	713	610	- 103	-14.50%	415	413	- 2	-0.56%	715	616	- 99	-13.84%

Vessel Transits	2012	2013	Transits	%	2012	2013	Transits	%	2012	2013	Transits	%
Total Transits	999	900	- 99	-9.91%	1,143	1,099	- 44	-3.85%	1,402	1,281	- 121	-8.63%

The St. Lawrence Seaway Management Corporation

to the Gulf of St. Lawrence. A series of locks either lift or lower vessels to overcome elevation changes. These include:

- seven locks on the Montreal-Lake Ontario (MLO) section of the St. Lawrence Seaway, which lift/lower ships 68.8m (226ft);
- eight locks on the Welland Canal (Welland) section of the St. Lawrence Seaway, which lift/lower ships 99.4m (326ft); and
- one lock at Sault Ste. Marie, Michigan, which lifts/lowers ships 9.2m (30ft).

Three distinct vessel-operator groups serve the waterway. These include American and Canadian domestic carriers transporting cargo between ports within the system, and international ocean-going vessel operators that operate between ports within the system and ports located overseas.

Every year, more than 160mt (million metric tonnes) of raw materials, agricultural commodities and manufactured products are moved on the Great Lakes-St. Lawrence Seaway System. Dominant cargoes include iron ore for steel production, coal for power generation, limestone and cement for construction, and grain for both domestic consumption and export.

This marine highway supports the activities of more than 100 ports and commercial docks located in each of the eight Great Lakes states, and the provinces of Ontario and Quebec. It is also a crucial transportation network for commerce moving between North America and more than 59 overseas markets.

Commodities

Agricultural products

Agricultural products represent about 40% of all Seaway trade. Grain shipped both by the United States and Canada is primarily for export. Cargoes include wheat, corn, soybeans, barley, oats, and flaxseed.

Iron and steel products

Iron and steel products, raw and processed, have been a major cargo for the Seaway since it opened. Products include steel slabs, scrap iron, bars, rods, and manufactured iron and steel. These commodities carry the highest value of goods shipped on the Seaway and their handling is the most labour-intensive.

Mine products

Mine products make up more than 40% to total Seaway trade each year. Products include iron ore, coal, coke, salt, and stone. There is strong demand by European utilities for low-sulphur coal from the Powder River Basin in Wyoming and Montana shipped via the St. Lawrence Seaway.

Other processed and manufactured products

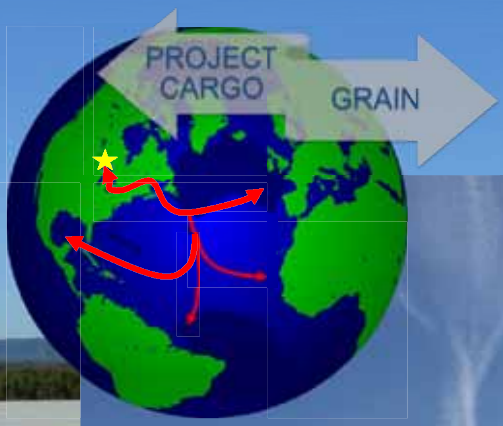
In addition to iron and steel products, the Seaway is a cost-competitive route for a number of other processed cargoes. Each year more than 10% of Seaway trade consists of fuel oil, petroleum products, chemicals, forest products, and animal products.

CANADA'S GATEWAY TO THE WEST

www.portofthunderbay.ca

The Port of Thunder Bay is a well-established gateway for wind turbines and oversized project cargo destined for Western Canada.

Grain, coal and potash exist as backhaul cargoes for European, African and Latin American destinations.



Thunder Bay Port Authority
100 Main Street
Thunder Bay, ON P7B 6R9
T (807) 345-6400
F (807) 345-9058

Award-winning Port of Sept-Îles reports on multi-user dock project status

Multi-user dock: mid-project status

Having reached the mid-point of its multi-user dock schedule, the Port of Sept-Îles has given *Dry Cargo International* an update on what is Canada's largest marine construction site.

With over 95% of project costs now known and incurred, the port is satisfied with the favourable pricing that was obtained. It will now be possible to deliver the project on budget ($220 million) and on time, with construction scheduled to wrap up in late March 2014.

The port is also pleased that work is back in full swing, following a provincial construction strike which caused an eight-day work stoppage.

The project is generating considerable local spinoffs, including:

- 80 to 90% of the 130 workers currently at the site are local;
- over $20 million in services and equipment are provided by the following main local suppliers: Construction de lignes électriques N.G.E., Westburne, Nedco, Équipements Nordiques, Construction Tshiuetin, AXOR, and Bouchard & Blanchette Marine.

"We're also very happy with the proactive support and cooperation of the teams from Pomerleau and Sandvik Canada, which have worked closely with our team to complete construction of the country's biggest bulk port terminal," said Port president and CEO Pierre D. Gagnon.

Port of Sept-Îles wins award

The Port of Sept-Îles received the Special Award for Support to the Reserve Force during a ceremony held at the Canadian War Museum in Ottawa on Friday, 7 June 2013.

The Canadian Forces Liaison Council (CFLC) presented the award to port president & CEO Pierre D. Gagnon at its Biennial National Employer

New grain port planned to handle increased output

Growth in Eastern Ontario's corn output is spurring the development of a new export grain port on the St. Lawrence River.

Ontario Grain Terminals proposes to construct the two-bin facility at the site of an existing UTI salt unloading dock on the Township of South Dundas waterfront.

Simple economics of supply and demand are driving the latest development. The export market demands grain, but supply of storage and handling space to move Eastern Ontario product at harvest time is short.

Once in operation, the terminal expects to receive wheat, soybeans and corn during their respective harvest periods for export shipment by marine vessel, according to a press release issued by site owner Tom Kenab.

Eastern Ontario produces over one million tonnes of grain annually, spurring seasonal surplus at harvest that must find its way to market.

Current storage capacity in the area is insufficient, causing less-than-ideal market conditions for local farmers at harvest, according to the release.

The developers expect the new facility will relieve some of the congestion by providing local farmers and elevator operators with a new market for their grains. Several major marine shippers of grain have expressed interest in loading their ships and this should provide better economics for local grain farmers.

Ontario Grain Terminals will be managed by Ben Currelly — longtime farmer, grain trader of a dozen years, and CEO of NorAg Resources Inc. of Port Hope.

The proposed Morrisburg facility will consist of two 20,000 ton grain bins with the possibility of adding two more bins of the same size in the future if demand is sufficient.

The bins are proposed to be located immediately south of Lakeshore Drive on the current UTI dock. The design includes truck unloading and loading, plus a conveyor to the edge of the water for loading ships.

The terminal will not have grain drying equipment, according to the developer, who insist the facility is being designed to the highest standard to minimize impact on several residences in close proximity.

The truck unloading pit will have dust control systems, according to developers. The aeration fans required to maintain grain quality will also be located on the south side of the grain bins. The project has recently moved to the permitting stage and construction is expected to begin after the township has issued the required permits.

The proposed grain terminal is being designed by Horst Systems Ltd, a Guelph-based builder of grain storage and handling systems for the past 20 years. Earl Horst, Founder of Horst Systems, said the project's two 'cans' would measure 105 feet wide by just under 100 feet tall.

Competition for Port of Prescott

Located 30km away, Robert Dalley, Port of Prescott general manager, conceded there can be capacity issues at harvest when incoming crops may slow down outgoing grain for export at that facility — though he added the port continually strives for improvement in a competitive marketplace. "If we can expand our business, we'll do what we can to get better."

His firm does business with NorAg, "and we still do," said Dalley. "There are no hard feelings here. "I know that Ben [Currelly] has always wanted to find his own place along the St. Lawrence."

Dalley acknowledged hearing from concerned residents of Lakeshore Drive, who have approached him with questions about why all of the grain shouldn't just go to the Port of Prescott.

He also said there was no truth to the rumour of a possible strike at the unionized port later this year, a theory some had raised as the reason behind the Morrisburg project. "I can absolutely say that's false," he said.

Support Award ceremony. The event is held to honour government organizations, companies, and educational institutions, highlighting their support for the Primary Reserve.

Lieutenant-Commander François Lévesque, commanding officer of Her Majesty's Canadian Ship (HMCS) *JOLLIET* of the Naval Reserve Division in Sept-Îles (Quebec), nominated the Port of Sept-Îles for the award. Pierre D. Gagnon, president and CEO of the Port de Sept-Îles, is a strong supporter of the HMCS *JOLLIET* and the Naval Reserve Division in Sept-Îles. The two organizations have collaborated in the region in an exemplary manner to promote the HMCS *JOLLIET*.

To highlight the award, a networking activity took place June 12 between the Port of Sept-Îles and the HMCS *JOLLIET* so employees of the two organizations could get to know each other better and strengthen their bonds.

About the Port of Sept-Îles

Boasting a variety of state-of-the-art facilities, the Port of Sept-Îles is the leading iron ore port in North America, with an annual volume of nearly 30 million tonnes. Sept-Îles' port facilities play a vital and strategic role in the operation of many businesses from the region's primary sector. The port's annual economic impact is estimated at nearly $1 billion, with some 4,000 direct and indirect jobs. Through its activity, the Port of Sept-Îles therefore remains a significant source of wealth creation in Quebec and the rest of Canada.

Logistec provides high quality cargo-handling services to marine and industrial customers through a strong network of strategically located facilities in the Great Lakes, the St. Lawrence River and on the Eastern Seaboard of North America.

THE PLACES WE WORK

Whether in North Gower (ON), as seen above, or at our other bulk facilities such as Laurier Terminal in Montréal (QC), Contrecoeur (QC), Sydney (NS), Sept-Îles (QC), or Brunswick (GA), Logistec provides customers with innovative solutions for their bulk cargo-handling needs.

www.logistec.com

LOGISTEC

THE PORT OF TOLEDO

The Port of Toledo - a 12 time recipient of the Robert J. Lewis Pacesetter Award - is at the forefront of cargo handling technology on the Great Lakes. Home to 15 terminals and a full service shipyard, the Port of Toledo is the largest landmass seaport on the Great Lakes. The Toledo-Lucas County Port Authority has acquired two new Liebherr Mobile Harbor Cranes, a High Rise Material Handler and other modern technologies that make it one of the most modern ports in the Midwest.

A newly launched virtual tour at www.tourtheport.com, provides customers a convenient and timely look at Toledo's waterfront resources.

TOLEDO | LUCAS COUNTY
PORT AUTHORITY

toledoseaport.org | +1 419 243 8251

Upsurge of barge traffic on Erie Canal: further growth anticipated

The Historic Erie Canal, which stretches 363 miles from Albany to Buffalo, has been receiving an upsurge in barge traffic in recent years after decades of being used primarily by recreational boats. According to a recent report, the revival in commercial traffic is in large part due to sales of Canadian grain, as well as to the low cost of fuel implicit in use of the canal compared to other transportation modes.

The canal officially opened in 1825 with some of New York's largest cities growing up along it. Freight passing through the 500 miles of waterways and locks peaked at five million tonnes. But the level dropped significantly when the interstate highway system and competing St. Lawrence Seaway to the north opened up. Commercial shipping slowed to just 10,000 tonnes a year, and recreational boats became the dominant users of the canal, as is still the case today. In 2012, however, the canal saw a four-fold increase in average freight transit. Projections for 2013 are for more than 100,000 tonnes to be shipped through the waterway.

The growth in commercial traffic is due to the rising cost of diesel fuel. Using one gallon of fuel, canal barges can carry a short tonne of cargo 514 miles; a train can haul it 202 miles, less than half the distance; and a truck only 59 miles. Canal barges can carry loads of up to 3,000 short tonnes. They can also transport objects that would be too large for road or rail shipment. Erie Canal Corporation Director Brian Stratton said that as more crops arrive from Canada because of changes in trade law, the canal just happens to be in the right place again. This system is still here. So it is an opportunity really to go back to what made this state great, and to use a tremendous infrastructure that 189 years later is still going strong, he said.

The Erie Canal is a canal in New York that runs about 363 miles (584 km) from Albany, New York, on the Hudson River to Buffalo, New York, at Lake Erie, completing a navigable water route from the Atlantic Ocean to the Great Lakes. The canal contains 36 locks and encompasses a total elevation differential of approximately 565 ft. (169 m). First proposed in 1807, it was under construction from 1817 to 1825 and officially opened on 26 October 1825.

It was the first transportation system between the eastern seaboard (New York City) and the western interior (Great Lakes) of the United States that did not require portage, was faster than carts pulled by animals, and cut transport costs by about 95%.

The canal fostered a population surge in western New York State, opened regions farther west to settlement, and helped New York City become the chief US port. It was enlarged between 1834 and 1862. In 1918, the enlarged canal was replaced by the larger New York State Barge Canal.

Today, it is part of the New York State Canal System. In 2000 the United States Congress designated the Erie Canalway National Heritage Corridor to recognize the national significance of the canal system as the most successful and influential human-built waterway and one of the most important works of civil engineering and construction in North America.

US grain dominates cargo shipments

Despite a month where cargo totals see-sawed between positive and negative territory, US grain shipments have made a decisive comeback, posting a nearly 50% jump from the same time last year. "US grain continues to rebound strongly from last season's disappointing performance with a 46% rise in tonnage, while several shipments within the Liquid Bulk category posted healthy jumps as the Seaway navigation season approaches midpoint," said Rebecca Spruill, Director of Trade Development, for the Saint Lawrence Seaway Development Corporation.

According to a news release issued in mid-July, year-to-date total cargo shipments for the period March 22 to June 30 were 12mt (million metric tonnes), down 11.6% over the same period in 2012.

Iron ore and coal, usually solid performers, were both down by 15% and 9% respectively due to lower steel production. Total general cargo was down 14% to 616,000 metric tonnes. The liquid bulk category posted a 2.6% year-to-date increase to 1.4mt. The dry bulk category was down 19% to 2.7mt. Within that category, however, scrap metal and pig iron posted upturns of 5% and 6% respectively.

While many cargo shipments showed a dip to the south, project cargoes were welcomed at the Port of Milwaukee and the Duluth Seaway Port Authority. Additionally, there remains optimism on the project cargo front with oil sands projects picking up in the autumn.

"Heavy mining equipment is an excellent example of the unusual and oversized cargo the Port of Milwaukee can handle," Interim Port Director Paul Vornholt said. "Recently, a mine owner needed to ship a huge Joy Global P&H shovel to the west coast of Mexico. After looking at all the options, the shipper chose to send the cargo by water through both the St. Lawrence Seaway and the Panama Canal. Our port is supporting both local manufacturing and international trade by facilitating the movement of complex cargo."

"The Port of Duluth looks forward to welcoming four heavy-lift shipments of transformers from Germany," said Adolph Ojard, executive director of the Duluth Seaway Port Authority, owner of the breakbulk terminal where 16 units will be discharged from Hansa Heavy Lift vessels this shipping season. All transformers will eventually be delivered to Canadian destinations via new 16-axle railcars.

"Crews at our terminal operator — Lake Superior Warehousing — have earned a global reputation for expert handling of dimensional and heavy-lift cargoes. Coupled with the supply chain efficiencies and backhaul opportunities offered by the Great Lakes-Seaway system, customers are increasingly utilizing this bi-national marine highway to move huge components like these in and out of North America's heartland."

The Port of Duluth has become a strategic link in the global wind energy supply chain and, as such, is a major handler of project cargoes, include wind turbine blades. For more details, see p52 of the August 2012 issue of Dry Cargo International magazine.

Coal shipments via The Great Lakes St. Lawrence Seaway System

For years, many different types of commodities have transited via the Great Lakes St. Lawrence Seaway System. These cargoes are either imported or exported to/from one of the numerous Canadian or US marine terminals which make up this unique shipping corridor.

Among these commodities, millions of tonnes of coal are shipped within the Great Lakes every year for power generation and steel production. Because of recent US domestic market trends in the coal industry, coal has finally seen its way through the GLSL Seaway System being exported to Europe.

CSL (Canadian Steamship Lines) vessel at the Port of Quebec.

With volumes starting at approximately 600,000 metric tonnes two years ago, this programme has now grown to 1.5mt (million metric tonnes) of coal travelling from Powder River Basin, transiting through the Port of Quebec going to Europe. This shipping lane has proven very successful and now has room for expansion estimated at slightly over 5mt per year.

As many players have contributed to the success of this export route out to Europe, let us briefly look into this logistical movement:

BNSF carries coal from Powder River Basin to MERC.

Rail

The BNSF safely and reliably carries the coal from Powder River Basin in unit trains to the Midwest Energy Resources (MERC) Terminal in Superior Wisconsin.

The coal is received by rotary dumper, transferred to stockpiles and loaded onto laker type vessels.

The coal is then transported via both self-unloader type vessels or gearless bulker type vessels to the Port of Quebec.

The coal is unloaded and accumulated at the Port of Quebec and then reloaded onto Panamax and Capesize vessels.

Midwest Energy Resources (MERC) Terminal in Superior Wisconsin.

Distance and transit time to the Port of Québec Via the Northern Corridor (Seaway System)

Superior (Wisconsin) 5.5 days by Laker 1,307 miles

Port of Québec distance and transit time to Europe and Asia

Rotterdam 9 days 3,000 miles

About St. Lawrence Stevedoring

St. Lawrence Stevedoring (SLS), a division of Quebec Stevedoring Company Ltd, has been operating since 1908. SLS is located in the Port of Québec, the deepest water port leading to the St. Lawrence Seaway and Great Lakes System accommodating vessels drawing up to 15 metres. As such, it is the transloading terminal in/out for oceangoing vessels (Handymax, Panamax and Capesize Vessels) and Laker type vessels (Canada Steamship and Algoma).

- SLS is one of the largest 'dual purpose' transloading terminals on North America's Eastern Seaboard;
- the terminal has a water depth of 15 metres at low tide with an average 5 metre tide;
- SLS can accommodate all size vessels: Handymax, Panamax and Capesize vessels;
- the main commodities that transit through the terminal are iron ore, coal, scrap metal, copper and nickel concentrates, alumina, gypsum, salt, raw sugar and alloys;
- SLS receives and ships bulk products from all over the world, and has the expertise to handle products of all kinds; and
- SLS regularly handles over 20 different kind of cargoes totalling more than 12.5mt per year.

INDEX OF ADVERTISERS

DC DRY CARGO international

SUBSCRIPTION FORM

PLEASE COMPLETE AND FAX TO: +44 (0)1206 562566

Dry Cargo International, Clover House, 24 Drury Road, Colchester, Essex CO2 7UX, UK
Tel: +44 (0)1206 562560 Fax: +44 (0)1206 562566 Email: info@dc-int.com

www.dc-int.com

Name .....

Position .....

Company Name .....

Address .....

.....

City .....

Postcode/Zip Code.....

Country.....

Tel .....

Fax .....

Email .....

SUBSCRIPTION RATES

	1 year ☐	*2 years* ☐	*3 years* ☐
UK	£170.00	£280.00	£365.00
Europe	£210.00	£355.00	£460.00
USA & ROW	£260.00	£445.00	£580.00

No. copies required: _____

Please charge my credit card: VISA ☐ ☐ ☐ ☐

☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐

Cardholder's name:_____ Expiry date:____/_____

Signature:_____ Date:_____

I enclose a cheque for:_____ Payable to **Trade Publishing Int'l Ltd**

☐ Please invoice me

Make sure you don't miss the next issue...

J&B GRABS

With more than 60 years' experience, J&B Grabs is the name you can rely on


Hydraulic High Volume Grabs


45 m³ Hydraulic Grab


High Volume Rope Grabs 31.5m³


Hydraulic Rehandling Grab


Hydraulic Cactus Grab (1.6m³)

Rope Cactus Grab (10m³)

J&B GRABS FOR ALL KINDS OF BULK HANDLING

Products:

- Cactus Rope Grabs
- Rehandling Rope Grabs
- Hydraulic Cactus Grabs
- Hydraulic Rehandling Grabs
- Hydraulic Wood Grabs
- Hydraulic Demolition & Sorting Grabs
- Quick Change System
- Multipurpose Spreader

New Products:

- Big Bag Frame
- Cellulose Frame

All our grabs are custom made, designed and produced to our customers requirements.

J&B Grabs are highly efficient for large volume and low deadweight handling.

J&B GRIJPERS

J&B Grabs
PO Box 176, 3454 ZK De Meern
Netherlands
Tel: +31 30 662 1616
Fax: +31 30 666 3765
E-mail: info@jb-grabs.com
Website: www.jb-grabs.com

World's No.1 CSU Supplier

Best Solution of Bulk Handling

IHI has supported Bulk Handling in the world over a century and continues to do in next 100 years.

IHI Product Line up

- Continuous Ship Unloader(CSU)
- Bridge Type Ship Unloader
- Mobile Multi-Purpose Crane
- Stacker
- Reclaimer
- Stacker-Reclaimer
- Conveyor
- Ship Loader

IHI Transport Machinery Co., Ltd.
8-1, Akashicho, Chuo-ku, Tokyo 104-0044 JAPAN
Website: http://www.iuk.co.jp/english/index.html