

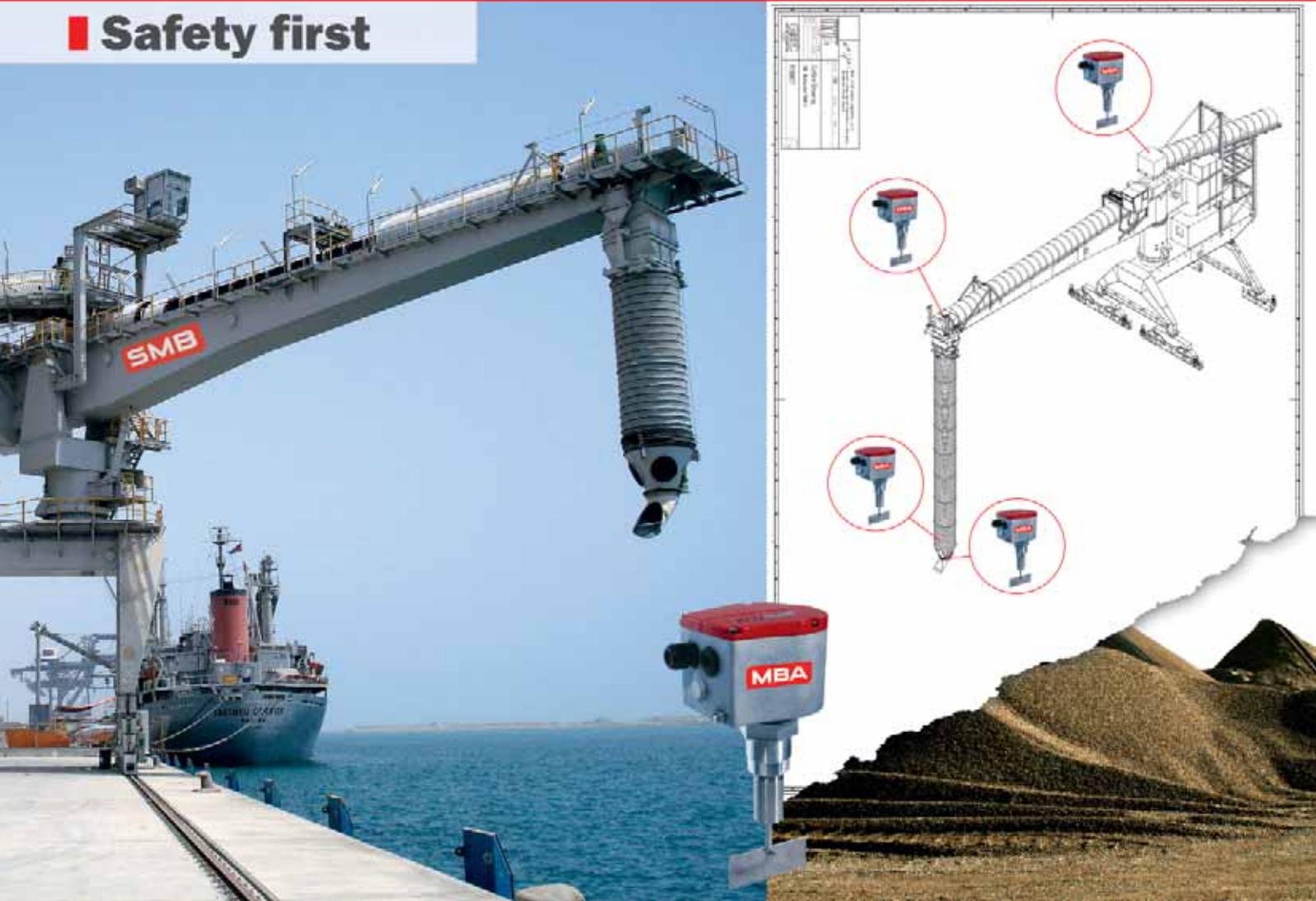


DRY CARGO

international

ISSUE NO.134 MARCH 2011

■ Safety first



FEATURES

- Global Grain Trades
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ISSN 1466-3643

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MARCH 2011 issue

featuring...



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Dry bulk trade growth ahead

Global seaborne dry bulk trade probably will continue expanding during 2011. Import demand for many commodities related to industrial output is likely to be bolstered by economic growth trends. Agricultural commodity movements may strengthen as well. But the overall advance is not expected to match last year's sharp rebound from the preceding exceptionally weak period.

Renewed uncertainty about the world economic outlook has emerged in recent weeks, however. Higher prices for oil and other primary raw materials, and foodstuffs, is exacerbating inflationary pressures. Policy measures to control the adverse impact are predictable in a large number of countries. These could result in the global economy growing less robustly than previously envisaged, over the next twelve months.

IRON ORE

The positive steel industry trend seen last year is widely expected to persist through 2011, although at a slower growth rate. Consequently global seaborne iron ore trade could expand by 5%, reaching about 1,050mt (million tonnes), as shown by table 1 below. Additional imports into China, Japan, South Korea and European Union countries may contribute to this outcome.

Signs point to China's iron ore import demand resuming its upwards trend after a marginal decrease in 2010. In Japan and Europe, reviving domestic industrial activity, and support from export markets, provides solid foundations for further increases in steel output and raw materials consumption. Expanding steelmaking capacity in South Korea is another factor potentially benefiting iron ore trade.

COAL

Following a remarkably strong performance last year, expansion of coal trade looks set to continue during the next twelve months. Higher import demand in both steam and coking sectors seems likely. The extra volumes are forecast to result in global seaborne coal trade reaching 1,015mt in 2011, a 6% increase, although that rate is less than half the pace seen in the previous period.

Rising output in steel mills, power stations and other

industries depending on foreign supplies of coal implies further growth in trade movements. The outlook for steam coal import demand this year seem especially favourable, amid indications of additional requirements in a number of Asian countries, including India and China. Some potential for growth in Japan and European countries is also visible.

GRAIN

Prospects for grain and soya trade during 2011 as a whole are not particularly positive. This view may change over the months ahead. Mid-2011 summer domestic harvests in northern hemisphere importing countries will have a big influence on trade movements. These crops can be only tentatively forecast at present, because weather conditions over the remainder of the growing season are unpredictable.

Currently a 3% increase in global seaborne grain and soya trade, to 308mt is a possible result for this year. Among signs of growth, at least up to mid-2011, larger wheat and coarse grains imports are predicted in Europe, Russia and North Africa. Soyabeans imports into China also are expected to continue growing, and there is a possibility that more wheat and corn may be needed.

MINOR BULKS

Industrial commodities, such as bauxite/alumina, steel products, forest products and cement, comprise the largest part of the extensive minor bulks trade sector. Many of these elements could benefit from strengthening manufacturing and construction activity in a range of countries over the year ahead. Overall minor bulk seaborne trade is forecast to grow by about 4%.

BULK CARRIER FLEET

Rapid expansion of bulk carrier fleet capacity is set to remain a prominent feature during the next twelve months, as shown by the calculations in table 2. The fleet's growth rate in 2011 is likely to be very strong at over 12%, raising the fleet to 601m dwt, although well below last year's 17% rise. Despite the much greater scrapping envisaged this year, high newbuilding deliveries will ensure that massive additional capacity emerges.

TABLE 1: WORLD SEABORNE DRY BULK TRADE — THREE MAJOR COMMODITIES (MILLION TONNES)

	2006	2007	2008	2009	2010	2011*
Iron ore	733.8	787.5	844.0	920.0	998.0	1050.0
Coal	770.5	810.0	823.4	841.7	957.0	1015.0
Grain (including soyabeans)	256.9	274.1	290.0	294.4	300.0	308.0
Total major bulks	1,761.2	1,871.6	1,957.4	2,056.1	2,255.0	2,373.0
% growth from previous year	9.4	6.3	4.6	5.0	9.7	5.2

source: Bulk Shipping Analysis estimates and forecasts *forecast

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

	2006	2007	2008	2009	2010	2011*
Newbuilding deliveries	26.0	24.7	24.4	43.2	78.5	82.0
Scrapping	1.7	0.6	5.5	10.4	5.7	18.0
Losses	0.8	0.2	0.1	0.3	0.4	0.3
Other adjustments/conversions	-0.3	0.0	7.1	8.8	3.5	2.5
Net change in fleet	23.2	23.9	25.9	41.3	75.9	66.2
Fleet at end of year	368.1	392.0	417.9	459.2	535.1	601.3
% growth from previous year	6.7	6.5	6.6	9.9	16.5	12.4

source: Clarksons (historical data) & BSA 2011 forecasts *forecast

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Savage natural disaster devastates Japan

The savage earthquake and tsunami and growing nuclear crisis, which hit Japan, has caused a trail of destruction, not seen since World War II, where tens of thousands of people are thought to have lost their lives. At the epicentre, in the north of the country, storage and port facilities — including Sendai, Hachinohe and Kamaishi — were damaged, along with inland transportation networks.

Traders predict shipments for Japan may be delayed for the foreseeable future until the transportation network is restored, while southern ports, which escaped the devastation — Tokyo, Yokohama, Osaka and Hiroshima — may see more shipments. Japan is a leading player on the world market, importing a huge 25mt (million tonnes) of cereals and coarse grains (including 16mt of corn), 12mt of oilseeds and oilmeals and significant quantity of dairy and livestock products, each year. The northern ports damaged by the tsunami that handle some of Japan's compound feed are directly linked to poultry farms in the area. And, while the scale of the disaster and damage to feed mills and their supplies is as yet unclear, Japan's farm ministry said that 4.8mt of the 24mt of feed produced in Japan, are from the northern areas near the centre of the disaster. Power shortages are hampering production at some plants, which survived with little or no damage.

The disaster in Japan adds to negative pressures, weighing on agricultural commodities, including reduced consumption of grain after rallying energy prices raised concerns about a slowdown in global demand for commodities and contrasts with high commodity prices evident at the beginning of March. Any sign of a temporary fall-off in global demand would ease tight crop supply pipelines, at a time when external markets may not offer much support, as investment funds have already made the switch from shares, metals and crops to less riskier assets. At the Chicago Board of Trade (CBOT) corn for May delivery was \$261.52/t (17.23 — 14 March).

Maria Cappuccio



A positive outlook for China's dry bulk imports

Dry bulk imports into China in 2010 exceeded 900mt (million tonnes), comprising about 27% of world seaborne dry bulk commodity trade. Ten years earlier, imports of around 100mt contributed just 5% of the global total. This simple comparison emphasizes how significant Chinese buyers have become.

Most signs point to potential for continued growth over the next twelve months. During 2011 larger imports in the most prominent trades — iron ore, coal and soyabeans — as well as additional purchases of other commodities, are widely expected. But uncertainty about the pace has intensified after a dramatic slowdown from around 50% expansion in 2009, to under 5% growth last year.

IRON ORE IMPORTS MAY PICK UP

The most spectacular change of pace last year occurred in the iron ore sector. After growing continuously over the previous decade, China's iron ore imports actually declined marginally. Following a huge increase of over two-fifths to 628.3mt in the preceding year, the 2010 total decreased by 1% to 619m.

Slower expansion of steel output during the past year reduced pressure on raw materials supplies. Blast furnace pig iron production growth was almost halved, although it was still strong at more than 8%. Of greater significance was the massively enlarged iron ore volume produced by Chinese domestic mines, which increased by about one-fifth, reaching 1.07bnt. Reportedly ore stocks also rose. The result was a negative impact on foreign purchases.

Estimates point to resumed iron ore imports growth over the period ahead. Record high monthly imports in January this year, at 69mt, may be one sign, although temporary factors seem to have inflated that total. An upturn in 2011 as a whole is expected to be based on sustained growth of China's steel output, despite slackening economic activity, coupled with domestic iron ore mines unable to greatly increase their supplies.

STRONGER COAL IMPORTS

During the past two years China has suddenly become one of the world's largest coal buyers. Imports tripled in 2009, and then grew rapidly last year by 32% from the new much higher level, to reach 166.3mt. Steam coal for power stations and other industries comprises about three-quarters of the total, with coking coal for steel industry usage comprising the remainder.

Rapidly growing consumption probably will continue benefiting coal imports. But annual changes in foreign purchases are difficult to predict. Very large changes in imports reflect just small differences between the growth rates of China's consumption and its domestic coal production, neither of which are easy to forecast precisely. Nevertheless, it seems increasingly likely that more supplies from overseas sources will be needed over the next few years.

Chinese domestic coal production apparently rose strongly

last year and may have exceeded 3.5bnt. Imports are only about one half of one percent of this vast market, which magnifies the impact of relatively small output variations. Inadequate rail transport capacity for moving coal from mines in northern China to consumers in the south is also a factor affecting foreign purchases.

UPWARDS SOYABEANS TREND

Bulk carrier employment, and activity at ports affected by China's dry bulk commodity imports, has benefited from movements of many commodities. Soyabeans is another prominent element. These imports have grown strongly over the past decade and in 2010 a 29% increase to 54.8mt was seen.

Although China produces soyabeans, output remained fairly static in the past few years, at around 14–15mt. Meanwhile, consumption has been expanding very strongly, amid growing soyameal use in livestock feed and rising usage of soya oil in food manufacturing and domestic cooking. Strategic stocks of beans were also raised. Consequently soyabeans imports for crushing expanded rapidly and it seems likely that the upwards trend will persist.

Related wheat and coarse grains imports are minor. China has been largely self-sufficient in recent years. But a tightening domestic market suggests that sizeable additional quantities may be needed in the near future. Corn purchases revived on a limited scale last year and may be enlarged, while tentative signs of higher wheat requirements have emerged.

PROMISING PROSPECTS

Several other dry bulk import trades may contribute to a positive trend during 2011. Bauxite/alumina imports were buoyant last year, rising by 39% to reach 34.6mt and reversing the previous year's sharp decline. Further growth may follow. Potential for expansion in minor ores and minerals trades is also clear. By contrast, there is less certainty about steel products imports, which fell by 24% to 17mt in 2010.

Forecasts for China's economy indicate a slackening during the next twelve months. Recent IMF estimates put GDP growth at 9.6% in 2011, following last year's 10.3% expansion. Continuing government measures to control inflationary pressures and prevent overheating are widely expected to cause some slowing of economic activity. Moreover, the effects of the huge economic stimulus programme implemented over the past two years are now receding.

The Chinese economy's progress this year looks set to be strong enough to have a favourable impact on dry bulk imports, however. A variety of commodity users including steel producers, power generators, and many manufacturers probably will need additional raw materials and fuel volumes from foreign suppliers. Higher purchases of oilseeds and cereals also are foreseeable.

CHINA'S DRY BULK IMPORTS (MILLION TONNES)

	Main bulk commodities						% change*
	2005	2006	2007	2008	2009	2010	
Coal	26.1	38.3	51.0	40.8	125.8	166.3	+32.2
Iron Ore	275.2	326.3	383.1	443.7	628.3	619.0	-1.5
Soyabeans	26.6	28.3	30.8	37.4	42.5	54.8	+28.9
Steel products	27.3	19.1	17.2	15.6	22.3	17.0	-23.8
Total of above	355.2	412.0	482.1	537.5	818.9	857.1	
% growth	+16.0	+17.0	+11.1	+52.4	+4.7		

source: China Customs, USDA, BSA

* % change in 2010, compared with previous year

Global grain trades



Tipping through the grain door regulates the material flow rate to the Lancaster Series mobile shiploader from B&W Mechanical Handling. For more details on B&W's grain handling equipment, please see p89 of this issue.

Maria Cappuccio

Tight grain supplies, surging oil and commodity prices pose a threat to world food security.

With the world economy continuing to recover, the International Monetary Fund (IMF) forecast at the start of the year, that global economic output would expand by 4.5% in 2011. The recovery being led by emerging economies where activity remains buoyant, contrasting with the subdued activity in advanced economies. But the recent surge in global oil prices, prompted by spontaneous political unrest in the Middle East and disruption to Libyan oil supplies, poses a serious risk to the global recovery, as high oil prices weaken trade balances, add to inflation, while putting pressure on central banks to raise interest rates, at a time, when economic growth remains lacklustre in many countries.

Increasing incomes in developing countries have boosted demand for meat and dairy, requiring more grain for livestock feed and land for grazing animals, rising demand for bio-fuels and adverse weather have tightened supplies, and prices of cereal and oilseeds have risen sharply. But the recent uncertainty and volatility in the oil market has further worsened prospects for world food security, especially the price outlook for crops, just as planting starts in some of the major growing regions. According to the UN's Food and Agricultural Organization (FAO), any further 'spikes' in oil prices, could exacerbate an already precarious situation in food markets. Besides raising farm fuel bills, oil costs also have a bearing on the costs of fertilizers and sprays, providing a significant upward threat to growers' cost of production, which would feed through into higher food bills. The FAO forecast, that with global food consumption outpacing supply, "prices are projected to increase over the next decade and to continue to be at levels on average above those of the previous decade."

PLANTING CONDITIONS GENERALLY FAVOURABLE FOR THE 2011 CROP

Planting conditions in northern hemisphere countries were generally favourable for winter grains. The global area planted to wheat is projected to rise by about 3% to 224m/ha, the largest since 1998, as many countries increase wheat plantings, in response to higher prices. While forecasts of production and consumption are tentative, and concerns remain about crop prospects in some major producers, the International Grains Council (IGC) projects global wheat supply and demand to be broadly in balance in 2011/12, with global wheat output expected to increase by 24mt (million tonnes), to 672mt.

NORTH AMERICAN AND EU PLANTINGS TO RISE

The US wheat area is expected to rise by 6% to 57m/ha, due to high prices and tighter supplies of quality milling wheat, but yields expected to be 6% lower than the record achieved last year, with production forecast around 57mt. Concerns persist, over the state of the US crop, although a recent government report (8 March), indicated that winter wheat conditions in the major US growing areas were steady or improved. Concerns also exist for Canada, where some areas are water-logged the Canadian Wheat Board (CWB) forecast wheat output to rise to almost 24mt. Like North America, EU wheat sowings are also raised, indicating a larger crop.

DIFFICULT PLANTING CONDITIONS IN RUSSIA SUGGEST SMALLER EXPORT SURPLUS IN 2011/12

With winter plantings affected by the summer drought, it was expected that there would be greater emphasis on spring plantings. But conditions for Russian crops are not as favourable-patchy snow cover in key areas, and seed, finance and fertilizer in short



WORLD WHEAT PRODUCTION (MT)

	2007	2008	2009	2010	2011
Europe	124	156	143	140	149
EU	120	151	138	136	145
E.Europe	4	5	5	4	4
CIS Baltic's	93	115	114	81	102
Russia	49	64	62	42	57
Ukraine	14	26	21	17	20
N & C America	80	101	92	87	84
US	56	68	60	60	57
Canada	20	29	27	23	23
S America	25	21	21	24	24
Argentina	19	11	11	15	15
N East Asia	40	32	37	39	38
Turkey	16	17	18	17	17
F East Asia	216	217	228	227	227
China	109	113	115	115	115
Africa	19	21	26	23	24
North Africa	14	14	20	17	18
Australia	14	22	22	26	24
Total	611	684	683	648	672

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

supply for spring sowings—with some farmers considering switching wheat acreage to sunflowerseed. Anticipating reduced output, Rabobank expect Russian wheat exports will be less than 10mt in 2011/12, and, even with improved Kazakh and Ukraine prospects, combined wheat shipments from the Black Sea bloc are unlikely to exceed 20mt. Russian officials recently announced that the ban on grain exports may be extended, until the end of the year. Ukraine's grain plantings are forecast to rise to 15.7m/ha and despite severe winter frosts, crop conditions are reported to be satisfactory, soil moisture contents sufficient, with damaged crops reported on less than 10% of the total planted area.

DROUGHT CONCERNS IN CHINA'S NORTHERN WHEAT PROVINCES SAID TO HAVE IMPROVED

Despite reports that eight major wheat producing provinces covering an area of 5.71m/ha experienced drought, with 1.04m/ha being severely drought-hit, Chinese officials say drought concerns for winter wheat in the north of the country, have improved—farmers are said to have planted an additional 66,600/ha of wheat. India is on track to produce its fourth record crop of 83mt, with stocks of over 14mt, may lead to wheat exports being resumed.

WHEAT THE MOST VULNERABLE GRAIN TO PRICE FALLS

The Australian Bureau of Agriculture and Rural Economics (ABARE) forecast that even with increased plantings, the 2011 Australian wheat crop will fall to 24mt, 2mt below last year's record crop. They also forecast global sowings of the major crops to grow by 3–4% this season, as high prices encourage farmers to bring less productive land into production, and have identified wheat as the most vulnerable grain to price falls, due to its small use in making bio-fuels, with average wheat values in 2011/12, to fall 19% below those in the current season, with "increased supplies forecast to outweigh a rise in demand."

DROUGHT REDUCED CROP IN 2010 CUTS SUPPLIES BY 20MT

World wheat production in 2010/11 is forecast at 648mt severe drought in Russia, Kazakhstan and Ukraine dramatically cut

WORLD WHEAT SUPPLY & DEMAND

	2006-2010/11mt				
	2006/7	2007/8	2008/9	2009/10	2010/11
Production	596	611	684	683	648
Consumption	616	617	642	652	663
Trade	116	116	143	134	124
Stock	130	125	167	198	182
China	39	39	46	54	60
Major Exporters	37	29	47	54	50

Source: USDA/FAO/IGC

production prospects, and prompted export restrictions at a time of growing demand, partially offset during the season by improvements in southern hemisphere crops. Wheat consumption is forecast to increase by 2% to 663mt. Feed use increased by 6mt to 123mt boosted by competitive prices relative to corn, and ample lower-grade wheat availability in Australia and Canada, with food/industrial use up by 5mt to 540mt.

WHEAT PRICES EASE BUT REMAIN SIGNIFICANTLY HIGHER THAN LAST YEAR

While strong demand for feed supplies underpinned trade there are signs that rationing by users, in response to prices that hit two-year-highs in Chicago, Paris and London futures markets, trimmed global trade to 124mt. With significantly lower Black Sea exports, prospects for traditional suppliers improved—US record wheat exports of 36mt amid greater competition from Australia 15mt and Argentina 7mt. While EU exports of 21mt slightly lower due to tight supplies of feed grains and a stronger euro; European Central Bank (ECB), announcement on curbing inflation caused the Euro to strengthen in anticipation of a 0.25% interest rate rise in April, making EU grain exports on international markets less competitive.

The surge in wheat prices was fuelled by smaller crops, export restrictions and tight supplies of milling quality wheat. Subsequently, they reflect competition for new crop acres, tight US corn market, poor winter wheat conditions in the US, political unrest in Middle East/North Africa—Export bids for Hard Red Winter Wheat (HRW) \$360 FOB (free on board) Gulf (4 March) up 73% on last year; EU wheat French Grade 1 \$358 FOB Rouen (4 March) up 117%. Prices have since eased boosted by improved southern hemisphere prospects and less import demand from Russia, with global stocks forecast at 182mt and stocks-to-use ratio at 27%.

MORE ACRES PLANTED TO CORN IN 2011 BUT OUTTURN DEPENDS ON YIELD

For coarse grains, harvesting of the 2010 crop is incomplete and planting intentions for the next crop are uncertain; IGC preliminary estimate for corn, a major coarse grain, indicates plantings will increase in several key producing countries including the US and China, with global production expected to set a new record in 2011, but unless yields are exceptionally high a second consecutive drop in global supplies is projected. Based on strong demand, corn supplies are projected to remain tight with closing stocks set to fall for a third successive year.

USDA expects US corn plantings to increase by 4.3% to 92m/acres, and using trend yields of 162bu/acre implies a harvested crop of around 345mt. Other analysts like Darrel Good Ag. Economist University of Illinois, believes the trend

Richardson International Limited realizes best year ever in Hamilton



Hamilton's emergence as a key port for grain handling has grown with its terminal capacity development and increasingly diverse mix of crops. After arriving from across the province of Ontario and western Canada via truck and railcar, agricultural commodities land in the Port of Hamilton for storage and further transit to a host of international markets. Winnipeg, Manitoba-based Richardson International Limited is a worldwide handler and merchandiser of major Canadian-grown grains and oilseeds and has held a presence in Hamilton for more than a decade. With over 1,600 employees across Canada and a major footprint in Ontario, it is committed to growing the sector for the port and the entire Seaway System.

The year 2010 saw a 38% spike in tonnage over the Richardson Hamilton terminal's previous high in 2006. Ontario's exceptional yield and crop quality last year, combined with drought and flooding conditions in several growing global regions, created opportunities for Eastern Canada to serve additional export markets not normally open to commodities originating in Ontario. Seaway System traffic flows complement the Hamilton grain trade well, with both domestic laker and oceangoing project fleets carrying export grain from the region. Connectivity to other modes in Hamilton include transfer via truck and railcar moving a mix of wheat, corn, soybeans and other agricultural commodities; demonstrating the strategic benefit of utilizing the port's multimodal facilities.

Richardson was the first terminal development at Eastport in the late 1990s, adding silo capacity and moving its Ontario headquarters to the port over the course of the past six

years. The Pier 25 terminal location serves incoming truck traffic with direct connectivity to major series highway lanes. The recent addition of storage bins to the terminal has proven instrumental in allowing the company to handle multiple commodities simultaneously and capitalize on spot

freight market opportunities as they become available. Cargo consolidation has also created loading efficiencies and enabled broader market reach. "We are proud to have grown our business in Eastern Canada in partnership with the Port of Hamilton," said Richardson International president Curt Vossen. "We have developed a strong export business that is benefiting the port

and producers in southern Ontario, giving them improved access to world markets."

Recognized as a global leader in agriculture and food processing, the company focus includes research, crop input sales and service as well as oilseed processing and food service packaging.

"Richardson's success showcases its ability to adapt to market conditions and leverage opportunities created by these market forces," notes HPA president and CEO Bruce Wood. "It highlights the ability of the port and its partners to plan and position for future opportunities." Terminal operators have chosen Hamilton for its cost-saving potential, prime location and facilities that efficiently serve traffic from all modes. Higher-than-average grain movements are forecast for the early part of the 2011 navigation season, due to significant carryover of the 2010 crop. This points to what is expected to be another very positive year for Hamilton grain movements.



WORLD COARSE GRAIN SUPPLY & DEMAND

2006–2010/11mt

	2006/07	2007/08	2008/09	2009/10	2010/11
Production	987	1,079	1,110	1,107	1,080
Consumption	1,013	1,056	1,080	1,106	1,120
Trade	115	129	111	119	117
Stocks	141	164	194	195	155
China	38	40	54	54	61
Major Exporters	56	65	77	82	40

Source: USDA

yields to be closer to 159bu/acre. This indicates a larger planted area of 93m/acre to allow for yield risk, and requires corn futures to strengthen to get the necessary acreage response. According to one analyst, US weather in April may provide a clue; warm dry conditions favour corn, while cooler wetter conditions favour soybeans.

Chinese farmers are likely to plant more acreage to corn in preference to other crops this spring, to take advantage of government support. According to officials responsible for the national grain reserve, corn should only be used for animal feed, not for exports, or industrial use, supporting rumours that China's corn stocks are tight this season, and that increased imports of corn will be required to satisfy growing animal feed demand and replenish stocks. The US Grains Council said earlier in the year that China may increase corn imports by up to 9mt in 2011/12.

REDUCED COARSE GRAIN OUTPUT BUT RECORD DEMAND DRIVEN BY FEED AND ETHANOL

Global coarse grain production fell dramatically from earlier expectations and is forecast at 1,080mt; following crop failures in Russia, Ukraine and smaller crops the EU and US. Growing feed and ethanol demand has driven demand to a record 1,120mt. Feed use is forecast up by over 1mt to 649mt, while food/industrial growth is forecast to increase by 12mt to 471mt mostly due to ethanol production. Global trade is expected to fall to 117mt, due to high prices, with the exception of the EU, where imports have increased reflecting tight feed grain supplies this season.

Even with a larger planted area, global corn production forecast at 814mt, will only be 2mt more than last year. Better crops in several countries including, China 168mt, Brazil 53mt, Argentina 21mt, offset by reductions in the US crop 316mt. With consumption forecast at a record 835mt — feed use up 10mt to 492mt, food and industrial use, mainly ethanol up by 9mt to 342mt — will outpace supply, sharply reducing global corn stocks

OIL PRICE SPIKES SUPPORT ETHANOL BUT CONFLICTING POLICIES APPARENT

Prior to the unrest in the Middle East and subsequent disruption to Libya's oil supplies, the grain complex was heading up, based on strong fundamentals and speculative fund buying. Since then, crude oil prices have rallied — Brent US\$115 a barrel (4 March), before retreating to US\$105 (8 March). The recent spike in oil prices has motivated more US ethanol plants to join production, despite high corn prices. Typically, high oil prices support ethanol production by improving operating profits—this year, while ethanol prices have risen more than 5%, gasoline prices are up by more than 20%.

While USDA indicated that corn use for ethanol production

is forecast to grow to 5Bn/bu, a team of economists within the University of Missouri's Agriculture Policy Research Institute (Fapri), advocate the removal of government tax credits (renewed this year against significant political opposition); in their forecast corn used by ethanol plants would fall to 4.6Bn/bu in 2011/12, a decline of 5.5%, thereafter, modest growth of 2.5mt (100m/bu) a year to 2020/21. The opposing pro/anti ethanol camps are expected to debate this through the summer in Congress, although the odds of obtaining American public support for more ethanol may prove difficult, if conditions in Europe are any reflection of what to expect. Germans are refusing to purchase gasoline with higher ethanol levels due to fears that it could damage their cars.

In 2010/11 US ethanol bio-refineries are forecast to convert 126mt of corn (4.95Bn/bu) 43% of US corn use, into 13.8Bn gallons of ethanol and almost 40mt of high value livestock feed-DDGS (Distillers Dried Grains with Solubles), corn gluten feed and meal. Dairy cattle, swine and poultry industries are utilizing more DDGS to displace some quantities of corn and soybean meal in the US. DDGS prices are strong, with exports to several destinations including Asia, Europe, and forecast over 10mt in 2010/11.

IMPROVED OUTLOOK FOR PIG AND POULTRY TEMPERED BY HIGH FEED GRAIN PRICES IN 2011

With consumer demand recovering, pork output is expected to increase by 2% to 103mt with China responsible for 80% of the increase. Similarly, poultry production is forecast to rise 2% to 76mt, with production growth in many countries expected to occur in the absence of major disease outbreaks. But growth estimates for pork and poultry are tempered by rising feed grain prices, which may adversely affect production. Beef production in Brazil, India and Mexico is forecast to expand, but their growth between 2–3% will not offset the decline in other countries, resulting in tight global supplies for the year.

BETTER DOMESTIC CROPS IN SEVERAL COUNTRIES CURB CORN IMPORTS

Global corn trade is forecast at 92mt, 1mt below last year. Mexico suffered a late freeze and is expected to increase imports to 9mt, while EU imports rose reflecting tighter domestic feed grain supplies. Major exporters like the US are expected to export 50mt, Argentina 13mt, Brazil 10mt. Global corn stocks are expected to fall sharply by 22mt to 123mt, with the major exporter stocks, especially in the US down to 17mt, with stocks-to-use-ratio of 5%. The tight situation for US corn supplies led to corn rallies through February/March not seen since 2008. US Corn 3 yellow FOB Gulf \$309/t (4 March) up 85% from \$167/t a year ago has since fallen to around \$283/t (10 March). Argentine corn exports have now shifted from a premium to a discount to US corn exports. Brazil's corn exports at 9mt are at record levels helped by high international prices and strong US soybean exports that have tied up port capacity.

SMALLER ACREAGE AND SEVERE DROUGHT REDUCE BARLEY OUTPUT

With a lower planted area and following the severe drought in Russia which halved the crop to 8mt, reduced Ukraine output to 8mt and that of the EU to 53mt, has cut barley output to 124mt down 25mt. Trade is also forecast lower at 16mt. Global consumption of barley fell to 139mt, due to reduced supplies and demand for feed, in Russia, partially offset by greater use in

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Associated Grain Terminals completes MGMT upgrade

Associated Grain Terminals adheres to the following quality philosophy: the MGMT (Myrtle Grove Midstream Terminal) will meet customer and organizational requirements by employing quality people and training them to commit to continuous improvement, which will provide highly valued customer solutions. This is accomplished by having highly trained personnel who perform their tasks safely and efficiently.

These skills were evident during a turnaround, where maintenance and upgrades were completed within budget and ahead of schedule. After months of planning, the AGT group went to work with the goal of completing the turnaround on the MGMT during a period of 21 days or less. After only 16 days, the MGMT was back in service loading cargo.

Some of the specific components upgraded include the Heyl & Patterson barge unloader, which was upgraded with new buckets, chain, sprockets, bearings and boom hoist cables. There are 27 buckets, each of which can hold approximately one tonne of cargo. This was a major project that will greatly extend the service life of the barge unloader.



The belts on the MGMT were totally enclosed to eliminate cargo loss and protect the environment. All belts, rollers, enclosure panels, and reclaim conveyors were thoroughly inspected and problem parts were repaired or replaced. The transfer points from one belt to the next were relined and rebuilt.

The shiploader spout assembly was completely rebuilt with a new transfer point, cables and sheaves. The hydraulic system that moves the barges had major structural repairs completed as well as cylinders and sheave replacements. The cargo sampling systems were upgraded with new components and re-certified. The dust collection systems had all of the socks in the bag houses changed and any worn piping replaced.

The MGMT has some of the most sophisticated and specialized vessel loading and control software of any floating transfer facility in the US. Customer service is a hallmark of Associated Grain Terminals' commitment to continuous

improvement in customer satisfaction. This project will enhance customers' operations by providing a grain elevator that is well maintained and ready to minimize load time.

improvement in customer satisfaction. This project will enhance customers' operations by providing a grain elevator that is well maintained and ready to minimize load time.

the EU, Morocco and Syria amongst others. Stocks are down 14mt to 22mt with export prices virtually more than double those of last year. Export prices EU (France) Barley FOB Rouen) \$283/t (4 March).

SORGHUM PRODUCTION FORECAST UP BY 4MT

Global sorghum production is forecast at 64mt, up 4mt on last year, with increases posted for most countries with the exception of the US. Prices for sorghum have tracked corn-Sorghum FOB Nola at \$303.62/t (Mar 4) for March delivery, 77% up on last year.

US SOYABEAN PLANTINGS EXPECTED TO RISE IN 2011 BUT STOCKS REMAIN TIGHT

US farmers may plant soyabeans on 78m/ acres in 2011, 1.4m/ acres above last year, and based on trend yields indicate a soyabean crop of 91mt (3.345Bn/ bu). But with usage similar to last year, new crop stocks could look as tight as old crop, keeping prices high this year. Joseph Glauber USDA's senior economist suggests it would be one to two years before the extreme tightness in the oilseed complex relaxes. While the US

WORLD MAJOR OILSEED PRODUCTION

	2006-2010/11 (mt)				
Oilseeds	2006/07	2007/08	2008/09	2009/10	2010/11
Production	404	392	396	442	444
Soyabean	237	221	212	260	258
Trade	82	92	94	108	113
Crush	329	340	338	358	378
Use: Meal	222	228	228	238	255
Use: Oil	120	126	130	138	147
Stocks	73	62	57	71	68
Soyabean	63	53	44	59	58
US	16	6	4	6	5
S.America	41	41	29	38	35

Source: USDA/Meal use includes fishmeal appx.5m/t

Planting Intentions Report due end March should provide a better indication of US acres devoted to soyabeans, prices likely to maintain a risk premium through summer until pod setting period.

OILSEEDS AND MEAL SUPPLY/DEMAND 2010/11 (MT)

Oilseeds/Meal Supply/Demand	Seeds Prod	Seeds Trade	Seeds Crush	Seeds Stocks	Meal Prod	Meal Trade	Meal Use
Soyabeans	258	99	226	58	179	59	175
Sunseed	30	2	27	1	12	4	12
Rapeseed	58	10	58	5	34	4	34
Copra	6	*	6	*	2	1	2
Palm kernel	13	*	13	*	7	5	*
Peanuts	35	2	15	1	6	*	*
Cottonseed	44	1	33	1	15	*	*
Total	444	113	378	68	260	77	255

Source: USDA -*less than 200,000/t. Oilmeals totals include fishmeal appx.5mt.

REVISED ESTIMATES FOR SOUTH AMERICA IMPROVE 2010 SOYABEAN HARVEST PROSPECTS

Despite a larger planted area, USDA estimate global oilseed output in 2010 at 444mt, a new record, but lower than originally envisaged. Lower soyabean 258mt and rapeseed 58mt output, offset by larger crops of groundnut 35mt, cottonseed 43mt and palm kernel 13mt, while sunflower 31mt and copra 6mt crops, remain virtually unchanged. Global exports of oilseeds are forecast to rise to 113mt, mainly due to increased soyabean exports up by 5mt to 98mt, with the US, Brazil, Paraguay and Canada posting gains and reducing global stocks to 68mt by the end of 2010/11.

While the USDA estimate pegs the soyabean crop for the major producers Brazil 70mt, Argentina 50mt and the US 91mt, ABARE provides a more upbeat forecast — US 97mt some 6mt higher. Agroconsult and Oil World forecast the Brazilian soya crop at a record 72mt, boosted by timely rains, which improved prospects in Rio Grande do Sol and in Matto Grosso, 2mt above the USDA estimate; while the Buenos Aires Cereals Exchange

(BACE) believe the Argentine soya crop will be closer to 49mt slightly below USDA's estimate.

HEAVY RAINS HAMPER SOYABEAN HARVEST IN BRAZIL

However, the heavy rains in March caused concern, not only for the Brazilian harvest but also for the follow-on-corn crop, where sowings are running at half the pace of last year. Many farmers in Brazil plant corn directly behind soyabeans for a double-crop (40% of the national corn crop is produced in this way). Some analysts including Michael Cordonnier of Soybean and Corn Advisor pegged the estimate for Brazil's soya output to 70.5mt still a record, but below other forecasts, due to delays in areas like Matto Grosso, which produces nearly 30% of the national soya crop, where the harvest in early March was only one-third complete. With logistics stretched, (late and possibly record crop) farmers say they can harvest only a few hours a day and even then are being forced to harvest soyabeans with moisture contents, some as high as 30%, at a time when they have already sold 70% of their soyabean crop, and need to deliver by the



(photo: B&W Mechanical Handling Ltd)

SOYABEANS MAJOR PRODUCERS

	2005–2010/11 (mt)				
	2006/7	2007/8	2008/9	2009/10	2010/11
US	87	73	81	91	91
Brazil	59	61	58	69	70
Argentina	49	46	32	55	50
China	16	14	16	15	15
India	8	9	9	9	10
Paraguay	6	7	4	7	8
Others	13	11	13	14	16
Total	237	221	212	260	258

Source: USDA

deadlines stipulated in the contracts.

Record soyabean exports from the US 43mt and Brazil expected to export 32.5mt. Paraguay's soyabean exports are also raised to 5.6mt. The Argentine's soyabean exports are lower at 11mt but exports of soyabean meal at a record 29mt. Canada's rapeseed exports at 6.8mt reflecting a stronger export pace, while Ukraine's sunflowerseed exports benefited from sustained demand from the EU-27, up to 0.4mt.

CRUSH MARGINS STIMULATED BY BIO-FUEL DEMAND

Global oilseed crush is expected to rise by almost 20mt to 378mt, buoyed by increased livestock and bio-diesel demand. Demand for oil meals and fishmeal, are forecast to rise to 255mt, 17mt more than last year. New crop markets were also bullish, with increased demand for bio-fuels production likely to



Soyabeans.

SOYABEANS & SOYABEAN MEAL

Importers	Major importers 2008- 2010/11mt					
	Oilseeds			Meal		
	08/09	09/10	10/11	08/9	09/10	10/11
EU	13	13	14	21	21	23
Asia	47	60	69	11	11	15
China	41	50	57	0.2	0.1	0.3
L.America	5	5	4	6	6	7
Mexico	3	4	4	2	1	1
Mid East/Africa	5	4	6	4	6	7
Others	5	5	3	7	7	5
Total	77	87	96	51	53	58

Source: USDA

keep supply balances tight, helped by the rally in corn and other markets in early March. The fundamental tight supply situation in Europe and healthy crush margins encouraging processors to continue to operate at maximum capacity but, given the dearth of seed available, the rate of processing may not be sustainable. While the rally in vegetable oil and rape meal markets, continue to lend support and higher oilseed prices may ration demand, the knock-on-effect from the crude oil market has also provided support, stimulating demand for vegetable oil, further boosting crush margins.

GROWING DEMAND FOR VEGETABLE OIL AND ANIMAL FEED BOOSTS CHINA'S SOYABEAN IMPORTS

Strong demand from China for imported soyabeans, boosted by a falling domestic crop (farmers favour grains and horticultural crops, which attract greater levels of government support), and a growing need for animal feed, are estimated to rise to 58mt with 26mt expected to be of US origin — 1mt more than current US estimates. The upbeat assessment from the American Attaché based in Beijing, is due to the strong and growing demand for vegetable oil and protein meals – soyabean oil directly boosted by Chinese consumers growing wealth, and soyabean meal indirectly through a growing appetite for meat. Additionally, growing demand for meat is spurring the consolidation and structural adjustment of livestock producers into industrial enterprises keener to buy soyabean meal than small-time farmers.

BRISK PACE OF NEW CROP SALES TO CHINA

New crop US soyabeans have yet to be planted, but sales of 5mt which usually occur in March/April were sold late January with 80% destined for China. Large sales to China and low US stocks of 5mt, are contributing to higher prices. US export bids, FOB Gulf, averaged \$548/t (4 Mar), compared to \$367 FOB last year, further pressuring supply. However, improved prospects for the Brazilian soya crop and seasonal shift in China's buying demand have contributed to prices easing with US export bids lower averaging \$539/t (10 March). With the focus directed to new crop weather and pipeline issues related to trade out of Brazil and Argentina (dock worker strikes and raids on multi-national grain exporters for tax avoidance) are expected to contribute to a very volatile outlook, and has "put a floor under the soyabean market," Benson Quinn Commodities said. America would be "unable to absorb any additional export demand if Argentine export shipments are compromised." According to ABARE soyabean prices, supported by faster rising demand, will average 10% less next year, and by 2015/16, prices are forecast to fall by one-quarter from 2010/11.

DCi

Mozambique coking coal

the last frontier

Iain McIntosh

After the shocks of the credit crisis in late 2008, the global coking coal trade declined by 5.4% as a result of reduced steel production in OECD (Organisation for Economic Co-operation and Development) economies. The reduction, whilst large in the OECD countries, was offset by China's rapid domestic-led consumption resulting on only a 7.4% global reduction in steel production. As the global economy recovered in 2010 steel production recovery was a primary factor in the OECD and, combined with China's steel growth, resulted in a 15% global growth which in turn impacted on a substantial upturn in coking coal trade. As steel production continues to grow the seaborne coking coal trade will rise with this as the table below highlights.

A major factor in this trade is the high level of reliance [60%] on Australian coking coal supply and with it an exposure to short- and long-term shocks. The floods in Queensland are currently creating this exposure although at a time when demand levels are traditionally weaker but has nevertheless forced up the price of metallurgical (met) coal. It is therefore desirable that new sources of coking coal from new supply areas are exploited to minimize this exposure.

MOZAMBIQUE COKING COAL DEVELOPMENT

Whilst reported before, an exciting development in the last year has been the met coal potential which is being developed in the Tete Province region of Mozambique through the Moatize project owned by to Vale and Tete through the Riversdale Benga and Zambeze projects. These projects are now reaching their final phase of development and should start the first exports of

coking coal through the port of Beira in the latter half of 2011. However there is still a lot of work to be done in respect of logistics but work is progressing well.

The success of these projects does present a significant competitive tonne mile advantage for Mozambique against certain market supply today and as per the table below it can be seen that both India and Brazil are well positioned in this respect.



Mozambique – Source 'The Economist'

COKING COAL GLOBAL TRADE (MILLION TONNES)

Coking coal	2007	2008	2009	2101 (e)	2011 (e)	2012 (e)
Seaborne trade	211	222	210	263	288	310
Australia supply	138	135	131	159	161	176
Australia share	65.4%	60.8%	62.4%	60.5%	55.9%	56.8%
Global growth		5.2%	-5.4%	25.2%	9.5%	7.6%
World steel production	1,346	1,327	1,229	1,413	1,515	1,595
		-1.4%	-7.4%	15.0%	7.2%	5.3%

source: SSY/Clarksons/World Steel

This could also present some short-term advantage in the type of vessel used, as in the early phase the ability to use large vessels may be difficult in light of draught restrictions in Beira but shorter distances may make Supramax tonnage competitive vs. long-haul larger Capes.

MOZ. VS. OTHER SUPPLIERS

Destination	(nautical miles)		
	MOZ	AUST	USA
India East Coast	3,886	4,929	—
India West Coast	3,253	5,697	—
Praia Mole (Brazil)	4,650	8,883	4,413
North China	6,076	3,523	—

The coking coal projects have three potential options for transport of coal from Tete with rail ex Tete via the recently completed Sena line to Beira (575km) being the first and nearing completion. Option 2 is considered technically feasible and involves the barging of coal along the Zambezi River to Chinde north of Beira. At Chinde a transshipment operation would be required to load into vessels and there is a potential to load 20mtpa (million tonnes per annum) through this channel. This has a 2013 readiness date attached if it was to go ahead.

The final option would be a rail line from Moatize through Malawi to the northern Mozambique port of Nacala which is 906km away (see below map). This requires 120km of new railway track as well as upgrade to existing track and some significant investment in the port of Nacala. The latter port has huge advantages given its natural deep water draught (15 metres) which would allow Panamax and small Capesize vessels to really exploit the economies of scale. The option has a 2016 start date attached so is some way off but with the potential to handle 40mtpa if feasible is the real growth potential option for the future.

Whilst options 2 and 3 look exciting for the future, the present is now in terms of Beira option 1 and it is worth looking at developments of this project further given its imminent start date.

SENA RAIL LINE

This is complete, and both Vale and Riversdale will be using their own rolling stock and sourcing locomotives from various

suppliers. Initial rail capacity will be 6mtpa based on a cycle time of 41 hours (Moatize–Beira–Moatize) requiring eight trains per day, handling 2,500 tonnes per train to achieve this. There are funds in place to expand the line to 15mtpa but for 2011 and 2012 it is likely the early phase of 6mtpa is the best possible.

BEIRA PORT DEVELOPMENT

This is a key phase of the development both in terms of quayside upgrade and navigation into Beira port itself. Beira has traditionally been a low-draught tidal port which has seen a lack of investment over recent years and the entrance channel (Macuti Channel) requires constant dredging. Thanks to investment by the European Bank, CFM (Mozambique Railways) and the Dutch government, dredging commenced in July 2010 and is nearing completion where the channel will then have eight metres chart datum by July 2011. At high tides this will generally allow 10–11 metres of draught and the ability to load a Handymax vessel to 46,000 tonnes cargo.

Given the need to maximize loading capacity there are plans to run a transshipment operation in an area 24nm (nautical miles) out at sea to Panamax/Capesize tonnage and as such the loading vessel in Beira would need to be specialized in order to run this operation. Transshipment loading rates in the loading area at sea are estimated to be 4,000tph (tonnes per hour). Whilst transshipment operations are quite common where ports have limited draught, there is possibly a balance between loading a Handymax vessel direct to destination port with marginally higher per tonne cost vs. a transshipment operation with costs to much lower per tonne cost achieved by using a larger bulk vessel and therefore likely the final operation could be a combination of both modes depending on market rates/and destination.

In Beira, port development has started at berth No. 8 for the shiploading and is developing well (key resurfacing etc — see picture on p14) and, when complete with shiploading cranes, this will be able to handle load rates of 2,400tph allowing completion of a vessel within 24 hours. At these loading rates it can be seen that the potential for 20mtpa through the berth would be possible.

Behind No. 8 berth, work is already under way for the landside operation covering railway unloading and stacking at 2,000tph with a stockpiling area capable of holding 300,000 tonnes. Importantly, reclaiming at 2,400tph from the stockpile allows the shiploading rate planned.



SUMMARY

Whilst there is still work to be done in completion of the Moatize–Beira supply chain, this has progressed well over the last six months and is on track for completion to see the first vessels loading from Q3/2011. Whilst 2011 will see some reasonable tonnage moved, full-scale operations can only be expected by 2012 in realizing the full short-term potential of 6mtpa throughputs. The longer-term potential is also there for further growth through Beira and the other options which could place Mozambique strongly on the world map as a major supplier of coking coal. Given the demands of the growing world steel trade and consumption it is essential this project is successful and all signs are that it will be given the significant investment and drive that has taken place so far.

DC

Port of Sept-Îles enjoys best results in 30 years

In mid-January this year, the Port of Sept-Îles announced the initial observations from an exceptional year in its history. In addition to registering the highest business volume in 30 years with 25.1mt (million tonnes) handled, compared with 19.8mt in 2009, the Sept-Îles Port Authority posted a record year with nearly \$70 million invested in port development.

The strong recovery of iron ore in 2010 — with growth of 29% — pushed tonnage past the 25mt mark, a feat last achieved in 1981. Arrival of the new producer Consolidated Thompson Iron Mines and its shipments to Asia starting in July led to a 76% increase in volume at the Pointe-Noire terminal with 2.4mt handled.

The railcar ferry between Sept-Îles and Matane handled nearly 100,000 metric tonnes, an astounding 85% increase for La Relance terminal. This included almost 58,000 metric tonnes of aluminium travelling on the Blue Highway, up 42% from last year. It is worth noting that the railcar ferry service translated into an average of one fewer truck per hour on Route 138 over the entire year.

Investments in 2010 attained a level unparalleled since the port's inception. More than a quarter billion dollars of private funds and port monies was invested in port properties. At the peak of the season, the port boasted more than 700 workers and five construction sites, including Pointe-Noire and La Relance terminals, the Consolidated Thompson project, and the cruise ship dock.

The past year was also marked by the opening of the cruise ship dock on 4 October. Sept-Îles residents were invited to celebrate the arrival of the first ship at the new dock, a simply spectacular event. Over 1,000 people came out to take part in festivities marking the departure of the *Norwegian Spirit*. Three ships dropped anchor in the Bay of Sept-Îles in 2010. More than 7,500 passengers and crew members took advantage of the unique appeal of Sept-Îles and its many services, with an average disembarkation rate of over 80%.

The Port of Sept-Îles also received two highly prestigious prizes in 2010, including the St. Lawrence Award from SODES (Société de

développement économique du Saint-Laurent), given annually to recognize exceptional results and projects that have contributed to the economic development or enhancement of the St. Lawrence River. The second was the Transportation Excellence Award from AQTR (Association québécoise du transport et des routes), received jointly with CN for its railcar ferry service.

"Everything is in place for the Port of Sept-Îles to reclaim its position as the second-largest Canadian port in 2011. A number of challenges await us again this year. Construction of a deepwater multi-user dock is expected to begin this year to meet the growing needs of current and future users. We must provide high-quality facilities for our partners so they can be more competitive in today's market, and we will take the appropriate steps to reach our goals," said president and CEO Pierre D. Gagnon.

"In the last year, both levels of government have supported future development of the Port of Sept-Îles by contributing to a number of key projects for our industries through the federal government's Economic Stimulus Fund and Community Diversification Program [International Cruise Ports of Call component] as well as Québec's Programme d'aide à la stratégie des croisières," added Carol Soucy, chair of the board. "We have also benefited from an outstanding partnership with our users that led to the completion of these projects. On behalf of the entire Port of Sept-Îles team, I'd like to thank them for their support, which reflects their confidence in our flourishing region."

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PORT
SEPT-ÎLES

and celebrates winning two awards



ABOUT THE PORT OF SEPT-ÎLES

Boasting a variety of state-of-the-art facilities, the Port of Sept-Îles is one of North America's leading iron ore ports and this year will become Canada's second largest, with an anticipated annual volume of over 32mt.

Sept-Îles' port facilities play a vital and strategic role in the operations of a number of businesses active in 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.

The Port of Sept-Îles will also host some 200 delegates at the 53rd Annual General Meeting and Conference of the Association of Canadian Port Authorities from 7–10 August 2011. Port activity at the Port of Sept-Îles therefore remains a significant source of economic and social wealth for the region, for Quebec, and for Canada.



Quelimane to handle tantalum shipments?

The Noventa mining company, which has a concession to work the Marropino mines in Mozambique, is looking into the possibility of shipping consignments of tantalum via the port of Quelimane. An initial 8-tonne shipment has already been sent to test the logistics chain linking the mine to the port, possibly leading to regular shipments as of 2011.

The main option is the port of Walvis Bay, in neighbouring Namibia, although this would involve road haulage of seven to ten days. The main advantage of Quelimane is that it is only 350km distant from the mine.

Tantalum pentoxide is a high-value mineral vital in the construction of mobile phones and other electronic equipment. *Barry Cross*

Three new Peruvian minerals terminals planned

Peru is to build three terminals dedicated to minerals traffic at the ports of San Juan Marcona, Matarani and Callao, investing a total of \$370 million.

At Callao, the Transportadora del Callao Consortium has made a direct approach to the National Ports Authority with a proposal for a terminal costing \$120 million, which could be in operation by 2012. It will consist of a dedicated quay for

the handling of mineral concentrates, which will be fed from a storage tower via a hermetically sealed conveyor system. This will be able to directly feed vessels moored at a pier.

The project at San Juan de Marcona has been costed at \$170 million, while that at Matarani, which is being promoted by the Terminal Internacional del Sur concessionaire, will need \$80 million. *BC*

Rio Tinto 'upping' its Dampier investment

Rio Tinto has announced investment of \$230 million in the Australian Port of Dampier. This will be used to increase shiploading capacity and also upgrade the amount of iron ore brought in by rail.

Earlier, \$91 million had been committed to boost capacity from 220mt (million tonnes) to 225mt by early 2011. In addition, surveys are under way to test the viability of upping capacity to 280mt by the end of the second half of 2013. In the slightly longer term, the target capacity is 330mt, which may well be place by 2015. *BC*

Itajaí handling steel coils from São Francisco

Excessive demand at the Brazilian port of São Francisco do Sul has resulted in the Norsul shipping line diverting some of its vessels carrying steel coils to Itajaí. São Francisco do Sul is experiencing a record year, expecting to handle 10mt (million tonnes) as opposed to the 8mt handled last year.

Norsul is currently trying to obtain approval for a 120 million terminal project (Mar Azul) in the port, which would speed up handling of products and also reduce costs on behalf of the producer ArcelorMittal. *BC*

Nacala rail link opens in southern Africa

The Chipata-Mchinji railway has opened in southern Africa, providing the shortest route to the port of Nacala on the Indian Ocean, which should boost trade to Malawi, Mozambique and Zambia. The port is a natural deep water harbour, making it ideal to accommodate large bulk carriers. At present, Zambia is handicapped in having to use a much longer rail link, which connects it to the port of Dar es Salaam. *BC*

MPX investing in Colombia

The Brazilian company MPX is concentrating investment on two open cast coal mines in Colombia, at Cañaverales and Papayal, as well as undertaking studies to construct a loading port for minerals at Dibulla. Coal production will begin in 2012, with output reaching 15mt (million tonnes) annually by 2021, although this potentially could reach 20mt per annum. The port will cover an area of 521 ha and be located 150km from the mines. If all goes according to schedule, it should commence operations at the end of 2013. *BC*

New Lázaro Cárdenas minerals terminal

Terminales Portuarias del Pacifico began construction in November last year of a new minerals terminal in the Mexican port of Lázaro Cárdenas, requiring investment of \$50 million. The initial phase of the terminal should open in December 2011, consisting of 350 metres of quay capable of accommodating Capesize vessels. In addition, there will be 25ha of stockpile area able to store up to 3.5 million tonnes a year.

The project is being financed by shareholders GMD, Cementos Mexicanos, the Clisa group and the Noble group of Hong Kong. The terminal will serve the mining industry in the South and West of Mexico, as well as importing minerals, steel and coke.

BC

Ponta do Félix in Brazil to deepen draught

The Ponta do Felix terminal in Brazil is to re-establish a draught of 9.5m, thereby allowing it to handle vessels carrying fertilizer. In contrast, the neighbouring Barão de Teffé terminal will retain its 6m draught, restricting it to cabotage operations and also barge reception. The upgrade at Ponta do Felix will also enable it to handle consignments of sugar, thereby ensuring competition for the neighbouring port of Paranaguá. Dredging alongside the terminal was set to commence at the end of 2010, depending on an environmental impact assessment.

BC

Sugar terminal for Maceió

Brazilian state organization Antaq has approved a tender seeking a concessionaire for the future Sugar Terminal at the port of Maceió. The concession contract is worth \$30 million and will involve minimum investment of \$12.66 million over 25 years. It will handle non-refined sugar and molasses in what will be a 71,260m² area, which will be operated as a common user facility. In its first year, it is expected to handle 1.27mt (million tonnes), rising to 1.82mt by the end of the 25-year contract.

BC

Cabedelo set to handle granite traffic

The Brazilian port of Cabedelo has begun to handle export granite blocks once again, having suspended such traffic in 2008. By the end of this year, it expects to be moving 40,000 tonnes of this material annually. Companies such as Coto Minerals and Granasa, which had switched consignments to other ports, are now coming back to Cabedelo, which has made certain investments to ensure it can compete with rivals for this traffic.

BC

Rio Grande refurbishes floating crane

The Brazilian port of Rio Grande has resumed operations with floating cranes. The 100-tonne *Cábrea Acre* floating crane was given a complete refurbishment to return it to its original condition at a cost of \$2.2 million. It is now deployed in various parts of the port, handling large pieces of project cargo as well as large volumes of dry bulk, if required to do so.

BC

Antonina handles new fertilizer traffic

The port of Antonina in Brazil has begun to receive consignments of raw materials needed for the production of fertilizer. Permission for stevedores to handle fertilizer or raw materials in the port was first given in September last year, allowing some vessels to discharge some tonnage in Paranaguá and the rest in Antonina.

The two ports are located comparatively close by, thereby obviating the need to make large diversions if vessels require access to both. As a result of the dual port option, importers have cut costs and reduced waiting time.



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Project cargo: wind turbine components being moved at the Port of Wilmington, Delaware, USA.

facing the differing challenges posed by dry bulk, breakbulk and project cargo



Louise Dodds-Ely

Port of Wilmington boasts particular expertise in project cargo traffic

The Port of Wilmington, Delaware is a full-service deepwater port and marine terminal handling over 400 vessels per year with an annual import/export cargo tonnage of nearly 5mt (million tonnes). Today, Delaware's port is the busiest terminal on the Delaware River. Located at the confluence of the Delaware and Christina Rivers, 65 miles from the Atlantic Ocean, the port is owned and operated by the Diamond State Port Corporation (DSPC), a corporate entity of the State of Delaware. Since it was founded in 1923, the Port of Wilmington has been a major mid-Atlantic import/export gateway for a wide variety of maritime cargoes and trade.

Recently, the Port of Wilmington's Deputy Executive Director Tom Keefer took the time to talk to *DCI* about the port's involvement in dry bulk cargo, breakbulk and project cargo.

DRY BULK

Tom Keefer explained that, in terms of dry bulk cargo, the Port of Wilmington handles in the region of 1mt a year. Dry bulk commodities include chemical-grade salt, road salt, speciality ores, petroleum coke (petcoke) and speciality chemicals.

The port provides the dock space and the cranes needed to carry out the unloading operation. The cargo is then taken off the dock, and stored adjacent to the port, in facilities owned by Port Contractors, Inc. and ICS (Intercontinental Services of Delaware LLC). Both companies store and manage dry cargo inventories, and then distribute the cargo from their own facilities.

BREAKBULK

The Port of Wilmington handles a variety of breakbulk cargo. It is the largest gateway in the USA for imports of perishable cargo (and is particularly noted for its handling of large quantities of tropical fruit and deciduous fruit). It also handles ferrous scrap; wire rod and coils; rebar; steel sheets and coils; steel plate; bulb flats; structural beams; and slabs. Forest products — mainly sawn timber in bundles — also regularly pass through the port. The port also deals with a considerable volume of paper, including paper rolls, newsprint, magazine stock and liner board.

PROJECT CARGO

Project cargo is regularly handled at Wilmington. It includes notably wind turbine components (see picture above), generators, components for oil refinery work — there are six oil refineries on the Delaware River that regularly need to bring in parts, including cracking towers and distillers.

One project of which the Port of Wilmington is justifiably proud is its handling of the rocket booster core for the Orbital Sciences Corporation's Taurus II rocket programme (please see box on p23) to resupply the International Space Station.

Another project, which involved moving a methanol plant from Delaware to Trinidad and Tobago, demonstrated Wilmington's importance in the logistics supply chain. For this contract, a methanol plant was disassembled, shipped on trucks and barged to the Port of Wilmington, and loaded directly onto

project ships. Smaller pieces of the plant were loaded onto vessels using ships' gear or shore cranes.

This project was particularly notable, as it was an excellent example of the close relationship that the Port of Wilmington enjoys with the Delaware Department of Transportation (DelDOT) as well as with the Department of Safety and Homeland Security (DSHS). DelDOT is responsible for issuing permits to carry oversize cargo over the roads, while DSHS provides police escorts. These two organizations are extremely efficient, and work well with the Port of Wilmington. The relationship is one of the reasons that Wilmington is able to offer an efficient service transporting wind turbine components to and from the port; the local trucking companies also enjoy excellent co-operation with the state police.

CARGO VOLUMES

Keefer told DCI that there is always some fluctuation in the annual cargo throughput at the port, though the base volume remains broadly similar. Environmental factors can have a significant effect on cargo throughput; the recent harsh winters, for example, have led to a surge in the total amount of road salt. Shipments of scrap have been satisfactory, though the drop in the scrap market price has meant that there has been less demand than the port had anticipated. Other factors that affect cargo volumes include: a more competitive market; the overall global economy; transportation costs; and climatic conditions.

The bulk and breakbulk markets have both been adversely affected by the global economic downturn, with its resultant fall in housebuilding. As a result, volumes of lumber and rebar have fallen drastically; lumber has effectively disappeared from the Port of Wilmington, while rebar is only occasionally handled, though Keefer says he expects this to pick up in the future.

The boom in steel over the past decade has meant that a considerable quantity still goes through the port, though the contraction of the automobile market has meant that Wilmington has not been able to take the opportunity to increase its volumes. One of the port's customers continues to offer the port a reliable base of business in its imports of wire rod. The seasonal closure of the Great Lakes between December and March each year means that the Port of Wilmington has a reliable winter steel programme each year, which includes high-quality tensile strength steel used for truck beds, bulldozer shovels, crane manufacturers and so forth.

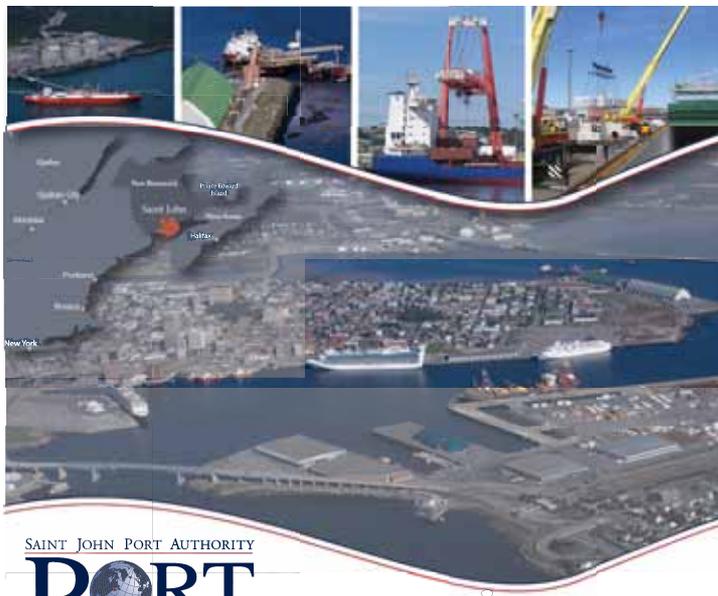
BERTHING FACILITIES AND EQUIPMENT

The Port of Wilmington has seven general cargo berths on the Christina River and one on the Delaware river. Of these, six berths are suitable for breakbulk and project cargo, and five are able to handle dry bulk. The terminal is operated by the Diamond State Port Corporation (DSPC), and there are two independent stevedoring companies that load and unload the cargo; their responsibilities begin and end at the ship's tackle.

The Port of Wilmington has two multipurpose gantry cranes (one manufactured by Kocks, one by ZPMC, with a maximum lifting capacity of 75 tonnes and 50 tonnes respectively) for berths 1-4. These are capable of handling project cargo, depending on how the vessel is stowed. Other equipment includes a 100-tonne mobile crane and mobile equipment such as forklifts.

GEOGRAPHICAL LOCATION AND CONNECTIONS

The Port of Wilmington's is favourably located, just a quarter of a mile from the north/south interstate which travels from Maine to Florida and 30 miles from the east/west highway system.



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Wilmington's project cargo is 'out of this world'



On 23 November 2010, the Port of Wilmington offloaded the first of six to twelve first-stage core structures for the Taurus® II rocket that is being developed by Orbital Sciences Corporation, one of the world's leading space technology companies. These 100ft-long and 15ft-wide cores originate in the Ukraine and will be trucked from the port to the Wallop Island, VA launch site on a custom-built heavy-duty trailer.

Orbital's Taurus II space launch vehicle is a medium-class launcher that will be used to conduct resupply missions to the International Space Station, as well as a launcher for civil government, defence and intelligence, and commercial satellites.

"Handling Orbital's rocket booster cores is a great compliment to the Port of Wilmington and the State of Delaware. It underscores our excellent location and infrastructure, as well as our logistical expertise," said

Diamond State Port Corporation Executive Director, Gene Bailey. "Furthermore, the fact that Delaware's Departments of Transportation and Safety and Homeland Security have been very accommodating in facilitating truck permitting and police and utilities escorts for such complex movement of cargo has been very helpful to our customers," he added.

The movement of this high-value piece was complex because the core unit was discharged off a uniquely configured stern ramp ro-ro (roll-on/roll-off) ship that required special mooring arrangements. In addition, the unit was driven on a custom-made truck, which is challenging to manoeuvre along public roadways.

In preparation for the discharge, Orbital conducted a successful data collection test transport run in June 2010 driving a booster mock-up from the Port to the Wallops Island, VA launch facility.

The port is well-served by rail companies: Norfolk Southern and CSXT are active at the port. The port is able to store up to 40 railcars, and has its own small tracked vehicle, the 'Trackmobile', so that it is not dependent on the railroads for shunting wagons.

Its location, and the above-mentioned good relationships it enjoys with governmental agencies enables it to work to the benefit of its customers.

WAREHOUSING

There is 250,000ft² of dry warehouse space that is used to house cargo that needs to be stored indoors, such as cold rolled coils and paper rolls. On top of that, there is an area of 33 acres of improved or semi-improved land that is used to store outdoor cargo.

The Port of Wilmington has its own proprietary inventory management system E-Port, which interfaces easily with other systems such as Papinet. Keefer is proud to say that he has not yet come across a system that does not easily interface with Wilmington's, and port customers have reported that it is the best system they have used throughout the whole of the USA. The system can be applied to all types of cargo, from automobiles to steel slabs; its flexibility is what makes it easily adaptable to shippers' proprietary systems.

CUSTOMS

Wilmington has both Customs and Border Protection offices based at the port, as well as US Department of Agriculture officers. The port is Customs-Trade Partnership Against Terrorism (C-TPAT)-certified.

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Forth Ports PLC plays vital role in supply chains and logistics across the UK

The ports business is central to Forth Port PLC's activities and is a rich source of opportunity for growth, based on a commitment to looking beyond traditional port services of loading and discharge and playing an increasingly important role in customers' supply chains and logistics operations. Forth Ports operates seven ports — six in Scotland (Grangemouth, Leith, Dundee, Rosyth, Burntisland, Methil) and the Port of Tilbury in London — and is the largest ports company listed on the London Stock Exchange.

The **Port of Grangemouth** is Scotland's largest port and the country's largest container terminal. It also has fully serviced cargo handling facilities and is a major hub for liquid bulks, forest products, steel and dry bulks. The port has an unrivalled location with rail and adjacent motorway connections to over 70% of the Scotland's population make it an ideal logistics and distribution hub. The port's rail-linked distribution centre has full warehousing services, backed up by a fully integrated stock control system.

The **Port of Leith** is the largest enclosed deepwater port in Scotland and has the capability to handle Handymax ships up to 50,000dwt. It offers a full stevedoring and cargo handling service with excellent rail and road connections into central Scotland. Storage is available in modern, secure, single span transit sheds or in surfaced open compounds. Covered storage totalling 14,000m² is situated close to the quayside and weighbridges for dry cargo storage. Leith has a long association with grain and animal feeds. Cereals are discharged for the Scottish whisky industry for distillation and flour milling. Leith handles in excess of 1.82mt (million tonnes) of a wide variety of bulks including cement, coal, iron ore, aggregates and fertilizers.

The **Port of Dundee** handles a wide range of general and bulk cargoes including grain, wood pulp and fertilizer. The port specializes in oil and gas offshore support.

The **Port of Rosyth** has Scotland's only direct ro-ro link with mainland Europe. Four sailings per week link Scotland with

Zeebrugge. Forth Ports also operates three smaller specialist ports on the Fife coast at **Burntisland, Methil and Kirkcaldy**.

The **Port of Tilbury** is London's major port of over 344 hectares providing fast, modern distribution services. It is a diverse, multi-commodity and multi-modal port with links to all major global markets. Serving the UK's market for forest products, general cargo, cars, grain and other bulks, the port offers customers deep sea and short sea services including ro-ro and ferries plus excellent transport links to and from the capital and across the south east and beyond

Two major dry bulk specialists have their own stevedoring operations within the port — CEMEX and Stema Shipping. In 2009, CEMEX built a bespoke £49 million, 1.2mt cement grinding and blending plant at the port which takes advantage of Tilbury's excellent position and connectivity in the South East. The plant is located directly on the quayside with the ability to handle ships of up to 30,000 tonnes. Stema's operation at Tilbury handles over 300,000 tonnes of sand, gravel and aggregates from its own coastal quarry.

Tilbury is also home to the first automated high bay facility specifically built for paper. The Enterprise Distribution Centre was built in 2005 at a cost of £38 million and has the capacity to handle over 800,000 tonnes of paper a year. The complex was built around the unique Stora Enso Cargo Unit (SECU) with a maximum load of 85 tonnes — three times larger than a standard 40-foot container. Tilbury's location is complementary to the needs of the company's distribution network.

Tilbury's Grain Terminal is one of the UK's largest in the UK with the facility to handle exports of wheat, barley, beans and rapeseed as well and imports of wheat, maize and soyabeans. Panamax vessels can be handled at the terminal's berth and shoreside facilities include 120,000 tonnes or storage in 200 separate silos for product segregation. Tilbury is also a key port for handling animal feeds and agricultural bulks which, together with grain, has volumes in excess of 1.3mt per year.

Grangemouth delivers for glass business

The first consignment of soda ash has arrived in the Port of Grangemouth for the local production of glass whisky bottles.

Three thousand tonnes of the specialist powder arrived on the Antigua-flagged bulk carrier, *Maria Schepers*, from the Port of Derince in Turkey.

Soda ash is a key ingredient in glass manufacture and this load was handled on behalf of supply chain specialist Newport Industries which wanted to take advantage of the proximity of Grangemouth to the final delivery point in Alloa.

Nik Scott-Gray, business development manager of Forth Ports PLC said:

"Our warehouse facility at Grangemouth is well placed for local businesses to order materials that they cannot store on their own premises. We work closely with our customers to fit in with their schedules and deliver just-in-time to keep production going. Customers also benefit from lower costs and a greener supply chain."

Commenting on the arrival, Raj Patel, managing director of Newport Industries said: "Not only does the location of Grangemouth, just over the River Forth from Alloa, reduce the truck journeys from other large ports, but the large warehousing facility at the port ensures that we get the soda ash when we need it."



Bulk and breakbulk at the Port of Los Angeles

The US Port of Los Angeles in California is a large, multi-purpose facility that handles a huge variety of cargo — including automobiles, containers and liquid bulk as well as dry bulk and breakbulk. It is also home to a total of 17 marinas containing 3,701 recreational boat slips, and is also a major passenger and ferry terminal.



In terms of dry bulk, the port offers two major facilities. On its berths 165–166, operated by US Borax Inc, it handles industrial borates. This is the only privately held facility at the port, and it transfers cargo to vessels at a rate of up to 1,000tph (metric tonnes per hour) and offers a product storage capacity of 350,000 tonnes. It covers a total land area of seven acres. The berth is 670ft long with an operational height of 14.2ft. Water depth is 37ft.

Berths 210–211, operated by SA Recycling, handle all grades of ferrous and non-ferrous scrap metals. The land area is 26.7 acres, and total berth length (two berths) is 1,500ft, with an operational height of 13.7ft. The water depth is 35ft. The terminal has a metal shear and shredder on site, and there are near-dock rail facilities.

Breakbulk is a major cargo at the Port of Los Angeles, and there are three facilities where this is handled. At berths 49–53, which is operated by the port, steel is the major cargo. The land area here is 24 acres, and the total berth length (two berths) is 2,100ft. Operational height is 14ft to 14.6ft, and water depth ranges from 35ft to 51ft. There is on-dock rail access. The terminal serves the company Pasha.

On berth 54–55, operated by Stevedoring Services of America (SSA), fruit is the cargo handled.

At berths 174–181, operated by Pasha, the cargo handled is again steel. The land area is 40 acres, and the total berth length (three berths) is 3,300ft, with an operational height of 11.2ft to 15ft. The water depth is 35–45ft, and the terminal is served by three 40-tonne-capacity cranes. There are also covered on-dock warehouses with a 235,000ft² transit shed capacity and a specialized on-dock rail service for steel.

With 13 acres (five hectares) of warehousing facilities that extend along 1,720 feet of berth length, Port of Los Angeles warehouses feature rail accessibility and storage convenience for a host of shipping lines.

Jol Consultancy – representing ports in Italy and beyond

Dutch native Frans Jol is a major presence in the shipping industry, having worked with major companies in the industry since the tender age of 16. For a full, in-depth profile, please see pp36–37 of the October 2010 issue of *DCI*.

Jol is now using his extensive experience to serve a varied group of customers through the consultancy business that he has founded — Jolconsultancy.

Jolconsultancy's clients are wide-ranging and include the following general cargo and bulk cargo terminals:

- ❖ Solacem: Torre Annunziata, Italy;
- ❖ Intergroup: Gaeta and Civitavecchia, Italy
- ❖ Lorenzini & C. Srl : Livorno, Italy
- ❖ Camorani: Salerno, Taranto, Italy
- ❖ Gallozzi: Salerno, Italy
- ❖ Compagnia Portuale Srl di Monfalcone, Italy
- ❖ Burke Shipping Group: Ireland, all ports
- ❖ Forlog – RCT, Willebroek, Belgium.

In the dry bulk market, Frans Jol also helps Verstegen Grabs (which supplies grabs for bulk handling) and LogSys (which offers software that specializes in bulk handling). He has taken the time to talk to *DCI* and to give details on some of the above ports and terminals.

SOLACEM AT TORRE ANNUNZIATA

Solacem SpA (part of the Rocco Group) is an integrated harbour logistics company that has been operating at Torre Annunziata since 1967. It specializes in the handling of grain and flour, and also retails these in South Italy and around the Mediterranean basin. Within the port, the company owns



Solacem at Torre Annunziata.

20,000m² and has extended the space it holds in concession by a further 3,000m² set aside for the handling of large cargoes that do not need indoor covering. Over the years, Solacem has diversified the range of its activities. It won its licence for grain storage in 1967; in 2001 it received its flour-storage licence; and in 2009 it was awarded a licence to unload, store and transport iron metals, pulp, fertilizers, food products and other goods.

Solacem now manages a great deal of the total traffic at Torre Annunziata, operating with the Italian branches of leading multinationals in the cereals and agro-industrial sectors, as well as with Italian and foreign companies in the metallurgical and logistic sectors. The company is exclusively responsible for managing the Eastern Pier (260m long, 40m wide, 8.6m draught). The harbour logistics platform includes: silos that are 40m or 50m high, 900-tonne capacity, comprising 32 starbeans, with a total capacity of 600tph (tonnes per hour); three sheds with seven metallic refrigerator-cooled compartments in a total area of 6,500m², ideal to store goods including flour, pulp, copper, fruit and more; and a completely enclosed open area under video surveillance, for storing and handling goods including iron and

steel products, non-ferrous metals, timber etc.

All areas conceded to Solacem are directly linked to the Eastern Pier, and all operations are carried out using 40-tonne-capacity cranes and forklift trucks of various capacities. Solacem uses highly sophisticated software for discharging the vessels, loading and controlling the silos and loading the trucks to the maximum allowed weight .

INTERGROUP: GAETA AND CIVITAVECCHIA (PORT OF ROME), ITALY



Logistics company 'intergroup' has been in business since 1986. It offers the global management of goods for its customers, including services such as national and international transports, marine terminals (it operates in Gaeta and Rome's seaports), packaging, warehousing, project cargo handling (such as windmill components), ferries, ro-ro and cruises. It also offers packaging, labelling, Customs and VAT services, intermodal services and outsourcing of logistics services.

Among major companies that intergroup has worked with are: Basf, P&G, Barilla, Henkel, Italcementi, Unilever, Acciona, Vestas, Caronte & Tourist, Tirrenia, Cristal Co, Edf Man, and many more). Today the group has a direct staff of 90, and it handles more than 4mt (million tonnes) of cargo per year.

Gaeta

A wide range of stevedoring services are available at Gaeta, which has high-tech equipment as well as trustworthy and efficient staff.

Civitavecchia terminal

intergroup is also active at the Civitavecchia terminal in the Port of Rome, using its own equipment and staff. Activities there include daily ro-ro and passenger services.

Within Civitavecchia, intergroup operates its Distriport, a 20,000m² facility within the port, 200m from berth no.23. It is connected to the railway, less than 1km from the country's major highway, where the company can handle and store containers, special cargo, packages, vehicles, and trailers. In this area, other services are available, including: packaging, assembling, quality control, labelling and degasification of containers.

WAREHOUSING

The Gaeta warehouse specializes in intermodal services for goods deposited in a foreign state and/or denationalized; VAT and excise are suspended.

As a port warehouse, it offers temporary storage and transit functions for goods subject to embarkation and disembarkation operations.

The Formia warehouse specializes in integrated logistics services for goods arriving by sea and by road. It supplies global management services for finished products, from production to the final destination, including packaging and further processing. It is situated 4km from Formia's harbour and 7km from Gaeta's harbour.

The Sessa Aurunca warehouse covers an area of about 6 hectares and is dedicated mainly to the logistics of coal products, supplied just-in-time from this distribution point to major cement factories in central/southern Italy, including Colacem, Sacci, Italcementi, Cementir. It can store 110,000 tonnes of coal.

The food terminal warehouse is one of the newest and most technologically advanced in Italy. It has been designed from the outset solely for the warehousing and handling of agri-food products and therefore satisfies all regulatory requirements.

The Frosinone warehouse is part of a modern rail terminal situated in the central part of Italy and connected with the most important intermodal infrastructures. It has also 40,000m² of storage and handling area and 7,000m² of warehouses.

PROJECT CARGO

From 2002, intergroup has become specialized in the handling of project cargo, especially windmill components. It has great expertise in logistics, transport and sea port issues.

LORENZINI COMPANY, LIVORNO PORT, ITALY



The Lorenzini Company, based in Livorno Port in Italy, is located in Leghorn on the Addis Abeba Docks. It was created as a private entity in 1979 and, over the years, has grown significantly. Starting with a dedicated area of just 1,000m² in 1985, it now has 92,000m².

For over ten years, Lorenzini's activities have been focused on Darsena I in Livorno Port, and it is continually gaining more and more national and international shipping companies as clients.

The company is ISO9001-2001 accredited. It offers a 24/7 service year-round, enabling fast and efficient services in loading/unloading of ro-ro, lo-lo of all types of goods, including forest products, general cargo, heavy lifts, rolling cargoes and containers.

For operational management, administration, accounting and communications, the company uses specific computerized system software. The systems is constantly updated by qualified staff using the most sophisticated computer technologies. Messages used by the terminal are in an international standard form and data exchanges are performed according to international standards, based on United Nations Economic Commission for Europe (UN/ECE) directives. Standard messages managed by the terminal are: for operating vessels, BAPLIE and COARRI; and for

the operating terminal, CODECO.

Lorenzini has a wide range of equipment on the terminal, including forklifts (handling goods from 4 to 25 tonnes) and four mobile harbour cranes (one Gottwald HMK 300 and three models from Fantuzzi Reggiane — the MHC 115, MHC 130 and MHC 5130).

CAMORANI: SALERNO, TARANTO, ITALY



The Camorani family has been in the maritime business for decades, with its earliest activity in the 'Furio' workshop taking place in 1920. Over the years, new parts of the company were devoted to shipbuilding, ownership and chartering of vessels and general shipping.

Back in his youth, in 1966, Giuseppe Camorani followed his passion for the sailor's way of life and boarded a Liberty ship going from Vasto to Rotterdam. Even while aboard he carried on his studies, and can now boast over 40 years of disparate maritime and mercantile experience. He is now a steady and inexhaustible source of knowledge for his sons, partners and assistants.

Today, the Camorani Shipping Group is a modern company with a thorough, qualified network. It offers services in: maritime shipping agency; rent and brokerage; stevedoring; project cargo handling; customs formalities; LCL and FCL container handling; trucking/haulage; 'door-to-door' delivery; cargo insurance; trading; travel and tourism; warehousing; storage; packing; crating; and distribution.

GALLOZZI: SALERNO, ITALY



Salerno Cargo Service (SCS), part of the Gallozzi Group, was specifically created to handle any non-containerized cargo which is handled by its sister company Salerno Container Terminal.

SCS is able to handle breakbulk, general cargo, steel and heavy lift and project cargoes. It offers services in logistics, stevedoring and warehousing. It has a port area of 2.2km; stacking area of 10,000m²; covered warehousing of 3,000m² and offers a maximum draught of 10.25m. Among the equipment it has is a mobile workshop; one mobile M&R van; five goosenecks and several slings; lifting equipment for heavy cargo and steel pieces; five cranes with maximum lifting capacities of 100 tonnes; six tug masters and ten trailers and ten forklifts.

It operates year round, 24 hours a day, seven days a week.

COMPAGNIA PORTUALE S.R.L. DI MONFALCONE, ITALY

Another Italian company represented by Jolconsultancy — via the agreement with A. Maneschi to help the whole Group including Sisam, ToDelta, Capital Logistic — is Compagnia Portuale S.R.L. di Monfalcone (CPM).

CPM benefits from the advantageous geographical location of Monfalcone, which is strategically situated for many commercial trades. Multimodal transport is available, with nearby roads and railways available for onward transportation of goods. The port is about 1 km from the A4 (Venice to Trieste) motorway, and the A23 (Palmanova–Udine–Austria) is also nearby.

Rail connections are good. The port has its own railway siding with a non-electrified line which is directly connected to the Monfalcone railway station, from where the Venice–Trieste and Udine–Tarvisio lines start.

Monfalcone also has other powerful logistical infrastructures, including the Ronchi dei Legionari airport and the intermodal hub Interporto di Cervignano del Friuli with has a large railway junction.

Monfalcone handles a wide variety of goods, including iron ore, clay, coal, various bulk minerals, cement, grain, cellulose and cars.

Monfalcone has a draught of approximately 12m, which means that it is able to handle various ship sizes carrying heavy tonnage.

Equipment at the port enables the handling of a variety of goods, and includes cranes, diggers, tractors and electric locomotives.

Storage is possible in public and private warehouses either as temporary storage or as bonded warehousing. There is covered warehousing on the quay for transit goods. Free zones are available for the development of new projects.

There are two pneumatic towers for loading and unloading of cereals and bulk meal, with maximum capacities of 200tph, connected to silos. The silos are also linked to the rail line, with a 120m link with a carrying capacity of 70,000 tonnes.

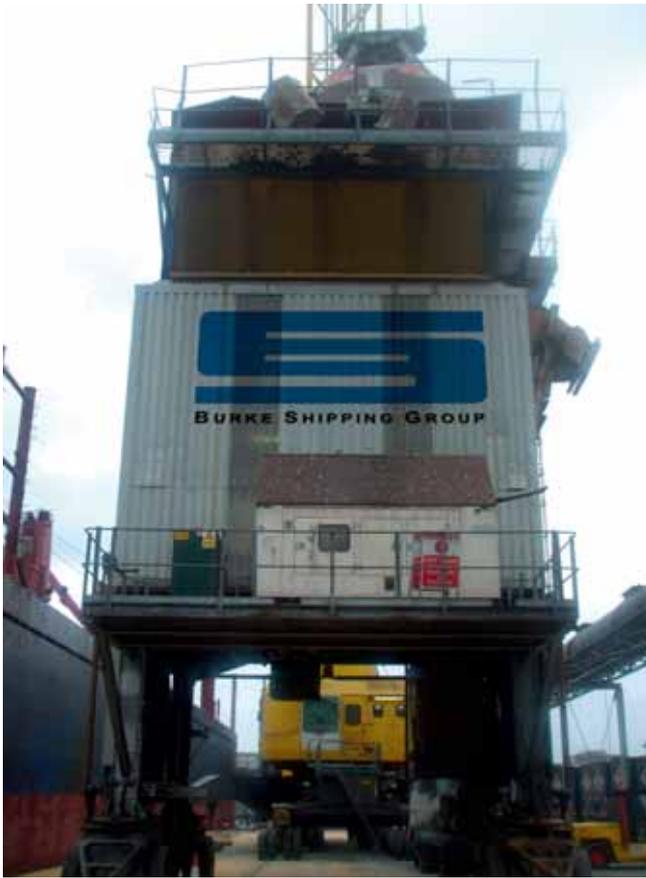
BURKE SHIPPING GROUP: IRELAND

Burke Shipping Group is the principal operating subsidiary of the Doyle Group. It is a privately owned total shipping service provider, which has been operating in Ireland since 1886.

In terms of marine services, Burke offers: terminal operations; stevedoring; ship repair; tug hire; and harbour services. Its shipping services include: ships' agency; liner agency; and cruise agency. Its logistics services are: ship chartering; forwarding; project cargo; distribution; and transport and major infrastructure project solutions.

In the last year, Burke has handled a total of 5,050 ship calls as a ships' agent: 3,000 at Dublin; 1,600 at Cork; 250 at Foynes; 100 at Belfast; and 100 at Waterford. Its agency services are nationwide in Ireland.

Burke also handles a great deal of breakbulk cargo, totalling 2.6mt in the last year — 1mt at Dublin, 850,000 tonnes at Cork,



640,000 tonnes at Foynes and 160,000 tonnes at Waterford.

Project cargo is also a significant part of the company's responsibility. In the last year, it has dealt with 575 turbines — 150 at Dublin, 150 at Cork, 200 at Foynes and 75 at Belfast.

Burke is also responsible for a total of 930,000ft² of warehousing — 350,000ft² at Dublin, 350,000ft² at Cork, 200,000ft² and 30,000ft² at Belfast.

The Burke Shipping Group has offices in Belfast, Dublin Port, Waterford, Cork, Cobh, Fenit, Foynes and Limerick.

Burke offers tailored, integrated shipping solutions to match the specific needs of its customers, and boasts over 100 years of industry experience. The company is committed to service excellence and strict adherence to best practice in health and safety — it has external safety and quality system auditors.

FORLOG – RCT, WILLEBROEK, BELGIUM.



Forlog is a specialist in freight forwarding, warehousing, custom brokerage and integrated logistics. It offers integrated logistic solutions and order tracking and tracing through its web application. All documents related to a customer's shipments are available via the web application, as well as an online 'freight rates system' and a 'stock management system'.

R.C.T. Stevedoring loads and unloads vessels ranging in size from 5,000dwt to 10,000dwt. It also deals with trucks (handling both pallets and bulk); and breakbulk cargo. It offers a significant amount of warehousing — 30,000m² of covered warehouses, and 40,000m² of outside storage. R.C.T. specializes in forest products, metals and ore, construction materials, steel and aluminium products and general cargo.



Forward planning is integral to the success of port stockyards

Quintiq, a fast-growing advanced planning and scheduling company has a global footprint in supporting bulk terminals to cope with the planning complexities that are inherent to dry cargo terminal operations.

The specifics of bulk port handling facilities from a planning perspective lead to a range of complex requirements due to the different mechanisms for handling of the different types of cargo which can be handled. An example of this is materials which are freely stockpiled in yards and the different approaches required to move different configurations on the ships.

Quintiq Pty Ltd in Australia, for example, has implemented planning and scheduling solutions at two coal port terminals on the east coast of Australia in the last two years. These solutions address the following key problem areas.

- ❖ providing visibility of planning and scheduling across the supply chain, from immediately assessing yard changes and their impact on upstream and downstream operations to allowing re-planning to improve throughput;
- ❖ planning of yards with restricted growth by ensuring that the product is in the yard and assembled ready for just-in-time shipment;
- ❖ utilizing the yard planning to determine the upstream rail and road requirements to align supply with the shipping and yard demand;

❖ managing the complexity of yard configurations for machines with multiple machines loading single ships, clearing of stockpiles to completion, through loading to ships, stockpile separation and machine clash avoidance.

“Bulk ports’ unique characteristics require the ability to specifically take into consideration the different business rules and constraints of these yards, which are very different from traditional production planning and logistics planning solution capabilities. Quintiq’s unique modelling and configuration capabilities enabled these port operators to achieve improvements in throughput,” says Phil Duff, director of Quintiq Pty Ltd.

Taking actual feedback from stockpile reclaiming and projecting forward any changes immediately redefines the end of shiploading jobs and subsequent sailing times. This also determines changes in terms of machine availability at the stockyard and planning for future jobs, or automatically replanning future jobs in the stockyard, and assessing the impact.

Whilst traditional logistics planning and production planning have been solved in many cases through the use of Advanced Planning Systems, the flexibility in planning yards with such different layouts, configurations, constraints and business rules enables port operators and bulk handling facility operators to really start to optimize the throughput of their operations.

Breakbulk and project cargoes handled by the Virginia Port Authority

The Virginia Port Authority (VPA) handles a variety of breakbulk and project cargo. In terms of breakbulk, it deals with consignments from rubber to steel to machine tools. Over the past few years, project cargo has predominantly consisted of large power-generation equipment. In 2009, VPA handled a total of 228,905 tonnes of breakbulk, rising to 253,854 in 2010.

Tonnages and cargo types fluctuate year on year, driven principally by the economy, pricing and access to the market and customers.

VPA’s dedicated breakbulk and project cargo facility is the Newport News Marine Terminal (NNMT), and is owned by the VPA and operated by Virginia International Terminals Inc., the VPA’s privately-held terminal operating company.

NNMT has 3,480 linear feet of berth space that is served by four cranes. The biggest of these units is capable of handling 50 long tonnes. The terminal sits on 40 feet of water.

The ship-to-shore labour is handled by the International Longshoremen’s Association, a union commonly known as the ILA. Ship-to-shore labour at all of the VPA’s terminals is handled by ILA labour. VPA has all the necessary equipment to handle breakbulk and project cargo and, at NNMT, also has the ability to discharge cargo directly to railcars.

FACILITIES AND ONWARD TRANSPORTATION

NNMT is a 140-acre terminal that has 853,000ft² (79,246m²) of multi-use warehouse area. Most of the warehouse space is leased to customers and there are plans now to develop another on-dock warehouse based on demand.

US Customs has an office in the market/port and its officers are at all of the VPA terminals. Additionally, there are customs house brokers throughout the region.

There are no stevedore-run/operated terminals in the region, but Ceres Marine Terminals Inc., CP&O, LLC and Universal Maritime Services all provide stevedoring services in this market.

NNMT is in an excellent Mid-Atlantic location that is positioned within a day’s drive of two-third of the nation’s population. The terminal has 42,720ft (13,021m) of direct rail access provided by CSX, one the Eastern US’s two Class I rail carriers. There is roadway access to Interstates 64 and 664 and US Route 17. Interstate 95, the East’s primary north-south corridor is about 2 hours drive from the terminal.

BUSINESS DEVELOPMENTS AT THE PORT

The VPA will benefit from two business developments that will bring more cargo to the port. VPA’s operating company, Virginia International Terminals Inc., has signed a seven-year contract extension with Wallenius Wilhelmsen Logistics (WWL), a Norway-based carrier focused on project cargoes. The extension carries the VPA’s relationship with WWL through 2017; the company’s vessels call at NNMT. The primary cargoes will be machine tools from Japan, natural rubber from Indonesia and Nissan automobiles.

Currently, vessels in WWL’s Far East Service call at NNMT several times a month. At NNMT the carrier has access to a modern 124,000ft² warehouse for rubber storage; two berth options for its vessels with deeper-draughts; quick turnaround for truckers; and easy interstate access. In 2007, the VPA and WWL signed a long-term contract carrying the relationship through 2012.

In a separate development, a new barge service, operated by Columbia Coastal Transport, is being launched to link the ports of Virginia and Philadelphia. The 13-week trial was launched in September to see if there is enough business to sustain the service. The barge will be moving military cargo from Philadelphia to Virginia. This is the first barge service to operate between Virginia and Philadelphia. Columbia Coastal barges has been moving cargo between the ports of Virginia and Baltimore for years.

Brake's J. Müller Group offers intelligent service and logistics solutions

For decades, the port of Brake and the J. Müller subsidiaries J. Müller AGRI Terminal and J. Müller Breakbulk Terminal have been among the leading cargo handling centres in Europe. Another J. Müller subsidiary in Brake, LOGISTIK SERVICES, operates the largest sulphur solidification and handling plant in Europe. Two Procor and Rotoform systems are available for the solidification of liquid sulphur, and one of the company's specialties is solid sulphur handling in FIBCs.

The port of Brake in Germany continues to expand at a dynamic pace. In August 2009, Niedersachsen Ports, the port infrastructure company of the Federal Land of Lower Saxony, completed the first port expansion phase, 'Niedersachsenkai', which provided an additional quay length of 270 metres and a further 30 hectares of storage space. Niedersachsenkai is simultaneously being developed as an offshore terminal for the wind energy industry and will be able to cope with weights of up to 1,000 tonnes per load unit. The second stage, which will create a further 180 metres of quay length and space for a second mega-vessel, is scheduled for completion in the third quarter of 2011. The planning approval procedures for deepening the Lower Weser from 12.20 to 12.80 metres are already under way and the project is expected to be completed by the end of 2011. Modern Handymax and small Panamax vessels will then be able to sail the entire 26km long route from the North Sea to Brake fully laden.

Thanks to terminals specializing in agri products and breakbulk, Brake can offer not only excellent cargo handling facilities, but also a number of value-added services for the customers of the J. Müller Group.

J. Müller Agri Terminal is Germany's largest port for the



import of feedstuffs and is a high-performance port-terminal company on the River Weser. The specialized terminal operation in Brake is optimally equipped for handling high-value goods. As a midsize family business, the company has been focusing on the careful and protective handling of its customers' goods since the company was founded in 1821.

J. Müller Agri Terminal owns one of the largest silo complexes in Europe. Located close to the Oldenburger Münsterland, Europe's largest compound feed area, the Port of Brake is ideally suited for the handling and storage of grains, feedstuffs, oilseeds, fertilizer, legumes, renewable natural resources, biomass products, sugar, food-related products and other agricultural goods. 360,000 tonnes of storage capacity (silos and flat stores) enable 'just-in-time' delivery, 24 hours a day, 7 days a week. Several shore cranes and flat stores are available for handling fertilizers.

Before cargo is unloaded, a visual check is carried out and a sample taken by J. Müller Agri Terminal representatives. The samples are analysed at the company's own laboratory. The parameters for these analyses are set out in the control schedules drawn up for incoming cargoes. Considerable quantities of the imported consignments are loaded onto river barges and motor coasters as well as railway wagons and trucks. A load compartment inspection is performed before any consignment is transferred to a barge or a seagoing vessel. A variety of criteria are checked in the course of this inspection. Loading can only begin after the load compartment has been given the all-clear. J. Müller Agri Terminal is certified for the handling and storage of organic products.

In addition to its traditional handling and storage business, J. Müller Agri Terminal can offer its customers efficient solutions for forwarding by truck, railcar, ocean vessel, coaster and river barge from one single source. GMP-certified barge operators and partner companies form the basis of a logistics service that is tailored to fulfil the customer's requirements. Moreover, it also handles documentation and customs clearance on request.

J. Müller Breakbulk Terminal handles iron and steel, project, heavy cargo and wind turbines as well as forest products. A range of logistics services for the on- and offshore sectors of the sunrise wind industry markets has been a firm element of the service portfolio for many years.

Handling iron and steel products has always played a central role at the port of Brake. At both the 'old port' and the new Niedersachsenkai, J. Müller BREAKBULK offers ideal conditions for import and export, with highly specialized facilities for handling highly sensitive girders, coated pipes, long rails as well as heavy coils and slabs. Niedersachsenkai has optimum handling structures for the steel and project cargo sector.

Forestry products – and in particular pulp and sawn timber – are another core business sector at the Port of Brake, where up

VUBL adds value

At its multi-purpose dry bulk terminal at the Port of Rotterdam in the Netherlands, where it currently handles approximately 2.5mt per year, Van Uden Bulk Logistics (VUBL) now operates two dedicated silo-truck loaders for its mineral logistics.

Adding these loaders to the services that it offers means that VUBL has developed another value-adding service to its logistic concept for industrial minerals.

Recently, VUBL concluded that the same set-up works well for other products. VUBL started with the intermodal (truck and rail) transport of wood pellets; currently it handles the so-called residential grade, but it expects that industrial grades will soon also be transported. VUBL also plans to transport larger loose bulk volumes, which are used for co-firing in fossil powerplants.

At this time of year, VUBL regularly deals with road salt shipments at its Merwehaven terminal in Rotterdam. Recently, a record shipment of about 28,000 tonnes was discharged directly at VUBL's impressive quayside, for onward transportation to inland EU destinations.

VUBL also offers global container logistics for loose bulk materials.



to 165,000m² of covered storage area are available for pulp and wood products. The sawn timber and other wood products are landed, stored and handled at the logistics centre, a modern complex with 95,000m² of covered storage and almost half as much outdoor storage area. The port's excellent connections to the German rail network mean that the goods can be delivered to pulp consignees in Germany in roughly 24 hours. More than 70% of all pulp transports are handled by rail and more than 50 per cent of all timber deliveries are intended for export.

SERVICE & LOGISTICS FOR THE WIND INDUSTRY

Amongst other things, the newly constructed Niedersachsenkai is used for handling wind farm components and project cargo. Wind energy is a key export factor in Brake and the current expansion of the offshore terminal also includes a new 140-tonne mobile crane for Niedersachsenkai. Structural elements such as rotor blades, generators, tower segments, internal and external components account for a high share of cargoes. These exports are headed for destinations all over the world, such as Ireland, Italy, Turkey, the USA and the Far East.

NEW ENERGIES NEED INTELLIGENT LOGISTICS SOLUTIONS

The company is systematically expanding its service portfolio in the wind energy logistics sector to offer customers tailor-made logistics solutions for products relating to all aspects of 'wind': this begins with highly efficient parts logistics, includes a range of



value-added services to optimize the flow of goods, and extends all the way through to service and maintenance. J. Müller offers businesses in the wind industry sector options which enable them to achieve lasting reductions in the costs of their quality and logistics activities.

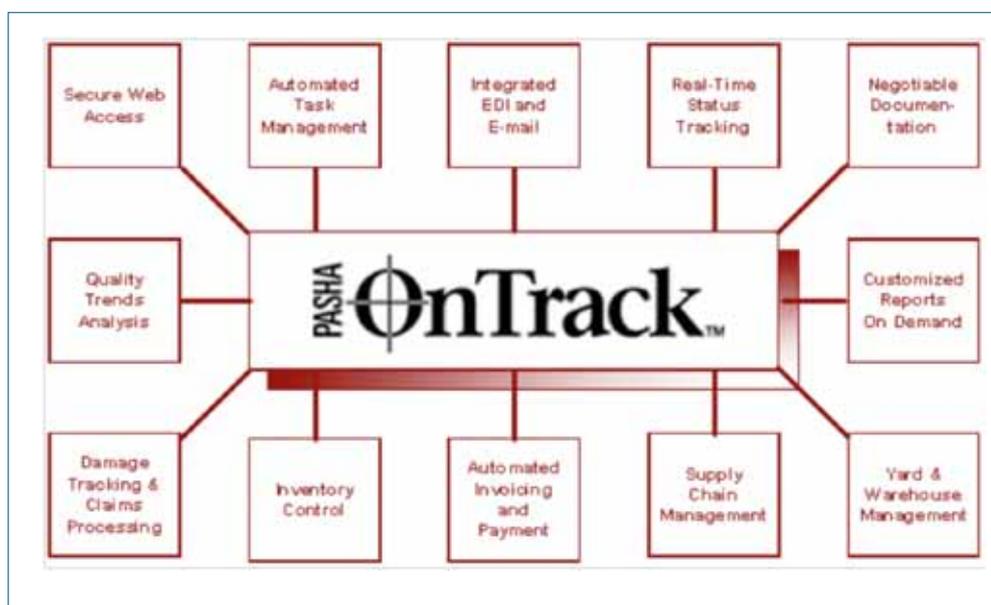
The service spectrum of the J. Müller Group encompasses the entire logistics chain. The J. Müller Brake Logistics Centre has both covered and outdoor storage areas which are suitable for highly versatile use, ranging from component production to the development of modern warehousing solutions which can optimize storage procedures and production processes.

There are sites available right beside the heavy goods terminal for companies wishing to set up business here in Brake, thus enabling optimum handling of wind turbine components up to 1,000 tonnes, whether for national and international on- and offshore wind farm projects or supply chain solutions as part of international procurement concepts.

The Pasha Group benefits from over 20 years of experience

With over 20 years of logistics experience, The Pasha Group is a specialist in providing warehousing, oversized cargo handling, and specialized packing and crating services. It offers over 200,000ft² of warehousing space in all of the major distribution hubs in the US, handling over a quarter million pounds of international cargo daily. Its facilities are equipped with a state-of-the-art security system, sensors and motion detectors.

Services include: warehousing in clean, secure facility; US customs bonded facility; on-site and off-site crating; heat shrink wrapping; stretch wrapping; vacuum packing; export boxing; consolidations and deconsolidations; oversized cargo handling; palletizing; and strapping.



GLOBAL LOGISTICS AND WAREHOUSE MANAGEMENT

Pasha's proprietary web-based OnTrack™ system manages Pasha's Automotive, Maritime, Transportation and Relocation operating divisions. Pasha OnTrack™ is designed, developed and supported solely by Pasha IT Services. The application utilizes reusable components that allow the company to quickly build and deploy reliable and cost-effective business solutions that support every step of the transportation chain — tracking, status, budget management, auditing and invoicing — and provides a wide range of reporting options.

Every customer project undertaken is unique. Each has its own special set of requirements and challenges requiring a blend of application development, data communications, networking and support skills. Pasha's organization and flexibility allow it to create project teams that leverage the resources and expertise necessary to lead a project to successful completion.

Pasha OnTrack™, supported by real-time RF hand-held computers, utilizes the latest barcode technology for on-site data entry, EDI applications for instant data transfer around the globe, and state of the art software solutions for data management and reporting. Every aspect of a Pasha project is tracked and monitored, and status and financial information is readily available by: project; part; container; vehicle; vessel; destination; and date.

Sea Port of Saint-Petersburg: stevedoring services in the northwest of Russia

The Sea Port of Saint-Petersburg group is the largest group of stevedoring companies in the northwest of Russia. It includes four stevedoring companies, operating at all four cargo areas of the Greater Port of Saint-Petersburg and also Multipurpose Reloading Complex in port of Ust-Luga (Leningrad region).

The Sea Port of Saint-Petersburg group of companies is part of the international transportation group Universal Cargo Logistics Holding (UCL Holding). Consolidating a number of stevedoring, shipping, logistics and freight assets, UCL Holding offers a wide range of services in relation to various cargoes, including project cargoes. Door-to-door delivery of cargoes is possible due to the combination of sea, river, railway and motor transport.

Sea Port of Saint-Petersburg, working with the logistics specialist Universal Forwarding Company, provides the whole spectrum of loading-unloading operations, forwarding of various types of cargoes, including breakbulk, heavy-lifts and out-of-gauge cargoes, construction materials and inert cargoes, equipment. It can offer competitive tariffs for services and 'through' rates for the entire cargo transportation route.

Breakbulk cargoes are handled using standard systems, including clamshells and conveyors. Gantry cranes with the capacities of 5–40 tonnes are used for handling vessels carrying this type of cargo. Loading of mineral fertilizers is performed at the specialized facility with an annual capacity of 1mt (million tonnes). In order to increase handling efficiency of vessels with 'loose' cargoes, a Kovako specialized discharge blower has been

installed, offering a capacity of 600tph (tonnes per hour).

For heavy lift cargoes of up to 300 tonnes, the Sea Port of Saint-Petersburg group uses the *Bogatyr* floating crane, which can transport cargoes of up to 900 tonnes on its own platform. For heavy lifts of up to 350 tonnes, there is a Demag floating crane, which can transport cargoes of up to 800 tonnes on its platform.

The company has covered warehouses with a total area of 55,000m² and open storage with a total area of 600,000m².

Well-developed port infrastructure includes railway and crane tracks, motorways.

Russian State Border passes through the territory of all the operators of the group. There are customs inspection points and border control on the territories, so the company includes customs procedures in its range of services.

The Sea Port of Saint-Petersburg group of companies includes First Stevedoring Company, Second Stevedoring Company, Third Stevedoring Company and Fourth Stevedoring Company on the territory of the Greater Port of Saint-Petersburg, the Multipurpose Reloading Complex in the Port of Ust-Luga and a number of service companies.

The Universal Forwarding Company included in Universal Cargo Logistics Holding freights sea and river vessels, acts as ships' agent in Azov and Black Sea basin, performs forwarding of the cargoes in sea and river ports of RF, CIS and Europe, multimodal and mixed transportation; the company has wide branch network in Russia.

Medusa dry bulk terminal at the Port of La Coruña in Spain

The Medusa dry bulk terminal at the Spanish Port of La Coruña is owned by Gas Natural Fenosa and its business partner Terminales Maritimos de Galicia (TMGA). The terminal is designed to unload, store and transfer coal and grain in bulk. Consignments of these goods arrive at the port in vessels ranging from 50,000dwt to 130,000dwt.

There is a wide range of equipment and facilities at the port, including:

- ❖ four mobile harbour cranes (one HMK 300 EG and two HMK 300 EG, all from Gottwald); and one LHM 500 from Liebherr, which unload the bulk cargo bulk from the vessel onto environmentally friendly, dust control hoppers;
- ❖ two dust-controlled hoppers which feed the belt conveyor running along the berthing quay and can also be used for the loading of trucks;
- ❖ a belt conveyor system that lift the cargo from the quay to the dome-shaped coal silo and to the grain warehouse;
- ❖ the 110m-diameter Medusa dome warehouse for storing up to 80,000 tonnes of coal;
- ❖ a 5,704m² rectangular-shaped warehouse with a capacity of 28,000 tonnes for storing grain;
- ❖ a main building complete with operations control room; office space; changing room and workshop space; and two 15 kV/400 V AC transformer.
- ❖ a railway loading bay complete with a set of four silos;
- ❖ a rail shunter;
- ❖ a bulldozer, front loaders and tracked backhoe loader; and
- ❖ fire control and fire-fighting installations.

DUST CONTROL HOPPERS

The two mobile hoppers are designed to minimize dust

emissions in the course of vessel discharges as a result of the necessary transfer of bulk from the cranes' grabs to the hoppers. This goal has been achieved by fitting each hopper with:

- ❖ oversized partial enclosure at the upper end as wind shield;
- ❖ a water spray system for coal; and
- ❖ a flex flap and reverse jet extraction system for grain.

The maximum rate of each hopper is 1,500tph (tonnes per hour) for grain and 2,000tph for coal.

BELT CONVEYOR SYSTEM

This comprises eight belt conveyors offering a maximum rate of 2,000tph for coal and 1,500tph for grain. These are all fully enclosed for dust control.

The belt conveyor running along the berthing quay is 315m long and thus can cater to both Panamax and Capesize vessels. Gate-controlled feeding openings evenly spaced along the belt allow for an easy conduction of the vessel's discharge.

The remaining belt conveyors elevate the cargo to the coal silo or grain storage warehouse via transfer towers. While the coal silo fits a stacking boom, the grain warehouse fits a tripper.

DOME SHAPED COAL SILO (MEDUSA)

With a 110m floor diameter and 30m maximum height, the dome-shaped silo capacity is of 80,000 tonnes bituminous or sub-bituminous steam coal.

It is referred as transit silo because it works as a buffer to reconcile vessels' discharging operations (at rate up to 25,000tpd [tonnes per day]) with the ongoing transportation on rail cars to the storage yard at the destination power plant (up to 7,000tpd).

Stacking is carried out by the stacking boom with the assistance of the ATEX-compliant wheeled bulldozer to ensure

compactness and minimize self-combustion risks.

Rather than a reclaiming wheel or boom, the Medusa fits two hoppers at floor level which are fed by the work of the bulldozer and drop the stored coal onto an underground belt that conveys it to ground level to the main transfer tower from where it leaves towards the set of railway silos.

GRAIN WAREHOUSE

Of rectangular shape and having a floor area of 5,704m² its total capacity is of 28,000 tonnes. It has internal subdivisions so that two grain qualities or consignments can be stored separately.

The belt conveyor serving the warehouse travels through its entire length at 10m above floor level and drops the cargo via a tripper.

The ongoing transportation to destination is carried out by trucks that weigh at a dedicated scale located in the vicinity of the terminal.



RAIL LOADING BAY

A set of four silos each of 300m³ capacity allow for the loading of railcars used for the on-going transportation of the coal to the destination power plant.

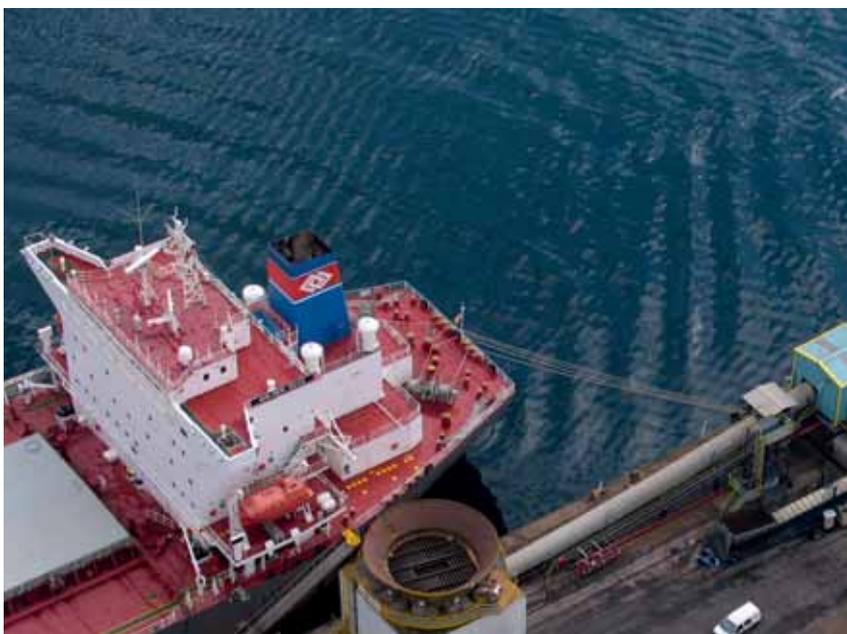
Two railcars are loaded at a time in groups or semi trains of 11, meaning that 700 tonnes of cargo can be loaded in approximately 50 minutes.

Weighing is carried out by means of scales fitted on the railway rails under the silos.

OPERATIONS CONTROL ROOM

The entire facility is operated from the control room that has the following systems:

- ❖ computers fitted with SCADA software that allows for the start up, stop and remote control of the hoppers, belt conveyors, ancillary installation and equipment including sensors, drives and alarms;
- ❖ CCTV that allows the operator to monitor the discharging, berthing quay, the various belt conveyors, silos and the terminal as a whole;
- ❖ main fire control station; and
- ❖ continuous readout from the weighing belt conveyors.



STAFFING

When in operation the terminal is worked in shifts of four operators excluding riders (cranes, bulldozers) and shipboard stevedoring personnel.

OPERATIONAL CLEANING

It is worth highlighting that a centralized vacuum cleaning system allows for an easy and environmentally friendly housekeeping.

FIRE AND DUST EXPLOSION SAFETY

The terminal is fitted with state-of-the-art running equipment fully ATEX compliant and thorough fire detection and fire-fighting installations.

MAINTENANCE

The work of the technical staff of the facility includes preventative (maintenance) and corrective (repair). These people work when operations are stopped, but they are ready to proceed 24 hours per day, 365 days in the year. The engineer co-ordinator oversees the maintenance tasks performed by the technical team. Maintenance tasks are issued daily by a computer software that considers the hours of work equipment and the manufacturer's instructions.

All maintenance personnel are trained in their specialty (mechanical, electrical or electronic) and have received training and information for the prevention of occupational hazards.

The maintenance of special risks (eg hot repair: welding and cutting, electric drives, atmospheres ATEX) is established by means of a work permit cards. These work permit cards are issued by an official who has overseen security conditions.

The maintenance of fire protection system is carried out by a specialized company.

SECURITY

The terminal fully meets ISPS Code regulations regarding security. It is guarded round the clock by security staff and fits from CCTV to highly sophisticated security equipment.

Medium-sized ports operator makes a big splash in the market

Medium-sized companies must do a bit more than their larger competitors if they are going not only to stay in the market, but also to expand in a healthy long-term way.

Brunsbüttel is a small town in the North of Germany, located at the lower Elbe just at the entrance to the Kiel Canal and to the North Sea. Very few people would know Brunsbüttel but of course they all know Hamburg.

The managing director of Brunsbüttel Ports, Frank Schnabel, noticed this some time ago and, since then, he has worked on developing co-operative agreements to place Brunsbüttel in the market. Together with the Lower Elbe Ports of Cuxhaven, Gluckstadt, Hamburg, and Stade the 'Hafenkooperation Unterelbe' was founded in 2009. Since that time, the agreement



In total, 90 blades are being shipped via Brunsbüttel.

has worked successfully in areas including port development, nautical issues, marketing and port policies.

In 2007, the management at Brunsbüttel celebrated the start of a 20-year contract with Aurubis AG in Hamburg. It has taken over the complete logistics for the company with its deliveries of copper concentrate, and even operates a terminal at Aurubis AG in Hamburg. This project gained European and even worldwide approval.

Another co-operative agreement that was initiated and driven by Schnabel took effect when the market for wind energy became popular. Some publicly owned ports developed specialized locations to handle components for offshore wind power stations, and the Ports of Schleswig-Holstein seemed to lose out. To mitigate against that, Brunsbüttel Ports and area



Frank Schnabel, on receipt of his LEO.



Elbehafen.

business development company 'egeb' ordered a study to look into the potential of handling these components locally; results showed that there is indeed significant potential. The entity Ports North Sea Schleswig-Holstein was born, and began operations, supported by the government of Schleswig-Holstein.

Nine ports in the area have created a concept offering a one-stop complete solution for builders and operators of offshore wind farms. There are assembly, supply and service ports covering all demands for the offshore energy industry. Currently, a total of 90 blades are being shipped via Brunsbüttel to the offshore wind farm 'Ormonde' in the Irish Sea for Repower systems. So progress is coming on nicely.

As a result of his initiative in the areas of co-operation and



Copper concentrate warehouse.

promotion of the location for offshore wind energy, this year Schnabel received the National logistics award 'LEO' in the category 'future-maker'. He was the only winner heading a medium-sized privately owned company next to all the big players!

Brunsbüttel Ports is part of the SCHRAMM group, an owner-run strategic alliance of individual companies specializing in all important areas of the maritime industry. All of the companies in the group are established, owner-run businesses with several years of experience and long-standing customer relationships: sound, performance-oriented and with a clear 'hands-on' mentality. Brunsbüttel Ports GmbH operates the ports at Brunsbüttel (Elbehafen [universal port], Ostermoor [liquid and general cargo] and Oilport [liquid goods]), the Port at Gluckstadt and a terminal at Aurubis AG, Hamburg with extended customer focus and logistical competence, safety and reliability.

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Unloading cargo at the Port of Gdynia.

Baltic ports & terminals

recovery in sight as traffic levels rise

Barry Cross

Many dry bulk terminals in the Baltic Sea region saw traffic badly hit by the recession. However, things now appear to be returning to normal, with many terminals now targeting new traffic flows.

INTER BALT is the forwarding arm of Poland's leading coal trader, the Weglokoks group, which cooperates closely with a series of deep mines in the south of the country to expedite the export of coal from that region. Roman Leonczak, commercial director, explains that coal is exported via four main ports: Gdansk, Gdynia, Swinoujscie and Szczecin.

"The vast majority of the coal that we deal with is sent to Gdansk Northern Port, whose world class facilities are the best in Poland. Not only do they achieve high loading productivity with their shiploaders, but they also have extensive stockpiles areas, which are ideal for the large consignments that we ship," he says.

The second most used port is Swinoujscie, which is ideally placed on Poland's western border to serve the neighbouring German market.

However, despite handling via these ports an average of 5.5mt (million tonnes) annually, Leonczak confirms that overall coal production in Poland is decreasing. He explains that this is mainly because of increased costs relating to deep mining activity, which makes it difficult for Polish mines to up production, while the mines themselves are located in challenging geological areas.

"In terms of price, we observe that Polish coal is competitive. Within Poland, Polish coal competes with that from Russia,

Columbia and Kazakhstan. The quality of their steam coal is comparable to ours, but our hard coal is much better," says Leonczak.



Polish coal.



Railcar handling at Gdynia.

Demand for Polish coal mainly comes from Germany, followed by the UK/Ireland, France, Scandinavia and Belgium, although the order of importance can vary from year to year depending on local conditions. Leonczak also says that INTER BALT has, from time to time, had to import Russian coal into Poland for use in local heating and in electricity generating stations.

Quizzed regarding the efficiency of Poland's port sector, he singles out Gdansk Northern Port and Swinoujscie, since both are well-equipped for coal handling. The former offers average loading rates of around 1,500tph (tonnes per hour), although notes that 2,000tph is also achievable. Gdansk also offers 15

metres of draught, which is more than sufficient for the Panamax vessels that routinely call there. Indeed, for European trades, INTER BALT has to deal with vessels in the 2,000–60,000dwt range, although Leonczak recalls that the largest ever bulk transporter to call was of 135,000dwt.

"We usually export consignments of around 70,000 tonnes, so Panamax vessels are sufficient for our needs," he says, adding that there is surplus capacity at the ports and that congestion is rarely encountered.

Asked about the recession, he concedes that two years ago there was a dramatic slump in the market, although since then volumes have almost returned to pre-recession levels. Interestingly, the extremely cold winters experienced by northern European countries over the last two years have not resulted in an upswing in demand.

Landside transport of coal to ports is almost entirely undertaken by rail, with only a very few small or extremely specialist consignments being shipped by road. According to Leonczak, investment has been made in rail infrastructure to upgrade it, although there is still more work that could be done. Nevertheless, he views rail as being relatively efficient and more than sufficient to meet current needs.

"The rail market is undergoing dramatic changes at the moment with open access operators having begun business. At the beginning, they competed on price alone. Since then, their services have become more expensive, but this is because they have concentrated on improving the quality of their service. Nowadays, prices are good, but service has improved.

Companies are trying to maintain a level of services to their customers, which is how we think they should operate. We, nevertheless, tend to stick with one operator that is able to offer advantageous rate plus good service levels," says Leonczak.

Port Handlowy Swinoujscie (PHS) undertakes stevedoring services at four terminals in the Polish port of Swinoujscie. Marketing director Lukasz Przyszlak says that, typically, the company handles 5mt per annum (mtpa) of dry bulk, of which around 95% would normally be accounted for by import-export coal.

"[The year] 2009 was a disaster, with traffic down to 2.7mt and both inbound and outbound coal consignments really badly affected by the recession," he says.

However, PHS has also suffered major traffic losses in the past, but nevertheless managed to add tonnage in other areas to compensate. In 2008, for example, Mittal Arcelor acquired an



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Coal storage at JSC Baltic Coal Terminal in Ventspils



At the end of November 2008, the JSC Baltic Coal Terminal was officially opened at the Port of Ventspils, Latvia.

This storage facility was primarily constructed to protect the city of Ventspils from exposure to coal dust. The warehouse consists of three sections, and the capacity of each section is 70,000 tonnes. The warehouse currently measures 300m long, 80m wide and 45m high.

The warehouse is equipped with a 1,800tph (tonnes per hour) tripper, which performs top-loading. The storage facility is unloaded using a portal reclaimer (pictured), which has a rated capacity of 3,000tph. Coal is directed to a magnetic



cleaning system before it is loaded into the warehouse.

The warehouse allows for the humidity of the coal to be reduced by up to 1%, thus increasing calorific value. Keeping coal at its original volume is very important, both for the terminal and for the client.

There are plans in hand to extend the storage space of the warehouse up to a total capacity of 450,000 tonnes.

iron ore mine in Ukraine and therefore stopped using Swinoujscie to import this commodity into Poland. Nowadays, just residual quantities of iron ore pass through the port.

“Although our current focus is on coal, we also have some traffic in cereals, aggregates for local markets, as well as some manganese ore and iron ore,” he says.

Swinoujscie has become Poland's leading import coal port, currently handling twice as many inbound consignments as it does outbound ones. The export market is in steam coal from the south of the country, which mostly goes to Germany and also Denmark for electricity generation. Imported coal is mined in North America and South America, with more recent consignments also from Australia. This is coking coal for steel production.

In the future, PHS expects to see inbound soya shipments at its new Portowcow terminal, which is currently under

construction for US-based multinational Bunge. Operations are expected to commence in May or June of this year, with annual throughput expected to be 600,000 tonnes, rising possibly to 1mt. Draught of 11.9 metres will allow Panamax vessels to operate there.

Gornikow quay is where the majority of PHS's coal operations are concentrated. 100% of coal exports go via this quay and half of all coal imports come ashore here. A shiploader handles exports and is linked to a belt conveyor system. There are also two Liebherr mobile harbour cranes used for coal discharge and for some consignments of general cargo.

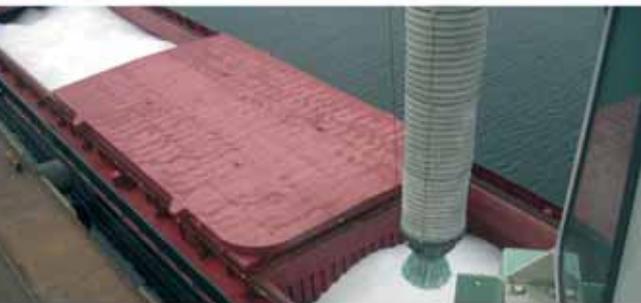
On fully laden Panamax vessels, daily coal discharge rates of up to 22,000 tonnes are achieved, which Przyszlak claims is the best of any Polish ports. He says that Gdynia claims around 15,000 tonnes per day and Szczecin 8,000–10,000 tonnes.

“Our loading rate is 25,000 tonnes a day, while Gdansk

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The Port of Helsingborg.

achieves around 30,000 tonnes, but has larger shiploaders. We are the only two ports in Poland that have the right equipment to load Panamax vessels," he says.

Ninety-nine per cent of the coal handled by PHS is moved by train. For export coal, there are two wagon tippers, which have a theoretical daily capacity of 20,000 tonnes, although rarely would all that be required within a 24-hour period. For imports, there is a stacker/reclaimers, with a loading tower and belt conveyors. Stockpile capacity is 1.2mt.

Imported coal is sent about 500km to the industrial region in the south of the country. Other consignments also go to the Czech and Slovak republics, a distance of 800km.

Each block train is 600m long and composed of 40 wagons.

In terms of other traffic, aggregates and occasional iron ore shipments are handled at Hutnikow Quay, where PHS has two gantry cranes in place.

Chemikow Quay, as the name implies, was previously dedicated to chemicals, such as phosphates, but this traffic has subsequently left the port. "There is a good size warehouse here and we are hoping to use it to attract future imported biomass traffic," says Przyszlak. "The actual berth is already equipped with two gantry cranes and belt conveyors, which could be used for hard biomass products, such as PKS."

He notes that Swinoujscie does also see calls occasionally from geared vessels, which mostly offload steel products, but they are less common than they once were. Self-discharging vessels are also used to transport some aggregates.

It is the port authority that is responsible for upkeep of the draught. The best available is 13.2m, which means that customers using PHS facilities have to be able to adjust to that.

"Panamax vessels load up to 13.2m of draught, but could take on more coal if there were deeper water. The port authority knows that we would like 15 metres of draught, but that would also mean having to rebuild existing berths and also dredge the

approach channel, which would be very expensive. However, we would definitely attract more traffic if we had deeper draught," he says, adding that the biggest Panamax vessel nowadays received is in the order of 80,000dwt, although the average size is 65,000dwt.

Significantly, being a major coal handler, PHS is able to provide customers with a range of value added services, including crushing, screening and, the most important, blending. It also stores different grades of coal separately.

"Steam coal customers do quite often ask us for these services, although importers of coking coal do not," says Przyszlak.

Quizzed about future developments, he points out that, two years ago, PHS only had one coal discharge quay and now it has two, with the purchase of two MHCs (mobile harbour cranes) being a key factor in this.

"We are investing in the business all the time. We are now looking at acquiring modern hoppers to accept coal and these will be connected to the belt conveyor system. We also plan to build a professional loading tower. Our existing tower is small and of low capacity, because we had to put it in quickly, but now we need a bigger one with a higher capacity. The storage area is to be increased, too, plus by rebuilding the rail sidings into our terminals, we can increase loading speeds."

The Swedish port of Helsingborg barely noticed that there was a recession at all. In 2010, for example, throughput for solid bulk amounted to 939,000 tonnes, which was a 9% increase over the 862,000 tonnes handled in 2009. While this is itself impressive, it compares with the 663,000 tonnes reported in 2007, which was before the recession began to take a grip, and throughput of 849,000 tonnes registered at the height of the downturn in 2008.

"During the recession, dry bulk traffic grew a lot, plus there were no dramatic changes for the different commodities that we

handle,” notes port authority sales manager Kjell Ranft.

Helsingborg nowadays mainly handles wooden pellets, grain and various chemical products and for 2010, 546,000 tonnes of these were inbound and 393,000 tonnes outbound. In all, there are three terminals dedicated to this traffic. One of them is for the discharging of pellets, which is undertaken by one of the port authority’s own mobile harbour cranes. Then there is a grain terminal, which has its own equipment for self-loading/discharging vessels. As for chemical products, these are handled either by quayside cranes or come ashore using ships’ gear.

Helsingborg used to be a major centre for coal traffic, but this was effectively replaced by wooden pellets some years ago. In fact, coal traffic has more or less disappeared from the Swedish market, with few ports nowadays handling it.

In 2010, imported pellets amounted to 200,000 tonnes. They are discharged via a conveyor directly from vessel into the local power plant, which is situated adjacent to the port. Grain traffic flows both ways, 55,000 tonnes being imported last year and 239,000 tonnes exported. The dedicated terminal is an effective hub for the whole of southern Sweden, with grain transported by lorries and tractors.

The chemicals terminal is owned by Kemira, although vessel handling is undertaken directly by the port authority. In 2010, 291,000 tonnes of various chemicals were imported and 154,000 tonnes exported, with most of the production of the latter undertaken at the Kemira chemical plant situated in the bulk harbour.

“Helsingborg is able to offer a draught of between 7 metres and 13.5 metres, depending on the terminal involved. This has proved more than sufficient, since there is no record of us having to turn away a vessel requiring deeper water;” says Ranft.

Interestingly, he adds that none of the bulk trades can be said to be worked by a typically sized vessel. This kind of traffic, he says, is not liner based, so different sized vessels will call depending on the size of the consignment and the origin/destination point of each shipment. The largest vessel has been around 40,000GT.

“We have looked into offering customers using the port various added value services associated with dry bulk consignments, but to date nobody has shown an interest;” says Ranft.

Finally, in respect of plans to expand this sector, he says that the port authority is not considering this. The main reason is that Port of Helsingborg is currently concentrating on developing the unitized traffic, which means either containers or trailers, which is where main growth is expected and where the port can be competitive in the future.

In the three small Danish ports of Bandholm, Nakskov and Rødbyhavn, the Alfr. Hovmand company acts as shipbroker and port agent, as well as arranging stevedoring and handling services for both loading and discharge operations.

In respect of traffic, shipbroker Phillip Hovmand notes, “There has been a reduction of about 35% overall in the last two years, which has mainly affected food stuffs for export. In general, Bandholm and Nakskov have increasing tonnages of export food stuffs. In the coming years, we have expectations for more imported stone traffic at Bandholm. All other cargoes are

presently relatively stable.”

All three ports are equipped with mobile harbour cranes. That in Bandholm is hydraulically operated and has an 18m outreach. It can be fitted with a grab, hook, finger grab or yokes for big bags. The unit at Rødbyhavn can handle loads of up to 32 tonnes, while Nakskov has a hydraulically operated mobile crane with an 18m outreach as well as rail-mounted crane with capacity up to 100 tonnes.



The Port of Bandholm.

In terms of commodities handled, Bandholm, which handles annual dry bulk traffic amounting to 130,000 tonnes, exports wheat and barley to countries such as Germany, Holland, Belgium, Poland, Spain, Russia, Norway, Sweden. It also exports logs to Norway and Germany. The port imports stone from Denmark, Sweden and Norway; soyabean meal from Denmark, Holland and Germany; fertilizer from Finland, Poland, Belgium, UK and Norway; and wood pellets from Poland, Sweden and the Baltic states.

For its part, Rødbyhavn exports wheat and barley to Germany and imports fertilizer from Finland, Poland, Belgium, UK and Norway. It averages annual traffic amounting to 50,000 metric tonnes.

However, it is Nakskov that has by far the biggest involvement in the dry bulk trade. There, around 300,000 tonnes a year are handled. Wheat and barley are exported to Germany, Holland, Belgium, Poland, Spain, Russia, Norway and Sweden and sugar to the Baltic states. Inbound, Denmark, Sweden and Norway are the source for stone traffic, while Finland and Poland generate consignments of fertilizer. Wood pellets are also imported, coming from Poland, Sweden and the Baltic states.

In terms of landside movements, consignments are moved by trucks and tractors to and from regional producers and farmers, while some project cargoes are moved by specialized trucking and crane companies.

The draught at all three ports is reasonably modest. Bandholm, for example, offers 5.80 metres at mean tide and Rødbyhavn 5.00 metres. At Nakskov, available draught varies between the 13 different berths, from 5 metres up to 8.5 metres.

“The port at Nakskov was dredged one year ago and presently has sufficient draught for its needs. Both Bandholm and Rødbyhavn would benefit from increased draught to also accommodate larger vessels that cannot presently call;” says Hovmand.

Currently, the average vessel size at Rødbyhavn is 1500 tonnes, while at Bandholm this is 2,000–3,000 tonnes, although larger 5,800-tonne vessels do carry project cargo. As would be expected, the average visitor at Nakskov is in the region of 3,000 tonnes, with ships of up to 10,000 tonnes deployed on project cargo duties.

“At Bandholm and Nakskov, reprocessing and rebagging facilities are available to customers;” Hovmand notes.

When quizzed as to future developments, he says that, in all three ports, there are plans to increase the handling of additional tonnages over the coming years. There is also an expectation that they may become service ports in connection with the building of the Femern Link.

Port of Koper handled 6.3mt of dry bulk cargo in 2010

The Slovenian Port of Koper, operated by Luka Koper plc, offers a wide range of handling services for many types of dry bulk cargoes: coal, iron ore, cereals, soya, fodder, minerals, alumina, etc.

A total of 6.3mt (million tonnes) of dry bulk cargoes passed through Port of Koper in 2010, which represents 41% of the total annual maritime throughput.

The port's main activities are divided between four terminals:

EUROPEAN ENERGY TERMINAL

The European Energy Terminal handles and warehouses coal and iron ore which are transported in both export and import directions.

The terminal equipment enables the loading and unloading of cargo on/off all means of transport (wagon, truck, barge/ship). A closed conveyor belt system links the quay with the storage areas and a wagon loading station. The terminal can unload Capesize and Panamax vessels simultaneously, as well as load all vessels up to Handysize. Additional services available at the terminal are: screening; blending; and crushing.

Terminal and environment

As the terminal is located close to urban areas, special attention is devoted to environmental aspects. In order to limit the negative effects that the terminal has on the environment, particularly in terms of dust emissions, the port has introduced several solutions such as:

- ❖ an 11m-high aluminium barrier around the terminal;
- ❖ a system of sprinkling towers on the storage areas and

sprinkling devices on the handling equipment;

- ❖ a shiploader equipped with a dust-controlled telescopic tube; and
- ❖ an unloading system equipped with a sensor, which detects the radioactivity of cargo.

TERMINAL FOR CEREALS AND FODDER

This terminal specializes in handling and warehousing different kinds of cereals and fodder such as: grains, various seeds, processed soya and other agro-food products. In order to provide suitable storage for cargo, a specialized silo and flat warehouses are used. Both facilities are entirely computer-controlled and equipped with commercial weighing machines. The terminal also has a dedicated wagon loading/unloading station which is directly connected to railway tracks. With these existing capacities, the terminal can support an annual throughput of over 1mt.

Additional services include: fumigation; separation; mixing; elevation; and control.

TERMINAL FOR MINERALS

This terminal handles minerals, industrial minerals and other bulk material, mostly bauxite, borax, cement, phosphates, ilmenite, clinker, perlite, sintermagnesite, scrap, etc. The terminal loads/unloads up to four trainsets per day.

ALUMINA TERMINAL

Modern equipment includes an unloading machine, a closed conveyor belt system that feeds into a silo with a 20,000-tonne capacity, and a wagon loading system. A modern weighing system guarantees that wagons are loaded to full capacity.



Lithuania's Port of Klaipeda remains important regional hub

Thanks to the natural development of economic trading patterns and its geographical location, Lithuania is an important transit transportation hub of the region, where a significant role is played by the country's only Port of Klaipeda which generates approximately 18 % of Lithuania's GDP.

Klaipeda port, often referred to as the hub of the Lithuania's economy, maintains ever-increasing cargo volumes by strengthening its inexhaustible capacities. In the near future, even larger vessels will be able to moor to the quays and the terminals of the port, because the container distribution hub in the Baltic Sea is being established here. Moreover, adjacent to the port, a large public logistics centre will be constructed. A new marina for small pleasure boats and fishing ships will be built. A number of many other no less important infrastructure projects, which are significant for the country, the port and the residents of Klaipeda, has already begun.

Economic fluctuations, increasing volumes of maritime transportation, and fierce competition force the ports to make rapid operational and administrative changes. Klaipeda port made adjustments during the economic recession and it has been proved that the insightful vision and right decisions were taken.

The Port of Klaipeda is notable for significant maritime trade growth, increasing from 15mt (million tonnes) in 1999 to 31mt in 2010, unequivocal proof of its growing importance and influence among the Baltic state ports.

Klaipeda port distinguishes itself for the highest growth of the maritime trade: from 15 mln. in 1999 up to 31 mln. in 2010, which unequivocally proves an increasing importance and influence of Klaipeda within the range of the Baltic state ports.

COMPETITIVENESS DURING THE ECONOMIC RECESSION

The uniqueness of Klaipeda is a multipurpose (33 specialized terminals), a deepwater (15m) and ice-free port, which provides all maritime business services. Klaipeda can accommodate vessels up to 315m long and draughts of 13m, and dry cargo ships of up to 80,000dwt.

The port enjoys a steady growth in cargo volumes. A record cargo turnover of 31.27mt was reached during 2010, a total growth in cargo handling volumes of 12.2 % over the previous year.

In terms of cargo handling turnover, Klaipeda Port remains ahead of neighbouring Riga and Ventspils ports, and is only surpassed by Joint Tallinn Port. The combined cargo handling

volumes of Klaipeda Port and Buting terminal equalled 40.29mt in 2010 and exceeded even the total cargo handling result reached by the Joint Port of Tallinn.

The greatest increase in dry bulk cargo turnover over the last year compared with the same period a year before was due to increased volumes of natural and chemical fertilizers (+1,773.3 thousand tonnes), minerals and construction materials (+662.7 thousand tonnes). Dry and bulk cargo handling increased by 21.6%, volumes of this cargo group were 11,771 thousand tonnes (37.6%).

There was a fall of 7.7% in ship calls at the port, 6,948 compared with the 7,529 the previous year. Klaipeda Port has still maintained its position of the leading port in containerized cargo handling.

PORT DEVELOPMENT

Contrary to the expectations of many, the Port of Klaipeda defied the recession which acted as a role of catalyst in its development. During 2009/10 the radical decline of construction material and labour costs was observed. For this reason, large-scale infrastructure projects and dredging works are being carried out, using the latest technologies. The port has reacted to this period of crisis by investing €174.1m in port infrastructure in 2010/12.

The implementation of the outer (avant) deep-water port project was launched. Constant growth of cargo flows, intensified navigation, larger vessel tonnage, and increasing number of vessels arriving at the port, are behind the port's decision to proceed with these long-term port expansion projects. The existing territory of the port, which is historically situated in the neighbourhood of the city, is intensively used for stevedoring operations; thus the terminals/warehouses cannot be expanded because of the limited area. Klaipeda port development requires larger territories, greater water depth, and wider navigation channel.

Considering the long-term port expansion, the most feasible option is proposed — the outer (avant) deep-water port. The future port with the natural depth of 17–17.5m could be established in the northern part, next to the port entrance: an artificial island (1.5km long and 700m wide) would be constructed 350m offshore from the coast; the reclaimed port area would have road and railway access linked to the existing port.

At the end of 2010 the Feasibility Study and the Environmental Impact Assessment (EIA) of this project had begun. For that purpose, the EU co-financing of TEN-T fund amounting to 50 % was granted. Having completed these works, the comprehensive market study will determine the actual construction of the port.

Klaipeda Passenger and Cargo Terminal is being constructed in the central part of the port. The container distribution hub to serve the Baltic Sea is being established in Klaipeda.

The integrity of all components plays a key role for the port competitiveness: well-developed infrastructure, effective storage operations and modern facilities, flexible port dues system and highest level of services. The credibility of the port is proven by its clients: during 2010 the record volumes of cargo were handled – 31.27mt, which makes an increase of 12.2 % compared to the respective period of the last year.



Demag Cranes acquires British IT company DB Controls

Through its Dutch IT subsidiary TBA, Demag Cranes has acquired the British company DB Controls, based in Doncaster (South Yorkshire, UK).

DB Controls comes with accredited software and consulting competence related to bulk materials automation and won the IBJ Award IT Solutions for Bulk Handling in 2010. The customers of the company, which in future will trade exclusively under the brand DBIS, include port and terminal operators in Great Britain, Asia and Africa, among others.

The acquisition is part of the parent company's strategy of expanding its capabilities in the field of bulk materials handling in the port technology segment. Thanks to the complementary service portfolio of DB Controls, Demag Cranes is expanding its range of software and consultancy services, previously geared to container terminals in the port and hinterland, to include the area of bulk materials. As a result, customers throughout the world receive a complete package from a single source.

Thomas H. Hagen, member of the management board of Demag Cranes AG and COO, emphasizes, "DB Controls' consulting and software capabilities combined with their automation skills are at the upper end of the services pyramid. This will enable us to strengthen our position in the bulk materials handling market considerably."

DEMAG CRANES

The Demag Cranes Group is one of the world's major suppliers of industrial cranes and crane components, harbour cranes and terminal automation technology. Services, in particular maintenance and refurbishment, are another key element of the Group's business activities. The group is divided into the business segments Industrial Cranes, Port Technology and Services and has strong and well-established Demag and Gottwald brands. Demag Cranes sees its core competence in the development and construction of technically sophisticated cranes and hoists as well as automated transport and logistics systems in ports and terminals, the provision of services for these products and the manufacture of high-quality components.

As a global supplier, Demag Cranes manufactures in 16 countries on five continents and operates a worldwide sales and service network that is present in over 60 countries through its subsidiaries such as Demag Cranes & Components GmbH and Gottwald Port Technology GmbH, agencies and a joint venture. In financial year 2009/2010, the group, with its 5,711 employees, generated revenue of €931.3 million.

Largest vibratory classifier separates at up to 77tph

A new Vibroscreen® high capacity, two-deck classifier said to be the industry's largest, separates up to 77 tonnes per hour of bulk solids into three fractions.

Measuring 2,540mm in diameter, it classifies bulk chemicals, minerals, plastics, foods, dairy products, pharmaceuticals and other materials ranging from dry bulk solids to solids-laden slurries.

Quick-disconnect clamps between each screen frame provide rapid interior access for

inspection, screen changes and wash down. An optional Air-Lift device pneumatically raises any of the screen frames, enabling one operator to rapidly perform what was previously a two-person task.

The classifier contains two horizontal screens located one above the other in a vertical, cylindrical housing supported on a circular base by rugged springs. An imbalanced weight gyratory motor affixed to the housing imparts vibration.

Material to be separated is fed onto the centre of the top screen, whose mesh is the largest. Oversize particles are moved to the screen periphery in a spiral pathway, and



discharged through an outlet, while undersize particles drop through to the centre of the next screen. The mesh sizes become progressively smaller toward the bottom of the screener.

The gravity-fed unit can operate on a batch or continuous basis.

Constructed of epoxy-coated carbon steel, it is also offered in stainless steel finished to industrial or sanitary standards.

Other options include various anti-blinding

devices, Clean In Place (CIP) construction, and automatic lubrication systems.

The classifier is also offered in diameters down to 460 mm, and is available to 3-A, FDA, BISSC and other sanitary standards, as well as to UL, ATEX, CSA and CE electrical standards.

The company also manufactures numerous types and sizes of gravity-fed and in-line-pneumatic, circular vibratory screeners and centrifugal separators for separating virtually any solid from any solid or slurry, as well as circular fluid bed dryers, coolers and moisturisers.

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



Iron Ore - 4,000 t/h



Grain 1,500 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

Pneumatic conveying equipment from Mactenn Systems

Mactenn Systems designs and engineers dense-phase pneumatic conveying equipment for use in applications across many different divisions of industry. The company's equipment is designed for the conveying of any bulk material in powder, granule or lump form. Mactenn is very experienced in different industries from the chemical, minerals, food and pharmaceutical along with the building and power industries to mention a few. It has over 35 years of experience with pneumatic conveying and the specific factors that need to be considered when designing a system.

Mactenn Systems' equipment offers many advantages, including:

- ❖ low energy consumption;
- ❖ low air consumption;
- ❖ minimal material degradation;
- ❖ minimal material segregation;
- ❖ handling of very abrasive materials;
- ❖ handling of fragile materials;
- ❖ handling of high temperature materials;
- ❖ only one moving part in its systems: the robust Inflatek Valve is capable of hundreds of thousands of cycles between inspections;
- ❖ increases pipeline life: standard schedule 40 pipe work can be used for conveying many materials; and
- ❖ fully enclosed systems: no material loss into the atmosphere or working environment.



MACTENN INFLETEK VALVE

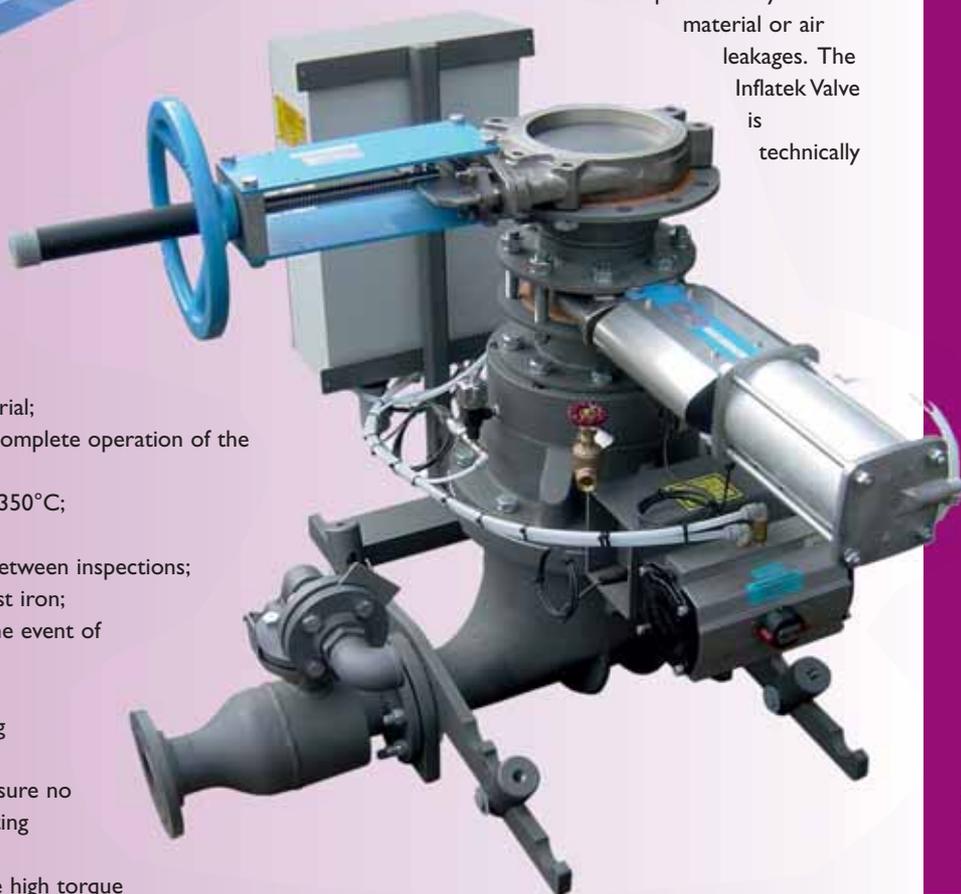
Mactenn's robust and reliable Inflatek Valve is at the heart of every system that it designs, and is used in hundreds of different applications around the world. The valve itself uses an inflatable seal, which is designed to allow for a pressure-tight seal against the closing member that prevents any

material or air leakages. The Inflatek Valve is technically

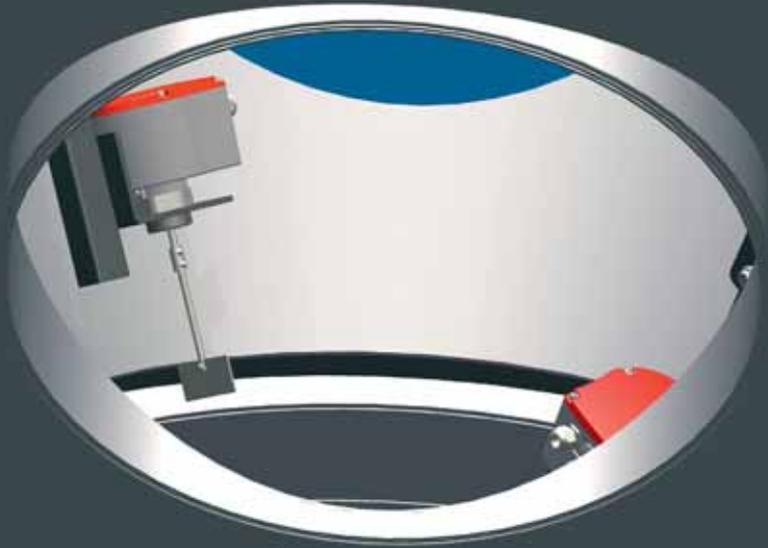
one of the best process valves on the market and has many benefits over other types of valve such as the butterfly valve, ball valve and gate valve.

Advantages of the Inflatek Valve

- ❖ can close through a moving column of material;
- ❖ Mactenn sequencing is available to control complete operation of the valve;
- ❖ capable of dealing with temperatures up to 350°C;
- ❖ easily maintained;
- ❖ rated for hundreds of thousands of cycles between inspections;
- ❖ can be manufactured in stainless steel or cast iron;
- ❖ the inflatable seal is able to over-inflate in the event of wear to the dome;
- ❖ the inflatable seal is efficient at creating a pressure-tight seal between the seal and closing member;
- ❖ zero contact proximity switch is used to ensure no movement between the dome and seal preventing damage and wear; and
- ❖ rotary pneumatic actuator is used to ensure high torque throughout hundreds of thousands of cycles.



SMB Shiploading



Ships all over the world are being loaded with know-how from SMB

All safety features are designed and implemented by SMB. Depending on the product being loaded a fire-fighting-system may be required. The design of this system is customized to ensure maximum efficiency. For the safety of the ships or other mobile systems on the jetty the installation of the SMB anti-collision system could be considered.

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

MBA level switches control the distance of the loading spout to the material in the ship.



Highlight of the month

All Shiploaders/Reclaimers designed and manufactured by SMB include a wide range of safety features.

- Anti-collision systems
- Firefighting – extinguishing systems
- Overflow/overfilling devices
- Lightning protection, Earthing
- Storm locking
- Acoustic Signals

SMB Filling



Line Filling System
Palett Filling System
Single Place Filling System

MBA Instruments



Level Detector MBA 100
Rotating Paddle MBA 200/2.2/3.2
Vibrating Paddle MBA 700
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Fluidization Silo-Flo
Conductivity MLA 900

SMB Logistics



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Vollert: innovative, reliable shunting systems solutions for the Port of Hamburg

Hansaport, bulk terminal operator at the Port of Hamburg, Germany's largest seaport terminal for bulk cargo, is bringing in two new shunting robots from Vollert for the loading of coal and iron ore.

Both machines are the first to feature the all new-design with modular construction.

At the beginning of 2011, Vollert's next-generation shunting robot will be delivered to Hansaport. The company has its own railway station, comprising 15 tracks. Up to 100,000 tonnes can be loaded daily along the 760m-long pier. Hansaport transships 15mt (million tonnes) of cargo each year. Two-thirds of this volume is moved by rail, and the entire loading and unloading process is fully automatic. For round-the-clock loading, 360 days a year, it is vital to ensure high availability.

The next-generation shunting robot from Vollert has an all-new design, bearing the colours yellow and blue. Its broad range of applications makes it ideal for use in refineries, power stations and building material plants, the steel and metal industry through to the petrochemicals industry, as well as the timber and food industry. Equipment and performance vary, depending on the application, and will be simplified in future with the advent of standardized assemblies and a scalable, modular design that is shared by the smallest to the largest, most powerful robot.

The product configurator from Vollert is also new and allows individual items such as pneumatics, wipers, or flange, lubrication to be combined, added, or removed in the way that customers use the configurators provided by automakers. The main advantage of the modular design lies in the minimal maintenance and repair they require, which is a direct result of the time-tested production components installed.

Other arguments in favour of using this solution from Vollert



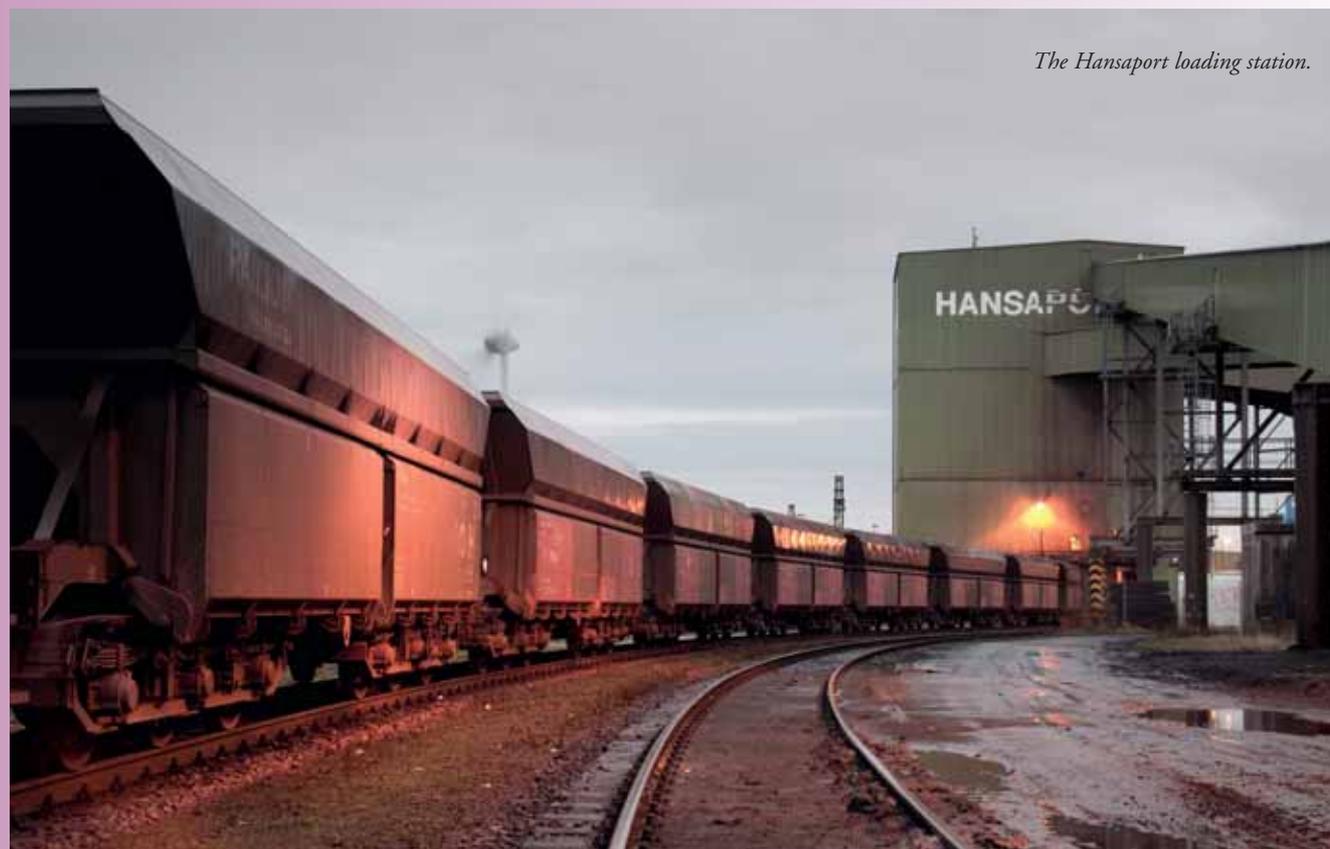
Vollert shunting robot.

include lower operating expenses and significantly reduced environmental pollution when compared with other solutions.

All future Vollert shunting robots will have the company's yellow and blue livery. At Hansaport, Vollert's DER240 model will cope with a traction weight of up to 6,000 tonnes. The robot has two bogies and a Megi spring pack for excellent running capacities. The model's diesel-electric drive unit means that Vollert is offering low maintenance and low costs overall.

Loading advantages with the next-generation shunting robot include:

- ❖ cost-effective and uncomplicated loading and shunting operation in comparison with traditional locomotives;
- ❖ modular design enables varied uses from the metal industry through to the petrochemicals industry and different applications;
- ❖ the modular design requires minimal maintenance and repair;
- ❖ the product configuration allows for additional individual items e.g. pneumatics; and
- ❖ transport charges are lower due to the optimum use of the wagon's capacity.



The Hansaport loading station.



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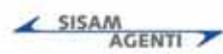
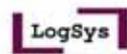


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Euromec Srl - 60 years of experience

Sixty years' experience cannot be improvised in a few months and references cannot be invented.

Euromec Srl's knowledge of the processes involved in the handling of all materials is the vital ingredient which guarantees its presence in the most important ports and plants all over the world. During the planning of its products Euromec pays particular attention to the simplicity of manufacturing processes so that it can keep production costs low, improve final quality and reduce maintenance. In this way, it can offer its final clients a



Euromec's new balanced stationary crane HBC.



major features which have always distinguished Euromec from its competitors. Thanks to its 60 years' experience, it's in a position to build its equipment with respect to the most rigorous certifications worldwide, both NEMA, ATEX and NEC 500 regulations for dangerous environments and GOST laws.

product which is economical, reliable, long-lasting and with very low maintenance costs. As, for example, the new balanced stationary crane HBC, with arms up to 25m, which, thanks to a precise and reliable balancing system, allows it to always have the two crane arms perfectly balanced so that it employs the engine power only for the handling of goods and not for the two crane arms. This system allows a remarkable energy conservation, a drastic reduction in management costs and a remarkable increase in work speed.

Euromec Srl prides itself in maintaining high standards when it comes to the production of electrohydraulic equipment for the handling of all different kinds of bulk materials. Its technical department has always been at the fore-front with regards to the study, the design and the realization of electrohydraulic

equipment for the loading and unloading of all types of material. Present in various plants and factories, it satisfies every kind of request, personalizing the product according to the customer's needs. Reliability and after-sales assistance are the





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- Lime kiln equipment
- Offshore conveying systems & ship loaders
- Plant for sanitary ceramics



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*Limestone handling –
stockpile and feeding
conveyors.*

SAMMI

building for the future

Italian manufacturer Sammi offers a wide range of equipment for the bulk handling industry.

The company's slogan is 'Sammi, building for the future', and the structure of the company reflects this focus.

The company's aims are to:

- ❖ design;
- ❖ build; and
- ❖ innovate.

Sammi places emphasis on the generation of new advance-guard products for international markets that are ever more competitive and demanding. It invests constantly, to allow it to offer solutions that anticipate the needs of its customers.

Special attention is paid to all the various production stages, from designing to the selection of materials, from production to assembly, from the outset of work right through to maintenance and after-sales technical services.

Thanks to its ever-increasing investment in human resources and specific modern equipment, the company is able to deal with the demands of many national and foreign customers.

*The Sammi head office in
Terni, Italy.*



To date, Sammi has carried out installations within Italy and other countries in Europe, as well as in North Africa, the Middle East, the Ukraine, the United Arab Emirates, China, Indonesia and central America.

Today Sammi is a major company in design, supply and installation of industrial plants, and it is able to resolve the most sophisticated needs of the client, with a wide range of extremely complex and diversified application, such as:

- ❖ complete mechanical industrial plants;
- ❖ bulk handling equipment;
- ❖ off-shore conveyor systems;
- ❖ transport system for loose and packed materials;
- ❖ lime kilns; and
- ❖ machines for the ceramic sanitary sector.

It is involved in important planning and construction works including: supply of materials with surface treatments, packaging, transport and installation, followed up by simulation and operational tests.

The continuous and constant evolution of Sammi over time, is marked by some fundamental events:

- ❖ 1976: year of foundation;
- ❖ 1980: building of the first production facility;
- ❖ 1993: transformation from partnership to joint-stock company;
- ❖ 1999: acquisition of the company METMO Molliconi Spa, a world-leading company in the design and supply of bulk conveyor systems; and
- ❖ 2010: extension of his base and new office buildings

Sammi today operates in an area that includes 800m² of administrative and technical offices, a covered 2,500m² workshop divided into production sectors, 10,000m² of external ground



Conveyor for waste removal.

and 600m² of painting shop that includes a recently built 8m x 15m shot-blasting cabin.

In both the 'old' and the 'new' company structures, the focus has always been and remains flexibility, pragmatism, coherence and substance. By sticking to this ethos, the company strives to become better and better known in global markets, and continues to invest in research, quality and professional service to the benefit of both its customers and its collaborators.

RECENT PROJECTS

Sammi has carried out a range of advanced projects, which include:

- ❖ the design, supply and installation of a conveyor system to remove waste from the new SNAM gas pipeline tunnel between Parma and Pontremoli (Italy). The conveyor has a length of approximately 1,200m. The design had to overcome various site restrictions, such as different altimetry levels, slopes and bends.
- ❖ the supply and installation of a steel construction weighing more than 400 tonnes, include all the equipment for a lime kiln engineered by MAERZ Ofenbau AG, Zurich. The contract for a lime plant at Brembilla, Italy.
- ❖ Sammi successfully supplied crushing mill plants with a rated capacity of 800tph (tonnes per hour). A first contract was placed for the design, supply and installation of a 800tph primary crushing mill at Calce Dolomia plant in Genoa, Italy. A second



Lime kiln and transport line.

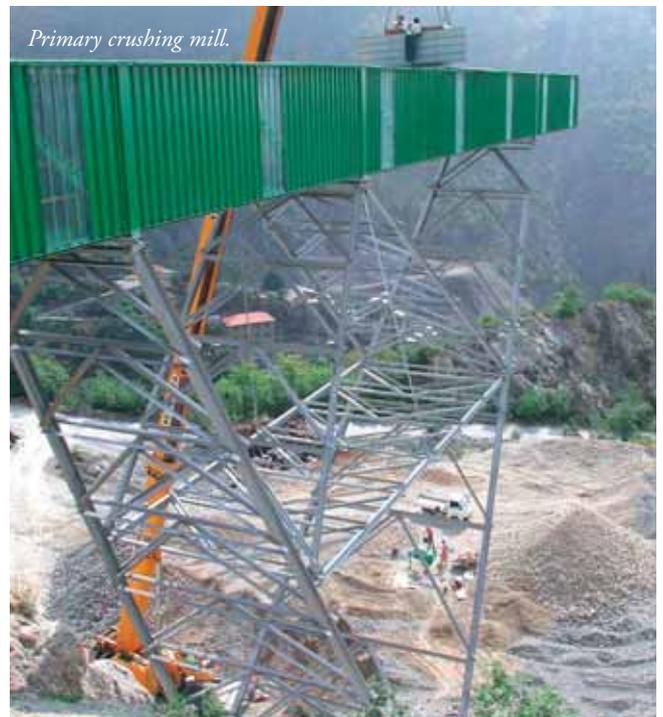


Dry mortar plant.

contract was for the complete design and supply of a secondary crushing in Cagliari, Italy.

- ❖ the complete design, supply and installation of all the equipment and the steel structure for a dry mortar production system for the Calce Dolomia production plant in Campiglia, Italy.
- ❖ in December 2009, Sammi was awarded of a contract for the Italcementi plant at Gaurain-Ramecroix, Tournai (Belgium). The contract was for a complete handling and storage system to be installed at the quarry of the cement factory, for a nominal load of 2,500tph of limestone. The project includes the design, manufacture, supply and installation of:
 - ❑ two transport lines complete with towers and tunnels including one tripper car, with a nominal capacity 2,500tph;
 - ❑ stockpile building for limestone storage, with a total capacity of 50,000 tonnes.
 - ❑ two transport lines complete with towers and tunnels for the recovery and feeding of the cement factory, with a nominal capacity of 750tph.

DCi



Primary crushing mill.



Conveyors

getting carried away in the bulk industry

Conveyor system in an open pit copper mine.



Louise Dodds-Ely

Conveyors: highly effective means of transporting material over long distances

Recently there has been a trend towards long conveyor systems with high-capacity single flights, writes *Ulf Richter, Diplom-Ingenieur (TU) Elektrotechnik, Global Portfolio Manager of Conveyor Systems at ABB Automation GmbH in Germany*. These conveyor systems are an efficient alternative to costly truck fleets. Also, with deeper mines, the use of diesel-driven trucks becomes more difficult. Another trend is in underground mining, where conveyers are an efficient alternative to drift hoists or dedicated rail systems.

The selection of the right electrical, instrumentation and automation equipment directly impacts the performance, flexibility of operation, efficiency, reliability and total life cycle cost of the conveyor system. Conveying systems are required to be solid and dependable and use process repeatable technology, to ensure the highest availability, under the most diverse conditions.

Based upon ABB's experience, a comprehensive applications portfolio of conveyors solutions has been developed. The application portfolio includes integrated systems for different types and geometric conveyor configurations of conveyors in the mining industry.

The ABB Conveyor System portfolio includes:

- ❖ conveyor drive systems;
- ❖ conveyor interlocking, automation and optimization;
- ❖ conveyor material tracking;
- ❖ conveyor instrumentation; and
- ❖ containerized drive and control system solutions.

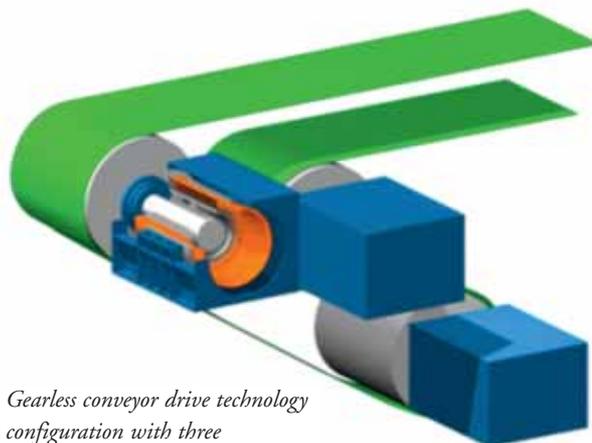
DRIVES SYSTEM

ABB's conveyor drive solutions correspond to state-of-the-art

technology and are designed for reliable, long-life and low maintenance operation. In addition to classic motor starting methods such as binary or the new ABB ECOSS electronic resistor starters, there are Variable Speed Drives (VSD) solutions in medium- and low-voltage designs satisfying a variety of applications including even the largest and longest conveyor systems.

Variable-speed control provides the opportunity for smooth starting, belt load profile optimization, belt slack and anti-slip controls, which result in higher reliability and lower operating costs.

Different configurations can be designed for geared or



Gearless conveyor drive technology configuration with three motors/pulleys.

One Source



One source for KOCH™ conveying solutions

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For more information please visit us at www.flsmidth.com

KOCH

An FLSmidth One-Source Company

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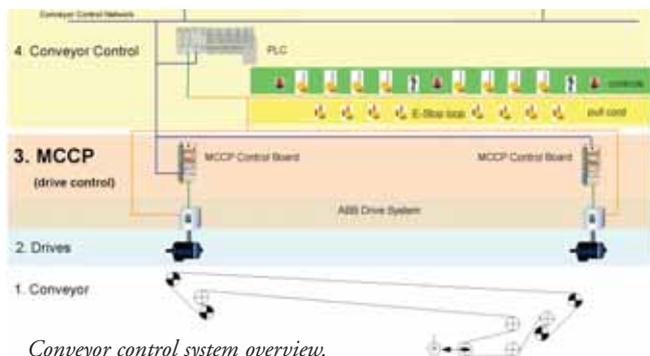
gearless conveyor drive system solutions, depending upon an economic life cycle evaluation and the site requirements. ABB's high-speed solution (geared) significantly reduces the mechanical stress on the complete drive train. The low-speed solution even eliminates the need for maintenance intensive gearboxes and makes high drive powers even possible.

ABB has also developed a Mining Conveyor Control Program (MCCP) which provides the conveyor main drives' control. A sophisticated control loop is superior to traditional control methods (such as a basic master — follower) in control accuracy and flexibility.

The ABB MCCP provides adjustable speed for conveyors and offers the opportunity to tune a soft start profile (e.g. dwell function) and soft operation at the speed set point for optimal conveying with the maximum transport volume. Special attention is given to the load shared starting and operation between the motors on the head and tail end drive stations in order to mitigate high torque peaks and longitudinal oscillation in the belt.

CONVEYOR INTERLOCKING, AUTOMATION AND OPTIMIZATION

In normal operation, the conveyor will operate in an interlocked mode. This ensures that, as the conveyor is started, the single flights in a conveyor system will each start when the conveyor ahead of it has reached a critical target speed. Belt slip, belt splice and belt rip detection as well as running at the torque limit have an influence on the interlocking of the upstream conveyor. When in interlocked mode, the whole conveyor system is controlled from a central control point.



Conveyor control system overview.

When controlling a conveyor system a main issue to consider is potential blockage and spillage at chutes. A major aspect to avoiding downtime and reducing belt wear is a correct baffle plate position control to direct the material flow properly.

With Variable Speed Drives operation at any speed is possible. This means, for example, that the filling level of the conveyed material on the belt can be kept constant and so matched to the upstream volume and process requirements. This saves energy and increases mechanical life.

MATERIAL TRACKING

Material tracking, or Mass Flow Monitoring System (MFMS), is essential where material quality and conveyor load tracking is required. It provides input data for stockpile management or optimum conveyor load control.

The MFMS stores the current amount of material on each conveyor segment, including the material properties and provides a virtual overview of current load and position of the load on all conveyors.

The input data for the MFMS are load measurements provided at those places where the first conveyor in a conveying



3D material tracking model.

route is loaded. The measurement can be done by laser scanners or belt scales.

The screen display example above shows a visualization of current status in the MFMS. The height of segment blocks is the ratio of material amount on the conveyor segment, and colour of the segment block specifies material property.

INSTRUMENTATION

Conveyor instrumentation incorporates all sensors and switches as well as actuators to protect the conveyor's mechanics and costly belt. Important features are, for example; tramp metal detection, belt misalignment avoidance and detection, slip detection and control, belt wear monitoring, belt rip and splice damage detection, and chute overfilling avoidance.

The conveyor's controller to be effective, measurements such as weight, volume, temperature, vibration, belt position and thickness, etc. must be taken in the right way.

CONTAINERIZED SOLUTION FOR ALL CLIMATE CONDITIONS

All electrical equipment, such as power distribution, drives and switchgear as well as the control system and auxiliary components need to be properly protected from the harsh conditions present in mining environment. Dust, shock and vibration, extreme temperatures and/ or high altitudes require a containerized E-house which is fully air conditioned and vibration proof. It is difficult to create a 'standard' E-house solution: therefore each situation must be viewed as unique. Design considerations include factors such as the heat losses, size of the room, available space and reduced cooling capability and electrical strength of the air at higher altitudes such as those found in most mines in South America.



Container in the copper open-pit mine, Collahuasi, Chile.

CONVEYOR SCAN

Remote Access is essential to reduce maintenance costs, decreasing time of process breakdown and for using a 'proactive' service. Finally it increases the efficiency of maintenance and trouble shooting as well as equipment live time.

Today machines are connected in a network. Via firewalls and while using Virtual Private Network (VPN) connections the remote access can be established over the internet independent of the distance in between. If no network connection is available also a low speed GSM connection allows access per remote.

Getting the best from your conveyor belts



Conveyors continue to be the most effective method of transshipment and on-site transportation but their durability and reliability can be critical factors in both productivity and cost management. Readers of *DCI* certainly need no reminder of the huge cost implications of a ship sitting quayside that cannot be unloaded because a conveyor belt needs to be repaired or replaced.

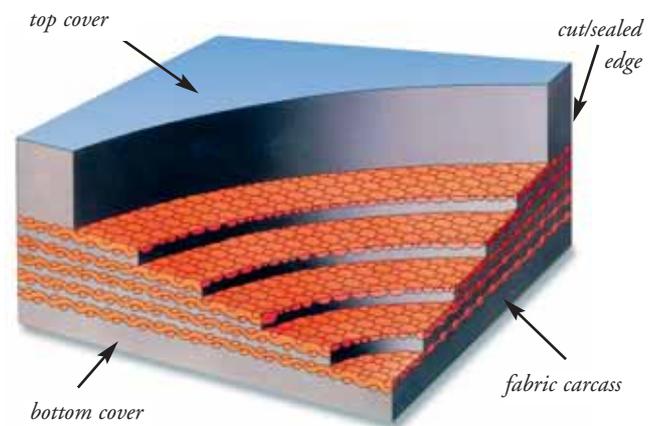
Especially during recent years, the technology used to manufacture conveyor belts has advanced enormously and today's users of belts should rightfully expect a much higher level of performance and longer operational life from their belts. Sadly, this is often not the case. Getting the best advice and guidance is not always as easy because for many suppliers and service companies, conveyor belts that last longer and require less maintenance are not good for business. All too often, their philosophy seems to be "sell cheap and replace often".

As if to confuse us even further, conveyor belt suppliers (and the companies that fit and maintain them) also seem to have developed a language all of their own. So, for the benefit of our readers who may not necessarily be conveyor belt experts, we asked for help from Netherlands-based Dunlop Conveyor Belting, which has a long-established tradition of developing high-performance rubber multi-ply belts.

Below, their general sales manager, Les Williams, explains conveyor belt construction and gives some valuable advice on how to choose the best type of belt to deal with the different kinds of demands that are placed on them.

CONVEYOR BELTS — THE BASIC STRUCTURE

Rubber belts with 'multi-ply' textile reinforcement are the most commonly used type within the dry cargo industry and usually consist of two elements. The basis of every conveyor belt is the



carcass, which typically contain layers of extremely strong but flexible fabric embedded in the rubber. It is the carcass that provides the inherent characteristics of a conveyor belt such as its tensile strength and elongation (elasticity or 'stretch' under tension).

The use of wide conveyors naturally helps to increase the capacity. It is important, that the belt has good flexibility to allow troughing when empty while at the same time provide sufficient transversal stiffness or cross-stability for good support when loaded. This means that the belt strength and construction should not only be based on calculated belt forces and required safety factors but also on transversal stiffness to fulfill the criteria for both the loaded and unloaded situation. Consideration needs to be given to the type of material being carried because weight influences the required stiffness of the belt. In other words, the heavier the material then the stiffer the belt has to be.



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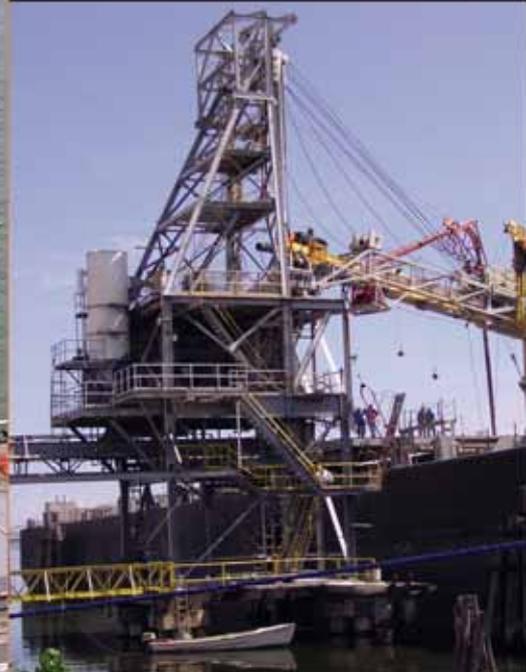
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Mobile 3-legged design assures you of equal weight distribution, regardless of rail or dock conditions.



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This kind of calculation requires specialist knowledge but a good manufacturer or supplier should be able to help. Dunlop's application engineering and local sales representatives provide this technical support service to its customers as part of what it calls its "total service package".

PROTECTING THE CARCASS

An outer cover of rubber protects the belt carcass. Different types of rubber compound are used for rubber multi-ply belting covers; each designed to withstand damaging effects such as wear caused by abrasion, tearing and cutting, heat, fire and oil penetration. These different covers are generally referred to as "cover grade qualities". The most commonly used types of cover grade used for dry cargo are abrasion resistant and oil resistant.

Selecting the best type of outer cover will largely determine the effectiveness and operational lifetime of conveyor belts. The wear resistance qualities of a conveyor belt are one of the major factors that determine its life expectancy and ultimately the truest test of its value for money. As a general rule, 80% of conveyor belt surface wear occurs on the top cover of the belt with approximately 20% of wear on the bottom cover.

Wear on the top cover is primarily caused by the abrasive action of the materials being carried, especially at the loading point or 'station' where the belt is exposed to impact by the bulk material and at the discharge point where the material is effectively 'accelerated' by the belt surface. Contrary to popular belief, short belts (below 50 metres) usually wear at a faster rate because they pass the loading and discharge points more frequently compared to longer belts. For these reasons, the selection of the correct type of cover quality and the thickness of shorter length belts becomes even more important than usual.



Wear on the bottom cover of the belt is mainly caused by the friction contact with the drum surface and idlers. The rate and uniformity of this type of wear can be adversely affected by many other factors such as misaligned or worn drums and idlers set at incorrect angles. Factors such as ozone penetration or an unclean environment where there is a build up of waste material can accelerate wear. Belt cleaning systems, especially steel edged scrapers, can also cause wear to the top cover surface.

THICKER IS NOT ALWAYS BETTER

The actual thickness of the cover is an important consideration. In principle, the difference in thickness between the top cover and the bottom cover should not exceed a ratio of more than 3 to 1.

In theory, the more abrasive the material and the shorter the conveyor, the thicker the cover should be. In reality, the actual abrasion resistance quality of the belt cover is more important than the thickness. In an effort to compensate for poor abrasion resistant qualities, many conveyor belt suppliers offer belts with covers that are thicker than are actually necessary but this can lead to other operational problems.

DIFFERENT TYPES OF ABRASION

It is a common misconception that a belt specified by a supplier as being 'abrasion resistant' should naturally be expected not to wear quickly. In actual fact, because of the variety of materials that are carried on conveyor belts, there are a number of different causes of wear and abrasion. For example, heavy and/or sharp objects can cause cutting and gouging of the belt surface whereas materials such as coal, sand and gravel literally act like sandpaper constantly scouring the rubber cover. For this reason, there are different types of abrasion resistant cover.

There are two internationally recognized sets of standards for abrasion, EN ISO 14890 (H, D and L) and DIN 22102 (Y, W and X). In Europe, it is the longer-established DIN standards

that are most commonly recognized and accepted. Generally speaking, DIN Y relates to 'normal' service conditions and DIN W for resistance to abrasion, cutting, impact (from high drop heights), and gouging resulting from large lump sizes of heavy and sharp materials.

Each manufacturer uses its own mix or 'recipe' of polymers to create cover compounds that have different abrasion (wear) resistance qualities. The main polymers used are SBR (Styrene-Butadiene-Rubber) and BR (Butadiene-Rubber). Both SBR and BR have particularly good resistance not only to abrasion but also tearing, cutting, ripping and gouging. Many manufacturers try to avoid the use of natural rubber wherever possible in order to keep costs (prices) low.

BUYER BEWARE!

It is important that buyers of conveyor belts remember that DIN and ISO standards are only the minimum benchmark of acceptability. Belts that conform to international standards still often have to be replaced after unacceptably short periods. Despite the claims of the manufacturers, tests reveal that more

than 50% are found to be significantly below those minimum standards.

In terms of resistance to wear, Dunlop's approach has been to provide a longer lasting and therefore more cost-effective solution by developing covers that significantly exceed international quality standards. An excellent example of this is its RA 'standard' abrasion resistant cover, which exceeds the DIN Y standard by more than 30%.

For extremely abrasive materials, or simply to achieve an even more extended working life, Dunlop has developed its RS cover, which exceeds the highest abrasion standard (DIN W) by nearly 30% and the equivalent ISO 'D' standard by more than 40%.

OIL AND FAT PENETRATION

Many cargo materials such as grain contain oil and fat. This can have a very detrimental effect on the performance and life expectancy of a conveyor belt because it penetrates into the rubber causing it to swell and distort, often resulting in serious operational problems. Despite the untold damage caused to

rubber there are, as yet, no recognized EN/ISO test standards for oil and fat penetration. This in itself can pose a big question mark against the oil resistance claims made by some manufacturers. In the Dunlop laboratories, the company applies the stringent ASTM D 1460 test standard, which originated in the USA.

Oil and fat (grease) resistance can be divided into two sources — mineral oils and greases and vegetable, animal oils and fats. Mineral oil and grease is most commonly present when transshipping goods that have either contained or been exposed to oil or grease at some stage. Mineral oils are the most aggressive kind and therefore require a particularly high level of protection. This is when a full nitrile belt is usually the best type to use. Dunlop recommends its ROS specification.

Cargo such as grain can have a surprisingly high level of vegetable oil. To provide added protection compared to standard abrasion-resistant covers, Dunlop has developed a very special compound formula in the ROM cover grade quality, which is specifically designed to resist wear as well as the penetration of this type of oil and fat. When particularly high concentrations of animal and vegetable oils are present then nitrile compound belts (ROS) should be used.

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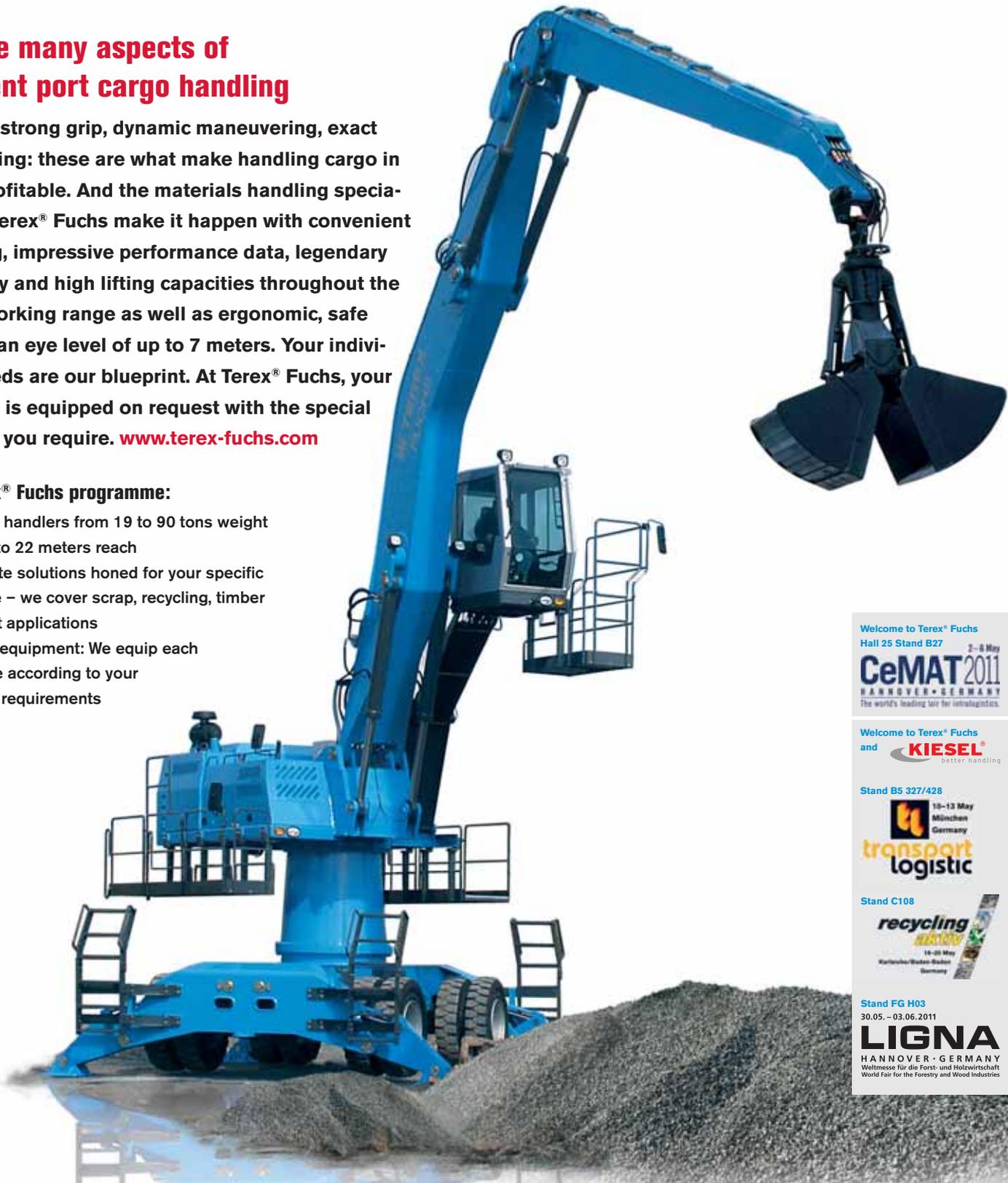
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4B Braime's B400 Elite conveyor belt misalignment system

The B400 Elite from 4B Braime Elevator Components detects dangerous misalignment of belt to prevent costly downtime and help eliminate the risk of explosions.



The B400 Elite uses an electronic microprocessor control unit and up to four contact alignment sensors to monitor the alignment of the belts of one or two belt conveyors.

The belt misalignment is detected by contact — using the 4B Touchswitch — or by the CBS2 system. If the conveyor belt becomes misaligned, the control will then cause the alarm relay to energize and, after a delay, the stop relay will de-energize.

Two separate alarm relays and two separate stop relays are provided. A self-test feature allows the control unit to check itself for correct function. An option for RS485 comms allows remote monitoring by PLC or PC.

The B400 Elite has been ATEX, CSA and IECEx certified.

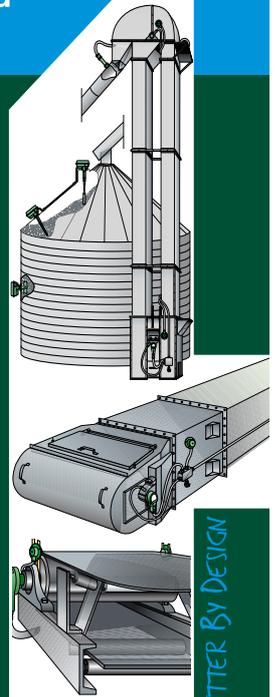
4B Braime Elevator Components offers a range of hazard monitoring systems for

belt conveyors, including misalignment switches, bearing temperature sensors, speed switches and multi-functional hazard monitoring systems.



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The mining industry moves millions of tonnes every hour but is growing weary of the long-term diesel cost and the environmental impact. Challenges like these drive Sandvik's innovative culture. For more than 140 years, Sandvik has invested in the development of new technology, in this case viable alternatives to traditional truck haulage systems.

Today, Sandvik offers a full range of materials handling systems and reliable conveyor components. This vast expertise in bulk materials handling has allowed us to deliver ingenious overland conveyors with both horizontal and vertical terrain adaptations. It's just another example of how Sandvik puts its experience in action for reduced operational cost and environmental impact. Rely on Sandvik for innovative thinking and a spirit that's dedicated to making you more efficient.

Flexco boasts a century of service to the belt conveyor industry

For more than 100 years, Flexco has been providing belt conveyor operators around the world with efficient, safe products, services, and solutions for their systems. Flexco manufactures mechanical belt fasteners, belt cleaning products, and tools, growing from a small Chicago workshop in 1907 to emerge as a major company active in the field of maximizing belt conveyor productivity.

The company serves customers in a variety of industries on six continents through a global network of subsidiary offices, sales representatives, and distributors. Flexco operates subsidiaries in Australia, China, England, Germany, India, Mexico, Singapore, and South Africa, marketing its broad line of products through a worldwide network of subsidiary offices, sales representatives, and distributors under well-known brand names, including Flexco®, Alligator®, Clipper®, Rockline®, Mineline® and Eliminator®.

As a major player in the industry, Flexco understands that conveyors play a critical role in an operation's productivity. When conveyors run efficiently, they make a real impact on an operation's bottom line. Flexco takes a holistic approach to belt conveyor systems, recognizing each system as a whole and working to address challenges and develop solutions. That's why Flexco goes beyond manufacturing fasteners, cleaners, and maintenance products to develop real solutions to belt challenges.

Flexco makes products that enhance belt conveyor productivity including:

- ❖ mechanical belt fastening systems;
- ❖ belt cleaners and ploughs;
- ❖ pulley lagging;
- ❖ belt cleats;
- ❖ transfer-point systems; and
- ❖ belt maintenance and installation tools.

Flexco understands that in coal handling operations, you need to be able to perform belt maintenance quickly. That's why the company offers easy-to-install mechanical fastening systems and

portable maintenance tools for timely, effective belt repairs, including conveyor belt clamps, skivers, cutters, and lifters. It also has a variety of products to enhance overall productivity, including pulley lagging, belt cleaners, impact beds, and more.

The company views its role as more than a manufacturer of products, but rather the provider of belt conveyor solutions for splicing, cleaning, tracking, and belt slippage. As a result, company representatives and distributors meet with customers, analyse conveyor operations and offer solutions designed to reduce downtime, accelerate belt repairs, and help achieve maximum productivity.

With an experienced team, Flexco is able to address almost any conveyor challenge — from slippage and spillage, to mistracking and wear and tear, to safety and environmental concerns. Even after a belt is up and running, Flexco stays involved to ensure that its products are delivering the top-notch performance needed for maximum productivity.

To support the needs of its customers, Flexco has developed a worldwide network of distribution partners who know Flexco products inside and out. The company ensures that its partners understand not just what its products do, but how they are constructed, and how they are best suited for customers' applications.

The Flexco team of field representatives and global distributors can help customers evaluate their system's performance, identify opportunities for improvement, and implement complete solutions.

Flexco provides the world's belt conveyors with efficient, safe products, services, and solutions for splicing, belt cleaning, belt tracking, spillage, and slippage. The company is based in Downers Grove, Illinois, USA, and operates subsidiaries in Australia, China, England, Germany, India, Mexico, Singapore, and South Africa. Flexco markets its broad line of products through a worldwide network of distributors, under the Flexco®, Alligator®, Clipper®, Mineline®, Rockline®, and Eliminator® brand names.



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Superior's TeleStacker® Conveyor offers cost-efficient shiploading/unloading



Superior Industries, a major US-based manufacturer of conveyor systems and components, offers a range of cost-efficient barge and ship loading/unloading solutions with its TeleStacker® Conveyor systems, which are custom-configured to meet the requirements of specific marine handling applications. While delivering the advantages of a lower capital investment, shorter lead times and quick on-site assembly, Superior TeleStacker Conveyor systems are an ideal and environmentally friendly alternative to the use of



labour-intensive cranes and clamshell buckets, cable stackers, and other more costly stationary shiploading systems. Systems are sized for the application with conveyor lengths from 110ft to 190ft; belt widths from 30in to 72in; and capacities ranging from 500tph (tonnes per hour) to 5,000tph.

Each customized TeleStacker Conveyor system is designed and engineered to perform both load and unload functions, while providing highly mobile flexibility with the three key travel modes required for effective marine material handling: 1) an inline travel mode; 2) a dock travel or transverse travel mode with 360° rotation; and 3) a radial travel or tow mode. Systems are equipped with a mobile pivot base that allows free-ranging transfer point mobility; and a fixed-width head axle with a swivelling wheel carriage that allows rotation into each mode. Axle jacks relieve the weight, a hydraulic pin is released, and the unit swivels into the next position. With push-button operation on the control panel, changing from one mode to another is quick, easy and safe. All loading and unload functions can be operated via the control panel or with a wireless remote belly pack.

A complete range of options are available for environmentally-sound operation and precision loading. Mainframe and stinger belt covers eliminate any dust emission or material spillage, while full-length drip pans prevent carryback material from spilling onto the dock or polluting water resources. A telescoping discharge chute is available to control dust emission and material drop height during loading; and a 360°, rotating trimming spoon can be combined with the telescoping discharge chute for clean, even and fine-tuned trimming around the hatches when loading.

For any customized barge or ship load/unload system, Superior Industries engineers and service technicians are available from consultation through design, engineering, and manufacturing, and into installation and startup.

Headquartered in Morris, Minnesota, USA, Superior Industries designs and fabricates a full line of portable and stationary conveying equipment including telescoping conveyors, truck unloading systems, feed systems, and design-build conveyor systems; and a complete line of idlers, pulleys and other conveyor components.

LIFTUBE® modular conveyor system sets the 'Standard' for belt sealing

Standard Industrie International, founded in 1978 by Hervé Simoëns, is a global specialist in the supply of equipment related to the storage, flow and conveying of dry bulk materials.

Standard Industrie is present in over 90 countries through its subsidiaries, and works in more than 60 business sectors including cement plants, mines and quarries, steel works, power stations, incinerators, foundries, chemical industries, glass manufacturing plants, and so forth.

The company owes its success to its proprietary AIRCHOC® air cannon (ten patents have been registered for it since it was developed in 1978), a product that is well-known and respected in the field of 'declogging'.

Over the last ten years, the company has developed a range of new products, including: industrial vacuuming, mechanized cleaning of silos, scrapers, rubber conveyor buckets, flexible flappers and LIFTUBE® (belt conveyor optimization).

LIFTUBE® is a modular system that optimizes the sealing of any existing conveyor belt (any width, any length, PVC, rubber, etc.), between the loading point and the unloading point.

Instead of being in contact with idlers, the belt slides on a single central idler roller set up between lateral glideboards. Both idler roller and glideboards are tiltable to allow easy access when needed.

A removable hood can be set up on top to ensure the reduction of airborne dust



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from the conveyor.

Components are standard, the dimensions of the central idler and hood will only vary with the width of the conveyor belt.

In addition, a patented system of tilting glideboards and idlers allows much simpler and safer maintenance and far less cleaning.

This patented system, made of standard, adaptable, evolutionary components, can be set up on existing or new installations.

Traditional system drawbacks include:

- ❖ spillages — loss of product;
- ❖ wear of flaps;
- ❖ wear of belt;
- ❖ safety risks — pinch point; and
- ❖ maintenance takes time.

The advantages of the LIFTUBE® system include:

- ❖ investment is quickly repaid;
- ❖ glideboards and tilting roller system ensure a drastic reduction in maintenance, which is made even simpler. There is a two-year warranty on these;
- ❖ protection of pinch point: complete safety (conforms to European standards);
- ❖ hood and lateral curtains: drastic reduction of airborne dust, between loading and unloading, conforms to the ISO 14001 standard and also ensures a reduction in the loss of materials. The product is totally protected. No material contamination is possible;
- ❖ longer life expectancy of the belt;
- ❖ adaptable to every existing type of conveyor thanks to its standard, adaptable and evolutionary components.
- ❖ by reducing the loss of product, the cost of cleaning is also reduced; moreover, the LIFTUBE® system reduces the cost of maintenance. Thus, payback is generally under



*LIFTUBE® in operation
at the HOLCIM
Romania cement plant.*

18 months.

- ❖ installations have taken place in all the bulk handling business sectors; and
- ❖ the LIFTUBE® system allows for the transport of fine bulk products (cement, lime, sugar...) as well as products of bigger sizes (limestone, chromium, iron, manganese...) and very abrasive ones (aluminium oxide, coal...).

Since 2006, more than 7,500 metres of LIFTUBE® have been installed all around the world.

A few examples of installations include:

- ❖ in 2008, the HOLCIM Romania cement plant installed two conveyor belts (800mm wide and a total of 235m length — see picture above) to feed the kiln with alternative fuels. This is the fourth installation of LIFTUBE® for AFR; and
- ❖ in another example, in 2010 the ELECTRABEL power station in the Netherlands opted for the LIFTUBE® system to carry biomass on the port (two conveyors, 218m in total), in order to comply with ATEX regulation (ATEX 21).

Since January 2011, Standard Industrie International has developed a new glideboard that is temperature resistant up to 250°C.

BELT SCRAPERS & PINCH POINT PROTECTIONS

As well as the LIFTUBE® system, Standard Industrie International also supplies a range of accessories for conveyor belts: belt scrapers and protection equipment to avoid pinch point.

It offers two types of belt scraper: a modular front cleaner

and subagent belt cleaner.

There are three types of blades in the product range, according to the requirements of the product being transported:

- ❖ carbide or ceramic blade for the scraping of abrasive products;
- ❖ polyurethane blade for the scraping of other products or damaged belts.

Standard Industrie International's belt scrapers guarantee

perfect cleaning of the belt. They improve the life expectancy of the belt and ensure that the running costs are reduced.

Tensioning is done by an integrated torsion bar or an external spring in order to exercise a flexible and equal pressure on to the belt.

The subagent scraper has a patented tension spring system which, after regulation, maintains constant

pressure of the belt blades.

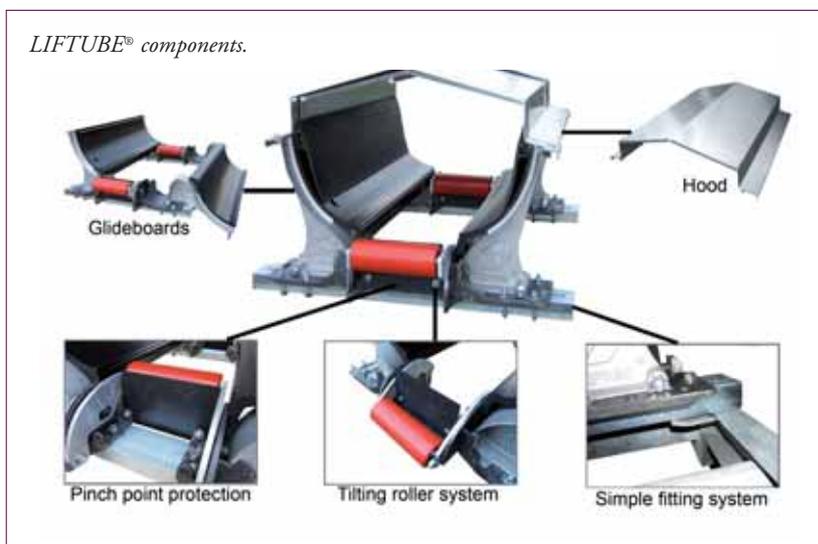
The fastening system of the blades enables the scraper to adapt itself whatever the head pulley profile.

The Standard Industrie International belt scrapers are compact and can be installed even in confined places.

Pinch point protection: in order to upgrade the conveyor system in accordance with the n° 93-40 European safety bill, Standard Industries offers three different pinch point protection systems:

- ❖ head pulley protection;
- ❖ tail pulley protection; and
- ❖ return roller protection.

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Martin Engineering poised to open business unit in India

Martin Engineering has announced plans to open a business unit in Pune, India in 2011. The company has been active in the India market since 2004, establishing a solid presence through its licensee, Thejo, to distribute and support select bulk material handling technologies across the continent. Already incorporated in India, Martin Engineering completed a detailed market study and entry strategy in 2010, finding huge potential in further developing its business there.

“Before making the decision to expand our business in India, we focused on providing high-quality conveyor products to a number of different industries,” commented Martin Engineering CFO Ron Vick. “Now that a business unit with full manufacturing capabilities will be opened, we’ll be positioned to offer our complete line of bulk material handling solutions, beyond the limited products currently available. This full line will include air cannons, railcar unloading products, engineered vibration and dust management.”

Vick said that Martin Engineering is looking forward to its role as a full-service supplier to the cement, steel, power and mining industries in India. “With growth rates expected to rival those in China, the India market represents an unprecedented opportunity for us,” he added.

A strategic business plan is currently under development, and Martin Engineering is in the process of hiring a managing director to run the new operation. During the beginning months of 2011, the company expects to finalize its lease on a new, 20,000 square foot facility. The company expects to have full operating capabilities by the second quarter of 2011. In addition to the new Pune facility, Martin Engineering will have sales and service offices and staff in three other areas of India: Calcutta, Delhi and Chennai. The firm is also aggressively investigating acquisition opportunities, as well.

Early in 2010, Martin Engineering exhibited at the Bulk Solids India trade show and was very well received, adding to the excitement of developing a full-service business unit in India. The company plans to utilize its expanded FOUNDATIONS™ Training Program, focused on the design and development of more productive belt conveyors, to help introduce Martin Engineering technologies and educate the industry.

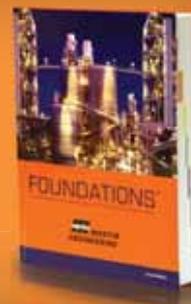
The programme features three levels of training: Introduction to Conveyors and Conveyor Safety; Operation and Maintenance of Belt Conveyors; and Advanced Topics and Conveyor Engineering. The FOUNDATIONS™ series has been teaching bulk materials handling personnel how to operate and maintain clean, safe belt conveyors for nearly 20 years.

Founded in 1944, Martin Engineering is the world leader in making bulk materials handling cleaner, safer and more productive. The firm is headquartered in Neponset, IL, with global reach from operations in Brazil, China, France, Germany, Indonesia, Mexico, South Africa, Turkey, and the UK.



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RUBBER CONVEYOR BELTS

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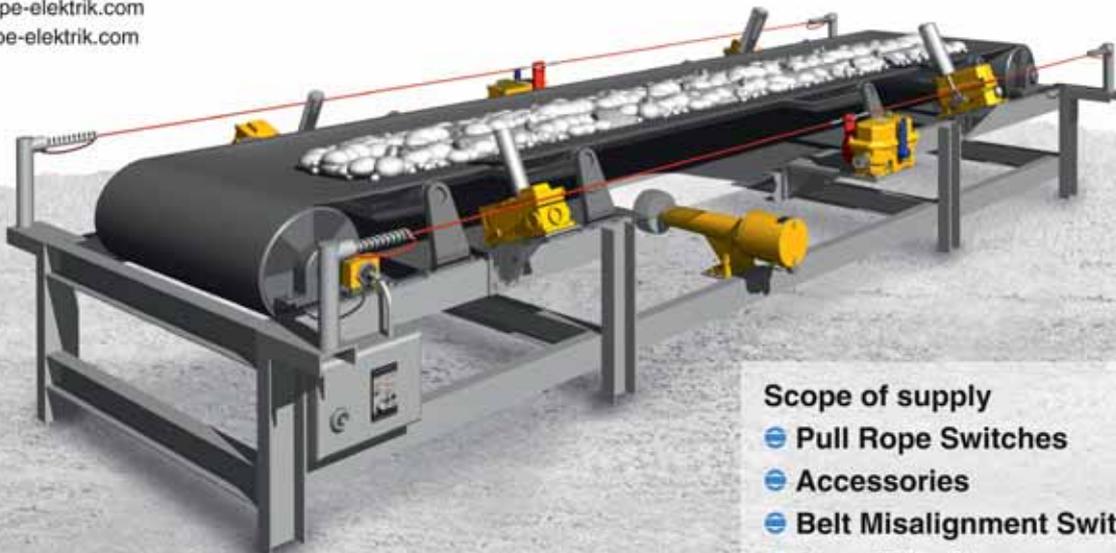


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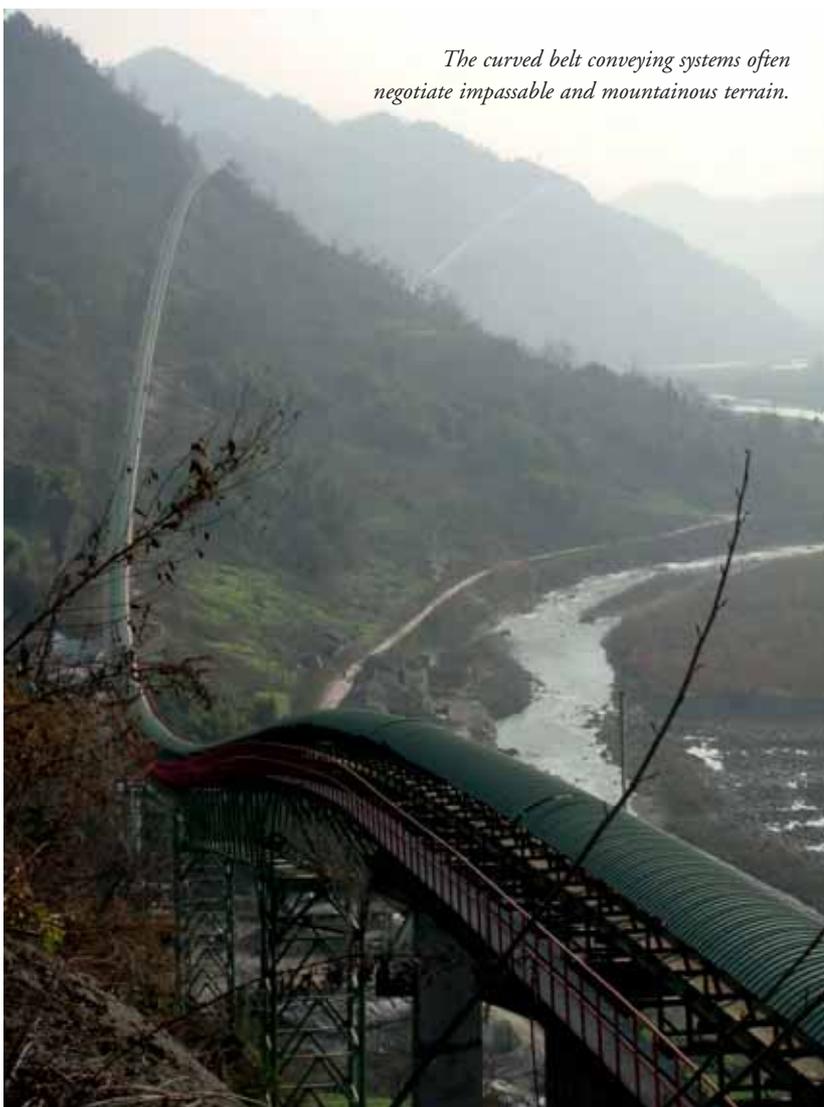
Modern mining technologies need belt conveying systems that are capable of moving increasingly large volumes over ever-greater distances, especially in the field of coal mining. The BEUMER Group, a major player in conveying technology, develops and installs such systems.

Companies need effective options for transporting bulk goods such as coal from the mine to the power plant. Transportation by truck is expensive and has a negative impact on the environment. An economical alternative is a continuous conveyor, such as troughed or tubular belt conveyors. With the right design, these conveyors can be optimally adapted to the environmental conditions. Pollutants such as dust, noise and exhaust gases are minimized or even eliminated. By comparison to transportation by truck, large mass flows can be transported. Even in difficult environments, the construction work for these systems is minimal.

INDIVIDUAL ADAPTATION TO THE MATERIAL

BEUMER belt conveyors are used as closed tubular belt conveyors or as open troughed belt conveyors. The open troughed belt conveyors are especially used for robust and coarse material. Due to their routing, belt conveying systems negotiate rugged terrain and other obstacles, such as rivers, streets, buildings or train tracks. This reduces the costs of moving earth and expensive transfer points are significantly reduced. Horizontal and vertical curves can even overlap.

BEUMER can respond to all needs with an appropriate solution. Tubular belt conveyors are particularly suited to negotiate steep slopes or inclines. They are ideal for high-quality or powdery materials. Inside the closed system, the material does not fall backwards and the excellent sealing allows the material to be transported dust-free. BEUMER tubular belt conveyors are used for particularly tight curves, as they are able to better negotiate curves than troughed belt conveyors. Troughed belt conveyors transport larger volumes and mass flows and consume less energy. BEUMER has already implemented belt conveying systems with centre distances of more than 10km.



The curved belt conveying systems often negotiate impassable and mountainous terrain.



BEUMER belt conveyors offer energy-efficient transportation of bulk material such as coal from quarries to the plant.

FOCUS ON ENERGY EFFICIENCY

The motors in these systems can be controlled, making optimal load distribution in the belt possible in all operating conditions. Depending on the terrain and loading condition, the systems can also operate as generators. The generated electric energy is fed to the mains by a regenerative feedback unit. This reduces the energy costs of operating the whole system.

MADE FOR A LONG SERVICE LIFE

Belts on BEUMER systems reach long service lives of up to 20 years. The reason for this is the optimal design of the routes, drive technology, the take-up station and the arrangement of belt-guiding idlers.

Exact calculations of the idler positions enable the belt conveyor to negotiate curves. If the system is designed optimally, an even stress on all components is ensured and the overall strain on the belt is minimized.

CONSULTING AND DESIGN COMPETENCE INCLUDED

BEUMER engineers, together with the customer, optimize the route of the belt conveyor on-site. They also develop the entire construction and design the static requirements for the bridges and belt conveying systems. Using their design competence, they make sure the investment and operating costs, as well as the required energy, are minimized.

DCi



McCloskey Turkish Coal Imports Conference 2011

May 5 – 6 May 2011 – Istanbul, Turkey



Turkey continues to dominate the AISU region in growth in power demand and steel exports. Many of their Arab neighbours are concerned with Turkey's dominance of the regions steel production.

Turkey continual growth in import saw 15.1mt of thermal imported in 2010. Imports are predicted to rise by 3mt in 2011 and much further in 2015 when the planned new power plants come online. But Asia is still the engine driving price direction and volatility. Europe has the concerns going forward with the continuing low price of gas. Will shale gas be the saviour that the utilities are looking for?

Low freight prices are allowing utilities to contract coals from further afield, but where does the future risk lie in securing freight for future cargos? How will the Black Sea ports develop? What is the future for Russian, Ukrainian, US and South African coals in Turkey? How will supply be affected by the dynamics in future freight rates?

The event will focus on two areas. First, the growth in Turkish power demand for the domestic and industrial user. Second the regional growth in steel demand and the future supply of raw materials.

We look forward to seeing you at the Sheraton in Istanbul.

The conference will cover the following topics:

- How have the Queensland floods affected the thermal and met coal supply markets?
- Review of global thermal coal demand: Planning for 2012 and beyond
- Where will Europe's thermal coal supply come from in the future?
- Turkey's proposed growth in power demand
- Development of Black Sea ports
- Outlook for freight rates and an update on new bulk vessel delivery
- Market drivers: India and China: Are they the long buyers or will they also control supply?
- World Steel production 2011- 2021– Country Focus
- Coking coal supply: From where and when?
- Future supply of scrap
- Sponge iron
- Forecast for iron ore production 2011 - 2021
- Developments in Egyptian coke production
- Steel demand in the AISU region: Is Turkey dominating production?
- Index/spot pricing vs quarterly contracts
- Development of steel futures
- Power plant construction update

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Siwertell screw conveyors

the flexible choice



1 = Siwertell vertical and horizontal screw conveyor on the ship unloader. 2 = Siwertell horizontal screw conveyor including rubber cover for continuous loading from the ship unloader. 3 = Siwertell inclined screw conveyor. 4 = Siwertell vertical screw conveyor. 5 = Siwertell inclined/horizontal screw conveyor.

Cargotec improves the efficiency of cargo flows on land and at sea – wherever cargo is on the move, writes Conny Johanson, Product & Sales Manager at Cargotec. Cargotec's daughter brands — Hiab, Kalmar and MacGregor — are recognized as global leaders in cargo and load handling solutions.

For dry bulk material handling, Cargotec offers well-proven, high-capacity, efficient and environmentally friendly systems under the brand name Siwertell. The Siwertell product range for bulk handling includes horizontal and vertical screw conveyors, shiploaders, ship unloaders, terminal conveyor systems and storage/reclaiming systems. Deliveries are uniquely tailored to suit each customer's specific requirements.

To meet port environmental requirements, all Siwertell dry bulk handling systems are designed with a specific focus on sustaining environmentally friendly operation, offering totally enclosed systems that reduce dust emissions to a minimum and completely eliminate spillage.

Quality service combined with long-term support are as essential as a quality product. From the first contact and throughout the entire lifetime of an installation, Cargotec provides the services and products needed to ensure cost effective, efficient operations.

When Cargotec is requested to provide a solution for a material handling project, it is sometimes asked: "Is it really possible to install a screw conveyor for this application?" In most cases, the reply is: "Yes, of course it is!"

Siwertell (formerly known as Nordströms) screw conveyors offer flexible solutions for handling dry bulk materials. They are available in two main types; horizontal screw conveyors and vertical screw conveyors. This article highlights a number of installation possibilities for Siwertell screw conveyors from both types.

A screw conveyor can be installed at any operating angle. It is only a matter of choosing the appropriate type of conveyor.

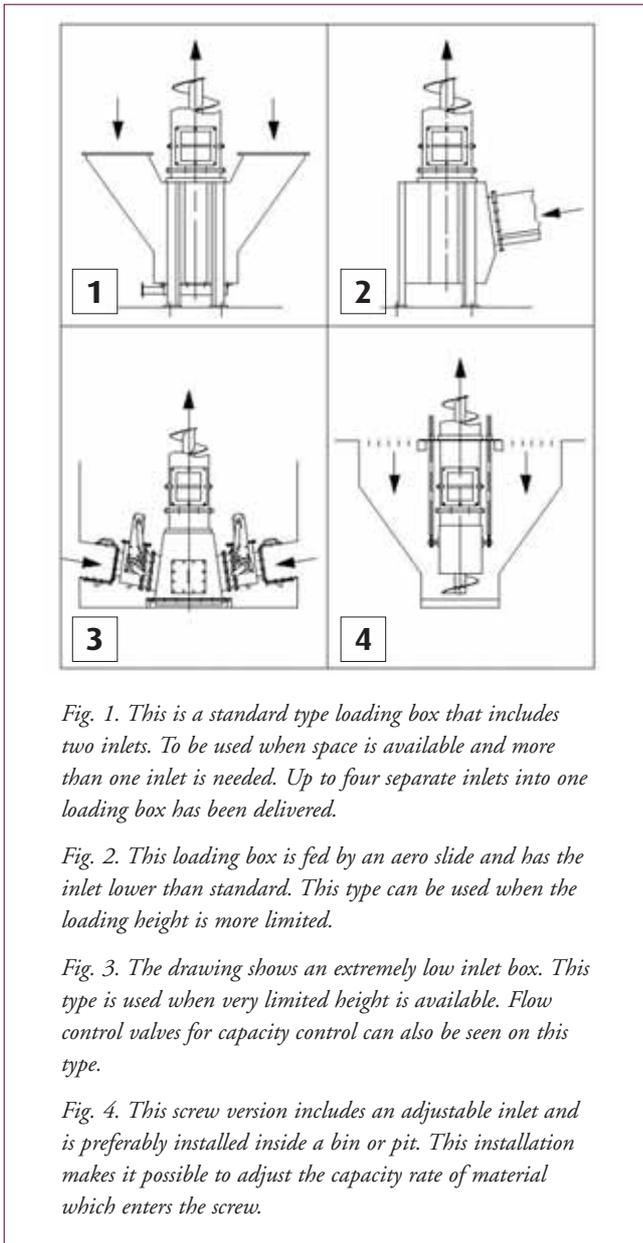


Fig. 1. This is a standard type loading box that includes two inlets. To be used when space is available and more than one inlet is needed. Up to four separate inlets into one loading box has been delivered.

Fig. 2. This loading box is fed by an aero slide and has the inlet lower than standard. This type can be used when the loading height is more limited.

Fig. 3. The drawing shows an extremely low inlet box. This type is used when very limited height is available. Flow control valves for capacity control can also be seen on this type.

Fig. 4. This screw version includes an adjustable inlet and is preferably installed inside a bin or pit. This installation makes it possible to adjust the capacity rate of material which enters the screw.

Siwertell screw conveyors are designed to operate under harsh conditions and can handle a variety of dry bulk materials such as cement, lime, raw meal, apatite, urea, fly ash, gypsum, etc., and can be used in a wide range of installations both ashore and onboard.

- ❖ silo/flat storage loading/reclaiming;
- ❖ behind a ship unloader;
- ❖ lorry/railcar loading/unloading;
- ❖ loading/unloading of vessels;
- ❖ distribution/reclaiming system on board vessels and in marine terminals; and
- ❖ mobile installations.

The screw conveyor drive motors are usually single-speed electrical motors. Two-speed motors or motors with variable speed, or using a hydraulic motor are other alternatives.

ENVIRONMENTALLY FRIENDLY

A screw conveyor is an environmentally friendly device as it is totally enclosed, with no spillage, hardly any dust creation and a very low level of noise.

VERTICAL SCREW CONVEYORS (VSC)

A vertical screw conveyor (VSC) needs only limited space. As an example, it needs much less space than is required for a bucket

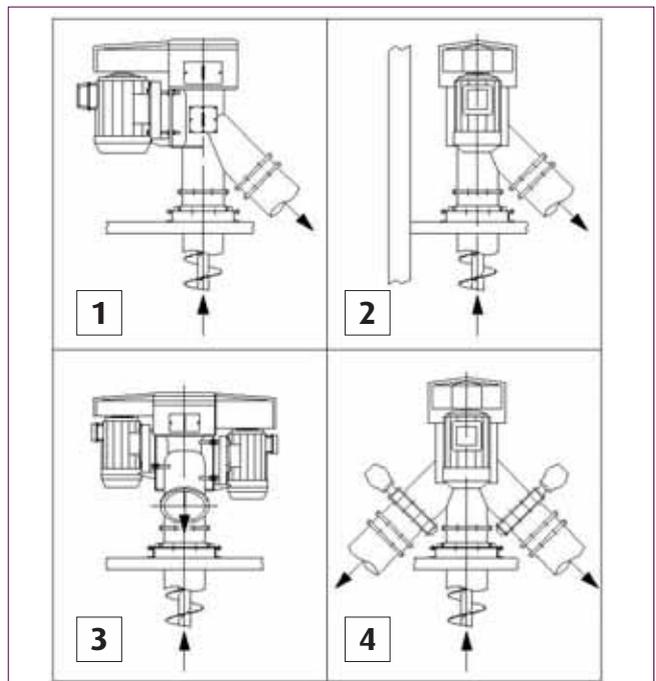
elevator. In most cases vertical screw conveyors involve less capital investment and installation costs than alternative systems. It remains a common misconception that a bucket elevator has to be installed for vertical transport of bulk materials. However, in a lot of cases, a screw conveyor can be a more suitable choice.

Siwertell vertical screw conveyors are able to transport material to a height of approximately 40m. If two or more conveyors are installed in a series, one feeding into the other, they can easily convey the material to any height a customer requests. For transport of even higher capacities two screw conveyors can be installed next to each other — both placed inside and loaded from the same common loading box. To date the highest capacity for one single Siwertell vertical screw conveyor is a VSC 700 (diameter 700mm) with a capacity of 1,500tph (tonnes per hour) for cement. Screw conveyors installed in ship unloaders have been delivered with capacities of up to 2,500tph.

Main VSC features

- ❖ totally enclosed and environmentally friendly;
- ❖ limited space needed for the installation;
- ❖ specially developed long-life intermediate bearings;
- ❖ electrically driven lubricator for automatic lubrication of the intermediate bearings;
- ❖ single- or twin-motor drive;
- ❖ more than one inlet possible;
- ❖ more than one outlet possible;
- ❖ conveying with different angles of inclination; and
- ❖ transport of high-temperature material is possible.

Loading of Siwertell screw conveyors can be arranged in many different ways depending on the nature of a project. The graphic above left shows some inlet alternatives for loading a VSC.



Alt. 1. Standard outlet including a single drive motor

Alt. 2. Outlet part with the drive motor at a 90° angle to the outlet

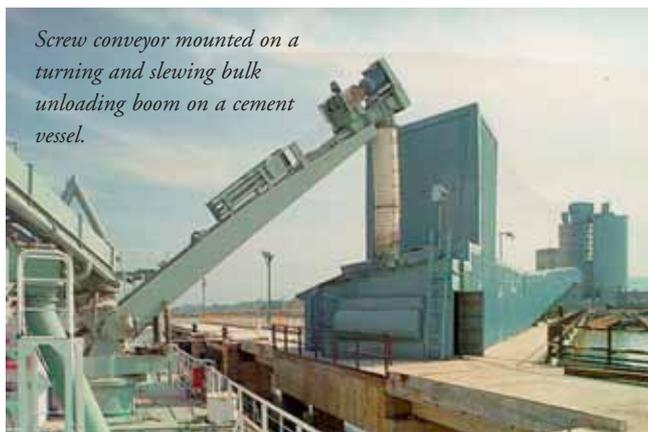
Alt. 3. Twin drive with the drive motors at a 90° angle to the outlet

Alt. 4. Discharge part including two outlets

The discharge part of a VSC can be arranged in different ways. The graphic at the bottom right of p80 shows alternatives with one or two outlets, with single or twin motor drive.

SUPPORT AND MAINTENANCE

The weight of a vertical screw conveyor is generally taken by the loading box. This means that only lateral stabilizing support is required from the inlet of the screw conveyor up to the unloading end. Alternatively, it is also possible to carry the screw conveyor weight at the unloading end if required. The specially developed intermediate bearings are easily accessible and their wearing parts are easy to change without dismantling any of the screw sections.



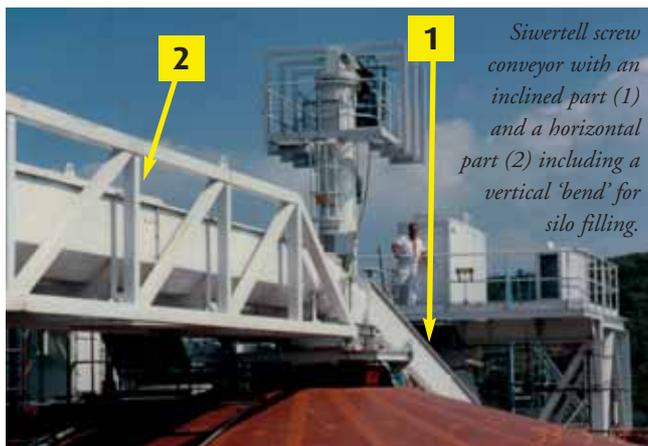
Screw conveyor mounted on a turning and slewing bulk unloading boom on a cement vessel.

HORIZONTAL SCREW CONVEYORS (HSC)

Siwertell horizontal screw conveyors (HSC) can also be used at impressive conveying lengths. To date the longest conveying distance delivered by Cargotec is 170m, for a HSC 800 unit with a diameter of 800mm made for 800tph cement capacity. For longer distances, two or more screw conveyors are arranged in series. The Siwertell screw conveyor is equipped with one drive unit at each end.

The main features of horizontal/inclined Siwertell screw conveyors

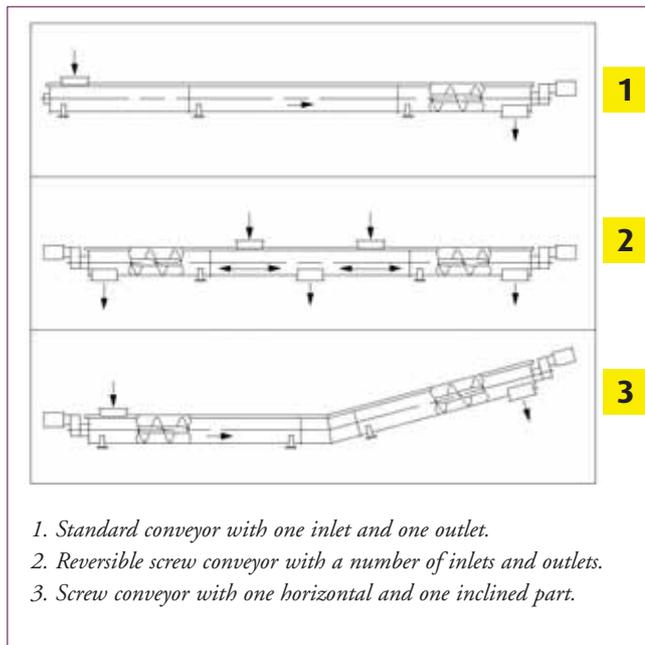
- ❖ totally enclosed and environmentally friendly;
- ❖ limited space needed for installation;
- ❖ specially developed long life intermediate bearings;
- ❖ electrically driven lubricator for automatic lubrication of the intermediate bearings;
- ❖ reversible conveying direction;
- ❖ more than one inlet possible;
- ❖ more than one outlet possible;
- ❖ drive unit may be installed at either end or one at each end;
- ❖ inclined and sloped conveying possible;



Siwertell screw conveyor with an inclined part (1) and a horizontal part (2) including a vertical 'bend' for silo filling.



Siwertell horizontal screw conveyor with a horizontal 'bend' (3) for silo filling.



1. Standard conveyor with one inlet and one outlet.
2. Reversible screw conveyor with a number of inlets and outlets.
3. Screw conveyor with one horizontal and one inclined part.

- ❖ various types of drive units can be used; and
- ❖ high temperature material transport is possible.

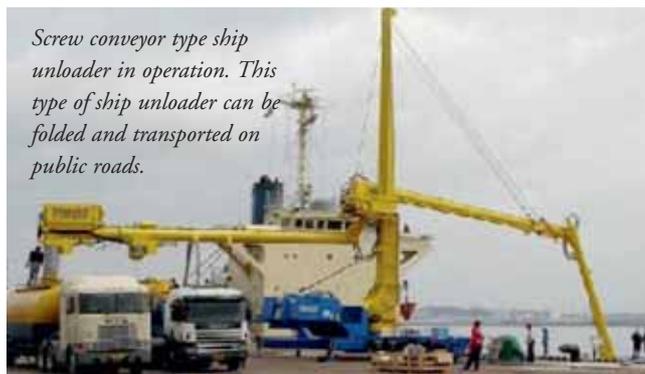
SUPPORT AND MAINTENANCE

As standard the Siwertell horizontal/inclined screw conveyor is equipped with a support at each intermediate bearing. This arrangement affords the maximum stability. If necessary the support can be customized to better fit the supporting steel structure in a building or other structure. The screw conveyor is also supported at the drive and outlet ends. The specially developed intermediate bearings are easily accessible and their wearing parts are easy to change without dismantling any of the screw sections.

AN EXCELLENT CHOICE

Siwertell screw conveyors are an excellent choice for conveying dry bulk materials under harsh conditions. Cargotec is able to tailor make a solution that suits virtually any type of terminal installation — a solution that is environmentally friendly, cost effective, flexible, space-effective and easily maintained.

DCi



Screw conveyor type ship unloader in operation. This type of ship unloader can be folded and transported on public roads.

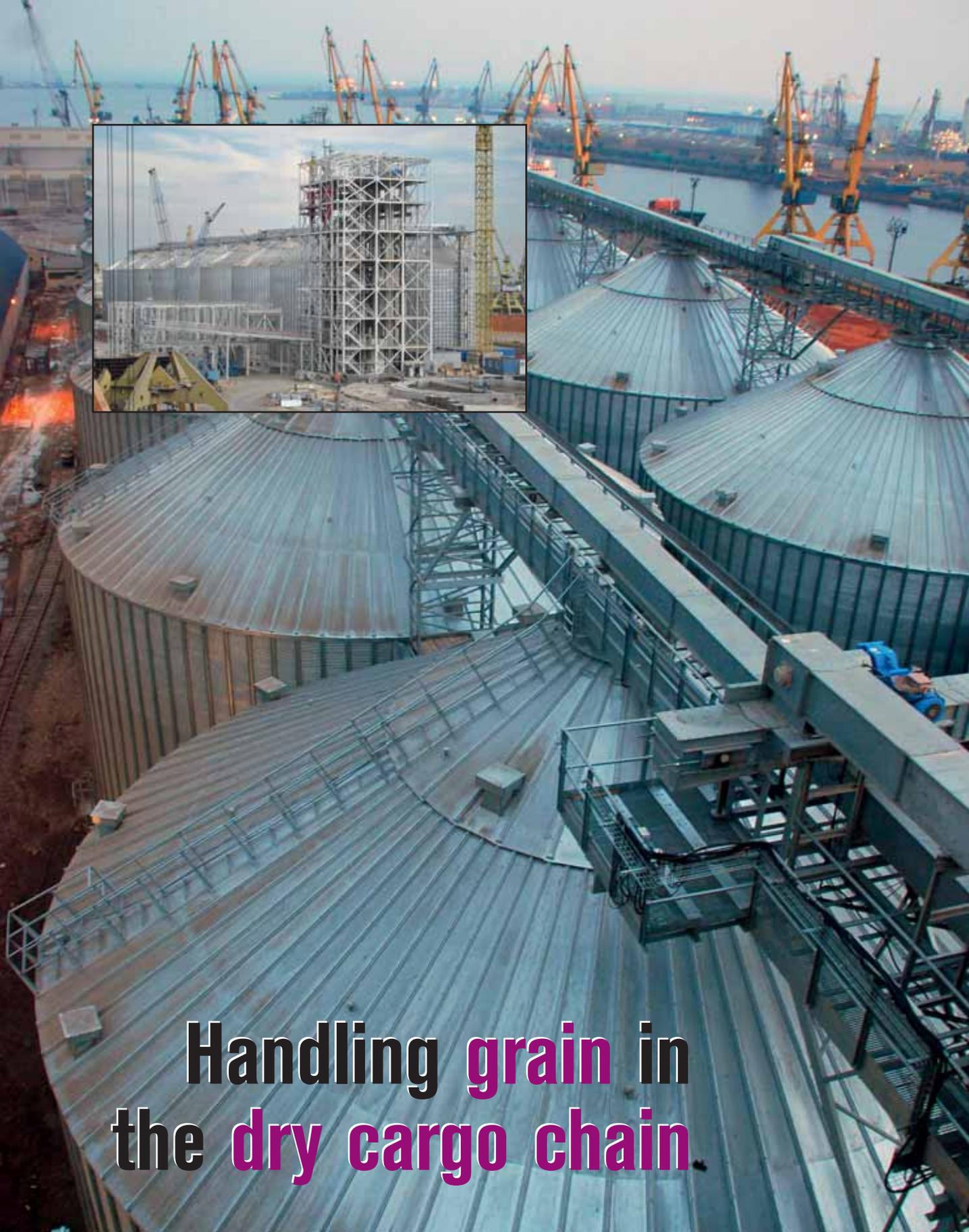
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Handling grain in the dry cargo chain

Bühler Grain Logistics safeguards grain supplies with efficient logistics systems

All over the world grain is counted as one of our most valuable staple foodstuffs, write *Hans-Dietrich Greth and Michael Heimisch*. In the light of a growing world population and climate change, safeguarding this raw material is one of the challenges of our times. In addition to the monitoring of cultivation itself, handling after the harvest is also a critical factor in relation to quality

assurance and the reduction of raw material losses. To meet the growth in demand for modern and efficient logistics systems, Bühler and Schmidt-Seeger will in future be working together, having now jointly created Bühler's new global Grain Logistics Business Unit. Whether it be grain or malt, canola or vegetables, Bühler and Schmidt-Seeger, with their many years of experience

throughout the world, offer high-end solutions for every aspect of professional grain management. The service-proven technologies of both companies complement each other perfectly and therefore cover all the processes involved: conveying, cleaning, grading, drying, dedusting, storage, loading and unloading.

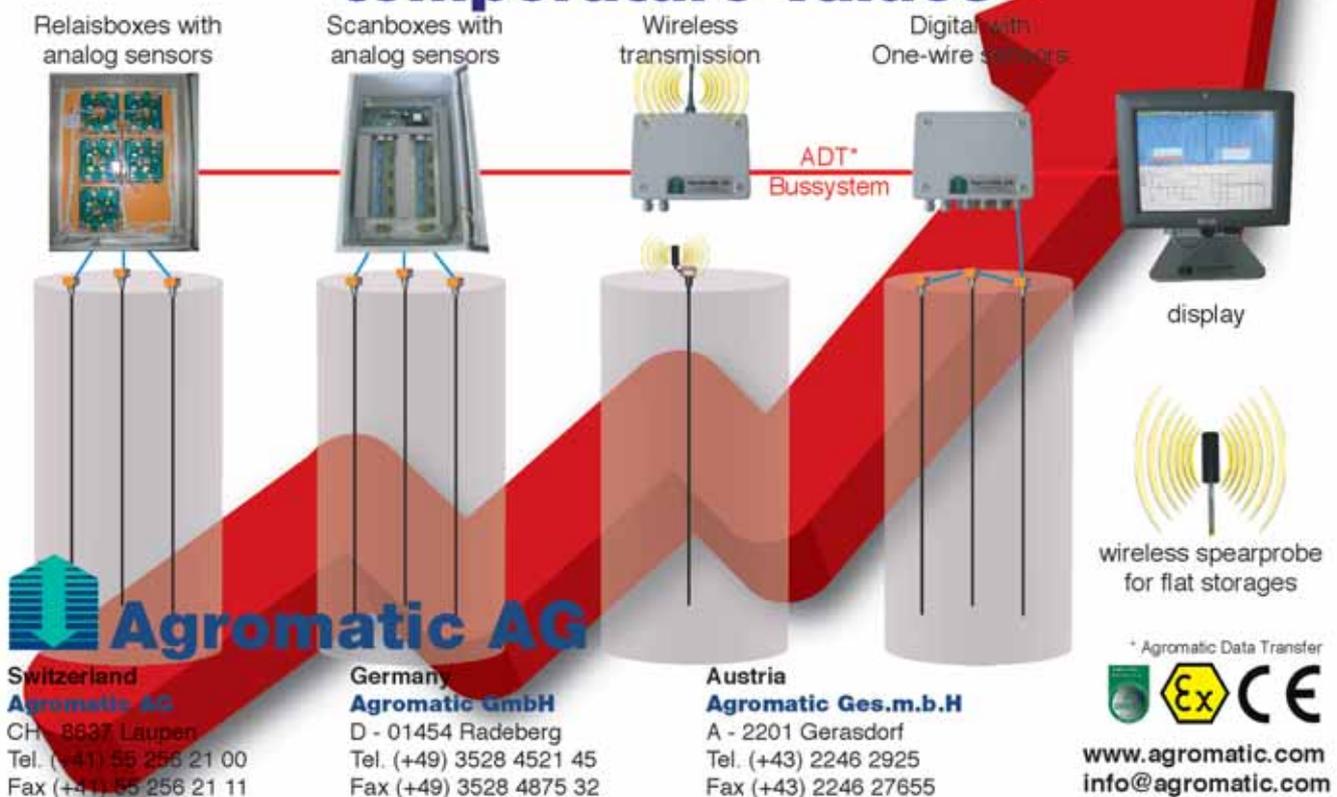
Countless tonnes of agricultural commodities are transshipped every day around the world — and the requirements to be met by the grain collection facilities and cargo handling terminals involved are growing. The overriding priority here is to use the latest technology to prepare every last grain of cereal for storage and processing as gently and economically as possible. These processes require considerable specialist knowledge of the systems and products. Grain Logistics offers all the process stages from a single source, meaning the complete package, namely the planning, development, construction and maintenance of anything from individual components to complete systems — anywhere in the world. Working closely together with the customer, Grain Logistics develops, plans and constructs customer-specific plants from standardized components. With regular servicing and genuine spare parts from Grain Logistics' customer service, the plants can offer decades of reliable service.

One of the latest projects, for which Schmidt-Seeger was contracted as the general contractor with responsibility for planning, delivery and installation management (supervision), is the new cargo handling terminal for North Star Shipping at the port of Constanta on the Black Sea. The plant is primarily a place of transshipment and an intermediate storage facility for grain, such as wheat and barley, which has already been cleaned. The grain is collected throughout Romania at grain collection facilities along the Danube route and then loaded onto deep-sea vessels (Panamax ships) from river craft, trains and trucks at the port of Constanta for transportation to the Far East, the Mediterranean region and Northern Europe. A total of 240,000 tonnes can be stored in the 32 round steel silos at the cargo handling terminal.

Incoming deliveries can be brought by truck, rail and river craft. Schmidt-Seeger supplied four receiving facilities for trucks with a capacity of 400tph (tonnes per hour), and one of them is also suitable for receiving from trains. In addition to the truck and rail receiving facilities there are also two ship receiving areas, each of which has a capacity of 400tph. One specification that Schmidt-Seeger had to meet was that at least two receiving areas had to be capable of being run at the same time, with every silo partition being filled from all receiving areas. To meet the requirements of European explosion protection standards, the plans included gutter dedusting devices for every receiving area. And in the ship receiving areas, too, a filter plant was planned in order to ensure optimum dust control and therefore a high standard of safety.



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Schmidt-Seeger elevator with residue-free conveying system.

After the product has been weighed in-flow by receiving scales, it is transferred by belt conveyors to the round silos for storage. Optimum storage conditions are guaranteed by full and empty sensors, a temperature control and ventilation system and special screws for residue-free emptying.

For better hygiene and improved quality, all the elevators have residue-free conveying systems. In this special design 'made by Schmidt-Seeger', the construction was modified to minimize gaps and eliminate all dead angles and spaces. The result is 99.9% residue-free conveying of the product. This has the major benefit that no residue is left in the conveyor, which in turn means a higher standard of hygiene. As for the trough chain conveyors, the customer also had special requirements in relation to protection against wear. The entire conveying system had to be rugged and offer an extended service life even if used for large transport volumes. As a consequence, not only was the base of the trough chain conveyor lined with Rino Hyde plastic but the bottom part of the trough as well. Other requirements to be met by the conveying system included ensuring that the technical preconditions for preventing the ignition of a hazardous, explosive atmosphere were achieved and constructive measures for restricting the impact of an explosion to an acceptable level taken.

Dust is removed from the complete system by four filter plants, three of which have a capacity of 215m³/min, the other 520m³/min. In addition, the plans included spot filters on all the elevators for direct dedusting. The aspiration system meets the requirements of the latest statutory regulations such as the ATEX directive and the German 'TA-Luft' directive on clean air.

There are three different options for loading the products. Normally the product is conveyed by a belt conveyors at a rate of 800tph per row of silos via discharge trucks to two cross-conveyors and on to the shiploaders. Loading onto the Panamax ships is carried out with two shiploaders, each of which has a capacity of 800tph. The maximum possible shiploading capacity

of 1,600tph is based on heavy-grain cereal. An alternative option is to load onto the shiploaders directly from the receiving areas without any intermediate storage. The third option is to transship the grain from water to land. Train or truck loaders with capacities of 400tph are provided for this.

Challenges faced during construction included the need to complete installation work in the confined port of Constanta and the restrictions presented by daily operations at the port. In addition, the plans had to account for an earthquake zone of 0.16g and a snow load of 2.56 KN.

Construction started in September 2009 and the first phase of construction on the project was completed and put into operation in September 2010. It is envisaged that the second phase of construction will be completely finished in June 2011. The customer is already very satisfied: "Right at the outset in the initial phase of the project we were really impressed with Schmidt-Seeger's engineering know-how. As the implementation of the project has progressed, we have been convinced by the quality of the products and services," says Mr. Teodor Bolocan, certified engineer and project manager of Minmetal S.A., Romania.

ABOUT SCHMIDT-SEEGER

Schmidt-Seeger, which is part of the Bühler group, ranks among the world's foremost suppliers of professional technologies for the management of bulk products. Customers include predominantly the cereals and seeds industry, breweries and malt plants.

ABOUT BÜHLER

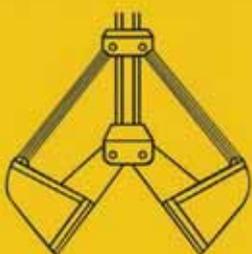
Bühler is one of the world's major suppliers of process engineering solutions, in particular for production technologies for foodstuffs and industrial materials. Bühler has operations in more than 140 countries and employs around 7,500 persons worldwide. Turnover in FY 2009 was CHF 1.7 billion.



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ORTS GmbH

Flexibility that pays – mobile grain loading



Loading grain in Great Yarmouth outer harbour with mobile B&W loading equipment.

Extreme weather events worldwide with droughts in Russia, Ukraine and other parts of Europe and adverse weather in the United States, Canada and Australia has slashed output and put a lot of pressure on global grain markets. In the USA the situation is also very fluid, the price of corn, used to make livestock feed and ethanol, has soared 95% in the past year, wheat has surged 84% and soybeans are up 57%. In London, at the time of writing March futures are set at over £200 per tonne, representing a more than doubling over the last three years.

With production pressures and ever-increasing demand from emerging markets, particularly in the Far East, it is clear the price trend will be ever upwards, especially when the demand from bio-fuels are factored in.

Around the world virtually every crop has supply problems and grain inventories in particular are at their lowest level for many years. The market is volatile not only in terms of trading prices but also in terms of logistical demands with new exporters coming on stream in developing countries where established port infrastructure may not exist. Under such conditions the flexibility of mobile loading equipment is extremely attractive. It does not require a dedicated berth or any fixed handling devices and may load direct from truck to ship without double handling or risk of contamination.

British company B&W Mechanical Handling Ltd. of Ely pioneered the development of the mobile shiploader concept in the beginning of the 1980s. Since then the company has delivered approximately 100 shiploaders of different types and sizes all around the world. In the grain trade, machines are generally supplied to either the port operator, shipper or trader wishing to take advantage of present market conditions and where a fixed permanent grain elevator and export facility cannot be justified.

A recent example is to be seen at the new Port of Great Yarmouth on the eastern seaboard of the UK. The cereals

export facility is operated by Gleadell Agriculture Ltd., which has installed a new fully featured B&W mobile shiploader. This equipment will receive cereals from the local on-port storage facility or from farm stores located in the hinterland of the port all delivered by conventional road tipping trucks. When not required for ship loading the equipment may be motored off the berth, under its own power, and stored till required for the next shipment.

EFFECTIVE DUST CONTROL

Minimizing the environment impact, particularly from dust pollution, was a fundamental part of the design brief from Gleadell. Great Yarmouth is a well-known touristic destination and a typical Victorian-style English seaside town with the beach close to the new port and as such any fugitive dust would be clearly a very sensitive issue.

The mobile shiploader included twin Samson™ feeders which permit direct intake from tipping trucks. The material free fall from the truck to the feeder is very short so that dust generation is mitigated at source.

With the dust control measures provided wind-blown dust pollution from the truck discharge is practically eliminated. Full dust control measures are extended by provision of a full enclosure to the shiploader boom with a dust filter at the conveyor feed boot and at the discharge to the trimming chute.

Control of the material from the boom head to the hold floor is absolutely critical from the dust control perspective in any ship loading operation. In Great Yarmouth the Cascade-style dust controlled trimming chute was specified. Using a stack of inclined interlocking cones the material is constrained to flow in a zigzag path to restrict the flow velocity. Only a small dust filter is required at the transition from the boom to the chute to fully contain any dust.

Shanghai Liangyou Group Co.



Project of Shanghai Waigaoqiao Grain Reserve Depot and Terminal Facilities

- Location: South Bank of Changjing Estuary
- Size of ships to be unloaded: up to 70.000 DWT
- Wharf length: 350 meters
- Annual ship unloading capacity: 4 million tons
- Type of Unloader: Continuous mechanical, chain type
- Design capacity: 1000 tph, 2 units
- Peak capacity reached during commissioning: 1200 tph each unit

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Twin Samson™ Feeders receive from two tipping trucks simultaneously.

SPECIFIED FOR PERFORMANCE

The performance of any truck-to-ship loading operation is effectively limited by the lost time in manoeuvring the trucks and moving the equipment to trim the vessel and the individual holds. Having twin Samson™ feeders allows two trucks to discharge simultaneously therefore mitigating any lost time in positioning the vehicles. In this manner, the equipment is able to achieve a spot rate capacity of 1,000tph (tonnes per hour) handling wheat.

To maintain a high through-the-ship loading rate powered travel facilities with in-line and parallel movement are included to lessen the time required to reposition the equipment. In the Great Yarmouth arrangement, the complete equipment may be moved as a single piece with the on-board diesel generator. No shore power is required. To bring the equipment to the berth the in-line travel mode is generally employed, but to move the vessel along the berth the wheels may be realigned for travel parallel to the vessel.

Of course parallel travel is ideal with vessels with a single open hold and no deck gear to obstruct the machine sideways movement. However, with a geared vessel the equipment must be moved to and fro to pass by the ship's cranes. This more typical design puts even more pressure on the shiploader powered travel system and the ability to change quickly from inline to parallel travel modes is critical. The B&W mobile shiploader is supplied with the latest version of the 'New-Generation' powered travel gear including automated wheel alignment for all modes of travel. With this system, each wheel set is mounted to a slewing ring with hydraulic jacking system and alignment actuator. This permits the wheel sets to be aligned for the desired travel direct using rotary positional transducers to signal the relative alignment and automate the change between travel modes. In addition the wheel unit alignment system provides for true Ackermann style steering in both travel modes controlled from the driver cabin on the shiploader chassis.

THE UNIQUE STERLING SERIES BY B&W

Back in 2002 Gleadell Agricultural purchased the largest mobile shiploader ever built by B&W and, with a working weight of around 400 tonnes, probably the largest mobile shiploader ever. Located at the port of Immingham and designed to operate on a dedicated berth but with the flexibility to park the machine clear and free the berth for other cargoes.

Known as the Sterling Series by B&W, this is a very different design being based on the tower concept with vertical elevation and a radial outloading boom offering a high freeboard clearance within a compact footprint. To take full advantage of the deepwater berth at Immingham this machine was designed to load Panamax size ships with a freeboard of around 15 metres.

For loading such vessels, a high work rate is essential and for this purpose the Sterling Series machine was supplied with four integral Samson™ feeders mounted in pairs to each side of the machine chassis. Using all four feeders, the appliance can load at a theoretical rate of 1,200tph continuously but the operators claim a peak rate of 2,000tph was achieved.

In order to maximize the overall loading rate, each pair of Samson™ feeders is automatically speed-controlled to maximize the receiving rate of each unit regardless of the load level on either and allow indiscriminate truck tipping without fear of overloading. This system is totally transparent to the operators who simply discharge the trucks as they arrive. The through-the-ship loading rate is related to the conveying capacity of the handling equipment and to the manoeuvring capability of the machine related to both hold trimming and moving along the vessel between holds clear of the ship's deck gear.

In the Sterling Series hold trimming is effected by using the rotating trimming distributor and also the radial outloading boom by travelling the boom diagonally across the hold from corner to corner in both directions. When the hold is trimmed out, the outloading boom may be moved parallel to the vessel and the complete equipment moved along the quay generally without the need to shunt back and forth, as is the



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case with a conventional design.

As with the machine at Great Yarmouth, the Sterling Series includes electronic Ackermann steering with precision rotary potentiometers to signal the wheel position. This system also allows steering without a physical linkage between the wheel steering units and at the same time maintaining an Ackermann-style steering geometry automatically. Each wheel-steering unit can support up to 120 tonnes' live load on six tyres and a hydraulic jacking system is employed to stabilize the machine in operation and raise the chassis, allowing the wheels to be aligned off load.

SMALL AND EFFICIENT: THE LANCASTER

For very much smaller vessels, B&W is able to offer the Lancaster Series mobile conveyor for loading ships. Typically, this size of machine will handle ships to 5,000dwt depending upon the freeboard clearance over the quay level. Feeder conveyors can be used to transfer grains from tipping trucks to the Lancaster Series allowing maximum flexibility of alignment on a congested berth. For this type of feeder conveyor, the grains must be tipped through the small grain door and the feed rate manually regulated by opening and closing the grain door to avoid over feeding the conveyor.

These three projects by B&W represent grain export facilities ranging from small coasters through Handysize vessels up to Panamax ships covering the largest parcels of grain likely to be shipped. Loading the ship is clearly the last stage in the cereals export process from the farm gate. However, generally between farm and port there will be a storage facility, particularly with co-operative organizations. For this purpose, alongside the mobile shiploaders, B&W developed a mobile stacking solution for use in flat open stores, often converted warehouses: the B&W Stormajor™. It was the mainstay of the UK Intervention grain storage business from the early 1980s and remains today the industry standard solution for loading to open flat storage in the UK, Europe and even in the Middle East.

B&W has had its roots firmly planted in the grain handling business for the last 30 years, offering high-performance solutions to satisfy the ever-expanding needs of the agricultural

industry. This experience was never more relevant than today with an ever-expanding world population and rapidly expanding demand from the major developing countries for meat products.

ABOUT GLEADELL AGRICULTURE

Gleadell Agriculture Ltd is a major trader of grain in the UK and, in volatile and risk-laden markets, is a safe and trusted trading partner for farmers and consumers. The company was founded in 1880 and today is a leading exporter of all grains, oilseeds and pulses to markets in the EU and further afield and a significant supplier to UK millers, maltsters, feed compounders and other consumers of grain. It is also the largest trader of organic grain in the UK and a growing force in the sourcing and delivery of imported and home-produced fertilizer and seed.

Since 2001, Gleadell has been jointly owned by Toepfer International and InVivo, a leading provider of agricultural goods and services in the EU. Gleadell operates from six offices throughout England and offers a people-based, quality service to farmers and consumers. Gleadell is a financially sound and profitable company that is investing in, and focused on, the future.

ABOUT B&W MECHANICAL HANDLING

B&W enjoys the benefits of being fully integrated into the substantial and respected international Aumund Group with strategically placed offices in more than ten countries and representatives in over 40. The bulk handling specialists have over 500 installed Samson™ feeder units around the globe with more than 40 of them installed underground handling a wide variety of materials including sugar, coal and petroleum coke, cement clinker, gypsum, iron ore and blast furnace slag to name but a few.

ABOUT THE AUMUND GROUP

The AUMUND Group is active on four continents. The conveying and storage specialist has special expertise at its disposal when dealing with bulk materials. With their high degree of individuality, its technically sophisticated and innovative products have contributed to the AUMUND Group today being

a market leader in many areas of conveying and storage technology. The manufacturing companies AUMUND Fördertechnik GmbH, SCHADE Lagertechnik GmbH, B&W Mechanical Handling Ltd. as well as AUMUND Logistik GmbH are consolidated under the umbrella of the AUMUND Group. In conjunction with the headquarters of the manufacturing companies, the global conveying and storage technology business is spearheaded by a total of eight locations in Asia, Europe, North and South America. **DCi**



A cascade-style loading dust-controlled loading chute is mounted to the B&W mobile shiploader.

WSS's redefined concept to benefit Indian coal importers

With an estimated 142mt (million tonne) shortfall in coal imports predicted in India in 2011–13, bulk shipping companies are planning a massive increase in their capacity to deliver to Indian ports. As the volumes increase, the opportunities for savings in bulk agency also increase, and Wilhelmsen Ships Service's redefined bulk agency is improving efficiency by simplifying the way multiple port calls are managed.

Wilhelmsen Ships Service recently re-defined the way it manages its international agency operations, providing an upgraded service to bulk customers. As part of the 'Ships Agency Re-defined' strategy, which was launched last year, all agents' operations now provide a standardized offer in 2,200 ports worldwide.

'Ships Agency Re-Defined' takes advantage of Wilhelmsen Ships Service's unmatched global network. The company realized that customers need agency support in only two ends: where their head offices are located, and in the ports where their vessels call. Dry bulk operators can have all their port calls in India (and worldwide) managed by one experienced global agent working in the customer's location and co-ordinating all the port calls for that customer. This gives customers the benefits of someone who speaks their language and works in the same time zone.

India is fast becoming a force to be reckoned with in the coal space. It has replaced Europe as the main consumer of Richards Bay coal with its increasing demand for Indonesian coal and with huge power projects in the pipeline. Wilhelmsen Ships Service is well placed to offer key agency and product solutions for the key stakeholders in the coal supply chain whether owners, brokers or charterers, through its global network which includes a pan-Indian presence with own office locations spanning both East and West coast India, Indonesia, South Africa and Australia.

"The market has welcomed our new approach to ships agency, which we believe will considerably simplify port call operations for bulk operators," comments Frederic Fontarosa,

Business Director Ships Agency and Bunkers.

The customer notifies Wilhelmsen Ships Service's global agent of expected port calls, who handles the pre-arrival and post-departure phases, developing a closer relationship with the customer and a better understanding of their special needs and preferences, including from a local perspective. The global agent also has access to a team of dry bulk specialists based in major dry bulk markets. The global agents, port agents and dry bulk specialists team up to ensure the specific needs of dry bulk operators are met, in any port worldwide. The customer's recurring operational requirements are also mapped and integrated into Wilhelmsen Ships Service's operational system. As a result, dry bulk operators experience a consistent high-quality service, even in new and unfamiliar ports.

Improved cost control through predictable pricing is another benefit of Wilhelmsen Ships Service's Ships Agency Re-Defined offer. Whilst the market norm is to charge a highly fluctuating lump sum agency fee, resulting in limited cost control, Wilhelmsen Ships Service has created a price list for its ships' agency services, meaning that dry bulk operators know exactly what the price will be and what they are charged for.

In addition, bulk customers can follow their port calls online through a customizable portal. It gives easy access to operational details and electronic disbursement accounts.

As well as bulk agency Wilhelmsen Ships Service supplies Unitor marine products, technical services, ships agency services and maritime logistics.

Wilhelmsen Ships Service has the world's largest maritime services network, with 4,600 marine professionals servicing 2,200 ports in 125 countries. It supplies safety and environmental services, Unitor marine products, Nalfleet marine chemicals, maritime logistics and ships agency to the maritime industry. Last year the company made 214,000 product deliveries to 23,000 vessels and handled 54,000 port calls.

London Club issues warning on fire-fighting preparedness

THE London P&I Club says the response to two recent onboard cargo fires has highlighted the value of both fire-fighting training and realistic shipboard drills for ships' crews.

In the latest issue of its *StopLoss* bulletin, the club refers to a case where smoke was seen by the crew of a containership to be escaping from a container stuffed with bone meal in bulk.

The crew quickly established the best means of fighting a fire involving that commodity and then executed a well-drilled plan to extinguish the fire by flooding the container using a fire-fighting lance connected to a fire hose. The lance was introduced into the box through a hole which the crew punctured in the roof of the container. The same technique was deployed when the bone meal inside a second container also started to self-heat.

By contrast, another crew's response to a fire in cotton bales loaded in a tweendecker was significantly less effective. While the master's decision to deploy the CO₂ fixed fire-fighting system

was fully compliant with the IMDG Code recommendations, the crew's failure to ensure that the cargo space was sealed before releasing the gas rendered the CO₂ wholly ineffective. The master subsequently sent the fire team into the cargo spaces to fight the fire with hoses. Unfortunately, one of the fire team apparently became disoriented in the thick smoke, suggesting that he had not received adequate training in fire-fighting techniques. He fell from the tweendeck level to the tank top, sustaining severe injuries.

The club notes, "Whereas the operators of the containership had a well-developed training programme, which included realistic drills on a range of different fire types and locations, there was no such prudent practice in place on the other ship. Owners must be aware of their obligations to conduct regular and realistic onboard emergency drills to the requirements of the flag state, SOLAS Convention and as provided for under the ISM Code Section 8 Emergency Preparedness."



Bulk carrier supply side conundrum



Iain McIntosh

The cyclical nature of bulk shipping is part and parcel of the constant supply and demand equation which faces the industry. The period from 2001–2008 was no exception, witnessing a golden era for bulk shipping. In this period, total trade grew from 2.1 billion tonnes to 3.05 billion tonnes causing a 'super cycle' of demand which ultimately created a response by the way of a huge upsurge in orders for new building to meet the demand. The demand side curve was driven by China's entry to the WTO (World Trade Organization) and created huge demand, notably for major bulks such as iron ore and later coal as China became a net importer of this product from late 2008.

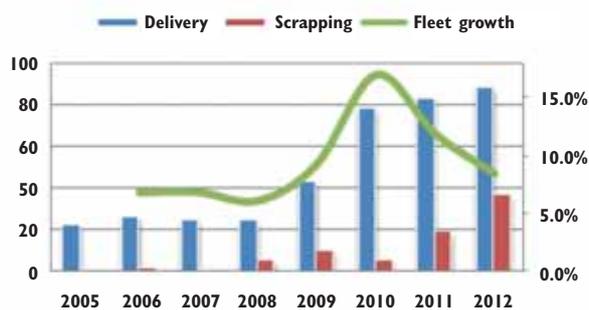
The credit crunch, of course, changed the picture as trade softened considerably and the overall dry bulk trade reduced by 3% in 2009. However, in some respects, this was a distorted

picture given that China's import volume continued to grow due to a government-led domestic expansion programme on the back of low commodity prices which actually maintained reasonable demand for the large bulks. In contrast, the minor bulks trades did contract by 13% in 2009, which created some demand for scrapping of a large number of older Handysize units. Trade recovered strongly for both major and minor bulks in 2010 (by 11%) and created a further distorted picture given the delivery schedule that was building including further ordering of tonnage given low shipyard prices.

As we enter 2011, we now have a scenario where, in spite of healthy super cycle demand proportions, an opposite effect to shipping market rate levels has now begun. This is purely due to the sheer weight of the delivery schedule and presents a challenging road ahead for bulk vessel owners as the supply side equation is now on everyone's minds. The current BDI (Baltic Dry Index) is trading in the 1,150–1,250 range — more or less where it was at the beginning of 2009, but for entirely different reasons. We are now faced with the very hard supply side conundrum and how to balance this equation.

The graph for delivery clearly demonstrates the impact of the orderbook schedule in millions of DWT (forecast to allow for slippage), set against actual demolition and forecast and a growth rate trend for the fleet. It should be noted that the actual orderbook for 2011/2012 is close to 250 MDWT (million dead weight tonnes) so the below delivery schedule of approx 171 MDWT allows for order book slippage of just over 30%. Given the thirst for building and lower yard prices in the last two

Bulk fleet delivery, scrapping & growth



Source Data – Clarksons/BIMCO/Maquarie

PRICES: NEWBUILD VS. SECOND-HAND

Type	Size	5YO S&P	Newbuild
Capesize	170k	\$50m	\$55m
Panamax	75k	\$28m	\$31m
Supramax	55k	\$28m	\$31m
Handysize	30k	\$25m	\$25m

years, it is possible that slippage could be even greater given that deposits could have been a lot lower, which could make it easier to default on completing orders.

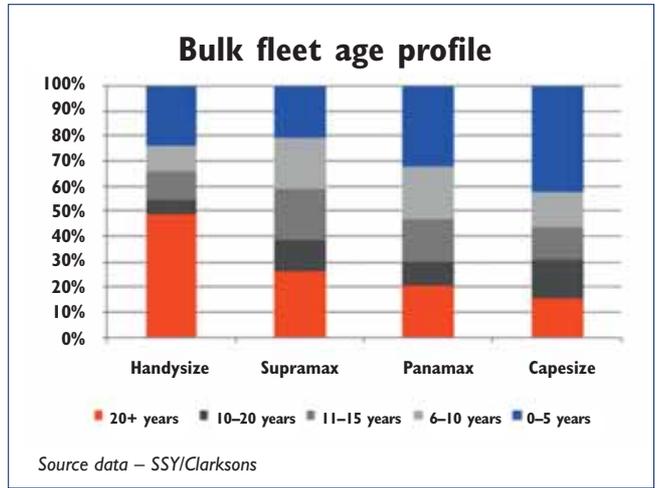
The graph clearly also illustrates the supply side problem caused by deliveries in spite of healthy growth in dry bulk trade, as the fleet will have grown from 349 MDWT in 2005 to nearly double that at 655 MDWT in 2012 (whilst trade has 'only' grown by a very large 60%).

SALE & PURCHASE PROBLEM

Whilst the trading of second-hand tonnage has not been quiet it would be safe to say that given the over-supply market, it could have and should have been a more brisk market. The main problem here is per below price comparisons: in early February, a five-year-old vessel was only marginally cheaper than a new build price from a shipyard. The demand for second-hand quick Panamax tonnage is in fact so great that the second-hand price is higher!

If new ordering is to slow down for some time especially given the excess supply then a fall in second-hand prices will greatly assist this process.

The effect of fleet growth is even more graphically displayed by the fleet age profile shown above (based on fleet deadweight



capacity end 2010).

It can be seen that for the major bulk vessel classes of Panamax and Capesize (where massive new building has taken place) that we now have an extremely young fleet with both having 30% and 40% respectively of their vessels between one and five years old. Conversely, vessels of 20 years and over represent only 20% or less of their fleet size. This graph will simply widen further in favour of a younger fleet as the orderbook for both classes of vessel represents 50% of the existing fleet. A similar picture exists for Supramax tonnage although the order book ratio is a lot less at 34%.

The one healthy picture is the Handysize (10–40,000dwt) sector where fleet age over 20 years remains high (nearly 50%) and therefore in spite of an order book of 23.5% of existing fleet has the right mix to ensure healthy balance in the years ahead. Given good growth in the minor bulks trade, and the need for



The 31,800dwt Handysize Nord Rio, built in 2007. Vessels of this class are considered reliable workhorses, and their future remains bright.



these excellent work horses, their future remains relatively bright.

DEMOLITION

Whilst order book slippage will slow down the supply side, we have not as yet seen large-scale lay-ups of vessels (as witnessed by liner shipping in 2009) and, similarly, the demolition of vessels has been relatively slow as detailed in the first graph. Much of the delayed scrapping of vessels was caused by the marginal slowdown in trade in 2009 followed by a fast recovery in 2010. Therefore, whilst scrapping did increase, it was largely the Handy sector and overage vessels.

The focus on this area to address the supply side is however likely to gain considerable momentum in 2011 and 2012 given the sheer weight of the orderbook and increasing fleet size. There are forces other than this at play which will, it is hoped, assist the decision-making process and that is demand for scrap steel in India and Asia — this is forcing up prices and this is illustrated in the price breakers are paying per LDT (Lightweight Tonne) covering the period week 27/2010 through to week 06/2011 as per the graph below. The demand does not appear to be easing and it should be noted that, with Bangladesh still out of the market, their eventual return could increase prices further.

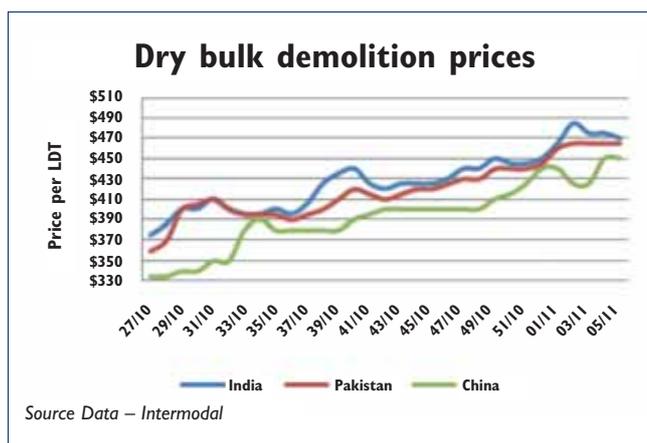
We are already seeing an encouraging trend developing in demolition of vessel types in the table above, right, covering the same pricing period of Q3–Q4/2010 through to Q1/2011. It

should be noted that Q1/2011 represents the period week 1–6 only and highlights that scrapping is already surging ahead of previous quarters in less than half the time. Provided current prices are maintained and the thirst for tonnage continues it is possible to see over 20MDWT go to breakers in 2011 and more

There are various views from different sources in respect of the realistic scrapping rate for 2011 and 2012 from lows of only 10 million DWT per annum to what we believe to be a more realistic report in Maquaries on 7 February suggesting 19–20 million tonnes in 2011.

The Maquaries report even suggests levels of 37 million tonnes in 2012. The fundamentals are there given the size of the fleet and the simple supply/demand equation. Conditions have never been better for large scrapping and it is likely many owners will increasingly be looking at price and special surveys to address this problem.

The supply side of the bulk fleet is of great concern given the growth but there are factors in play which can address this in coming months which will, it is hoped, improve the health of the industry. Unfortunately, this takes time and, like all cycles, we are likely to go through a period of soft returns for owners potentially through to end 2012 until the supply/demand equation returns to a better balance. It is however worth reflecting that the demand side of the equation is very positive and growth rates in trade of 7–8% per annum are likely over the same period which will assist the process as well and could balance the equation faster.



BULK VESSEL DEMOLITION

(Q3/2010 to week 6/2011)

Type	Data	Q3/2010	Q4/2010	Q1/2011
Cape	Number	7	7	7
	DWT mill. tonnes	1.01	1.01	1.21
Panamax	Number	3	5	12
	DWT mill. tonnes	0.23	0.37	0.86
Handymax	Number	16	25	24
	DWT mill. tonnes	0.39	0.63	0.64
Number		26	37	44
DWT mill. tonnes		1.62	1.99	2.69

Source various – Intermodal/Weberseas

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- ▲ Global demand and economic outlook for dry bulk commodities
- ▲ Improving logistics at bulk terminals — expansion or redesign
- ▲ Corridors and hinterland evolution to ensure future competitive security — the port/terminal perspective
- ▲ The functional requirements associated with bulk terminal design and implementation — the consultant's perspective of EPC (turn-key contract) and EPCM
- ▲ The optimization of bulk terminal logistics using information technology
- ▲ Tracking and tracing at bulk terminals — traceability of bulk material from unloading through to storage and delivery
- ▲ Terminal simulation
- ▲ Man-less operation of grab unloaders — lessons from the first year of real operation
- ▲ Developing a low capital cost iron ore port in Western Australia using conveyor centric barges
- ▲ Improving a coal export terminal's handling systems and environmental performance for increased trade throughput



trying to minimize risk in the dry bulk shipping sector

Michael King

Cargo liquefaction remains uppermost in the thoughts of all those trying to improve the safety record of the bulk carrier fleet.

The barrage of criticism directed at the dry bulk shipping industry because of the flawed handling of two cargoes — iron ore fines and nickel ore — shows no sign of diminishing with losses of both lives and vessels increasingly frequent.

In October Intercargo, the dry bulk ship owners' association, raised its concerns about three vessel losses involving nickel ore. The *Jian Fu Star* sank on 27 October with the loss of 13 lives. The *Nasco Diamond* suffered 21 fatalities on 10 November, while the *Hong Wei* went down on 3 December and ten crew perished.

All three vessels not only carried nickel ore, they were also loaded in Indonesia. Each was a Chinese-operated and -manned ship, and was registered under the Panamanian flag. They each also sank in roughly the same location and were all bound for China where the cargoes were to be used in the Chinese steel industry.

Another trade that has been linked to a number of serious safety incidents is the export of iron ore fines, most conspicuously when loaded in India during the monsoon season.

In February this year, the UK P&I Club produced an aide-mémoire aimed at shipowners and ship managers in the form of a pocket leaflet guide for charterers. "Iron ore fines and nickel ore are frequently presented for loading in a dangerous condition," warned the Club.

"The consequences of loading these unsafe cargoes can be catastrophic. The list of ships that have capsized or come close to capsizing since 2009 is now in double figures and rising, as is the death toll. And these ships are not 'rust buckets' — in one

case, a 55,000dwt vessel just 18 months old, capsized with the loss of 21 crew."

What is agreed by all in the industry is that there is no reason why these incidents should continue to happen, or should happen at all.

Yes, more shipments of iron ore and nickel ore fines are being made than ever before due, principally, to demand from China's steel industry. But ample information on loading and handling these cargoes has been available for some time in the International Maritime Safety Bulk Cargo (IMSBC) Code.

Moreover, the IMSBC Code became a mandatory procedure for all operators of vessels carrying solid bulk cargoes on 1 January this year when amendments to the International Convention for the Safety of Life at Sea came into force.

"The IMSBC Code serves to facilitate the safe stowage and shipment of solid bulk cargoes by giving information on the possible dangers," said Gijsbert de Jong, product manager for dry bulk carriers at leading classification society Bureau Veritas.

Those dangers include structural damage due to improper cargo distribution and chemical reaction of bulk cargoes as well as instructions on carriage procedures. It contains operational instructions on stowage and handling of cargoes and also some specific provisions regarding the design or the equipment of the ship. And it also addresses the danger of cargoes such as nickel ore and iron ore fines that can liquefy a process that turns a previously safe cargo into a cargo with a dangerously high moisture content (MC).

As De Jong explains, granular materials have void spaces caused by irregular particle shape. These void spaces may be filled with air and/or water. When cargo with moisture is carried at sea, cargo particles compress the void spaces and

Innovative WIAS monitoring improves bulker safety

In the wake of continuing high level of casualties involving bulk carriers, PSM Instrumentation Ltd has introduced a unique option to its Bulksafe® intelligent WIAS (water ingress alarm system) that gives vessel managers, for the first time, the opportunity to receive critical alarm messages remotely within seconds of an alarm occurrence on board anywhere in the world.

This innovative development of the PSM Bulksafe® system now offers a low cost global bi-directional satellite communication link between the WIAS central monitor and operator desk almost instantaneously. In the event of a water ingress primary alarm being initiated on board, a time-stamped and GPS position fixed message would be automatically triggered via a satellite D+ link from the vessel, direct to the vessel manager's desk, warning of a potentially dangerous situation. Should a secondary WIAS warning be initiated, a further critical alarm message or SMS text message could be automatically sent to alert managers, and/or for example, transmitted also to coast guard or rescue services.

Since the communication is bi-directional, the operator can simply request a full function test of the WIAS and log the data at any time irrespective of the vessel's duty or operations at the time. Any malfunctions can be rectified well in advance saving PSC (port state control) testing time and consequential delays. The PSC can be presented with a system health log that is inviolate and date and time stamped. PSM Instrumentation's managing director Geoff Taylor commented that the speed of remote message transmission is clearly vital if a vessel operator is to be able to act to moderate in preventing an incident. There is a common misconception that satellite transmission is always instantaneous. Few vessels of this class have broadband and a message sent via satellite may take up to half an hour to be received; such is the complexity of ground earth station routing. In a critical



situation this would be inadequate and provide little practical benefit in a potentially hazardous incident. Therefore, a new but low-cost message routing protocol had to be established. After two years of product development this time lapse has been reduced to only a few seconds. PSM says it is delighted that this remote safety condition monitoring can now make a major contribution to the prevention of major accidents in this sector.

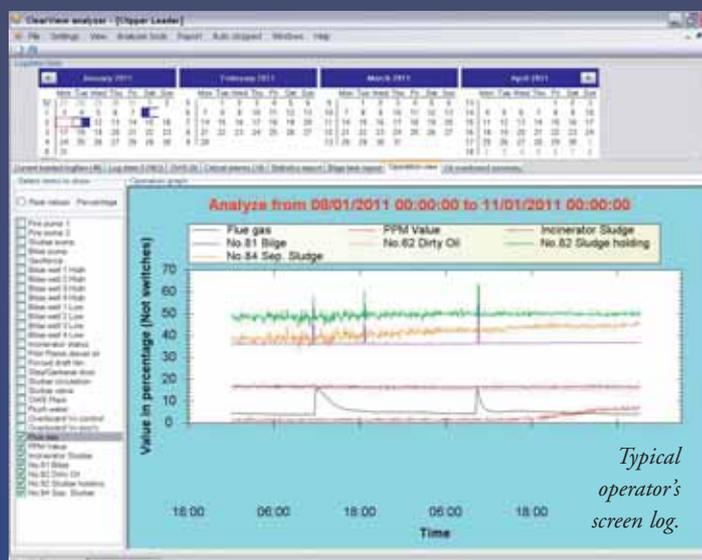
This concept has now been tested for two years on five vessels of the Nordic Tanker fleet, under the auspices of the US Coast Guard (USCG), on a PSM sister product called Clearview®. PSM was the

recipient of an innovation award in 2010 for this product after the trials, which were continuously monitored by the USCG, proved the viability and value of low cost satellite critical messaging and remote data acquisition. The same Clearview® system is now available integrated into the PSM Bulksafe® system, allowing operators to monitor critical WIAS safety

conditions of their vessels as they occur. In addition, by simply linking signals from other machinery on board, into the Bulksafe® CV interface, they can remotely 'see inside' the vessel's plant and engine room operations in real time. The CV Analyser software supplied as part of the system enables both data logging and analysis of parameters such as fuel consumption/efficiency, OWS and bunker management.

Recognizing the importance of vessel

operating cost considerations in these difficult times PSM argues that the benefits of its Bulksafe® CV system could be available at little extra cost for new installations because of a further innovation of their system. By the integration of its latest ICT intelligent digital sensor technology, PSM claims installation cost is vastly reduced. For example, on a typical seven-hold Panamax it says the savings alone on installation cost over conventional systems can be shown to significantly cover the cost of Bulksafe® CV option.



Typical operator's screen log.

pressurize any free water present in the spaces. The moisture released from the mineral structure of some types of cargo increases the amount of free water in the cargo and can lead to a further increase in the pore water pressure. If the pore water pressure is high, it can overcome the friction forces binding the individual particles of material and the shear strength of the cargo falls to the point where liquefaction occurs.

"The bulk cargo then becomes a viscous fluid with flow ability," De Jong told *DCI*. "The consequence is loss of stability due to the movement of liquefied cargo."

The IMSBC Code provides guidance on the standards to be applied for safe stowage and the prevention of liquefaction. "The two key points are the determination of the Transportable Moisture Limit (TML), which is the responsibility of the shipper (declaration), and the determination of the actual moisture content of individual shipments," he added.

If the actual moisture content portion of a representative cargo sample consisting of water, ice or other liquid expressed as a percentage of the total wet mass of that sample is higher than the TML, the cargo should not be taken on board for safety reasons.

"Based on experienced feedback, this procedure has not been fully implemented globally [even though] the IMSBC Code makes this implementation, rightfully, mandatory," said De Jong.

The failure to take such precautions recurs again and again. The Intercargo missive back in October called on shippers and cargo interests to conduct an urgent review into the testing and safety processes involved in shipping nickel ore and iron ore fines which can liquefy after ship owners reported that "the rudimentary loading conditions in some of the exporting countries may have contributed to accidents."

Several P&I clubs have also reported that owners and their ship masters were being asked to load cargoes that have moisture levels that exceed the Transportable Moisture Limit (TML) and Flow Moisture Point (FMP) figures specified in the IMSBC Code.

"Once the TML is exceeded it should not be loaded," said Karl Lumbers, the UK P&I Club's Loss Prevention Director.

The UK P&I Club claimed owners and masters were still being put under enormous pressure to load these cargoes. "Some cargo surveyors are ill-equipped to carry out the necessary surveys while other reputable surveyors who are recommended by the P&I clubs, suffer intimidation to the point of violence or threats to their families," said the Club.

However, Captain Kuba Szymanski, Secretary General of Intermanager, the ship management organization, said the Code had been widely adopted and was already

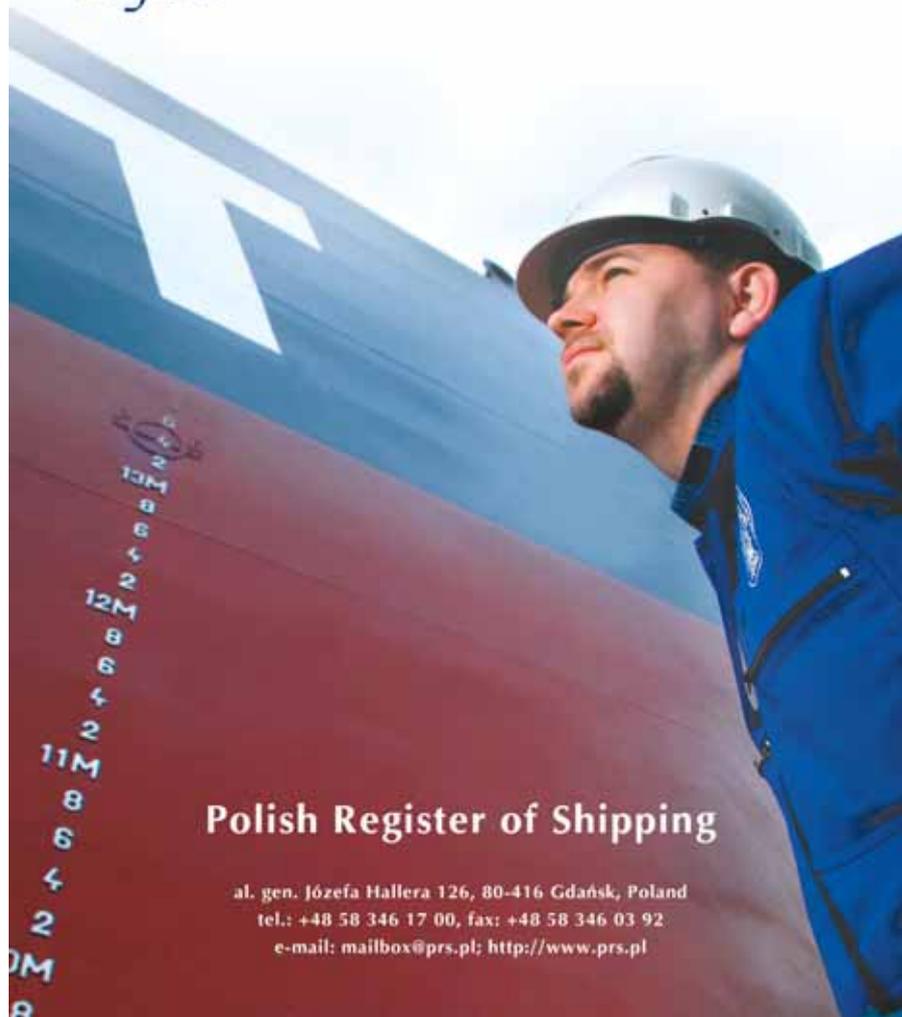


*Peter Cremers, CEO
of Anglo-Eastern.*



75 years

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Polish Register of Shipping

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starting to prompt tighter implementation of loading conditions relating to iron ore fines, DRI, coals and other cargoes subject to liquefaction.

“This new regulation is actually helping bulk cargo operators as it can now be used to show charterers what is allowed and what is not,” he said. “A particular example is the issue of moisture in the cargo, which was always a matter of debate and some Masters were forced to load. Now they can refuse. This is already having a positive impact on bulk carrier safety.”

Peter Cremers, CEO of Anglo-Eastern, a leading third-party manager of bulk carriers, said regulations like the IMSBC Code needed to be supported more firmly by the industry and be more strongly enforced by relevant authorities.

“The industry is still laying fake keels to get away with not implementing new regulations and we need to move away from the ‘exploiting loopholes thinking’ into a ‘responsible industry thinking’ mindset,” he told DCI.

“Basically, we need more responsible players in the market. Recent losses are caused by cargo being loaded that’s unfit for transport into ships that are manned by crew that are either not aware of the issues or under pressure to accept.”

He said work could be done to improve the Code, for example by including more information on cargoes such as metal sulphide concentrates which were environmentally hazardous but were not classified as such in the schedule of IMSBC. But he said the most important factor in improving loading safety would be more responsible supply chain players. “There could be an improvement in compliance of the Code from a wider range of ports, terminals and cargo shippers from around the world,” he concluded.

Rob Lomas, Secretary General of Intercargo, said he was aware that many companies had refused to accept cargoes that



*Rob Lomas,
Secretary
General of
Intercargo.*

might be subject to liquefaction because they were either not loaded in accordance with the international standards contained in the IMSBC Code or because Masters sensed that the testing and certification processes aimed at determining the moisture content of the cargo being offered for shipment lacked credibility.

“Masters have refused cargoes which appear to be highly suspect in terms of their moisture content vis à vis their Shippers Declaration certificate or where Masters have been refused their right to use an independent third party cargo surveyor,” he said.

“Sadly, some shipowners may not have the relevant experience or knowledge in interpreting the IMSBC Code and may accept cargoes which are unsafe.

“But we need to receive the reassurances of the Competent Authorities in the exporting countries that their procedures and processes have integrity and transparency so that this message is received and most importantly, believed by the shipowners.

“Competent Authorities are the key to ensuring that seafarer lives are not put in peril. At the very least, any exporting country which cannot meet these requirements or which refuses to allow independent third-party surveyors is likely to find maritime transport for these cargoes more difficult to source.”

Adonis Violaris, Group Marketing Director of Bernhard Schulte Shipmanagement which runs a fleet of some 60 bulkers, cited the recent losses associated with nickel ore and firmly concluded: “There should be mandatory sanctions and prohibitions applied against shippers, ports and facilities which load cargo in violation of the Code.”



*Adonis Violaris,
Group Marketing
Director of
Bernhard Schulte
Shipmanagement.*

RightShip unveils secrets of ship vetting and its role in keeping shipping safe

With international dry bulk trade currently operating at a high volume of over 2.8 billion tonnes, the world's fleet ageing, an oversupply of capacity, turbulence in freight rates and pressure on the availability of skilled staff at sea and on shore, there is a critical global demand for reliable vetting to minimize the risks of delays, damage, detentions and casualties.

RightShip has maintained its position as a pre-eminent ship vetting agency for some ten years, and year on year vets over a third of all dry bulk cargoes, including over 90% of all iron ore and more than 50% of all coal transported by sea.

Here CEO Warwick Norman answers questions about how RightShip contributes to improving the safety of dry bulk shipping.

"I'd start by reinforcing that everyone and everything in the global shipping industry is connected. It's in everyone's interests to reduce risk and we all have a part to play. We see our role as protecting our customers from having substandard ships in their supply chain, as a step to our ultimate goal of getting those ships out of our industry," he explains.

"What we offer that is different, and has met such a need, is a comprehensive system of support, information and advice. RightShip is best known for our online risk evaluation system, which can provide an instant analysis of the risk of over 71,000 ships and more than 121,000 maritime companies. But we also deliver expert advice 24/7 from experienced technical staff, local knowledge through our offices in London, Houston and Melbourne, physical inspections of vessels worldwide, secure hosting of in-house vetting systems, management reviews for companies, tailored reporting and benchmarking.

"Each service goes some way towards helping customers make better-informed risk decisions. The combination of services and skills we bring does make our customers' operations safer:"

Q: Could you give me details on the vetting process, and the factors you consider?

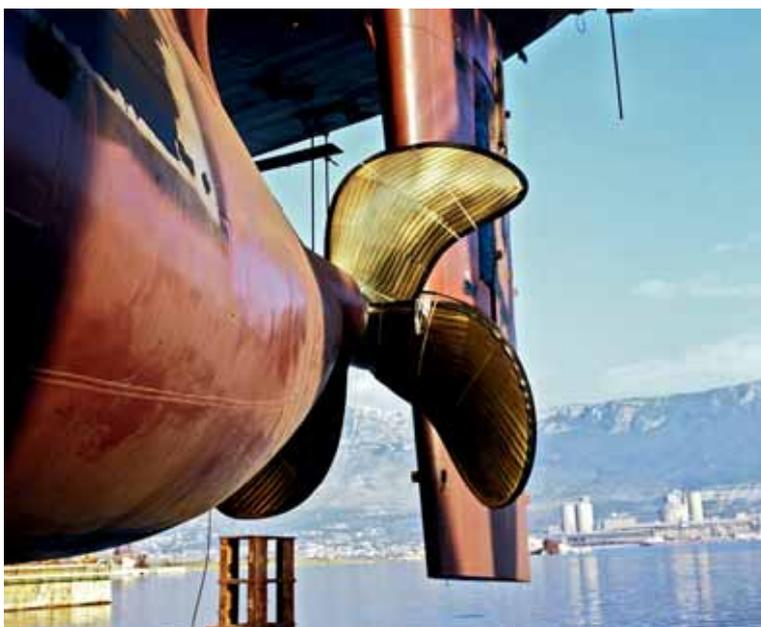
A: "The online process starts with a user logging on through our website, where they enter any ship's name or number to see details of our risk evaluation with an overall 'star' rating and approval recommendation. The analysis covers over 50 separate factors, all of which have a proven link to the risk of vessel detentions and casualties. These factors cover vessel building and maintenance, ownership and management, crewing, flag, class, Port State Control, inspections and many other aspects of history and performance.

"Depending on the outcomes of that analysis, RightShip may recommend the vessel, or progress further investigation of some risk factors, potentially including a physical inspection, before recommending the ship to our customers."

A: How do you interact with your customers, and is it a global service?

A: "It depends completely on what each customer wants. Some want to run their own vetting checks and call us for advice if needed. We have other customers who prefer our staff to undertake the entire process for them – it's tailored to whatever best suits each business.

"We operate a 24/7 service for online vetting and staff



support, mostly by email and phone but we also have staff available in our offices.

"It's critical that we have staff in London, Houston and Melbourne so we can cover all time zones for customers who are based in over 50 different countries worldwide. We serve a global industry and our customer base reflects that, so our service must also be truly global!"

Q: Who are your customers?

A: "Cargo owners and shippers remain our major customers. We support many of the world's biggest shippers of dry bulk products including grain, iron ore, coal and other minerals.

"Our risk assessment tools are also being used increasingly by port and terminal operators, including the Dry Bulk Terminals Group, as well as agents, insurers and maritime bankers. Another growing sector is shipowners, with many subscribing to use RightShip's tools for benchmarking and reporting.

"Our service package is made available via a volume-based subscription, which gives customers unlimited access to the online system and expert staff support:"

Q: How do you define success?

A: "One key measure is recognition, from customers and the wider industry, for the validity and value of our system as a measure of vessel quality. Another is feedback from our customers, telling us we are adding value and helping them achieve commercial and risk management goals, such as demonstrating value add for dry bulk terminals by helping them make decisions that avoid the high costs of interruptions or breakdowns to their operations.

"And of course success means better shipping standards. Independently validated data has shown the usefulness of RightShip ratings as predictors for PSC performance, and improvement in PSC deficiency averages in ports and regions where ships have been RightShip-vetted.

"Ultimately that is what success looks like for us, that RightShip customers have the tools to remove the riskiest ships from their supply chains, and that overall dry bulk shipping standards have improved worldwide since RightShip began operating."



Q: How has your relationship with organizations like Intercargo affected the way you do business?

A: "Achieving safer shipping is all about relationships. RightShip is an Intercargo member and we work co-operatively with Intercargo and many organizations as we pursue common goals in our different ways.

"In fact, registration of vessels with Intercargo is among a number of factors that our system recognizes as an indicator of superior safety performance."

Q: Is there anything else you think may be of interest to our readership?

A: "There are a couple of new developments. First, we've been

working closely with the Dry Bulk Terminals Group and terminal operators on questionnaires for data gathering, which can help reduce the burden on owners and operators and improve the terminal's safety and efficiency.

"Second, we've just released access to all our customers to a new online rating covering environmental sustainability. It sits alongside and complements our risk rating, so we believe our customers will find it an easy and useful way to bring sustainability into their decision-making, whether to align with their policies or prepare for expected changes in regulations and charges. Like our risk rating, it can benefit shippers, terminals and owners who want to focus on vessel selection and/or benchmarking to raise standards."

DC

RIGHTSHIP



MANAGING MARINE RISK

Environmental Rating System including EEDI & EEOI

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BULK PORTS, TERMINALS & LOGISTICS 2011

The Crowne Plaza, Antwerp, 15th-17th May 2011

What will the dry bulk outlook be for 2011/2012? Will the market recover as signs of demands for raw commodities from key regions continue to escalate?

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- ▲ Ship terminal interface developments and safety
- ▲ Bulk terminal design

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Current Speakers

- ▲ Olle Östensson, President — Caromb Consulting
- ▲ James Leake, Managing Director — ICAP Shipping Ltd
- ▲ Luc Pelkmans, Project Manager Bioenergy — VITO NV
- ▲ Hugo du Mez, Business Developer — The Port of Rotterdam
- ▲ Fred Doll, Managing Director — Doll Shipping Consultancy
- ▲ Ian Harrison, Technical Manager — Intercargo
- ▲ Prof.dr.ir. Gabriel Lodewijks, Head of department of Marine and Transport Technology — Delft University of Technology
- ▲ Mr Wim Leuyckx, Commercial Affairs Terminals, Euroports Belgium NV
- ▲ Ekke Oosterhuis, Project Manager Industrial Installations — Haskoning Nederland B.V
- ▲ David Trueman, Sales Director — DB Controls Ltd
- ▲ Frans Kleisman, Manager Electrical Process & Control Tebodin Consultants & Engineers
- ▲ Glen Martin, Project Manager, Port and Logistics Business Solutions — The Strang-Tradex Group
- ▲ Bernd Mann, Chief Officer, Design and Technology — ISAM AG
- ▲ Stewart Graham, Managing Director — Oceanport Shiploaders Ltd
- ▲ Vic Stoltz, Coal Terminal Manager — Port of Seward & Greg Bierie, Martin Engineering
- ▲ Dr. Holger Lieberwirth, Executive Vice President — TAKRAF GmbH
- ▲ Dr. Khanindra Pathak, Professor, Department of Mining Engineering, IIT Kharagpur
- ▲ Mi-Rong Wu, Faculty of Mechanical, Maritime and Materials Engineering — Delft University of Technology

Programme Highlights

- ▲ Global demand and economic outlook for dry bulk commodities
- ▲ Improving logistics at bulk terminals — expansion or redesign
- ▲ Corridors and hinterland evolution to ensure future competitive security — the port/terminal perspective
- ▲ The functional requirements associated with bulk terminal design and implementation — the consultant's perspective of EPC (turn-key contract) and EPCM
- ▲ The optimization of bulk terminal logistics using information technology
- ▲ Tracking and tracing at bulk terminals — traceability of bulk material from unloading through to storage and delivery
- ▲ Terminal simulation
- ▲ Man-less operation of grab unloaders — lessons from the first year of real operation
- ▲ Developing a low capital cost iron ore port in Western Australia using conveyor centric barges
- ▲ Improving a coal export terminal's handling systems and environmental performance for increased trade throughput

Conference Programme

Sunday 15th May

- 17:00 Registration
- 17:30 Exhibition Opens
- 18:00 Welcome cocktail reception

Monday 16th May

7:30 Registration

Conference Chairman: James Leake, Managing Director – ICAP Shipping Ltd

Session 1 – Trade & commodity analysis

- 9:30 Global demand and economic outlook for dry bulk commodities
Olle Östensson, President – Caramb Consulting
- A two speed recovery: firm in emerging countries and limping in the OECD
 - What will be the outcome for commodity demand?
 - What commodities will be necessary to support rapid growth in emerging economies?
 - What are the implications for global trade volumes?
 - Will regulatory changes or protectionist measures constrain world demand growth?
 - Summary of the short-term outlook for the main dry bulk commodities

10:00 European perspectives of bio-energy, the role of trade and the potential associated issues
Luc Pelkmans, Project Manager Bioenergy, VITO NV

10:30 Coffee Break (Exhibition Hall)

11:00 Coal and iron ore trades outlook
James Leake, Managing Director – ICAP Shipping Ltd

11:30 Hub opportunities for European coal exports: Rotterdam, a case study
Hugo du Mez, Business Developer – The Port of Rotterdam

12:00 Lunch (Exhibition Hall)

Session 2 – Shipping, the bulk facility interface & terminal management

14:00 Bulk carrier supply and demand outlook and fleet analysis
Fred Doll, Managing Director – Doll Shipping Consultancy

14:30 Shipowner and terminal operator interface issues and developments from the shipowner's perspective
Ian Harrison, Technical Manager – Intercargo

15:00 Improving logistics at bulk terminals – expansion or redesign
Prof.dr.ir. Gabriel Lodewijks, Head of department of Marine and Transport Technology, Delft University of Technology

15:30 Coffee Break (Exhibition Hall)

16:00 Corridors and hinterland evolution to ensure future competitive security – the port/terminal perspective
Mr Wim Leuyckx, Commercial Director, Euroports Belgium NV

16:30 The functional requirements associated with bulk terminal design and implementation the consultants perspective of EPC (turnkey contract) and EPCM
Ekke Oosterhuis, Project Manager Industrial Installations - Haskoning Nederland B.V

17:00 Networking drinks and snacks (Exhibition Hall)

Tuesday 17th May

8:00 Registration

Session 3 – Information technology at the terminal

09:30 The optimization of bulk terminal logistics using information technology
David Trueman, Sales Director – DB Controls Ltd

10:00 Tracking and tracing at bulk terminals traceability of bulk material from unloading through to storage and delivery
Frans Kleisman, Manager Electrical Process & Control – Tebodin Consultants & Engineers

10:30 Coffee Break (Exhibition Hall)

11:00 The Importance of Initial Assumptions in the Simulation of Dry Bulk Terminals
Glen Martin, Project Manager, Port and Logistics Business Solutions – The Strang-Tradex Group

- Aspects to be considered when deciding to use and using a simulation model in the design of a dry bulk terminal.
- The importance of testing assumptions and data for accuracy and relevance
- By asking this simple 'what if' question, potentially costly errors may be avoided.

11:30 Man-less operation of grab unloaders – lessons from the first year of real operation
Bernd Mann, Chief Officer, Design and Technology – ISAM AG

12:00 Lunch (Exhibition Hall)

Session 4 – Bulk terminal developments – equipment and engineering

14:00 Developing a low capital cost iron ore port in Western Australia using conveyor centric barges
Stewart Graham, Managing Director – Oceanport Shiploaders Ltd

14:30 Improved shiploading systems at the Port of Seward, Alaska
Vic Stoltz, Coal Terminal Manager – Port of Seward & Greg Blerie, Martin Engineering

15:00 The latest developments in terminal layout and equipment design at Ust-Luga coal export terminal – a comparison with the Wanina terminal on the Pacific coast of Russia
Dr. Holger Lieberwirth, Executive Vice President - TAKRAF GmbH

15:30 Coffee Break (Exhibition Hall)

16:00 The status of bulk materials handling in Indian ports and the scope for advanced facilities
Dr. Khanindra Pathak, Professor, Department of Mining Engineering, IIT Kharagpur

16:30 European biomass trades, demand analysis and opportunities for developing and designing a large-scale biomass bulk terminal
Mi-Rong Wu, Faculty of Mechanical, Maritime and Materials Engineering, Delft University of Technology

17:00 Networking drinks and snacks (Exhibition Hall)

18:00 Event Closes

Conference Programme

SPONSORSHIP OPPORTUNITIES

If planned well in advance, your company will benefit not only from high profile promotion at the event but also from a substantial level of pre-event corporate publicity.

Conference CD ROM – £2,000.00.

All conference delegates are given a set of conference papers on CD-ROM. Sponsorship of the CD ROMs includes printing your latest colour logo across the CD ROM front covers plus your latest colour brochure included in the CD ROMs content. A printed copy will also be placed in the conference bag.

Delegate Bags – £3,495.00.

All delegates attending the conference will be given a high quality bag for keeping conference documentation and show literature. Delegates frequently use these bags well after the conference has ended. Exclusive sponsorship of the delegate bag will provide your company with a high level of publicity for the sponsor; your company name and corporate logo will be included on the outside of the bag in a highly visible position.

Brochure Distribution with the Conference Delegates' CD ROM – £500.00.

An effective method of guaranteeing that all conference delegates receive a copy of your latest colour brochure is to have your brochure distributed personally by our event staff at the Event Registration Desk. Guaranteed brochure distribution to every conference participant.



The ideal way to be at the centre of the event is to take an exhibition booth. This allows delegates and network visitors the opportunity to view services and products relating to the Dry Cargo market. Also remember that the exhibition area becomes a very busy networking area during registration, lunch and coffee breaks.

EXHIBITION COST

Taking a pre-built exhibition stand is an inexpensive way to exhibit.

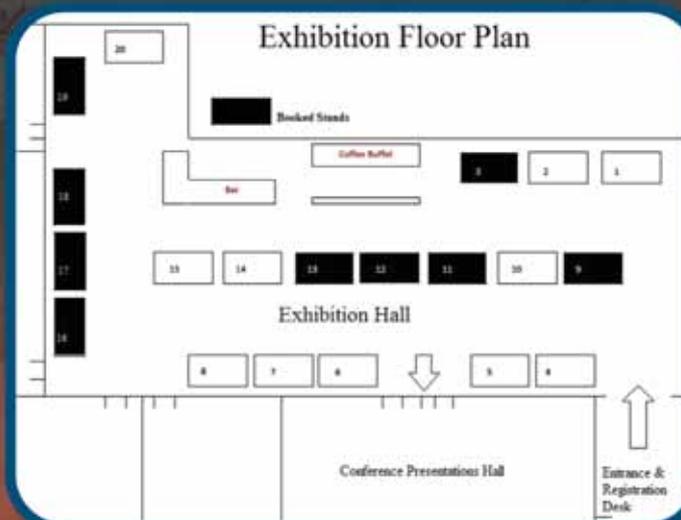
Each booth is 2m x 3m. The price is £2,500.00 (includes one complimentary delegate registration – value £650.00).

A double is 2m x 6m. The price is £4,200 (includes two complimentary delegate registrations – value £1,200.00).

Prices shown are in pounds sterling.



Exhibition Floorplan



THE EXHIBITION STAND – WHAT IS INCLUDED

All stands are equipped with a professional shell scheme including a round table, two chairs, power socket, lighting, and exhibitor's name panel.



United Kingdom

bulk handling news

Gottwald's G HMK 6407 B mobile harbour crane at work at the Port of Southampton.



Jay Venter

Port of Southampton takes delivery of sixth heavy-duty Gottwald mobile crane

Gottwald Port Technology has delivered a sixth heavy-duty mobile harbour crane to The Port of Southampton. The latest crane, a G HMK 6407 B, was purchased by Associated British Ports and is the latest investment in the development of its bulk terminal. Solent Stevedores, operator of the bulk terminal located in the Western Docks Southampton, has enjoyed significant success in operations thanks to the accelerated growth of the bulk business in the area.

Doug Morrison, port director at ABP Southampton, commented "ABP has worked hard in partnership with Solent Stevedores to develop the bulk terminal, the most recent investment being a third high-capacity Gottwald crane to be delivered to the bulk terminal, which will greatly assist."

The Gottwald G HMK 6407 B, one of Gottwald's Generation 5 models, weighs over 400 tonnes and is fitted with a 1,112kW diesel engine providing the primary power. The crane has a maximum lifting capacity of 100 tonnes on hook and a 50-tonne grab curve capable of handling the largest vessels calling in Southampton.

ABOUT GOTTWALD

Gottwald Port Technology, based in Düsseldorf, Germany, is a subsidiary of Demag Cranes AG. Founded more than 100 years ago, the company manufactures state-of-the-art equipment for efficient cargo-handling in ports and terminals under the Gottwald brand name. Thanks to their electrical drive concepts, these products, supplied by Gottwald to more than 90 countries worldwide, meet the steadily growing requirements of economical and environmentally compatible operation.

As the inventor of the mobile harbour crane Gottwald Port Technology manufactures mobile harbour cranes with lifting

capacities of up to 200 tonnes and radii of up to 56 metres for all kinds of applications and for all sizes of ships in all types of terminals. Gottwald mobile harbour crane technology — proven more than 1,000 times over worldwide — also extends to rail-mounted portal cranes and floating cranes.

ABOUT THE PORT OF SOUTHAMPTON

Southampton is one of the UK's busiest and ports, and a principal driver in the regional economy. It handles in excess of 42 million tonnes of cargo annually — or around 7% of the UK's entire seaborne trade — and is the main gateway for Far East imports. Its natural deep-water harbour, unique double tide and sophisticated Vessel Traffic Services (VTS) allow the port to welcome the world's largest vessels, from deep-sea container ships to cruise giants. Equipped to handle any type of cargo, Southampton is a leading car-handling port, home to the UK's second largest container terminal (DP World Southampton) and the sole UK port for all Canary Islands fresh-produce imports.

Dry bulk at Southampton

Southampton is a growing force in the import and export bulk-cargoes sector. A 5-ha multi-user bulk terminal is situated in the port's Western Docks, dedicated to the handling of dry-bulk cargoes and minerals, including animal feed, fertilizer, scrap, aggregates and marble chippings. It is operated by Solent Stevedores Ltd, a specialist independent stevedoring company.

The volumes of bulk handled at Southampton have soared in recent years and, with growth set to continue, ABP has enhanced the handling and storage facilities at the bulk terminal. This has recently been expanded into the King George V Dry Dock, providing a further 2.8 ha of land for dry-cargo handling.

New product from 4B – adjustable depth bearing temperature sensors (ADB)

The ADB Series of bearing temperature sensors has been approved for use in hazardous areas according to ATEX, CSA and IECEx.



4B Braime Elevator Components' adjustable depth bearing (ADB) temperature sensors have been designed to allow the depth of the probe to be adjustable depending on the application. The ADB series is available with three standard probe lengths of 2, 4 or 8 inches (50, 100 and 200mm), and screw directly into a bearing housing through the existing grease zerk thread. There is no need to remove the sensor for bearing lubrication since each sensor is fitted with its own grease zerk. The ADB series has NTC type thermistors which allow for continuous temperature monitoring, and they can be connected to a PLC or to a hazard monitoring system, such as 4B's T500 Hotbus Elite or Watchdog Elite. The ADB Series of bearing temperature sensors has been approved for use in hazardous areas according to ATEX, CSA and IECEx.

OTHER TYPES OF BEARING TEMPERATURE SENSORS ARE ALSO AVAILABLE FROM 4B:

- ❖ The WDB7 series is a lug-style NTC thermistor model for continuous surface temperature monitoring and has been designed to bolt directly onto a bearing housing, motor, gearbox, or machine casing. The mounting hole is 5/16" from the factory, but can be drilled up to 1/2" if needed. The sensor can be connected to a PLC or to a hazard monitoring system, such as 4B's T500 Hotbus Elite, Watchdog Elite, or T400 Elite. The

connections are not polarity sensitive therefore special connections requirements are eliminated.

- ❖ The WDB8 Series is a range of bearing temperature sensors designed to screw directly into an existing grease zerk fitting on a bearing housing. Each sensor is fitted with a grease nipple to allow lubrication of the bearing without the need for removal of the sensor. The WDB Series is available with either a PTC thermistor with various factory set trip points or an NTC thermistor with a user adjustable trip point.

- ❖ The MDB Series is a range of bearing sensors manufactured to screw directly into a bearing housing through the existing 1/4" BSPT threaded grease zerk (can be installed in 1/8" NPT grease zerk fitting with an adapter). Each sensor is fitted with a grease zerk to allow lubrication of the bearing without the need for removal of the sensor. The sensor is fitted with a M12 connector for use with a separately supplied cable and socket assembly which can be attached connected directly to a PLC or to a hazard monitoring system, such as 4B's T500 Hotbus Elite, Watchdog Elite, or T400 Elite. The connections are not polarity sensitive therefore special connection requirements are eliminated.

4B Braime Elevator Components supplies level controls, intelligent sensors and safety control systems that prevent costly downtime and minimize the risk of explosion in hazardous areas.

NKS speeds up storage operations with RDS on-board weighing

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

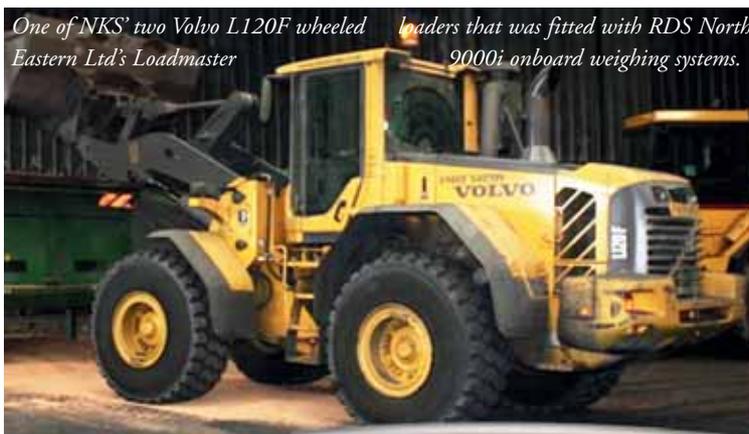
Total capacity of the NKS site is over 250,000ft² and around a million tonnes of different product is turned around each year. To help speed up this operation, NKS has invested in two Loadmaster 9000i onboard weighing systems from RDS North Eastern Ltd for use on its two Volvo L120F wheeled loaders.

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

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

NKS has used RDS weighing systems for over 20 years as Shaun Dannatt, warehouse manager at NKS explains, "We have

One of NKS' two Volvo L120F wheeled loaders that was fitted with RDS North Eastern Ltd's Loadmaster 9000i onboard weighing systems.



received nothing but excellent service and product support from RDS North Eastern, who have always responded quickly and

effectively to any question or support issue. The loader operators get on well with the RDS system and in such an operation as we have here it certainly helps our aim of achieving a quick vehicle turn around."



RDS' Loadmaster 9000i onboard weighing system.

Credit control for 3PLs

As news of the spending cuts is still sweeping the nation it is now more important than ever to make sure your credit control department is working in the most efficient way possible, writes *Matthew Marriott, commercial director of Hellmann UK.*

Process efficiencies and new business contracts are the only way we can sustain a standstill or growth situation in today's climate to overcome the negative impact of spending cuts and continue trading and making profit. For 3PLs one of the crucial elements in protecting the company's results is to review the processes in place for investigating the credit worthiness of both existing and new clients (alongside making sure your invoices are getting paid on time).

As well as running financial checks on new clients before contracts are signed, it is equally important to run regular checks on existing clients to ensure that exposure to risk is limited. By building up a picture of your client's financial position (through using simple and cost effective searches, such as those provided by Experian, and supported by research at Companies House) you'll be able to see whether your client is keeping their head above water in these difficult times and may enable you to take early action to prevent a loss if their results are declining.

Taking a closer look at the company's full accounts will give you a better understanding of the firm's position. If questions remain, the next step would be to talk to its financial or managing director – you'll be able to gauge from talking to these key personnel whether they are happy to talk about their financial position and are on top of their company's strategy. Keep the lines of communications open so that, if things become

a little harder to manage further down the line, your personal relationship with the client helps to manage the effects. Offering alternative payment patterns to support your client's cash flow (within a reasonable time period) is one option which can protect your position and strengthen the ties of loyalty with your customer.

With the indirect effect of job losses in the public sector threatening to affect high street spending and reduce demand for manufacturing output, turning business away at the moment is hard. If a decision to turn business away or restrict credit is made, this can cause tensions to arise between the credit control and sales departments but it all comes down to the fact that, if a client doesn't pay, the company doesn't make any money. It's as simple as that.

At Hellmann, the company is starting to encourage its sales staff to spend time with credit control to give them a greater understanding of the process, how decisions are reached, and why it's so important for the profitability of the company. This is also helping to build a really positive working atmosphere between the departments.

Hellmann Worldwide Logistics is one of the largest privately owned and family run logistical global networks, currently employing over 16,500 dedicated people to serve customers worldwide – and operates from 443 branches across 157 countries.

Hellmann's UK network has ten individual offices based throughout the country including state-of-the-art corporate headquarters at Fradley Park in Lichfield, Staffordshire.



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Steel market

looking forward to an optimistic future

Huge rise in global steel production is good news for the market

The world steel industry has left bad times behind, writes *Kunal Bose in New Delhi*. In step with the global recovery from a recession found to be similar in its impact to the Great Depression of the 1930s, crude steel production in 2010, according to World Steel Association (WSA), jumped 15% to a record 1.414bn tonnes. What is particularly remarkable was steel production in the US growing by as much as 38.5% to 80.6mt (million tonnes) last year followed closely by Germany where growth was 34.1% at 43.8mt. Japan, yet another country taking a big recessionary hit, lifted production by 25.2% to 109.6mt.

Unlike the developed steel-producing countries or emerging nations like South Korea, Russia and Brazil, China — as part of a policy to phase out polluting and old technology-based units — grew steel production by a relatively modest 9.3% to 626.7mt, bringing down in the process its share of world output to 44.3% from 46.7% in 2009. With a 6.4% rise in production to 66.8mt, Indian growth was modest. But from here, India richly endowed with iron ore and thermal coal and where steel demand should grow at double digit rates will have to build steel capacity and production at a pace much faster than in the past. At 897.9mt of crude steel, the Asian share of world steel production was 63.5% in 2010.

The lower base of 2009 no doubt was a reason for last year's spectacular production performance. As expected, world steel

production grew at a modest 5.3% to 119mt year-on-year in January 2011. No doubt as idle capacity, particularly in the developed world, is recommissioned with improvement in demand and prices of steel, new capacity through both brownfield and greenfield routes is created in BRIC (Brazil, Russia, India and China). The WSA says the world apparent steel demand grew 13.1% to 1.272bn tonnes last year after contracting 6.6% in 2009.

Aditya Mittal, chief financial officer of the world's largest steel producer ArcelorMittal, says he is "seeing a strong recovery in the US, moderate growth in China and restocking in Europe" where, however, end-user demand requires lots of catching up. In some European economies, the recovery so far is export led. ArcelorMittal, which alone makes up to 7% of world steel, has forecast a faster than expected recovery in steel demand and prices in the first quarter of 2011.

Many of the calculations of steelmakers, particularly the ones without good mines linkages, about market expansion and operation profitability have been upset by the recent behaviour of prices of metallurgical and thermal coal and iron ore. As if the raging floods in Australia's Queensland submerging coal mines and twisting and washing away rail lines were not enough of a disaster, a cyclone bearing down on north western parts of the country brought iron ore shipments to a near halt. Incidentally, Dampier and Headland ports handle nearly all of

Australia's around 400mt of annual iron ore exports. So the steel industry has now to live with extraordinary prices of iron ore and metallurgical coal. A good portion of world steel is made outside the blast furnace-basic oxygen furnace route.

Electric arc furnaces make steel with sponge iron and scrap. Feedstock for sponge iron is iron ore and thermal coal. Prices of thermal coal are also rising fast because of supply disruptions. Scrap prices too are rising.

International steel prices have been rising since last year-end on the back of restocking and raw materials cost increases. "We are seeing recovery in the US, Europe and Japan. That made it possible to raise steel prices in instalment. But steelmakers are now in a Catch-22 situation. While they are not to find it easy to go on raising their prices to neutralize incremental raw materials costs, supply of coal and iron ore are not to improve in the near term," says Dilip Satapathy, metals analyst with Business Standard. The confirmation of raw materials supply side problem comes from BHP Billiton CEO Marius Kloppers who thinks that the company's profit margins will stay robust despite escalating costs, specially because iron ore prices will remain strong for as long as two years. This cannot be otherwise for two reasons: first, the Indian authorities are not allowing exports of the mineral to the country's potential even while the world demand is growing. Second, because of the global financial crisis resource companies in general held back investment in mines expansion and opening of new mines.

Indian steel secretary P.K. Misra told *DCI* that rising prices of raw materials could hit the profitability of steelmakers as the world would be seeing steel based products from automobiles to white goods becoming more expensive. He is particularly concerned about the likelihood of the competitiveness of the steel industry being compromised as a result of rising production costs. One can only speculate about the price tipping point for steel when search for alternative materials will begin.

What is, however, certain the concern about supply and prices of iron ore, coal and now also gas will lead steelmakers to seek optimization of operational efficiency through mergers. Steel guru Peter Marcus says, "mills have learned that if you are bigger you have more clout [with suppliers of raw materials and buyers of steel] and that you can be more flexible when you have to lower production." In fact, the perceived benefits of reacting to market development in the right way as was demonstrated by ArcelorMittal and JFE of Japan, groups created by mergers, when the world slipped into a recession in 2008 have once again ignited interest in capacity consolidation.

At least for once Lakshmi Mittal who last year said that "outside China, the steel industry is well consolidated. I really do not see major consolidation transactions in the steel industry, albeit there could be smaller opportunities available," has been proved wrong. For Nippon Steel and Sumitomo Metal, which between them have steelmaking capacity of 47.8mt in mutually exclusive product profiles are now seeking gaining heft through mergers. The deal likely to be completed next year will give the merged entity second place next to ArcelorMittal in the world comity of steelmakers.

The Nippon and Sumitomo merger is driven by

considerations going beyond cutting costs and fending off competition from rivals in China and South Korea. According to Nippon Steel president Shoji Muneoka, the merger will arm the new company with extra financial and management clout it

needs to build or buy new capacity overseas. "If you want to know whether we're going to invest a lot of money in domestic capacity and then export, the chances are low. We have to go out into the world," Muneoka says. Japan's steel industry is highly export-oriented. But because of a strong yen and rising raw material bills, Japanese steel companies will now be seeking production base abroad. Will the company to emerge from Nippon and Sumitomo merger be able to repeat the performance of JFE, resulting from coming together of Kawasaki Steel and NKK in 2002, in more than doubling profit margins in two years of the union?

The world is looking intently as to how China takes forward capacity consolidation programme and also weeding out

technology deficient steel mills. Mittal expects some Chinese groups to emerge through mergers with capacity ranging from 50mt to 70mt in the next few years. Chinese capacity consolidation, though frustratingly slow so far, is thankfully now gaining in pace. Last year, China's ten leading mills had a share of 48% of the country's steel production against 45% in 2009. China has an authoritarian regime. Even then the Beijing edict that polluting steel units should be snuffed out could not be carried through in many provinces because of the prevalence of graft. China is desperate that the steel industry brings down its carbon footprint in a major way. The country's concern about resources availability at reasonable costs is leading it to acquire mineral deposits in various parts of the world, especially in Africa and Australia.

China will continue to build new capacity as it will continue to rid itself of ageing capacity. "I have no doubt that as for steel, the current decade will belong to India like the past decade was all China's. Indian steel demand will be growing at a rate higher than its GDP growth rate, which is close to 10%," says Sushil Roongta who headed Steel Authority of India Limited till recently. If the Indian Planning Commission proposed investment of \$1 trillion in infrastructure development during 2012-17 and thrust on house building will create massive demand for long steel products, rapid growth of automobile and white goods industries will call for stepped up supply of flat products.

In response to the potential of the Indian market, investors have signed as many as 222 agreements with different Indian states but mostly with the ones with rich reserves of iron ore to create new capacity of 275mt. South Korean Posco is pursuing a 12mt steel complex along with a captive port in Orissa that is to bring a record single project foreign direct investment of \$12bn. ArcelorMittal wants to build at least three mega mills in India. In the meantime, all the major Indian steel groups, including SAIL, Tata Steel, JSV, JSPL and Essar are pursuing major capacity building programmes through brownfield and greenfield routes. India has targeted a steel capacity of 200mt by 2020. This will, however, be realizable provided land acquisition does not remain frustratingly slow, promised mines linkages are given to projects and environment and forest clearances do not prove to be a major hurdle.



Brazil's steel industry has record year – though imports more than doubled

Many records were broken by Brazil's steel industry last year, amongst them the fact that imports doubled to more than 6mt (million tonnes) last year, writes *Patrick Knight*.

The year 2010 was a record one for the Brazilian steel industry and, with the economy growing at close to 8%, the mills made 33mt of steel, 24% more than in 2009.

A total of 21mt of the steel made in Brazil was sold on the domestic market last year, 29% more than in 2009. It was bought by the booming motor and consumer durables industries, for civil construction, for numerous infrastructure projects — notably new railways and at ports — and by the oil industry, now preparing to develop the mammoth reserves of crude oil and gas found under a thick layer of salt 3,000 metres beneath sea level, 300km from the Brazilian coast.

But there was one record the industry would rather forget, which was that almost 6mt of steel, the majority high-priced sheet and other flat products, was imported last year.

This was almost exactly twice as much steel as had arrived in 2009, when imports formed about 10% of all the steel used in Brazil.

Last year, more than 20% of what was used came in, although not all of the imported steel has been sold. Large stocks remain, hurting some of the speculators who anticipated the bonanza would continue much longer than it did.

Despite the record imports, which cost about \$5.5 billion dollars, Brazilian mills still managed to export virtually 9mt of steel in 2010, 300,000 tonnes more than in 2009.

However, because most of this steel was lower-value slabs and other heavy basic products, to be processed into high-value products in mills in the developed world, steel exports only earned about \$6 billion last year, the same as in 2009.

Steel made in Brazil is usually sold for a premium of about 20% above the price of what is imported. The cost of transport, taxes and other charges add to the cost of the imported variety.

However, mainly because the Brazilian currency is so strong — it has gained about 40% against the US\$ in the past two years — numerous countries with surplus steel competed to export to Brazil. The suppliers were led by China, which sold four times as much steel to Brazil last year as in 2009, Russia sold five times as much, Japan sold three times as much and Taiwan sold twice as much. These countries were able to overcome the barriers and their steel was still competitive.

To compete with low-cost imports, the Brazilian mills were forced to cut prices, which has eaten badly into industry profits for 2010.

A couple of years ago, the Brazilian Steel Institute announced that mills planned to spend about \$20 billion in the next six years to add 21mt to capacity, which now stands at about 45mt.

The largest Brazilian-owned company, Usiminas, which now makes about 9mt of steel a year, had planned to spend \$6 billions on a 5mt monster mill in Minas Gerais state, close to the iron ore mines it owns and which allow it to keep prices down. Arcelor Mittal had been planning a new sheet plant at its mill near the port of Sao Francisco do Sul, in Santa Ceterina state. Other brand new mills were planned for Rio de Janeiro, Ceara and Para states. All these plans have been put on hold for the time being.

Usiminas says that rather than adding capacity, it will seek to reduce costs at its two existing mills, partly by integrating vertically, notably by becoming completely self-sufficient in iron ore, one of the trump cards of Brazil's steel industry. All the

BRAZILIAN STEEL STATISTICS

Month	Imports of steel 2009 & 2010, tonnes		Exports of steel, 2009 & 2010, tonnes	
	2010	2009	2010	2009
Jan	384,000	252,000	676,000	439,000
Feb	361,000	159,000	653,000	474,000
Mar	573,000	164,000	698,000	534,000
Apr	500,000	136,000	787,000	653,000
May	494,000	217,000	655,000	593,000
Jun	420,000	172,000	782,000	698,000
Jul	533,000	194,000	567,000	780,000
Aug	562,000	203,000	585,000	1,028,000
Sep	552,000	186,000	564,000	1,084,000
Oct	633,000	197,000	942,000	1,039,000
Nov	454,000	234,000	987,000	666,000
Dec	432,000	218,000	1,092,000	645,000
Year	2,584,000	5,898,000	8,988,000	8,633,000

Source: Brazilian Steel Institute.

mills are now trying to wean themselves off depending on the ever-more-expensive ore mined by the Vale company. This could be bad news for Vale, as when ore prices start to fall, as they inevitably will, there will be far fewer Brazilian customers to fall back on.

Usiminas says it will endeavour to get closer to customers and seek to improve efficiency, preferring to add capacity at its existing mills than adding new capacity.

In fact, the industry reckons the pressure from imported steel will be much less this year than it was last. The economies of several of the countries which exported so much to Brazil last year are recovering, as are those of several other countries which normally import steel.

Several Brazilian companies, including Usiminas and CSN, have instigated anti-dumping procedures against some exporters. The companies claim that the steel coming to Brazil was sold more cheaply than that sold in their domestic markets.

Some of Brazil's states where steel is not made cut taxes on imported steel last year, to give a helping hand to steel users in those states. This is to be stopped.

Measures seeking to prevent under-invoicing, claimed to be common last year, have also been taken.

Wilson Brummer, chief executive of the Usiminas company, said that circumstances were special last year and he feels the pressure will decline from now on.

Even so, Brummer remains cautious about investing though. He says that 35% of the steel-making capacity around the world is idle at the moment and so remains a threat. He says he does not anticipate the Brazilian currency remaining as strong as it is for ever, however, so he plans to wait.

If plans for new mills have been put on hold, last year saw the start up of the first phase of the 5mt capacity 'Atlantico' mill, in which Thyssen-Krupp has a 76% share, Vale the remaining 23%.

The Atlantico mill is located close to the town of Santa Cruz in Rio de Janeiro state, is linked by railway to ore mines in Minas Gerais state and has its own port in Sepetiba bay, from where the first shipment of slabs left for Germany in September last year.

Once a new steel mill, also being built by Thyssen-Krupp,

starts up in Alabama, 60% of the slabs from Atlantico mill will be sent to the United States, the remainder will go to mills in Germany.

The new mill expects to make 3mt of slabs in the 12 months starting last September and if all goes according to plan and the second blast furnace starts up on time, output will rise to 5mt a year in 2012.

Thyssen-Krupp mill in Alabama expects to supply sheet steel to the motor industry.

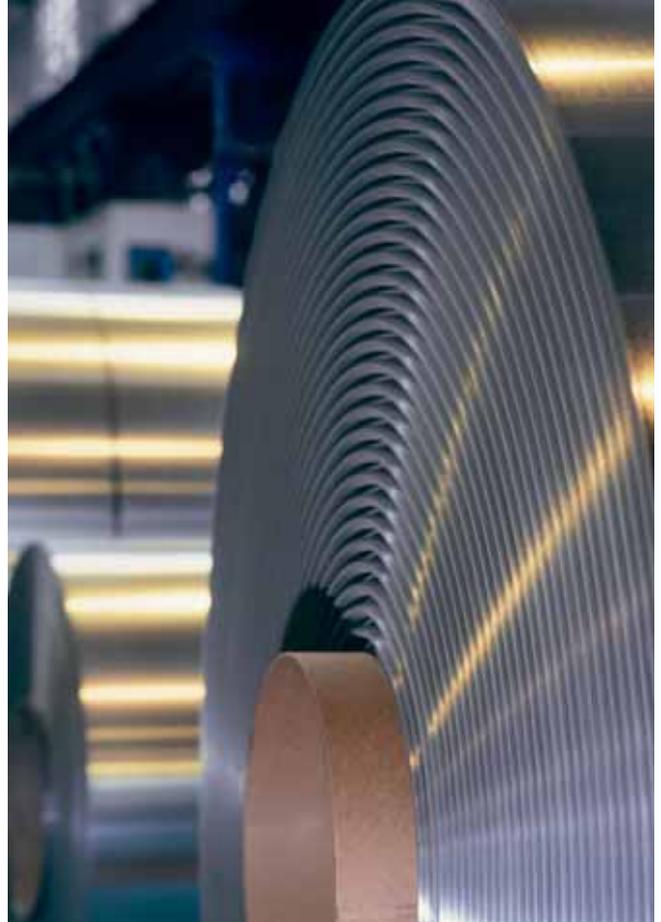
The Gerdau company, in contrast to all the other steel makers in Brazil, continues to invest heavily in the United States, and about half of the 22.6mt capacity of the company is located there.

A few weeks ago, Gerdau, which in the past 12 years has bought 19 mainly relatively small 'mini' mills, which use mostly scrap as raw material in the United States, acquired its first mill on the west coast, the 500,000-tonne-capacity Tamco mill.

This mill was an associate of the large Ameristeel company, all of whose capital is now owned by Gerdau following the purchase of the remaining stock, which Gerdau began to buy in 1999.

Gerdau anticipates benefiting from the major investments in the renewal of infrastructure in the United States where 150,000 bridges, a quarter of the total, will soon need renewal, while up to \$900 billion will have to be spent on re-building highways. Gerdau also notes that 100,000 towers will be needed for a massive programme of wind power mills.

Like the other mills in Brazil, Gerdau is moving steadily towards self-sufficiency in iron ore, and plans to raise its output of ore from the present 1.7mt to 7mt by 2012. Some of the ore will be taken by conveyor belt 7km from its mines to the



Acominas mill, which makes special steels and where investments are under way.

The overall prospects for Brazil's steel industry remain good, despite the fact that mills still have to import virtually all the increasingly costly coal they use, although charcoal is used to make pig iron and in some furnaces.

Although this year will not see a repeat of the record growth of 2010, Brazil's economy is still expected to grow at about 5%, which should mean about 8% more steel will be needed this year as in 2010.

Attracted by the strong growth in sales of all types of vehicles in Brazil, several new car companies are building new factories, or plan to and it is expected that vehicle sales will have doubled to five million units a year in five years' time.

If Brazil exports are to remain competitive, major spending on infrastructure works are essential. Although government spending is to be cut to prevent inflation from getting out of control, dozens of infrastructure projects remain intact and they will require several millions of tonnes of steel. Brazil is to host the World Cup in 2014, and the Olympic Games two years later, so tens of thousands of tonnes of steel will be needed for new stadiums, modernizing airports, build dozens of new hotels, upgrade roads, and extend railway systems. The Olympics are to be held near Rio de Janeiro, where housing will have to be built for athletes and officials.

Usiminas has recently installed equipment which will allow it to make thousands of tonnes of specially resistant steel which will be needed by the Petrobras oil company.

Petrobras is now ordering dozens of drilling rigs and production platforms, as well as several hundred ships of all types and sizes, in addition to large amounts of new pipelines and other equipment which will be needed in the next few years.

The government wants 65% of all the equipment needed by the oil and gas industry to be made in Brazil, obviously very good news for the country's steel industry.

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Unitizing bulk in steel transports: eliminating cargo damage

Serving the steel industry, Lanh Ship has developed a number of innovative cargo securing methods to ensure the safest delivery possible.

This shipping activity got the wind in its sails in 1983, when the family-owned company bought its first fully owned second-hand vessel. Since then, it has bought in total nine newbuildings and is at the moment running a fleet of five modern multipurpose ships.

“We have been watching how the steel products get more and more refined during the years we’ve been in the business”, says the managing director Hans Lanh. “We just felt that this valuable, highly processed and also vulnerable steel deserves to be carried safely and gently, and should also be loaded fast and efficiently.”

One of the first innovative solutions that Lanh Ship patented was the cradle tween-deck solution that offers a number of advantages over conventional methods of steel coil transportation.

Traditionally, coils are transported on the tank top of the ship, this low centre of gravity resulting in up to 30° of heeling and roll times as short as five seconds. Lanh Ship’s cradle tween-decks, however, allow part of the coils to be loaded just below the weather deck, therefore raising the centre of gravity. As a result, heeling is reduced to as low as 10° and rolling time increased to a more comfortable 12 seconds.

At the moment, this system is present on three of the company’s ships and on a couple of vessels owned by other shipping companies and has had a 100% success rate, with no instances of damage to cargo.

LEASING TRANSPORTATION UNITS FOR STEEL PRODUCTS

The company also offers a number of other steel transportation solutions that use a wide range of units.

The units can be divided into two; those planned for the transportation of large steel coils having cradle bottoms and containers with flat bottom.

The flat bottom containers are mainly equipped with special securing systems that ensure the safe transportation of heavy products. To this group belong the 20ft and 40ft hard open top containers, whose roofs are made very quick to manoeuvre and make the container stuffing most flexible.

To this class belongs also the 20ft side open container that brings different kind of flexibility to the stuffing.

In the cradle units there are both cassettes that are first lifted



Large steel coils can be transported on both the tank top using cradle cassettes and on the cradle tween-decks. The hold can be fully in use without a need to stow the coils in layers on top of each other.

onboard and then loaded with coils and containers that can be lifted onboard fully loaded.

When placing the steel coils into containers it brings a huge amount of flexibility into use when planning the shipments; one has in use all the normal container lines — now the small shipments also become economical.

The company has also developed many of its units to suit rail carriage. This is the case also with the 20ft hard open top cradle container:

“The cradle frame bottom has been used for some years now, but we have designed new load bars that are used for securing steel coils inside the container when the container is carried on rail”, explains Laura Lanh-Lagerlöf, the commercial manager of the company. Loading one very large coil weighing over 30 tonnes into a hard open top cradle container makes it possible to send such mother coils even by rail due to the classified securing system.

The emphasis on developed transportation solutions is on the steel, but the company has not forgotten that steel is often carried only in one direction. When returning the units to the steel port it is important that they would not have to be brought back empty.

The versatility of the containers has all the time been kept in mind. And now many of the units can be used for return cargoes such as raw materials or even for liquids transports by using flexitanks inside the containers.

EFFICIENCY BRINGS SAVINGS

“Our units bring big savings in cargo handling because the units are faster to stuff and unstuff than standard units,” says Markku Yli-Kahri, the product manager for Lanh Ship Cargo Solutions. “And of course in many cases it is not even possible to secure the heavy steel products safely into standard containers. The way I see it, it is often either the conventional bulk transportation or our solutions.”

The handling times of the cargo are in some cases calculated to be cut to 20% of the original when the Lanh Ship Cargo Solutions systems have been used. Further savings arise from the fact that the units do not need disposable securing material. — naturally, this is also good for the environment.





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Foreign steel behind PST's entry into steel handling market

Pasha Stevedoring & Terminals L.P. (PST), headquartered in the Port of Los Angeles, has roots reaching back to 1972 when the company began its automobile stevedoring operations. Today, PST, a wholly-owned subsidiary of The Pasha Group, has a strong focus on general breakbulk transportation, with specialties in automobiles, steel, containers and grain products. PST offers a new level of international maritime service through the operation of the only Omni breakbulk and container terminal in the Port of Los Angeles. The penetration of foreign steel into US markets has played a major part in Pasha's foray into the steel-handling business, leading to PST and the Port of Los Angeles achieving the number one record for steel imports on the US West Coast. PST also enlists its travelling supercargoes to aid in the loading of slab steel in several international ports to ensure safe stowage, which creates maximum productivity at the port of discharge, enables the recipient to receive a reduction in rate and damage, and guarantees on-time delivery.



2011. PST, with its dedicated work force is definitely ready to take on new business.

VARIETY OF SERVICES

In addition to its Los Angeles operations, PST also provides stevedore and terminal services in the Port of San Diego, and manages vessel loading and discharging for Pasha Hawaii, a roll-on/roll-off liner service between San Diego and the Hawaiian Islands. Pasha Hawaii's *Jean Anne* has ten decks of enclosed cargo space for vehicles, yachts, and a variety of over high and wide cargo, from construction equipment to Black Hawk helicopters. Additionally, as a stevedoring group, PST is available to provide vessel services at other facilities in addition to the terminals they already operate. Such arrangements enable PST to provide additional resources for the global maritime transportation industry, and expand their expertise to non-traditional commodities, such as bulk scrap. PST also offers

DRY BULK EXPERTISE HELPS SET RECORD YEAR

But steel isn't the only ocean cargo that PST excels in handling. In partnership with the Port of Grays Harbor, in Aberdeen WA, PST has brought its expertise to AG Processing. AGP, a farmer-owned co-operative, is the largest soyabean meal co-operative in the world. For the past seven years, Grays Harbor has been AGP's West Coast export hub for dry bulk products destined for Pacific Rim Markets, and PST has been the stevedore of choice with the 2009 award of the grain contract. The year 2010 was a record one for PST, Grays Harbor and AGP. The facility at Grays includes enclosed conveyers that transport product from the receiving building into the waiting vessels. PST's supervisors oversee the loading of the bulk agricultural products. In 2010 alone, over one million metric tons were put on board. On the heels of this record year at the Port of Grays Harbor ship loading facility AGP is increasing the storage capacity by 33%, and is in the process of constructing a total of eight silos.

ADDING VALUE TO AUTOMOTIVE EXPORTS/IMPORTS

Also in Grays Harbor, new rail expansion is taking place with a Phase 1 project allowing the port to attract new auto accounts that rely on land-bridge capability for new import and export vehicles. This will increase the number of railcar spots from 32 to 100. PST's long heritage of automotive stevedoring plays an equally important role at this deep water port. In concert with Pasha Automotive Services, whose well-trained processing personnel are in place at Grays, the vehicle stevedoring offered by PST provides a seamless operation for new vehicle manufacturers. Phase 2 will involve the creation of long-term dedicated automotive and bulk cargo rail spurs to be completed by the end of

ancillary services such as reefer and chassis maintenance and repair, sensitive cargo warehousing, and logistics management. Jeff Burgin, PST senior vice president, notes, "Moving forward, we continue to explore different avenues to further enhance our operations, increase the level of productivity and add value to our customers. Today's client is also looking for fresh ideas for handling their project cargo. PST has assisted in the design of a variety of lifting applications to reduce damage and reduce costs."

Burgin adds, "We are seeing the benefits of our training, cross-training, and investment in people, particularly in the steady labour force. Our goal has always been to identify areas of common ground with our business partners, take what we believe to be good, and create a new paradigm to shift the business to even greater levels. The customer's need is for one-stop shipping and transportation solutions, and we're there to see that it happens."

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