

# DRY CARGO International

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## **FEATURES**

- Global Fertilizer Trades FIBCs & Bagging Cement Handling
- **Belgium** Italian Equipment Manufacturers

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

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## Steam coal trade still buoyant

ncertainty about future global commodity import demand over the year ahead has intensified during the past couple of months. But there are still signs of an upwards trend continuing, despite negative influences in the industrial and agricultural sectors. Seaborne dry bulk trade volumes could evolve solidly through 2013.

A problematical economic background for world trade is underlined by the IMF's latest (early October) assessment. According to this organization "prospects have deteriorated further and risks increased". After slowing to 3.3% this year, from 3.8% in 2011, global GDP growth is expected to see only a very modest improvement to 3.6% expansion next year. And that progress depends greatly upon how the European and US economies' difficulties unfold.

#### COAL

The outlook for global seaborne coal movements in the next twelve months is one encouraging element of the dry bulk trade picture, especially for the steam coal sector. Table 1 shows key Asian importers' volumes. In many countries a growing coal consumption trend seems set to continue, with increasing dependence on imported supplies.

A few weeks ago Australia's Bureau of Resources and Energy Economics predicted that world steam coal trade could increase by 30mt (million tonnes) or 3.4% in 2013, to 909mt, from an estimated 879mt this year. A solid advance of 4.5% in Asian countries is expected to accompany slower growth elsewhere. Given the potential for additional imports into China and India, this forecast may prove conservative.

#### IRON ORE

While it seems arguable that world movements of steel industry raw materials will remain in a positive mode over the year ahead, prospects for some parts are hazy. Clearer indications of how economic developments will affect demand for steel are awaited.

An attempt at predicting how steel usage will evolve in 2013 was made last month by the World Steel Association. Forecasts for consuming countries which are key steel producers, and also importers of iron ore and coking coal,

were not entirely positive. Steel demand in China next year is estimated to grow by 3.1%, accompanied by a 2.4% increase in the European Union. Conversely, Japan's demand is expected to decline by 2.9%.

#### **G**RAIN

Signs of positive influences affecting grain trade in the current 2012/13 crop year ending June 2013 are very limited. A detailed breakdown of importing countries' likely requirements reveals only one or two significantly higher volumes. Morocco's imports could increase by 2.1mt or 38%, reaching 7.6mt, resulting from much lower domestic production in this year's harvest. EU imports may increase by 12%, to 15.4mt.

Consequently, world trade in wheat plus corn and other coarse grains during 2012/13 is forecast to decline sharply by 19mt or 7%, to 251mt, based on International Grains Council calculations. Tighter grain supplies available from exporting countries, especially the USA and Black Sea region, and higher international prices, largely explain the expected downturn in volumes.

#### MINOR BULKS

Part of the minor bulk trades sector is comprised of agricultural products and related commodities. Seaborne movements of oilseeds (excluding soyabeans) and meal, rice, sugar plus fertilizers appear to have totalled about 305mt last year, and some signs suggest a 1–2% increase during 2012, despite an expected reduction in sugar trade.

#### **BULK CARRIER FLEET**

Among bulk carrier size groups, the Capesize (100,000dwt and over) fleet is still growing at a very fast rate, although not as rapidly as seen last year (table 2). Newbuilding deliveries remain massive, possibly rising to a new record high volume in 2012. But a larger scrapping total is expected, and together with other changes could result in the fleet's growth slowing from 19% last year to 13–14% this year. In 2013 a further, much sharper slowdown could emerge.

TABLE 1: STEAM COAL	. IMPORTS IN I	KEY ASIAN CO	UNTRIES (MIL	LION TONNES)		
	2007	2008	2009	2010	2011	2012*
Japan	106.2	111.0	96.2	107.9	106.6	111.0
South Korea	71.0	80.0	87.0	95.2	103.2	103.0
Taiwan	55.7	54.7	49.2	53.2	56.0	57.0
China	44.8	34.0	92.1	119.0	138.4	160.0
India	29.0	35.0	46.0	70.0	90.0	98.0
Total of above	306.7	314.7	370.5	445.3	494.2	529.0
source: various & BSA estimates	*forecast					

	2007	2008	2009	2010	2011	2012*
newbuilding deliveries	10.4	8.6	21.0	38.6	45.6	46.0
scrapping (sales)	0.0	2.2	1.4	2.6	10.5	13.0
losses	0.0	0.0	0.0	0.2	0.0	0.0
plus/minus adjustments	0.0	5.5	6.9	3.8	4.8	1.0
fleet at end of year	131.6	143.5	170.0	209.6	249.5	283.5
% change from previous year-end	+8.5	+9.0	+18.5	+23.3	+19.0	+13.6

## **CONFERENCE SCHEDULE**

#### 13-15 NOVEMBER

Breakbulk Turkey Congress 2012

Istanbul, Turkey

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#### 15-16 NOVEMBER

Coaltrans Emerging Asian Coal Markets

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#### 20-21 NOVEMBER

3rd Coaltrans Mozambique

**Maputo** 

Mozambique

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#### 26-29 NOVEMBER

Global Grains Congress

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## 2013

#### 23-24 JANUARY

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Spain

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#### 24-26 JANUARY

Pacific Basin Coal Conference

Waikiki

Hawaii

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#### 12-13 MARCH

12th Coaltrans India

India

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#### 19-20 MARCH

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Katowice

**Poland** 

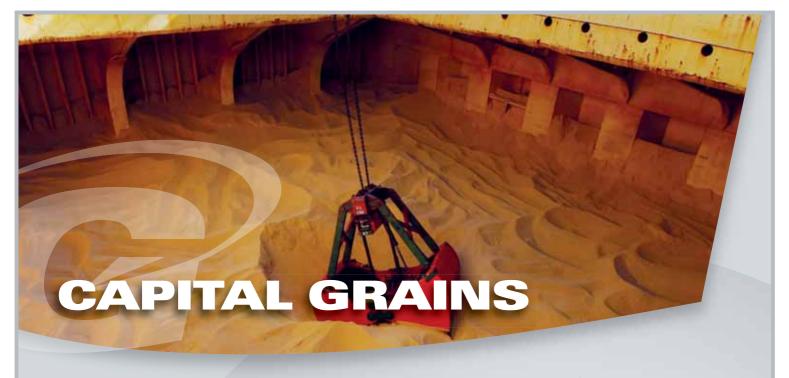
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## Another grain trade shake-up

Global grain trade is experiencing another upheaval. Dramatic reductions in recent US and Black Sea region harvests have sharply limited the volume of grain supplies available. Together with the resulting higher international prices, this abrupt change is weakening import demand in many countries. Patterns of seaborne trade and bulk carrier employment are being greatly affected.

During the past 2011/12 crop year, almost half of global trade in wheat, corn and other coarse grains was supplied by the USA and Black Sea region. In the current 2012/13 year ending June 2013, the combined share of these suppliers, within a sharply lower world total, could be reduced to about two-fifths, based on the latest International Grains Council calculations. However, some smaller exporters, including Brazil and India, may see much higher volumes.

#### **PLUMMETING BLACK SEA EXPORTS**

After suffering a huge setback in 2010/11, Black Sea suppliers bounced back in the past twelve months. Russia, Ukraine and Kazakhstan achieved a record high 60.1mt (million tonnes) of wheat and coarse grains exports in 2011/12, comprising over one-fifth of the annual world total. This notable performance is likely to be reversed by the recent summer's poor harvest.

Excessively hot and dry weather through the growing season severely damaged crop yields in many areas. The summer 2012 grain harvest in the three countries combined is estimated at 122mt, a very large 50mt or 29% decline compared with 172mt last year. Production in Ukraine and Russia was 24–26% lower, while Kazakhstan's output was more than halved.

The downturn in Russia's and Ukraine's production is especially significant for the world market, because of their key roles among exporters. In Russia wheat, which provides the largest part of foreign grain sales, was adversely affected by drought in southern producing areas. Ukraine's wheat crop was also affected, but the country's corn output, providing a large proportion of grain exports, benefited from a higher planted area which partially offset yield losses.

Latest (end October) forecasts by the IGC suggest that the three Black Sea suppliers will export 39.6mt wheat and coarse grains in the current 2012/13 year, a 20.5mt or 34% fall from the previous twelve months. Russia is expected to see the most dramatic decline of well over half, reducing its volume from 27.2mt, to a low 12.6mt.

## FALLING US EXPORTS

A devastating drought in the USA this year has greatly restricted grain output and also cut soyabeans production. In 2011/12 US exports of wheat plus corn and other coarse grains comprised well

over one-quarter of the world total, at 72.5mt. In the current year a sizeable decline is forecast, but the market share may be similar because global trade is likely to be proportionately lower.

Although the US crop growing season began well, extreme heat and drought were features during the 2012 summer period. However, wheat, which is mostly harvested earlier than other crops, experienced generally favourable weather resulting in increased production. The much larger corn crop was damaged by insufficient rainfall and abnormally high temperatures, cutting output by over one-fifth.

Availability of US grain for foreign sales in 2012/13 consequently has tightened. Wheat exports are still expected to rise, by about 10%, reaching 30.8mt but corn and other coarse grains exports may be 28% lower at 32.3mt. The overall total, according to the IGC, could be 13% down at 63.1mt.

But the global grain supply outlook is not completely negative, despite a possible decrease also in Australia's sales, assuming lower production in the harvest starting soon. One previously minor supplier, Brazil, is becoming more prominent with grain (mainly corn) exports estimated to double in 2012/13, reaching 20.3mt. Also, a surplus in India could boost grain exports by 45%, to 7.1mt.

#### GLOBAL GRAIN IMPORT DEMAND HIT

During the past twelve months a strong surge in global wheat and coarse grains trade unfolded. The total rose by 28mt (11%), reaching 270mt. Bulk carrier employment, and activity in many grain loading and discharging ports around the world, was boosted. This progress is set to be substantially reversed in 2012/13, when IGC estimates suggest a 19mt (7%) reduction to 251.0mt could emerge.

Import demand probably will be widely affected by tighter supplies and higher prices, while other factors are evident as well. In several instances improved domestic production of grain within importing countries is enabling foreign purchases to be reduced.

A prospective reduction in China's grain imports can be related primarily to slightly better domestic output this summer. The country's 2012 estimated wheat and coarse grains harvest is about 7mt (2%) higher, at 326mt. Although consumption for both food and livestock feed is on a solidly rising trend, imports in 2012/13 may be almost halved to 5mt.

Elsewhere, the negative impact of higher costs for foreign grain supplies will be a more visible influence. Imports into the Middle East area are expected to be about 11% lower at 40.0mt in the current crop year, including a sharp decline in Iran's volume. North Africa's imports may be lower, by about 4%, to 37.0mt, mainly reflecting a large reduction in Egypt. The Sub-Saharan Africa import volume also could be reduced by 12%, to 18.3mt. *Richard Scott* 

GLOBAL WHEAT & COARS	E GRAINS EX	CPORTS (MI	(MILLION TONNES)		
2007/08	3 2008/09	2009/10	2010/11	201	

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13*
Argentina	26.9	22.3	20.0	26.1	31.7	31.5
Australia	11.3	18.4	18.0	23.2	30.2	26.3
Canada	22.6	22.2	21.4	21.0	21.7	23.6
EU-27	15.6	30.0	23.6	28.1	21.9	20.9
Russia	13.4	23.1	22.0	4.3	27.2	12.6
USA	104.6	77.7	79.4	87.7	72.5	63.1
Ukraine	3.9	24.9	21.0	12.2	21.5	19.8
others	41.1	30.9	34.9	39.9	43.4	53.2
World total	239.4	249.5	240.3	242.5	270.1	251.0

source: International Grains Council 25 Oct 2012 \*forecast July/June crop years

## IEA Clean Coal Centre reports on seaborne coal trade

Impacts of seaborne trade on coal importing countries – Pacific market, CCC/202 by Paul Baruya is the latest report from the IEA Clean Coal Centre.

In recent years, there has been a convergence of international trade with traditional domestic markets. As imports continue to increase in many coal producing regions, the influence of trade on domestic markets has been twofold. Firstly, imported coal displaces domestic production and, secondly, international price trends may drive prices of what remains of the indigenous market for coal.

While international trade does not provide any additional benefits in terms of reduced  $\mathrm{CO}_2$  at coal-fired power stations, importing coal provides many benefits, such as cost savings, improved coal quality, enhanced supply diversity, and often fills a gap which domestic supply is unable to fulfil. This report examines how coal markets have evolved over the decades with utilities and heavy industry moving away from their seemingly secure yet captive markets of domestic coal to procuring more supplies from the international market to satisfy the need of cost reduction and better and consistent quality of fuel product. The various factors that have led to a rise in popularity of seaborne traded coal, and the future of domestically produced coal in the Pacific market are discussed.

This is one of three reports which examine the changing



trends in coal imports over the long term in three geographical regions: a global perspective, the Atlantic market and the Pacific market.

The IEA Clean Coal Centre is a world-renowned expert on the clean and efficient use of coal worldwide, particularly clean coal technologies, and it diffuses its information in a balanced and objective way, without political or commercial bias. Its products include in-depth topical reports, literature reviews and online databases. It also provides advice, facilitates R&D networks and organizes workshops and conferences. It is funded by member countries and industrial sponsors so its analysis stays impartial.



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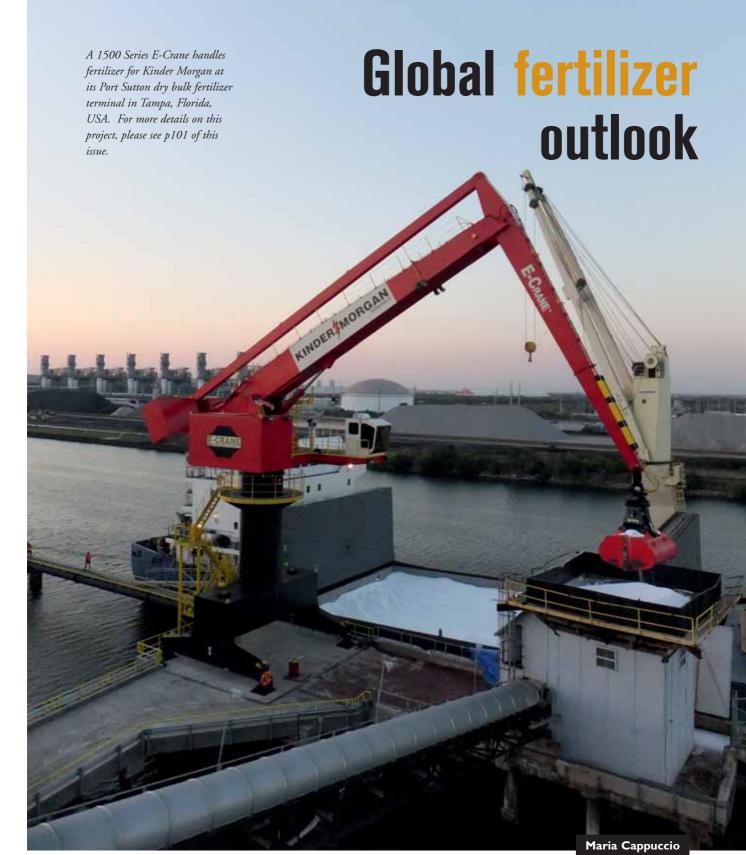
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In the latest assessment of prospects for the global economy, the International Monetary Fund (IMF) concluded that uncertainty weighs heavily on the outlook. They suggest a key reason is that policies in the major advanced economies have struggled to rebuild confidence in medium-term prospects; while risks such as the viability of the euro area and US fiscal policy mistakes, continue to preoccupy investors. The IMF project global growth at 3.6% in 2013, weaker than previously forecast with output expected to remain sluggish in advanced economies but still relatively solid in many emerging market and developing economies. Poor results from blue chip companies and weak demand increased anxiety about a potential slowdown, that

added to macro-economic woes and sent stock and commodity prices tumbling, as investors fled from risky assets, to the safety of Treasury bonds. With stocks poised to dip further, a survey from China's manufacturing sector provided a tiny spark, which helped revive the prices of many asset classes, including commodities.

## FAO BACKS AGRICULTURAL CO-OPERATIVES TO IMPROVE FOOD

Sharply reduced cereal supplies in the wake of a severe drought in the US and in other key producing regions and higher commodity prices, well above those seen in the last five years,

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FERTILIZER PRICES \$ PER TONNE FOB 2008-2012									
	2012	2012	2011	2010	2009	2008			
	0ct	0ct	0ct	0ct	0ct	0ct			
	Wk5	Wk2	Wk2	Wk2	Wk2	Wk2			
Urea	\$	\$	\$	\$	\$	\$			
Baltic	387	425	490	340	295/233	520/50			
Persian Gulf	425	460	502	360	210/215	480/620			
Ammonia									
Yuzhny	645	650	640	415	295	820/840			
Tampa CFR	720	715	650	465	330	931			
Middle East		705							
Ammonium Sulphate									
FSU	205	220	_	_	_	205/210			
Diammonium Phosphate	e								
North Africa		573	677	573/575 <sup>1</sup>		-			
US Gulf	545		635	570/575 <sup>1</sup>	480/299	1,068/1,072			
<b>Triple Super Phosphate</b>									
North Africa	_	485	565	460/463 <sup>1</sup>	_	1,079 <sup>1</sup>			
Muriate of Potash									
Baltic	_	_	_	_	_	_			
Vancouver	420/450	490	590	420	490	830			

Source: Compiled from Fertilizer Week, Fertilizer Market Bulletin, Profercy/ Monthly average — Sep.

brought the issue of food price volatility and the need to improve food security, into sharp focus. With a growing global population of over seven billion people, driving the demand for food, the UN's Food and Agricultural Organization (FAO) theme for World Food Day this year, 'Agricultural Co-operatives', was chosen as a way to help improve food security by providing support and investment to farmer and producer organizations. The FAO hopes that by getting smallholders organized in cooperatives allows them to increase food production and to market goods, create jobs and increase livelihoods, in all agricultural sectors, including agro-industries and fisheries. Referring to the recent report on the global 'State of Food Insecurity' (SOFI), FAO Director General-General José Graziano

GLOBAL FERTILIZER USE							
	190	51–2016/17 r	nt Nutrients				
	Nitrogen	Phosphate	Potash	Total			
1961/02	11.6	10.9	8.7	31.2			
1970/01	31.8	21.1	16.4	69.3			
1980/01	60.8	31.7	24.2	116.7			
1990/01	77.6	36.0	24.6	137.8			
2000/01	81.2	32.5	21.9	135.6			
2001/02	82.9	33.4	23.0	139.3			
2002/03	85.1	34.1	24.7	143.9			
2003/04	87.1	35.2	25.5	147.8			
2004/05	90.2	37.5	25.6	154.7			
2005/06	93.2	37.0	26.3	156.5			
2006/07	97.4	38.1	26.9	162.4			
2007/08	100.5	38.4	28.9	167.9			
2008/09	97.7	33.7	23.4	154.8			
2009/10	101.9	37.5	23.5	162.9			
2010/11	104.1	40.5	27.6	172.2			
2011/12e	108.2	41.0	27.7	177.0			
2012/13f	109.8	42.2	29.4	181.4			
2016/17f	114.7	45.4	32.7	192.8			
Source: International Fertilizer Association							

Da Silva, acknowledged that although some progress towards reducing hunger had been achieved, more work was necessary, as nearly 870 million men, women and children, go hungry every day, the situation being worse in Africa and in the Near East.

#### STRONG INCENTIVE FOR FERTILIZERS SLOWED BY MACRO-**ENVIRONMENT UNCERTAINTY**

The economic incentive for farmers to increase food production and to replenish grain stocks remains strong, and when allied with the need to improve crop yields around the world, typically drives fertilizer demand. Yet, as this season unfolds, the speed and magnitude of response has varied by market, with macroeconomic uncertainty, weighing on decision-making. In the US and Brazil, a number of farmers are responding more quickly to the opportunities, driving strong demand for all fertilizers; in the EU a more cautious approach has been adopted, while regions with more government involvement and less-developed agricultural economies — and lagging yields — are seen moving more slowly, disrupting typical demand patterns.

Earlier in the year, the International Fertilizer Association (IFA) forecast fertilizer demand to grow by a modest 2.5% to 181.4mt (million tonnes) Nutrients in 2012/13, similar to last year but well below the record in 2010/11. Potash (K) demand is forecast to increase by 6% this year, while growth rates for Nitrogen (N) 1.4% and Phosphate (P) 2.9% are seen as more moderate; demand is expected to rise in all the regions, with the largest gains in South Asia.

In the medium term while the agricultural outlook is expected to stimulate fertilizer demand, high volatility could result in significant year-on-year variations, with demand projected to reach 192.8mt by 2016/7, with the highest growth rates found in regions with recovering agriculture like North America, Eastern Europe, Europe and those with large potential to increase agricultural production such as Latin America and Africa. During the next five years, East Asia, South Asia and Latin America are expected to account for 75% of increased demand.

## CEREALS AND OILSEEDS - PRODUCTION, USE & STOCKS 2011/12-2012/13 MT

	Prod	Prod	Use	Use	Stocks	Stocks
	11/12	12/13	11/12	12/13	11/12	12/13
Wheat	696	653	696	678	198	173
Coarse grains	1149	1110	1149	1129	165	146
Rice	465	465	458	469	106	102
Total Cereals	2310	2228	2303	2276	472	421
Oilseeds	438	458	391*	389*	64	64

Source: USDA-mainly harvested Jul-Dec/ food feed industry/\*oilseed crush

#### ANALYSTS REMAIN BULLISH ON FERTILIZER PROSPECTS

Rabobank's Food & Agribusiness Research and Advisory Group, expect farmers to take advantage of higher prices and ramp-up plantings for the 2013 crop, to compensate for the dismal harvest and dwindling global grain reserves. This is a view supported by Dow Chemical, which became the second US chemicals conglomerate to report agriculture as one of the few highlights of a poor operational picture, which is forcing hundreds of job cuts. The US chemicals group, said that its agricultural sciences division achieved an 8% rise, to \$1.30bn, in sales for the (Jul-Sep) quarter boosted by solid industry fundamentals. Elevated farm income levels providing strong incentive for farmers to maximize yields, as they reported a particular increase in sales of seeds up by 21%, while sales of agrichemicals rose 6%, driven by significant volume and sales gains in Latin America, forecast to significantly increase sowings to exploit high crop prices.



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#### PRICES MOVEMENT REMAINS MIXED ACROSS THE FERTILIZER SECTOR

While the sharp cut in global grain supplies and tight global inventories are expected to stimulate global fertilizer demand, price movements across the fertilizer complex at the start of the (Oct-Dec) quarter are mixed. Global urea prices 10-13% softer than in the previous quarter, and even with cut-backs lack of demand for potash and phosphate is evident and all global nutrient prices remain well short of the historic highs witnessed in 2008. China's low export tax window for phosphate combined with production cutbacks in some regions kept markets relatively balanced. Following the severe drought, which affected large swathes of the Midwest, US fertilizer demand is expected to rise as a result of better returns from crops, through higher grain prices and insurance payments, which will be a key factor in autumn/spring application windows. Some analysts believe that despite record prices some farmers may opt to skimp on crop nutrients because low yields and the interrupted growing season may have left phosphate and potash fertilizer in the ground. Based on overall market fundamentals, Rabobank forecast global fertilizer prices will remain relatively steady through to the end of the year, but with some upside potential.

#### WEATHER-RELATED ISSUES IN LATIN AMERICA CONTINUE TO PLAGUE 2012 HARVEST

While the planted area for wheat and coarse grains rose by almost Im/ha, drought and other weather related issues in several of the world's key agricultural regions severely impacted this year's corn, soyabean and wheat crops — the USDA's provisional forecast for 2012 harvest is 2.2Bn/t, a huge 82mt below last year, with all crops expected to be subject to further downward revision. Hope that Latin America would produce a bumper corn crop, to ease pressure on supplies and prices, have been upset. Persistent hail, rain, waterlogging and flooding, has landed much of Argentina and southern Brazil with excessive rain, while leaving many central and northern parts of Brazil with too little moisture. Argentine corn sowings were said to be 38% complete, some 20 points behind last year, with the slow rate of seeding becoming a big issue. While some analysts suggest it is too early to make meaningful projections, Buenos Aires-based economist and agricultural consultant Manuel Alvarado Ledesma, expects Argentine's corn crop to drop from an anticipated 28mt to 22mt.

Brazil and Argentina, were also expected to produce record soyabean crops, but recently Michael Cordonnier, of Crop Advisor, trimmed his forecast for Brazil to 80mt, from 81-83mt; while Oil World cautioned, "...there is now a higher risk that initial estimates of a sharp increase in South American soyabean production will not fully materialize." Lower global output of cereals and oilseeds, even with a fall in consumption, is forecast

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CEREAL EXPORT PRICES US \$ FOB PER TONNE 2008-2011						
	2012	2012	2011	2010	2009	2008
	Oct	Oct	Oct	Oct	Oct	Oct
	Wk5	Wk2	Wk2	Wk2	Wk2	Wk2
	\$	\$	\$	\$	\$	
US Wheat No 2 HRW	378	368	294	298	202	264
Corn No 2 Yellow (Gulf)	322	316	279	254	173*	184
Sorghum (Nola)	307	311	262		169	160
Soyabean No 2	601	581	488	476	399	388
Argentina (up river)						
Wheat	3301	300*	_	_	_	_
Corn	290	294*	_	_	_	172
Soyabean	594	584	491	473	392	387
Thailand B (Bangkok)	560	563	_	_	_	_
Rice White 100% 2nd grad	le —	618*	616	497	537	676–734
Rice Broken Al super	_	497*	_	_	_	423
Source: FAO IGC USDA — Prices are based on indicative quotations.						
Necochea Port Jan/Feb <sup>I</sup> *Monthly average — Sept						

to outstrip supply taking thin global stocks, especially corn to historic lows. In the US, the largest corn consuming country, stocks have tightened further with the corn stocks-to-use ratio expected to fall below 6%.

#### WHEAT, CORN AND SOYABEAN PLANTINGS FORECAST TO **INCREASE IN 2013/14**

Early indications suggest winter wheat planting in the northern hemisphere is already well advanced under generally favourable weather conditions-some concerns have been flagged in North America and in the Volga River area in Russia, where persistent dryness resulting in a lower planted area/ poorly established crop. Elsewhere Russian farmers are said to have raised sowings of winter crops to 16.8m/ha, while spending more on inputs, seed and fertilizer. The willingness to invest reflects the greater returns on crops that growers are receiving, given Russia's decision to avoid imposing a ban on exports, which has helped to keep domestic prices exposed to higher prices on the international market. The International Grains Council forecast the global wheat area 2% higher for 2013/14, driven by rising futures and firm cash prices and a projected recovery from the weather-related damage to crops (CBOT Wheat Dec \$8.67/bu -31 Oct).

US growers are forecast to plant 80m/acres to soyabeans and 97.5m/acres to corn in 2013, higher than last year and the largest corn acreage in 75 years. High corn futures prices and firm cash prices have driven corn area expansion in the US and in competitor countries like Brazil, Argentina and Ukraine. With corn and soyabean prices rising on reports of extreme weather conditions, expected to significantly cut output in South

America, and also China's soyabean crop now thought to be below 10mt, and likely to increase soyabean imports by 5mt to 65mt in 2012/13. The additional uncertainty next spring about the availability of specific seed types, acreage, feedlot placements, the export pace and ethanol policy heightens the pressure on buyers to extend coverage before next spring. Corn futures CBOT Corn Dec 12 - \$7.46 (Oct 31), and soyabean prices strengthened CBOT Soyabean 13 Jan - \$15.426/bu (31 Oct).

#### IMPROVING NITROGEN DEMAND TO ABSORB INCREASED SUPPLY

The current low-cost environment resulting from the boom in shale gas that led to a historic fall in US gas prices has been of great value to the nitrogen sector and to companies like Agrium, who derive 50% of its income from the nitrogen sector. Since last year the share prices in Agrium rose to NYSE \$105.69 - 31 Oct (\$67.55). The International Fertilizer Association (IFA) forecast global nitrogen capacity to expand by 17-25%, with improving demand to absorb short-term increases in supply.

#### **A**MMONIA PRICES DRIVEN BY PRODUCTION CUT-BACKS

Prices of ammonia firmed in September \$630-650/t in response to gas production cut-backs in Trinidad (down by around 25%), reduced supply of ammonia from Iran due to international trade sanctions and lack of vessel insurance further curtailing exports. While DAP (diammonium phosphate) producers have been strong buyers of ammonia, muted demand for their product this year in Southeast Asia and limited interest in South America. US domestic ammonia prices were flat at NOLA through September but firmed at interior terminals with prices up from \$780 to \$790/t. But little activity was evident, late October, in

GLOBAL NITROGEN SUPPLY/DEMAND
2012-2016 MT N

Fertilizer	2012	2013	2014	2015	2016
rertilizer	2012	2013	2014	2013	2010
Nitrogen capacity	169.0	174.3	176.5	189.2	189.4
Nitrogen Supply	140.8	146.4	149.7	158.4	162.2
Nitrogen Demand	137.3	139.6	141.9	143.8	145.6
Of which fertilizer use	109.5	110.8	112.1	113.2	114.4
Global Nitrogen balance	e +3.5	+6.8	+7.8	+14.6	+16.6

Source: IFA — data N/t basis

### **GLOBAL UREA SUPPLY/DEMAND 2012–2016 MT UREA PRODUCT**

Fertilizer	2012	2013	2014	2015	2016
Urea Capacity	192.4	202.8	207.4	224.3	226.1
Urea Supply	165.9	173.7	180.3	189.7	195.0
Urea Demand	162.3	165.9	170.0	173.8	176.1
Of which fert'r demand	143.3	146.2	149.4	152.7	154.4
Balance	+3.5	+7.9	+10.3	+15.9	+19.0
Source: IFA- Data mt Urea basis					

## GLOBAL POTASH SUPPLY/DEMAND 2012-2016 MT K<sub>2</sub>0

Fertilizer	2012	2013	2014	2015	2016
Potash capacity	46.2	49.8	52.7	58.4	61.4
Potash supply	40.2	43.5	45.7	48.6	52.8
Potash demand	32.2	33.8	34.8	35.7	36.6
Of which fert'r demand	28.4	30.0	31.0	31.7	32.6
Global potash balance	+8.1	+9.7	+10.2	+12.9	+16.2

Source: IFA-Data K<sub>2</sub>0/t basis

UAN and ammonia and prices were flat. Internationally, one sale in the Black Sea showed continued strength in world ammonia values. The IFA forecast, global ammonia capacity could increase by 17% to 230.4mt NH3 in 2016, suggesting a surplus of 16mt N by 2016, but delays and slower growth would cut the surplus to 10mt roughly 6% of potential supply.

#### UREA PRICES FALL ON LACK OF INTEREST IN KEY AREAS

The sharp price run-up for prilled urea, has given way to limited interest in all major areas — FSU prices have stalled with buyers reluctant to consider offers near \$400/t FOB (free on board) Black Sea/Baltic. While small deals have been concluded at \$402-405/t FOB Yuzhny for top-off tonnage, larger tonnage will be significantly lower. Current prices are said to be too expensive in Asia, while India's next tender (31 Oct) is expected to be dominated by Chinese and Iranian urea, at prices well below \$390/t FOB for Black Sea origin.

Chinese granular urea sold for Oct/Nov shipment at \$411/t FOB but, suppliers are seeking much higher levels for future movement from bonded store. In the West granular prices are largely flat. Egypt's latest sales tender resulted in just a small sale of 6,000/t at \$462/t FOB.

The important US market has drifted lower as urea imports pile up at the Gulf. With soft urea prices, buyers are not prepared to move large volumes with the spring season months away, and lower traded values evident for Nov \$410–413/st FOB, Dec \$420/st FOB and Jan \$425/st FOB. In Brazil many observers have flagged port hold-ups and improved working conditions for truck drivers, as hampering fertilizer trade, while buyers remain ever cautious over likely price developments. In the UK demand remains slow due to a rain-soaked autumn sowing period.

Yara International confirmed that urea prices at an average of \$383/t were down 21% year-on-year, but flagged supportive factors to the market from setbacks to fresh global manufacturing capacity in Egypt and Algeria in particular. While global capacity was set to rise by 2.6% in 2013, ahead of annual growth in demand, which averages 2.1%, further capacity delays are evident compared with these estimates. Overall, projects due for 2012 and 2013 completion remain behind schedule. And while several new plants are being planned in North America, for completion in 2015 and beyond, most of these projects are at an early stage with significant uncertainty linked to financing and permit hurdles.

Over the next five years, the IFA forecasts global urea demand for all uses to grow by 2.4% per annum to 176mt, with market moving from relatively tight, to a growing surplus over 19mt by 2015/2016, with much of this increase reflected in the massive capacity addition, that is planned in India in 2015/16; although the forecast, recognizes the potential for much slower growth, which would cut the potential surplus to 12mt.

### GLOBAL PHOSPHORIC ACID BALANCE 2012–2016 MT P<sub>2</sub>0<sub>5</sub>

Fertilizer	2012	2013	2014	2015	2016
Phosphoric acid capacity	53.3	56.2	58.1	59.4	61.3
Phosphoric acid supply	44.3	45.9	47.4	48.8	49.8
Phosphoric acid demand	42.5	43.8	44.7	45.5	46.2
Of which fert'r demand	36.7	37.6	38.3	39.0	39.7
Global balance	+1.8	+2.0	+2.7	+3.3	+3.6

Source: IFA-Data P<sub>2</sub>0<sub>5</sub> tonnes basis

## FLAT PRICING AND LACK OF DEMAND INCREASE POTASH STOCKS

Despite higher returns from key crops, flat pricing and lack of demand have added to potash stockpiles that were already higher than normal. PotashCorp, the world's biggest fertilizer company reported disappointing third-quarter results blamed on delays in signing new supply contracts with China and India two of its most important offshore customers, and led to a drop in share values (NYSE \$40.31 - 31 Oct), despite record sales to the North American market over the same period of Imt, as post-drought, farmers address soil nutrient requirements. Elsewhere, sales to the world's top potash importing countries-China accounted for only 12%, India 5%, where new supply contracts are not expected until late December/early January; other Asian countries accounted for 41% and Latin America 32%. In the first nine months of 2012, Canpotex (the sales arm for PotashCorp, Agrium Inc and Mosaic Co) shipped 5.9mt of potash, some 20% down year-on-year.

#### PLANT CLOSURES TO HELP BALANCE SUPPLY

Even with higher crop prices providing farmers with plenty of motivation to increase fertilizer applications, and strong US and Latin American potash shipments, the potash market remains soft and relatively slow. Russian producer Uralkali Belarussian Potash opted for plant closures as did PotashCorp with Rocanville and Lanigan mines in Saskatchewan to be closed for eight weeks, as the industry grapples with large supplies. While the closure removes about 1mt, it follows previous cuts in production that removed about 2.1mt. PotashCorp continues to bet on much higher demand in the future, and is investing in massive production expansion that will take its capacity to 17.1mt by 2015, in sharp contrast to the company's current production cut-backs. But according to the company's CEO, Bill Doyle, this is not a new phenomenon, '... growth has often occurred in uneven waves, with increases in demand sometimes punctuated by periods of contraction...'

While discussions with China are on-going, shipments are expected to resume by the end of the year. China was said to have met its recent potash needs through a mix of domestic production, stock draw-downs and rail deliveries from Belarus, but unlikely to rely solely on these sources long-term. The need to boost stocks in the future may even lead, to increased sales to this market in 2013. By contrast, the outlook for renewing the Indian contract is more complex — PotashCorp says the Indian government has a fertilizer subsidy program that favours nitrogen over potash, which has created price distortions in the market, encouraging farmers to apply too little potash. The cut in fertilizer subsidy by the Indian government, combined with an inflated rupee has left many Indian farmers unwilling to pay higher prices for potash. While PotashCorp has cut its estimate for potash shipments in 2012 to 7.6–8.3mt, it remains upbeat on

DC:

the long-term prospects. Overall, global potash shipments are expected to fall by 2mt to 53mt in 2012. Both Mosaic and PotashCorp see a rise in potash purchases from Indian and Chinese buyers by end year or early in 2013 at prices c. \$420/t and \$450/t.

According to the IFA, despite slippage of 6–18 months for some projects, near 40 potash projects are expected to come on stream by 2016, increasing capacity by over 15mt  $\rm K_20$  to 61.4mt K20, mostly in North America (largest supplying region), Eastern Europe and Central Asia; supplies are expected to grow by 37% to 52.8 mt K20, while demand is forecast to increase by 3% per annum to 36.6 mt K20.

## PHOSPHORIC ACID CAPACITY TO INCREASE IN CHINA, MOROCCO AND BRAZIL

While large phosphate rock supply emerging in Africa and East Asia in the near term expected to grow by 43mt to 256mt in 2016. Rock phosphate prices have stabilized in recent months after some volatility mid-year, but prices have grown steadily from May–September to \$185/t. Phosphoric acid capacity will increase in China, Morocco and Brazil, with global capacity growing by 4% per annum to 61.3mt P<sub>2</sub>0<sub>5</sub> in 2016. Global

supply is projected at 49.8mt  $P_2O_5$  with demand to rise to 46.2mt  $P_2O_5$ , leaving a small global phosphoric acid surplus of 3.6mt  $P_2O_5$ . Should projects be delayed this surplus would fall to 2–2.5mt  $P_2O_5$  2012–2016

#### INDIAN DAP SALES HIT BY GROWER PREFERENCE FOR UREA

Global capacity of the main processed phosphate fertilizers would reach 47.6mt P<sub>2</sub>0<sub>5</sub> in 2016. Large capacity increases will occur in China, Morocco and Brazil. Mosaic's North American phosphate output dropped 9.1% to 2mt while sales were 16 percent lower at 2.7mt. With limited interest in sales of DAP in South America and lack of sales to India, where relatively higher prices of more complex P&K fertilizers have been cut as farmers opt for lower cost urea. Poor third quarter results were reflected in a dip in Mosaic's share price on the NYSE \$52.37 -31 Oct (\$55.20 - Oct 11). Jim Prokopanko Mosaic's CEO, expects the market for phosphates, to continue to be "tight" but looks to an improvement in product sales as the season progresses. Phosphate prices nearby were unchanged with barges around \$545/FOB NOLA (19 Oct), with more pronounced down-side pressure on the market, with DAP offers for 13 Jan said to be under \$500/t FOB NOLA.

## **Nutritional security vital to India's future**

The importance of agriculture to the Indian economy will be understood from its nearly 15% share of gross domestic product and the sector providing employment to close to 60% of the population, writes Kunal Bose. The country has got about 128m hectares under foodgrains, 28m hectares under oilseeds, 5.2m hectares under sugar cane and 12m hectares under cotton, jute and mesta. All these besides, India — the world's second largest producer of tea after China — has got vast tracts of land under plantation crops, including coffee, rubber and the whole range of spices. Food security for over a billion people is a challenge, calling for the agriculture sector growing at least 4% annually. This, however, is not happening most of the times. In fact in 2008–08, the farm growth rate fell into negative zone of -0.1%. No wonder the government is keen to create conditions for the launch of a second green revolution which, apart from cereals, should also touch oilseeds, pulses and fruits and vegetables. Being a leading emerging nation, it is time India started talking seriously about nutritional security.

The challenge is multi-dimensional and the next breakthrough

in farm production will depend much on India's capacity to use fertilizers in right quantity and maintain at the same time a correct balance in application of nutrients like nitrogen, phosphate and potash (NPK). To get the best results from use of fertilizers, it is absolutely essential to very substantially raise the irrigation potential from the present about 110m hectares. Many farmers engaged in growing oilseeds in marginal lands complain of major setbacks in production in a bad monsoon year and investments in fertilizers go waste, they being denied the benefit of irrigation. According to the government's latest Economic Survey, only a little over a quarter of land under oilseeds has irrigation support.

Feedstock shortages like natural gas, notwithstanding recent discoveries of

Krishna-Godavari gas, is standing in the way of Indian fertilizer capacity expansion through brownfield and greenfield routes. While India already has a fairly large production base for ammonia-urea, it does not have much to show for phosphate and potash since raw materials for such nutrients are not locally available. The Economic Survey says, "India is meeting 85% of its urea requirements through indigenous production. But it depends heavily on imports for its phosphatic and potash fertilizer requirements." Depending on land under various crops and nutrient requirements of land during a crop year, India will be importing annually over 6mt (million) tonnes of urea and diammonium phosphate (DAP) each and over 5.5mt of muriate of potash. Even after domestic production of over 21.5mt of urea, 4m tonnes of DAP and 9.2mt of complex fertilizers supplemented by imports, the Indian per hectare consumption of fertilizers in nutrient terms remains less than 150kg per hectare. This not only compares rather poorly with countries where farm productivity is high but fertilizer use here is tilted much in favour of urea.



Agriculture economist Suresh Srivastava says, "we are living in times of globalization and India is in the forefront of free trade and cross border investment campaign. The country has shortages of raw materials needed to make fertilizers. At the same time, Indian groups have rich experience in building and running fertilizer complexes over decades. This should be leveraged to create offshore capacity where natural gas and other raw materials are available aplenty." Some Indian fertilizer producers have already built plants in the Middle East and Africa and also acquired mines for sourcing phosphate and potash, in partnership with local groups. A more successful such venture is Oman India Fertiliser Co which is half owned by Oman Oil Company and the balance in equal proportion by two Indian cooperatives IFFCO and Kribhco. It is no brainer that it is much easier to import urea than gas. This will explain why more and more Indian fertilizer companies are keen to build capacity

India has now set its eyes on Mozambique, which has discovered huge gas reserves totalling an estimated 100 trillion cubic feet showing potential to emerge as the world's fourth gas rich country after Russia, Iran and Qatar. New Delhi is holding proposals to build fertilizer plants in Mozambique provided it gets gas allotment at concessional rates. Rashtriya Chemicals & Fertilisers, an Indian group, will be keen to build a complex with capacity of 1.2mt of urea and 650,000 tonnes of phosphate. The project calls for an investment of \$2bn. India is awaiting a reply from Mozambique asking for an indicative price for gas for it to decide investments in downstream projects, including fertilizers and petrochemical projects.

As India makes the bid in Mozambique, it is aware how well entrenched China is in Africa, leaving the US and Europe well behind in acquiring resources. At the same time, Indian peregrination, stoked by the need to own capacity abroad and thereby not play in the hands of international trading houses has led IFFCO to plan develop a 1.2mt urea plant in partnership

with a Canadian agriculture co-operative. The plant is to be commissioned by 2017.

Though no formal announcements have been made, it is understood that some Indian groups are scouting for medium-sized potash deposits in Canada for development into mines. India has no potash deposits but it has growing requirements of potash. China and India are among the world's largest importers of potash from Canada and both are now facing major procurement issues. The two countries buy the nutrient through contracts that are generally renewed annually. Annual contract prices are then taken as benchmark for spot sales. The US and Brazil mostly buy their requirements in the spot market. Indian importers are piqued that Canadian producers hand in glove with trading houses have set potash prices too high forcing them as also Chinese importers to postpone buying at least till December. It is a case of hiking prices because of strong demand.

"You can't have it both ways — high demand leading to high prices. We are, therefore, seeing demand destruction," says an observer. Neither China — which is sitting on comfortable reserves from which the nutrient is drawn in the absence of imports — nor India, which will have a fair idea of its requirements once the crop growing season wraps up in December, is in a tearing hurry to enter the world market for potash.

The fall out of absence of China and India as buyers is Potash Corporation of Canada temporarily shutting down two mines Lanigan with capacity of 3.3mt and 2.7mt Rocanville in Saskatchewan. An Indian official makes it clear that "we will need to pay significantly less than the \$490 a tonne we paid for the last contract. Demand for potash in India has turned soft because of combination of high import prices, a weak rupee and a cut in fertilizer subsidy." The message for China and India is they should go all out to buy potash deposits wherever these are available.

## Growing soya and sugar demand behind demand for fertilizer in Brazil

Fast-growing demand for soya and sugar, amongst other crops, is pushing up demand for fertilizer in Brazil, 70% of which is still imported, writes Patrick Knight.

The 22.5mt (million tonnes) of fertilizer Brazil will import this year, will cost close to US \$10 billion, twice the US \$4.9 billion the 15mt imported in 2010 cost.

The strong demand is explained largely by the enthusiasm of farmers planting soya, who buy 44% of all the fertilizer used in Brazil and who have planted an extra two million hectares to the crop this year, 8% more as in 2011.

With the world population growing fast and demand for food increasing considerably faster, about 6% more fertilizer has been used in Brazil each year in recent times. Seventy per cent of it is imported.

A record 4mt more was used in 2010 than in 2009, an increase of 16%.

With domestic production now hardly growing, more than 5mt more fertilizer had to be imported last year than the 15.3mt of 2010, an increase of more than 35%. About 5% more was needed this year than last as well.

Led by the Vale mining company, fertilizer companies in Brazil, the world's fourth-largest market for fertilizer after China, India and the United States, plan to spend close to US \$20 billion dollars between now and 2017 on raising production.

A top priority will be to produce more potassium, of which

## PRODUCTION, CONSUMPTION AND IMPORT OF FERTILIZER

Year	Consumption	Production	Imports
2012	29.8	9.8	22.5 (est)
2011	28.3	9.8	20.7
2010	24.5	9.3	15.3
2009	22.5	8.4	11.0
2008	22.4	8.9	15.4
2007	24.6	9.8	17.5
2006	21.0	8.8	12.1
2005	20.2	8.9	11.8
2004	22.6	9.7	15.4
2003	22.8	9.4	14.7
2002	19.1	8.1	10.5

Source: Association of Fertilizer Distributors, ANDA

90% of the 4mt used each year is now imported, as well as of phosphates, of which close to 50% of what is used comes from abroad

Vale, which paid \$5 billions for the assets of the Bunge company in fertilizer three years ago, will be responsible for most of the new investments.

The goal is for about 60% of what is used in Brazil to be produced there, rather than less than 30% as is now the case.

Whether this will actually be achieved is another matter. It takes at least six years to bring a new mine on stream, while the fast-growing demand for grains means much more will be needed each year from now

Vale, part way through developing a large potassium mine

in Argentina — which, if all goes well, will start producing 3.4mt in 2014, most to be exported to Brazil — had a nasty shock early this year.

The increasingly nationalist government in Argentina took back into state control the YPF oil company, bought by Spain's Repsol a few years ago. Repsol had recently announced the discovery of one of the world's largest reserves of oil-bearing shale there.

Upsetting Spain is one thing, but to offend Brazil, Argentina's largest trading partner, is another matter. Brazil now supplies increasing amounts of electricity, as well as crude oil to Argentina, both in short supply there because of a lack of investment.

After due deliberation and with assurances from the Argentine government, which also promised not to interfere with Brazil's oil company Petrobras — which has important interests in the country — Vale decided to continue with the \$6 billion investment there.

As well as opening the large mine, a new terminal is to be built at Bahia Blanca port.

Three-hundred-and-fifty kilometres of new rail track will be laid and a further 400km of line upgraded.

There is concern that the Argentine government, increasingly dependent on taxes on the export of commodities such as maize, wheat and soya, might later raise taxes on the export of the potassium, for which Brazil will have to pay the world price.

After years of negotiation, Vale has finally agreed new terms for further development at the only potassium mine in Brazil itself. The existing concession Vale has with state oil company Petrobras, which owns the mine, runs out in 2014.

This potassium is found close to large reserves of crude oil which Petrobras wants to develop. Some engineers at Petrobras, which uses natural gas to make most of the nitrates produced in Brazil, wanted the company to take over running the mine, which is in Sergipe state.

But president Dilma Rousseff intervened and a new contract, aimed at increasing production from the present 700,000 tonnes a year, to 1.2mt, has now been signed.

Whatever happens, it will be some time before Brazil becomes anywhere near self-sufficient in potassium and phosphates, as it takes six or seven years between the decision to open a new mine being made and production starting.

A rule of thumb is that to produce one additional million



tonnes of fertilizer, US \$1.6 billion has to be invested.

In the meantime, Brazilian ports, notably Paranagua and Santos through which most of the 20mt plus fertilizer imported each year now arrives, are having difficulty coping with the huge increase in imports.

The difficulties involved in getting the fertilizer from ports to the farms where it is needed, many up to 2,000km away, are also getting worse.

In the middle of this year, 47 ships were either waiting to unload fertilizer at Paranagua, which handled 9mt last year, or were expected to arrive shortly.

Paranagua has sufficient storage capacity to hold about 2.5mt of fertilizer. But this was full to overflowing early this year, despite importers having to pay \$1 per tonne per day to keep it there.

The trucks and trains which bring the soya, maize and sugar from farms and mills in the interior to Santos and Paranagua, carry mostly fertilizer as a return cargo.

However, freight rates have risen by up to 40% this year, while new restrictions on how long truck drivers can remain at the wheel, will push up costs further.

Although soya, maize, cotton and sugar cane account for 80% of all the fertilizer now used in Brazil, ranchers are under pressure to increase the number of cattle which now graze on a hectare of land, so are buying more fertilizer as well.

Farmers wanting to plant more soya and sugar cane, are pressing ranchers to sell them their land. So to push up yields and revenues as well, ranchers are using more fertilizer on their pastures.

The world price of fertilizer has increased sharply in the past few years, as existing producers struggle to keep pace with the growing demand. But the current high prices have attracted considerable new investment and 250 new plants are now being built around the world. This could result in prices falling from 2015 on.

Investors are turning their attention to Brazil, notably because very large reserves of potassium have been found underground close to the Amazon river.

Relatively little of Brazil's huge territory has been properly surveyed for minerals. So, as time passes, Brazil can be expected if not to become entirely self sufficient in fertilizer, at least to keep pace with the huge growth in the output of soya and other crops.

## ICS disappointment at IMO fuel study decision

The International Chamber of Shipping (ICS), whose member national shipowners' associations represent more than 80% of the world merchant fleet, has expressed disappointment and concern at a decision by the International Maritime Organization (IMO) to reject its call to accelerate a critical study into the global availability of low sulphur fuel for ships.

A small majority of IMO Members States, led by the United States, rejected an ICS submission to the IMO Marine Environment Protection Committee (MEPC), which was debated in October in London. Nevertheless, the IMO vote was very close indeed. As well as having the support of major shipping nations such as China and several open registers, ICS was supported by some EU Member States.

ICS was pressing for IMO to start work without further delay on a comprehensive fuel availability study that could consider the impact of all the changes required by the new MARPOL Annex VI regime, to reduce atmospheric pollution, before it is too late for the oil refining industry to respond and invest.

Shipowners are worried about whether sufficient fuel will be available to allow ships to comply with the strict IMO regulations on sulphur emissions and whether, as a result of insufficient supply, the costs for those ships that are able to obtain the required fuels might be prohibitively expensive. In some trades this could lead to significant modal shift to shore based transport, with negative consequences for congestion and the environment. These are issues that were not anticipated when the regulations were agreed.

Speaking after the vote at the IMO MEPC, ICS Secretary General, Peter Hinchliffe remarked: "Some governments still appear to have their heads in the sand with respect to fuel availability. What will be the impact of ships switching to distillate on the availability of diesel for road transport or heating oil for homes? We still think it's essential that a global fuel study is carried out sufficiently in advance of 2020 to give the refiners adequate time to invest and react. The major refinery upgrading required could take a minimum of four or five years, perhaps longer, and we believe that completing the study in 2018 would simply be too late."

ICS argues that the need to move forward the IMO study is more important than ever, especially as the EU has already decided that it will definitely implement the 0.5% sulphur requirements in 2020, even if the IMO study results suggest, as permitted by MARPOL, that full implementation should be postponed until 2025.

"ICS has not given up, and we will bring the issue back to IMO next year" said Hinchliffe. "The issue is just too important. The enormity of the switch to distillate and its economic impact on shipping, and indeed the world economy as whole, should not be underestimated or swept under the



carpet.

ICS emphasizes that when the global requirement to switch to distillate was adopted in 2008, ICS supported the agreed IMO timetable as an acceptable compromise.

However, if the switch to low sulphur fuel is to be successful, ICS believes that those governments that advocated such ambitious goals need to do everything possible to assure themselves and the industry that the refineries are able to deliver. ICS still believes this means undertaking the required studies of fuel availability as soon as possible.

There is already a formal mechanism in MARPOL Annex VI for IMO to complete a review, by 2018, of progress made towards meeting the demand for 0.5% sulphur fuel that must be used globally outside of Emission Control Areas (ECAs) by 2020 or 2025. However, ICS had suggested that a preliminary IMO study of the availability of compliant fuel, taking into account the introduction of the 0.1% sulphur in fuel requirements to be used in the Baltic Sea, North Sea and the North American ECAs in 2015, would provide a suitable test case. Such a study would provide a projection of possible scenarios resulting from the introduction of the 2015 0.1% ECA standard, against the background of the world market. This could then be considered in comparison with the real situation encountered in 2015.

Fuel is by far the largest operational cost for shipowners and has already increased in price by about 400% since 2000. However, the current 50% price differential between low sulphur distillate and the residual fuel oil that is currently in use is predicted to increase yet further if the new demand that will be created by the MARPOL requirements is not matched by increased supply.

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

## NORDEN wins prize for 2011 annual report

On 17 September 2012, NORDEN received a special prize for the way its Annual Report 2011 describes expectations for the future.

The prize is instituted by the Confederation of Danish Industry and the Institute of State Authorized Public Accounts in Denmark (FSR). However, it was the participants in the conference hosted by the founders of the prize who decided to give the special prize to NORDEN. Three companies — chosen from all listed companies in Denmark and the 100 biggest companies in Denmark — were nominated.

According to the jury, the following goes for three

nominated companies' ways of describing their expectations for the future:

- good overview, but also broad and specific as to the description of expectations;
- ❖ good long-term estimates not seen very often;
- strategic goals, mid-term and long-term;
- financial KPIs (key performance indicators) are used to define strategic goals;
- discussion of the important factors impacting expectations and expected developments.

Executive vice president & CFO Michael Tønnes Jørgensen received the prize on behalf of NORDEN.

## STCW compliance: when training delivers what technology cannot

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) aims to achieve for the shipping industry what increased technology has so far failed to deliver, namely a reduction in the 80% of accidents on board ship attributable to human error. Proper training and evaluation can make a real difference to these damning statistics and Videotel's newly launched STCW training programmes provide the tools to assist the ship owner and manager make a real difference.

"We have all seen the level of technology on board ship take off over the past few years," says Nigel Cleave, CEO of Videotel Marine International. "Yet as the statistics show, the human factor has not changed appreciably, and indeed we have actually seen that the failure of individuals to come to grips with new technology can contribute to the accident rate. Maritime safety must focus on the role of the individual in taking responsibility for vessel safety and good training can help build the skills that prevent the occurrence of unwelcome incidents."

Videotel has added three new courses to its STCW portfolio:

Marine Environmental Awareness: focuses on the 'human element' in preventing marine pollution, and educates, stimulates and empowers officers on board vessels and on-shore personnel to contribute to environmentally sound shipping.

- Maritime Security Awareness: highlights the key issue that security is not a matter of luck, demonstrating that risks to life, ships, colleagues and passengers can be significantly reduced through knowledge, awareness and understanding, and most importantly knowing how to deal with all the latest security threats.
- Entry into Enclosed Spaces: addresses the vital issue of health and safety in enclosed spaces, as many deaths are still attributable to this easily preventable hazard. Based on Videotel's award-winning series of programmes, it provides all the latest rules and regulations that need to be adhered to in order to protect and save lives.

Marine Environmental Awareness and Marine Security Awareness are delivered using interactive Computer Based Training (CBT). Students follow easy on-screen instructions to progress through the course. The programme contains text with optional English language voiceover, still photographs, video clips and animations. Entry into Enclosed Spaces is available in VHS/DVD with support booklet, interactive CD-ROM and through Videotel On Demand (VOD).

## MAJ highlights shipping's safety mission

Shipping is on a mission to ensure the safety of lives at sea. That was the message from the Maritime Authority of Jamaica, as the global shipping industry marked World Maritime Day on 27 September this year. The lives of seafarers, passengers and the protection of property and the marine environment are all important components of the modern shipping industry.

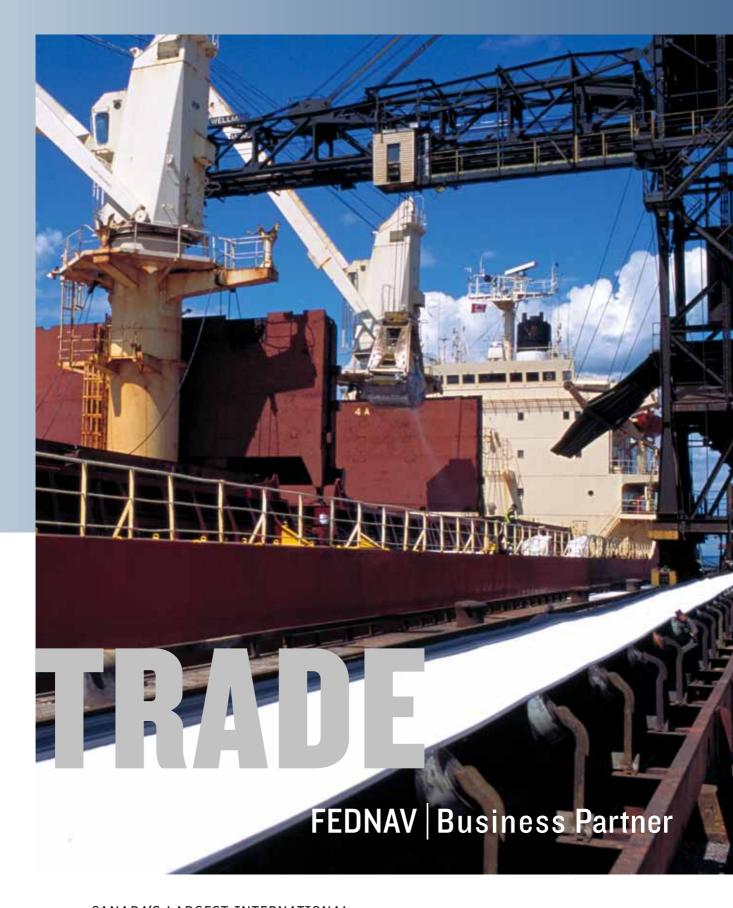
This year's theme for this important international milestone was maritime safety, coinciding as it does with the 100th anniversary of the sinking of the *Titanic* which sparked the development of the International Convention for the Safety of Life At Sea, 1974 (SOLAS). While shipping is now one of the safest modes of transport today the theme helps

the maritime community to focus on ensuring it is made even safer.

The Maritime Authority of Jamaica (MAJ) is a party to SOLAS and, as a Flag State, Port State and Coastal State, takes its responsibilities very seriously. The country is a key player at the International Maritime Organization where it is a Category C Council member and is represented on a number of committees, including the Standards of Training and Watchkeeping committee which it chairs.

In addition, the MAJ is at the forefront of regional efforts to ensure and enhance safety. Jamaica is a member of the Caribbean Memorandum of Understanding on Port State Control and hosts the Secretariat's offices in Kingston.





CANADA'S LARGEST INTERNATIONAL DRY-BULK OCEAN TRANSPORTATION GROUP





## Ejner Bonderup heads NORDEN's Dry Cargo Department

On 22 October 2012, Ejner Bonderup took up the position of head of NORDEN's Dry Cargo Department. At the same time, he became part of the executive management team with the title of executive vice president.

Further to this appointment, the company's executive management now consists of president and CEO Carsten Mortensen, executive vice president and CFO Michael Tønnes Jørgensen, executive vice president and head of the Corporate Secretariat Martin Badsted, executive vice president and head of the Dry Cargo Department Ejner Bonderup and executive vice president and head of the Tanker Department Lars Bagge Christensen.

Group Senior Vice President and head of NORDEN Shipping (Singapore) Pte. Ltd. Peter Borup has resigned from his position. Jakob Bergholdt, Director of Accounts & Finance, NORDEN Shipping (Singapore) Pte. Ltd. has been appointed temporarily as head of NORDEN Shipping (Singapore) Pte. Ltd.

## ISS appoints new Americas manager

Major global maritime services provider Inchcape Shipping Services (ISS) has appointed Francisco Villagran to a new role as Regional Operations Manager, Americas with effect from I October 2012.

The new appointment is a promotion for Villagran who was previously Regional Operations Manager for South America. In his new consolidated role Villagran is aiming to improve processes and share best practice in the region between ISS' operations in North, Central and South America.

Francisco joined ISS in 1997 as ships operator and has worked in the shipping industry for 23 years. He has recently been seconded to Brazil to oversee the appointment and transition of the country's new general manager.

Based in Chile, Villagran will report to Jaime Otero, Executive Vice President Operations, Americas. Said Otero: "We are sure Francisco will add value in his new role for ISS and make an even greater impact now he has responsibility for a larger region."

Inchcape Shipping Services has over 290 proprietary offices in 67 countries, and a workforce of over 3,700. The company's diverse global customer base now includes owners and charterers in the oil, cruise, container and bulk commodity sectors as well as naval, government and intergovernmental organizations.

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

## Sea Marshals gains ISO approval in record month

Private Maritime Security expert Sea Marshals has gained ISO9001:2008 approval in a month which saw the company protect a record number of vessels transiting the Gulf of Aden — up 22% on the previous month.

To cope with this increasing demand the company hired 20 additional qualified ex-military British security operatives in October and also intends to boost levels at its UK Operating Base in Cardiff, which currently stand at 15 OPS personnel.

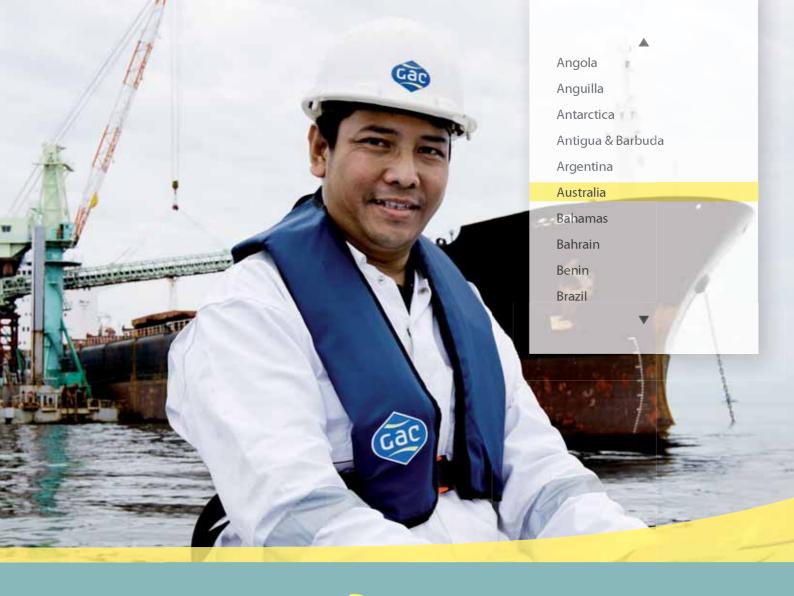
Sea Marshals Chief of Operations, Thomas Jakobsson, said: "We are busier than we have ever been which demonstrates the industry's recognition of the effectiveness of armed onboard security teams and is testament to the professionalism of our maritime operation. We are shipowners ourselves and we can easily understand the needs of our clients. That's why we employ mainly UK security operators and team leaders and work according to IMO and Bimco-Guardcon standards, while complying with Flag State requirements."

"By utilizing advanced planning systems and effective use of our resources we are able to provide a first class service at competitive rates," he explained. "Moving to a new and larger headquarters has enabled us to expand our operational centre and our in-house training facilities — something that has greatly enhanced our operating capabilities and helped us cope with demand."

Sea Marshals new staff will undergo the company's comprehensive in-house training which includes further understanding and integration of maritime conventions such as STCW95 and dangerous cargoes. Staff and team leaders in the field also have access to the sophisticated company communication network which enables further training online.



As Jakobsson points out: "We have never failed to make a transit, thanks to good planning and our experienced and well-trained personnel."



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## 'Green Dolphin' Handysize design shown at Posidonia

A new 'green' bulker concept design was unveiled at Posidonia this year, which took place 4–8 June in Athens, Greece.

The design, named the 'Green Dolphin' is for a Handysize five-hold bulk carrier. Its dimensions mean that it will be suitable for the majority of ports worldwide able to accommodate Handysize vessels.

The design was created by the Shanghai Merchant Ship Design & Research Institute (SDARI) and development partners DNV and Wärtsilä.

The new vessel design is environmentally friendly, and is flexible, fuel-efficient and low maintenance.

SDARI and DNV worked together on the design of the vessel's high-performance hull, which is able to operate at a high level in a variety of loading conditions, speeds and sea states. A wake-equalizing duct in front of the large, slow-rotating propeller enables improvements in propulsion efficiency while a rudder transition bulb and rudder fins reduce hub vortex and recover rotational losses.

Engine designer Wärtsila's two-stroke low-speed RT-flex50 main engine, which is Tier II compliant, has been selected. This can easily be retrofitted to dual-fuel engine in the near future. Multiple fuel tanks allow for strategic purchasing of heavy fuel oil,

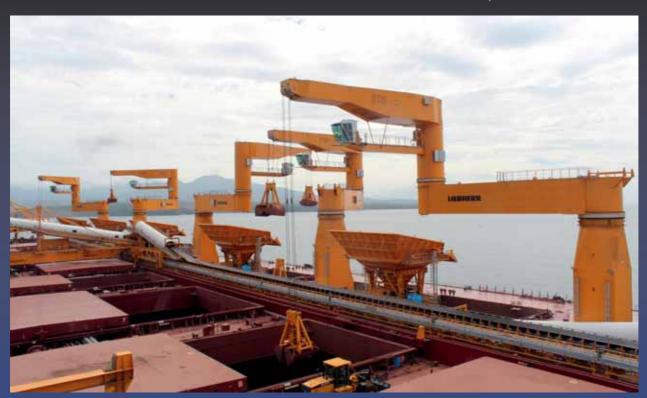
low sulphur fuel and distillates. "Design variants are available for fuel switching systems, installation of selective catalytic reduction and exhaust gas scrubbing systems and, in the near future, the use of LNG as fuel" says Giulio Tirelli, business development director of Wärtsilä – Ship Power. "The concept design also includes shaft torque and exhaust gas monitoring equipment to maximize the fuel consumption optimization possibilities while constantly monitoring emissions," he adds.

A heavy ballast condition is achieved without using a cargo hold for ballast water and the cargo holds are equipped with compressed air, power and wash water supply. Wash water holding tanks are also included.

Wide hatch openings and fully electrical deck equipment improve the loading, discharge and cleaning efficiency so port turnaround time can be minimized. A ballast water treatment system is included as well as holding tanks and treatment systems for sewage and bilge water.

"We have achieved a concept design that is not only fuel efficient, safe and robust today, but is also prepared for the future, with the various design alternatives that an owner can select to comply with environmental regulations," says Michael Aasland, DNV's business director for bulk carriers.

## Liebherr extends series of maritime heavy lift cranes



On the occasion of the SMM fair trade 2012, Liebherr announced that the existing series of heavy lift cranes will be extended by one type per year. The lifting capacities of the present portfolio range from 120 to 450 tonnes. In the future cranes with lifting capacities up to 1,000 tonnes will be included in the new series. The knowledge from all product divisions and applications are actively integrated in new developments in the ship crane segment.

In addition, existing sales activities will be intensified by a strategic cooperation with the company Kehdinger Kran-Service GmbH (KKS). The partnership not only includes operational sales activities, but also active co-operation in after sales. The present distribution network of the Liebherr-Werk Nenzing GmbH will thus be further strengthened.

## Cargo Care unveils new hatch cover support pad

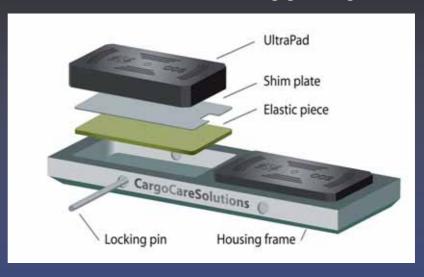
Hatch cover and ro-ro equipment specialist Cargo Care unveiled its latest product development during the popular SMM exhibition in Hamburg, Germany in early September.

The UltraPad, a new type of polymerbased, self-lubricating hatch cover support pad has just received a type approval from Germanischer Lloyd in recognition of its low wear and low friction characteristics.

The UltraPad features an improved locking pin mechanism preventing loss of the pads. The very low friction rate means the UltraPad has a smooth sliding feature resulting in low noise operation. UltraPad has the lowest wear rate available on today's market, ensuring the pad has a

longer lifetime. Easy wear detection adds to the pad's safety, making it easy to determine when it needs to be changed and therefore avoiding the damages which can occur to the hatch cover and coaming structure when a worn support pad is not replaced in time.

Peter Peltenburg, group director of Cargo Care Solutions, says: "This new hatch cover support pad represents excellent value for money for ship owners and managers — up to a



40% saving. In today's market with tight margins this will certainly be a real benefit."

The UltraPad can be used as replacement for other traditional types of hatch cover support pads and is available in a range of sizes to meet customer's needs.

Cargo Care Solutions offers tailor-made programmes to help identify the best solutions to keep hatch covers in top shape.



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## Water Ingress Detection and Alarm Systems to protect Bulk Carriers in accordance with SOLAS regulations

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- Only one sensor required per hold. Available with a full range of mechanical and electrical installation options
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- Rugged sensor construction has no moving parts and will not wear or foul with damp cargo

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Marine instrumentation that allows vessels to operate efficiently reliably and comply with safety and environmental regulations

## ClassNK welcomes world's first specialized nickel ore carrier to register

In late October, the world's largest classification society ClassNK (chairman and president: Noboru Ueda), announced that the world's first specialized vessel for the carriage of nickel ore has been built and registered to the NK class. The vessel, the *Jules Garnier II*, was built by Naikai Zosen Corporation and delivered to Japanese shipping major JX Shipping Co. Ltd on 19 September 2012, and is the first vessel in the world to be recognized as a 'Specially Constructed Cargo Ship for the carriage of Nickel Ore' in accordance with the IMO's IMSBC Code. The announcement followed a monthly meeting of the Society's Classification Committee, which reviewed and officially certified the vessel's registration on 22 October 2012.

Nickel ore cargoes can liquefy during transport, drastically impairing the ship's stability and safety, and these cargoes have been cited as the cause of four vessel casualties and the loss of 66 seafarers in 2010-11. Intercargo has since named nickel ore 'the world's most dangerous cargo' and efforts are under way at the IMO to strengthen the International Maritime Solid Bulk Code (IMSBC), which regulates the loading and transport of bulk cargoes such as nickel ore.

The ISMBC code currently requires that the moisture content (MC) of cargoes that may liquefy be tested prior to their loading onboard ships, and forbids non-specialized vessels from loading cargoes with an MC greater than the specified Transportable Moisture Limit (TML). However, questions have been raised about the testing procedures and validity of moisture content test results for nickel ore, and there is growing concern about whether nickel ore can safely be carried by standard vessels.

While the ISMBC code allows for these dangerous cargoes to be carried by 'Specially Constructed Cargo Ships', no definition or requirements for such vessels are included in the code itself.

In order to address this issue and ensure the safety of the world's bulk carrier fleet, ClassNK began carrying out independent research on the physical characteristics of nickel ore

in 2009. Based on this research, ClassNK developed the world's first hull structure and stability requirements for building such 'Specially Constructed Cargo Vessels' in 2011, and released them for use by the maritime industry as part of its *Guidelines for the Safe Carriage of Nickel Ore* in March 2012. These requirements have since been approved by the governments of Panama and Japan for use in vessels flagged with their administrations. They have further earned the recognition of Intercargo as well as the wider maritime industry, and ClassNK was presented with the 'Safety Award' at the Lloyd's List Global Awards in September 2012 for its contribution to the safe transportation of nickel ore.

The 27,200dwt Jules Garnier II is the first vessel in the world to apply ClassNK's new requirements in its construction and makes use longitudinal bulkheads in its cargo holds to ensure stability and structural strength even when liquefied nickel ore cargoes are loaded. The ship's design earned the approval of the Panamanian government in September 2012, and with its completion in September 2012, is the first and currently only vessel to be certified as safe to carry liquefied nickel ore cargoes in line with the IMSBC code. The vessel is also the first to earn ClassNK's new SCCS notation for safe carriage of nickel ore in recognition of its special construction.

Commenting on construction and registration of the vessel, ClassNK operating officer and hull department general manager Mitsuhiko Kidogawa said: "With the completion of this vessel and the successful implementation of these new standards, we have realized an important step in our efforts to ensure the safety of vessels and their crews." "While this is an important achievement, we are continuing our research on nickel ore and other cargoes that can liquefy during transport, and we hope that we can develop methods for existing vessels to safely transport these dangerous cargoes, as well."

ClassNK's Guidelines for the Safe Carriage of Nickel Ore are available free of charge on the ClassNK website.



## Action needed on places of refuge and casualty investigations

There are some clearly identifiable steps which need to be taken to enhance shipping's already very impressive record of maritime safety, according to International Chamber of Shipping (ICS) Secretary General, Peter Hinchliffe.

Speaking at the IMO Alternative World Maritime Day Event in Bahrain in mid-October, Hinchliffe stressed the need for mandatory provisions to provide a place of refuge for ships in need of assistance, plus timely and obligatory reporting of casualty investigations by Flag States to the International Maritime Organization (IMO). This would replicate the handling of aviation incidents.

Environmental protection and crew and passenger safety can be addressed better by raising the current level of guidance on providing a place of refuge to a new level of obligation, he said.

Noting that accidents may happen even under the most stringent regulatory regimes, Hinchliffe said the industry's ability to learn from such incidents was hampered when investigations were not conducted in a timely fashion or the outcomes were not reported to the IMO. "The track record of rapidly decreasing environmental impact by the shipping industry is the most powerful measure of the steady increase in the safe design, construction and operation of ships," he told those attending the IMO event.

Sustainability, as highlighted by the recent United Nations Rio+20 Summit on sustainable development, is also a key issue

for shipping he explained, stressing that safety, environmental protection and the global quest for reduced dependence on fossil fuel are "inextricably linked".

Careful adjustment in key areas will ensure that shipping remains a top performer with respect to the environmental pillar of sustainability for the foreseeable future, said Hinchliffe. But he also championed the need for a formal "impact and sustainability assessment" that will allow IMO to take full account of economic sustainability when drafting new maritime legislation. "The subject of impact assessment has been recognized at IMO but we have yet to see this being transformed into reality," he said, adding that this issue also puts the spotlight on the argument against regional and local legislation which cannot possibly take into account its impact on international trade.

"Without shipping the world's social and economic sustainability is in real jeopardy," warned Hinchliffe. "Ninety per cent of world trade is carried at an environmental cost of three percent of the world's CO<sub>2</sub> inventory and it doesn't take a big conceptual leap to see that, with legislation already in place or awaiting ratification, the environmental influences of shipping are managed and limited already."

As long as shipping continues to be "the mode of choice for 90% of world trade" then the world's environmental sustainability is safeguarded well, said Hinchliffe.

## Drewry predicts oversupply of Panamax vessels



According to a Drewry Maritime Research forecast, there may be an oversupply of Panamax bulk carriers in the near future. Panamax capacity is continuing to expand, going from 161.7mt (million tonnes) to 167.5mt in the second quarter of this year, which is an increase of 3.6%. In the same period, post-Panamax capacity rose by 9.1%. The oversupply of Panamax vessels is expected to peak in 2013.

## Reducing downtime and



## Customer expresses full satisfaction with Alfa Laval's specialized systems

Hamburg-based MACS Maritime Carrier GmbH & Co — which carries breakbulk and project cargoes, as well as containers — is involved in shipping and transport activities worldwide and the operation is spearheaded by a fleet of eight multipurpose vessels. Since 2009, the fuel and lube oil treatment systems onboard four MACS ships have been covered by an Alfa Laval Performance Agreement and the company has noticed a considerable difference. MACS technical director Mr Jeromin relates that operating costs have stabilized at a lower level than in 2008.

#### **HARBOUR SUPPORT VISITS**

MACS Shipping's first contact with Alfa Laval was at the end of 2008 regarding a piece of damaged equipment. The ensuing discussion about the fuel and lube oil treatment systems resulted in MACS signing an Alfa Laval Performance Agreement for Separators in February 2009.

The Performance Agreement covers major services on the centrifugal separators with a harbour support visit each year. A major service includes changing the separator bearings and regasketing the bowls, technical inspection of the system, giving technical advice to the crew while doing the service, and a price agreement for genuine Alfa Laval spare parts.

#### MAINTENANCE BUDGETS CAN BE PLANNED

Fleet management director Mr Jeromin said: "During the first year our costs actually went up significantly, but this was due to

major repairs which had accumulated and needed to be done.

"The costs are now stable at a level well below the 2008 figures. We can plan our maintenance budgets more accurately since the equipment is now working reliably and no unplanned repairs or maintenance are needed. We also have less capital and storage space tied up in the ships' spare parts inventories. All we need to keep onboard are the Alfa Laval Service Kits."

#### **CREW SOON REALIZED THE BENEFITS**

The crew had previously performed maintenance on the oil treatment systems themselves. How did they react to the presence of the Alfa Laval service engineers onboard?

Agnes Drzymala, marine superintendent at MACS said: "At first they were slightly sceptical and perceived the Alfa Laval presence onboard as some kind of check on their work. But they received a lot of useful tips and realized how much they could benefit from the knowledge and competence of the Alfa Laval technicians. Also, emergency repairs are no longer needed, which has made life onboard much easier for them."

#### **RECOMMENDATIONS FOR IMPROVEMENTS**

During harbour support visits, Alfa Laval systems specialists make recommendations for improvements to the systems. These recommendations have led to several equipment upgrades on the MACS ships.

Klaus Maak, Manager, Alfa Laval Marine & Diesel, Mid-Europe Region said: "As a supplier it is essential that customers can rely



on and are satisfied with our products, as this will lead to new orders.

"The strongest confirmation of our equipment's performance on the MACS vessels has been the fact that MACS newbuildings currently under construction at Nanjing Shenghua shipyard in China will be equipped with a wide range of Alfa Laval products.

"The products include fuel and lube oil cleaning systems, fuel conditioning modules and fresh water generation systems. When the vessels go into service, we will also offer similar Performance Agreements for them as well in order to maintain optimal performance."

#### **ALFA LAVAL PERFORMANCE AGREEMENTS**

Alfa Laval's Performance Agreements are individually tailored service packages that help customers stay on top. Based on their requirements Alfa Laval put together a unique service solution that brings maximum performance and low operating costs. A performance agreement can for example include:

- inspection of the system;
- onboard service;
- spare parts;
- monitoring; and
- crew training.

#### MACS SHIPPING

Founded in 1970, MACS Maritime Carrier GmbH & Co's main activity is transporting cargo between the United Kingdom/Europe and Southern Africa. In 1983 MACS incorporated the service of AESL, owned by Steenkool & Handelsvereeniging (SHV) of Rotterdam. This substantially increased the line's capacity in terms of vessels and containers. In 1992 MACS joined the Europe Southern Africa Conference to be appointed the official Multipurpose Carrier. Owned by a family partnership, MACS' success is due to its ability to combine containers, project cargoes, ro/ro, heavy lifts, general cargo, dry and liquid bulk.

#### ABOUT ALFA LAVAL

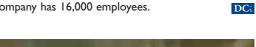
Alfa Laval is a major global provider of specialized products and engineering solutions based on its key technologies of heat transfer, separation and fluid handling.

The company's equipment, systems and services are dedicated to assisting customers in optimizing the performance of their processes. The solutions help them to heat, cool, separate and transport products in industries that produce food and beverages, chemicals and petrochemicals, pharmaceuticals, starch, sugar and ethanol.

Alfa Laval's products are also used in power plants, aboard ships, in the mechanical engineering industry, in the mining industry and for wastewater treatment, as well as for comfort climate and refrigeration applications.

Alfa Laval's worldwide organization works closely with customers in nearly 100 countries to help them stay ahead in the global arena.

Alfa Laval is listed on Nasdaq OMX, and, in 2011, posted annual sales of about SEK 28.6 billion (approximately  $\le$ 3.2 billion). The company has 16,000 employees.





## **DBIS** preferred supplier for Transnet

Transnet Port Terminals, the South African national port Company, has selected CommTrac as the standard solution for its bulk terminals. The first terminal that will go live with CommTrac is its facility in Saldanha Bay, an iron ore export terminal with a throughput of around 45mt (million tonnes) a year. The CommTrac solution will incorporate all advanced modules including Planning and Scheduling, KPI Tool and Customer Web Viewer. The contract was signed in Durban on 6 September.

## Valemax vessel to berth in Mindanao

In October, one of CVRD's Valemax iron ore bulk carriers will dock at Villanueva Port on the Philippines island of Mindanao for the first time. It will take on board cargo at Ponta da Madeira terminal in Brazil in September and deliver the iron ore to Japan's IFE Steel plant in Mindanao. By the end of 2013, CVRD expects to have 35 of these 400,000dwt vessels in service, of which 19 will be directly owned by it and 16 chartered from international shipowners. Barry Cross



## **Punta Lackwater receives shiploaders**

The shiploaders purchased by the Chilean mining company Mina Invierno for its Patagonian port of Punta Lackwater have been delivered. The port will export coal to the Northern region of the country and also to customers overseas. The shiploaders, which were assembled in Bremen, Germany, will be able to load 3,000 tonnes of coal per hour.

The port is reported to be 60% completed and will eventually have a 450m-long quay able to accommodate vessels of up to 140,000dwt when it opens in the last quarter of this year. A pilot consignment is expected to be shipped sometime in December. RC

## Gramosa's Chiapas agribulk terminal opens in October

At the time of writing, Gramosa Agroalimentos was scheduled to inaugurate the initial stage of its new agribulk terminal at the Mexican port of Chiapas in October. It will have a 24,000-tonne storage capacity in silos and a further 6,000-tonne storage capacity in warehouses.

The facility will be used to ship wheat from the north of Mexico to the South, whilst at the same time developing agriculture in and around Chiapas itself. Chiapas is already the second largest producer of wheat in Mexico after Sinaloa and the new facility should help exports to grow to Central and South America.

At present, in Mexico, Gramosa has a total storage capacity of around 135,000 tonnes, which will increase to 260,000 tonnes once the new facility in the port of Chiapas commences operations. The company has revealed that this year alone agricultural exports handled by it have risen by 30%. RC



## COAL INTO GERMANY

via Rhenus Midgard's Seaports

#### Coal Terminal NSB (Niedersachsenbrücke) in Wilhelmshaven, Jade Bay (Germany):

- ☐ New: Capesize Vessels up to 250.000 dwt with a draft up to 18,50 m (60') sw
- ☐ Rail connections into Germany's hinterland and neighbourhood countries

### Coal Terminal Nordenham on the River Weser (Germany):

☐ Rail- and inland waterway connections to Germany's hinterland and beyond ☐ Panmax- and partly loaden Cape Size Vessels with a draft up to 13,10 m (43') fw

Both ports handle close to 5 million tons, i.e. more than 10% of the imported coal into Germany.

Rhenus, a company with a long history, is one of the world's leading providers of integral logistics services and has annual turnover totaling 3.4 billion Euro.



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## Indian ports hit by heavy duties on iron ore exports

Indian dry bulk cargo ports with berths dedicated to handling iron ore shipments have fallen victim to the federal government making it increasingly difficult to export the mineral by way of imposing a stiff duty of 30% on both lump ore and fines. Disincentive by way of high duty beside, the government is charging a penal 3.6 times more railway freight when the mineral is sent from mines to ports for exports than to destinations within the country for use by local steelmakers. As the voice of the powerful steel lobby has prevailed over the government much to the discomfiture of the miner fraternity, India's iron ore exports fell rapidly from 117.4mt (million tonnes) in 2009/10 to 97.66mt in 2010/11 and 61.8mt last year. Director general of the Federation of Indian Mineral Industries RK Sharma says in the first quarter ended June 2012, exports on a year-on-year basis were down 45% to 11.93mt from 21.65mt. As a result, every single Indian

port through which iron ore is routed to the world market is nursing huge idle capacity.

Local cost push on government account has also significantly eroded the competitiveness of Indian ore. This has coincided with global fall in demand for the mineral and significant loss in its prices. Sharma points out that "sputtering demand for iron ore in the world market sent prices of the benchmark ore with 62% iron content to \$82 a tonne in August-end, a fall of more than 50% on a year-on-year basis. In the process, the mineral used in the making of steel fared worst since October 2011." Brokers desperately looking for a good news break that would lift the market sentiment, therefore, hang on to Beijing clearing some major infrastructure projects to claim investments of \$158 billion. Though there was no clarity as to when the announced infrastructure projects will create extra demand for steel, the brokers lifted ore prices to \$100 a tonne and beyond immediately on the Chinese announcement. Ore prices, however, fell thereafter and the forecast is that prices will be yo-yo-ing within a short range, at least till the quarter beginning October when China will start restocking in anticipation of winter dislocations in port operations.

China alone accounts for over 90% of India's ore export sales. In fact, of last year's export sales of 61.80mt, China's share was 57.84mt or 93.59%. In a move to reduce its import dependence on Rio Tinto, BHP Billiton, Vale and Fortescue, China had India on its radar, as it is already buying and opening mineral assets in some African countries. However, rises in the Indian tariff barrier from nil (till November 2009) to 30% and high railway charges have left China distraught. China buying less and less from India



resulted in iron ore cargo movement at Goa falling to 10.39mt in the first quarter of 2012/13 from 14.52mt in the corresponding period of 2011/12. In the same period, Paradip Port suffered a setback to 310,000 tonnes from 269,000 tonnes and Haldia to 370,000 tonnes from 153,000 tonnes.

According to Paradip Port chairman SAC Bose, it is mainly on account of a large shortfall in iron ore traffic that total cargoes dry bulk, crude oil and container - handled by the allweather port in the east coast were down 1.8mt to 54.2mt in 2011/12 . Thanks to export discouragement and strict vigilance on mining, iron ore throughput loss for Paradip last year was 7.3mt to 6.55mt. The port handled 16.16mt of ore in 2009/10. Contraction in ore exports has hit the Dhamra Port in the east coast between Haldia and Paradip ports the hardest. The first phase of Dhamra with two fully mechanized berths of 350 metres each with combined capacity of 25mt for handling imports of coal and limestone and exports of iron ore was commissioned in September last year. With iron ore exports drying up fast, the Dhamra berth is lying largely unused. The situation is so grave that the promoters of Dhamra Port have appointed a merchant banker to find a buyer for the ore export berth. CEO Santosh Kumar Mohapatra says: "It's a strategic move. If someone else sees greater value in running the terminal as export facility, then why not." The sale of export terminal will be structured through a sub-lease agreement involving payment of upfront money by the buyer and sharing a portion of annual revenue by it with Dhamra Port. In the meantime, a few ports, including Ennore have started using iron ore berths to handle Kunal Bose coal.

## **Cereals record for Guaymas**

The Mexican port of Guaymas continues to break records. Recently, it loaded around 70,000 tonnes of wheat belonging to Cargill and Gradesa en route to Turkey. The previous record had been just 50,000 tonnes of export wheat. The port can handle vessels requiring up to 14.5m of draught.

ВС

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## Chiapas to have new minerals terminal

The new minerals terminal at the Mexican port of Chiapas, which will cover an area of 18,500 m², will have the ability to store around 25,000 tonnes of materials at any one time. Initially, monthly exports are expected to amount to 25,000 tonnes. Eventually, this quantity is expected to be handled weekly. The tender for the terminal was published in early August.

## Lazara Cardenas bulk terminal starts operations

The new TPP bulk handling facility at the Mexican port of Lazaro Cárdenas has commenced operations. It's the first and only terminal of its type at the port. Investment has been in the order of \$55 million and regular operations are due to commence at the beginning of December.

The terminal, which covers an area of 25ha, is being developed in two stages. At the beginning of September, the first berth, which has alongside draught of 16.5m, will be put into operation and able to accommodate vessels of up to 180 000dwr

Lazaro Cárdenas is the only port in Mexico able to accept vessels of this size.

It is expected to receive inbound consignments from both Australia and China conveying coal. Outbound cargo is expected to be iron ore en route to China.

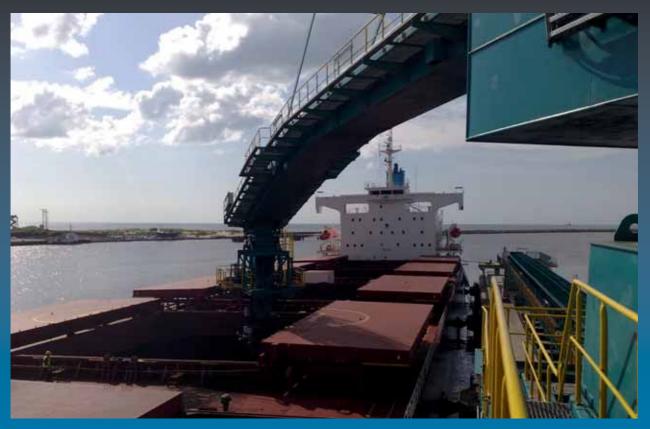
Capacity at the port will be around 3mt (million tonnes) to 3.5mt annually. The facility will be connected to the rest of the country by both road and rail, with some consignments expected to go to the United States, especially to the state of Texas, which is to export coal to China.

## Yuzhny receives call from major dry bulker

Yuzhny port in Ukraine recently received a call from a 209,000dwt bulk carrier, which is the third largest ship ever to be deployed in the Black Sea. It loaded with iron ore and proceeded to the Chinese port of Dalian.

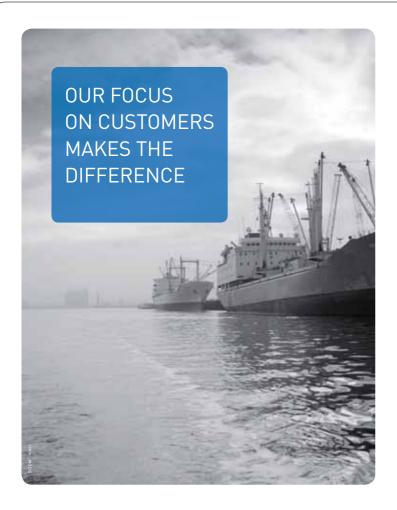
BC

## Baltic Coal Terminal handles record volume



The Baltic Coal Terminal in the Port of Ventspils in Latvia has reported that in the first eight months of this year, coal volume rose by 28% to more than 3.5 million tonnes. In August, traditionally a quiet period, volume was up 23% to 529,760 tonnes. Coal handled by the terminal is exported to the UK, Belgium, Spain and Morocco.





The seaports of Terneuzen and Vlissingen provide an ideal gateway between northern Europe and the rest of the world. They guarantee a rapid flow of goods thanks to their easy accessibility, deepwater location and excellent facilities. The two modern ports are strategically located between Rotterdam and Antwerp, at the mouth of the Western Scheldt. Together with a first-rate network of congestion-free roads, railways and waterways, this ensures fast and effective transport links with the hinterland. The key advantages of Terneuzen and Vlissingen are customer-friendliness, tailormade solutions and ample opportunities for logistics and industrial activity. And the Zeeland Seaports Authority is there to see that these important benefits are carefully maintained and safeguarded for all our customers.

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Continuous investments have made it the leading dry bulk port in Finland.

The draft of 13 m allows Panamax class vessels to load full loads of 75,000 ton, and larger vessels (120,000 DWT) have loads of more than 100,000 ton.











## San Martín on verge of collapse

A recent study undertaken by the Dock Workers Cooperative has indicated that operations at the Argentinian river port of San Martín may well collapse next year given a predicted 27% increase in vessel movements. At the same time, the grain harvest in 2013 is expected to increase by nearly 40%, putting undue pressure on both the river system and road network.

There are 15 loading and waiting points in the port, but these are insufficient to cope with additional volume. Annually, some 4500 vessels make use of the 22 port terminals and 31 quays that make up the river complex. Only 25 of the quays are used by deep sea vessels and the other six by barges.

Barge traffic is particularly important, with the port handling around 4,000 units, with another 10,500 passing through the port en route for other ports downriver, adding to the overall congestion.

## ESSEX to use Codelco's Barquito port

Chile's state copper company, Codelco, has announced that its Salvador division and ESSEX Holdings had signed a recent contract that will double the movement of cargo through the port of Barquito and will require a series of upgrades to the infrastructure, including the provision of a conveyor belt system a new electrical systems.

As per the deal, around 80,000 tonnes of iron ore per month will be loaded at the port from the SS-Xavier-I mining project. At present, the port, which belongs to Codelco, handles around 820,000 tonnes annually, composed of copper, hydrocarbons, sulphuric acid and concentrates. The new contract will boost this to 960,000 tonnes annually.

## New coal terminal for Murmansk

All those involved in the project to build a new 18 million tonne-capacity coal hub at the Russian port of Murmansk have signed an agreement to resolve all issues in respect of the construction as soon as possible. The local government has made available sufficient land to build a 2km-long railway from Lavna railway station to the port, with the coal terminal to start construction either later this year or early next year.

## Coal exports up in Newcastle



The Australian Port of Newcastle, which is used by Anglo-American, Peabody Energy, Rio Tinto and Xstrata, has reported a 12.2% increase in coal exports in the year so far. For September, the port was expected to handle a total of 10.9 million tonnes.

BC

## Major bulk port in Finland

# Port of Pori

The port of all size vessels



# The strengths of the Port of Pori

- Dust minimized loading and unloading systems in use
- Suitable for large volumes
- Deep fairway (15.3m) and the best ice conditions in Finland
- Uncongested hinterland connections
- Room to expand, free areas available for dry and liquid bulk
- Located far from dense housing areas
- Environmental and work safety as top priorities
- New 12m quay!
  For more info go to:
  www.portofpori.fi/en

## Reachability (by truck)

- Within 3 hrs. of Pori
- Within 6 hrs. of Pori

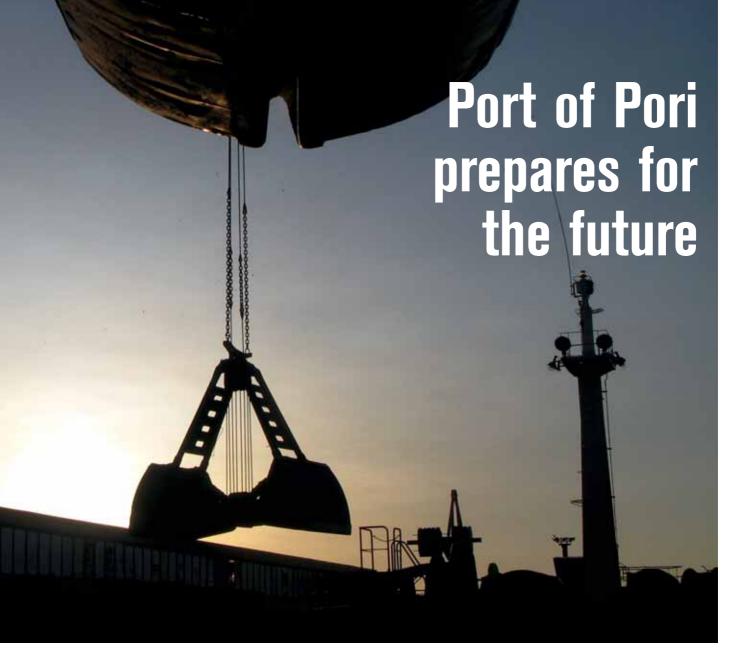
**FINLAND** 





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Both clear weather and clouds are on the horizon in the Baltic Sea region. The Port of Pori in the west coast of Finland is preparing for the future with optimistic expectations. The mining industry is booming in Finland and in Sweden which means increasing bulk and chemical transports at the Baltic Sea area. Russia became a member of the World Trade Organization last August. That is good news for the Finnish logistic business which has expertise on transit traffic. What about the clouds then?

Environmental regulations will be tighter on the Baltic Sea and on the North Sea, but on the other hand the new regulations will force the shipping industry to find new solutions. The Port of Pori has done a lot to improve the environmental standards in port operations and cargo handling and it will remain an active participant in 'green' initiatives in the future too. LNG bunkering facilities, smooth hinterland connections, energy-efficient seaborne transports with large vessels and new routes are some key factors which will help operators to meet the new environmental challenges.

The Port of Pori relies on its geographical position. Maybe surprisingly the Port of Pori has the best ice conditions among the Finnish ports. Due to the favourable wind directions, deep waters and the absence of an archipelago, the port is ice-free in normal winters. Because of the good ice conditions, the idea of transporting cargo via the Port of Pori from/to Russia stems

from the early days of the railroad. Now the idea of using the benefits of Pori's logistical location is more real than ever. "The ports north from Pori are covered with ice during the winter time," notes Jaakko Nirhamo, the Port Director of Pori. The mining industry and other industrial plants could gain savings in terminal costs by using the Port of Pori. "There is no need to store large quantities of raw materials for winter season, if you choose Pori," summarizes Nirhamo.

The Port of Pori has the deepest fairways in the Gulf of Bothnia area. There is a 15.3m fairway to Tahkoluoto deep harbour. This means that all ships, even Capesize vessels that are able to go through the Danish Straights, can call at the Port of Pori. In Mäntyluoto harbour, there is a new 12m fairway. In Tahkoluoto chemical harbour, there is a 10m fairway which can easily to be dredged to the depth of 12m. Because of the deep fairways and efficient cargo handling facilities, the Port of Pori has the expertise to function as a hub for bulk cargoes.

Hinterland connections are uncongested and the main economical areas of Finland can be reached in four hours. Road and railway connections reach even to the Russian border. Finland has the same gauge as Russia and other CIS countries. In the Port of Pori, the railroad is mainly used in the short-distance transports. There is a scheduled full-train bulk transport system between the Port of Pori and the smelter in Harjavalta Industrial Park. This operates six times a day; every year, almost Imt

### The Great Lakes St. Lawrence Seaway System



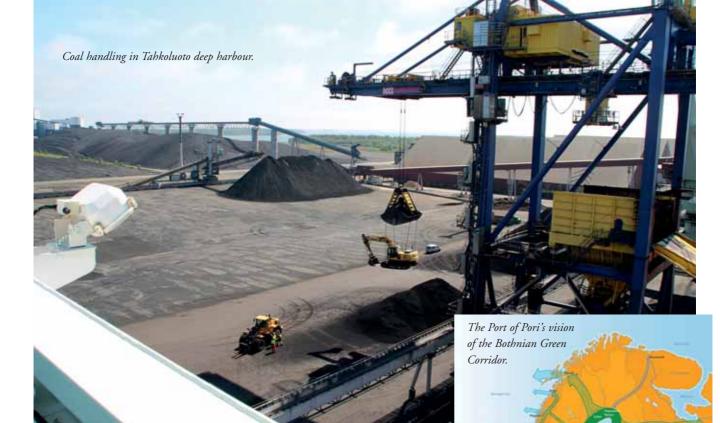
### Shipping Bulk? Water way to go!



Highway H<sub>2</sub>O - your gateway to the agricultural and industrial heartland of North America. With plenty of capacity, our System provides a seamless flow of goods that saves you time and money. The Great Lakes St. Lawrence Seaway System represents 300 years of history and we think some traditions are worth keeping.

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(million tonnes) of concentrate is transported from the port to Harjavalta in order to fulfill the raw material needs of the plants of Boliden and Norilsk Nickel situated in the industrial park.

The Port of Pori is constantly developing its connections. It is taking part of a Bothnian Green Logistic Corridor project, which is part-financed by the European Union. The overall objective of this project is to increase the integration between northern Scandinavia and Barents with the industrial chain and end markets in the Baltic Sea Region and central Europe. The Port of Pori is investigating re-opening a Pori–Parkano— Haapamäki railroad line. The line would open a new and smooth connection to the mining areas in Eastern Finland and in Lapland as well to the Russian border. In the BGLC project, new connections from the Norwegian

Atlantic coast via Sweden and Finland to Russia are also being studied. "In these visions, the Port of Pori could be an important crossing point and a hub," outlines Nirhamo and looks a map of the Bothian Green Corridor.

The port is situated 25km out of town. In the immediate vicinity of the port, or even in the port area, there are 200 hectares of free land reserved for the use of industry and logistical operations. For example district heating, electricity, sanitation and IT services can be provided at a competitive price. Fresh water is available from the river nearby. City planning guarantees good preconditions for industry and logistical operations. "This is a unique opportunity for industry and logistical companies, which can't be found nowhere else in Finland," says Pekka Sundberg, development manager of the Port of Pori. The Port of Pori will launch a campaign this fall to promote the marketing of the sites.

The Satakunta region, where Pori is situated, is the most industrialized area in Finland. It is known for port-related heavy industry and energy clusters. To strengthen these clusters the Port of Pori is taking part in a prefeasibility study in order to evaluate the needs for industrial use of LNG in Satakunta and the other counties nearby. The Port of Pori is planning to be an LNG hub of the Finnish west coast and in the Gulf of Bothian area. This vision requires that the hub could respond to both industrial and shipping-related

demand of LNG.

The Port of Pori is a bulk port but a port must be also a general port to fulfill the needs of modern industrial clusters. The Port of Pori is really a general port, where besides of dry and liquid bulk also containers, project and breakbulk cargoes as well general cargo are handled. The port also has facilities for ro/ro cargo handling. "The Port of Pori is a serving port for all kind of cargoes and all sizes of vessels," stresses Nirhamo.



Coal handling in Tahkoluoto deep harbour.



# POWER IN ACTION Port equipment - Ship Loaders / Unloaders





### **Vigan – Belgium-made production for accurate control**

Belgium-based VIGAN Engineering S.A. is more than just a manufacturer of shiploaders/unloaders, but is also a global solutions provider for port development projects.

From initial consulting of VIGAN's UK subsidiary AS-C Projects Ltd. experts up to commissioning, VIGAN is able to deliver whole turnkey terminals including a wide range of equipment and auxiliary devices thanks to its network of business partners.

#### **A**MONG SUCH ACHIEVEMENTS:

- The F.A.P. grain and fertilizer terminals in Pakistan including one continuous ship unloader (CSU) of pneumatic type NIV 600tph (tonnes per hour) + one CSU of mechanical type SIMPORTER 1,000tph + conveyors + bagging stations + flat storage + civil works & engineering;
- S.D.T.V grain and fertilizer terminals in Djibouti including two CSUs of pneumatic type NIV 300tph + I mobile harbor crane + conveyors + stationary and mobile bagging stations + flat storage + two mobile pneumatic conveyors T100D + civil work and engineering.
  - VIGAN also delivered a few years ago two special mobile hoppers on rubber wheels with three bagging lines, last summer SDTV ordered three additional mobile bagging lines.
- The French port of Sète with one mechanical shiploader (800tph) and one CSU of pneumatic type (400tph);
- The Dry Bulk Terminal of Muuga Port in Estonia, with fertilizer handling and storage facilities including rail unloading station + belt conveyors and dome storage silos, recently choose again VIGAN's UK subsidiary AS-C Projects Limited based in Stockport, England for carrying out the third phase of expansion to its terminal. This third phase of expansion





includes three new dome storage silos (total additional storage of 27,400 tonnes) plus associated intake and outloading belt conveyor systems. Completion is scheduled for June 2013.

### VIGAN MASTERS BOTH PNEUMATIC AND MECHANICAL TECHNOLOGIES:

- The NIV-named pneumatic continuous ship unloaders, the main advantages of which include: very little manpower is needed (one single operator); excellent hold cleaning efficiency; capacity variability from 160tph to 800tph; and its easy and low-cost maintenance.
  - Two 'NIV 600tph' units are about to be shipped to Jeddah port in Saudi Arabia.
- The mechanical 'SIMPORTER' is well adapted for vessels up to Post-Panamax size and offers very high-capacity requirements of up to 1,500tph. It has the lowest energy consumption rate per unloaded tonne (0.2–0.45kWh/tonne) and is even more environment-friendly (no dust with a totally enclosed conveying, no noise, no material degradation as it is gently conveyed by a twin-belt system).
  - Two units with a capacity of 1,000tph each are going to be commissioned in Tianjin port in China during this winter.

The diversity of VIGAN's range of equipment is key to the company's ability to offer high quality solutions to any project requirements, whether pneumatic or mechanical is preferred, or even a combination of both.

From the alloyed steels — which are produced by a sister company — used for all the metallic structures and parts, up to the pre-assembly in the factory, VIGAN's production remains Belgium-made.

This guarantees a most accurate control of the entire machine manufacturing and enables an easier and faster-response time after-sales support.

### **Euroports offers strong portfolio of bulk terminals in Belgium**



In Belgium, Euroports is currently handling dry bulk on its sites in Antwerp, Ghent and Liège & Charleroi.

In Antwerp, an annual volume of about 4.5mt (million tonnes) of fertilizers and minerals are handled at quay 168. In addition to handling seagoing vessels, trucks, containers, barges and trains for bulk goods, the 320,000m² site also offers a wide range of value-added services such as bagging, sieving and weighing. With 160,000m² of covered warehouses, Euroports terminals Antwerp is a major player in the storage and handling of fertilizers and minerals. The second of Euroports' bulk terminals in Antwerp is located at quay 518. The sugar terminal offers the largest storage area for white crystal sugar in the world, with a capacity for 290,000 tonnes. In 2012 a new bulk loading station for

containers was inaugurated to further the growth in service offering. On its third bulk location in Antwerp, at Quay 54, Euroports handles currently only kaolin.

At Euroports' Ghent facilities, over 1mt of fertilizers, minerals and chemicals are handled. The site, with over 200,000 tonnes storage capacity, can, in addition to handling bulk products, also handle general cargo. Value-added services such as weighing and sieving are an integral part of Euroports' bulk supply chain solutions.

Located more in the hinterland, in the Liège region of Belgium, Euroports Inland Terminals offers five locations for bulk handling: Liège – Renory – Seraing – Loën and Couillet. On these sites a different product range is being handled: ferroalloys,

minerals and waste products. In addition, Euroports Inland Terminals also offers contract logistics solutions and works on behalf of its clients on their sites in the region. A total of 5.5mt is handled on these sites on an annual basis.

Besides these bulk operations Euroports offers the entire package of transport services: barging, trucking, customs formalities, agency and sea chartering. Container freights can be organized by Manuport Logistics, Euroports' in house container expedition company.

This wide variety of services makes Euroports a great partner in maritime supply chain solutions.



### Class approved underwater hull repairs in Belgium and Uruguay



Recently Hydrex teams of diver/technicians mobilized to a 164m ro-ro vessel berthed in Antwerp, Belgium and a 235m bulker at anchor in Punta Del Este, Uruguay to perform underwater hull repairs. Despite the smaller scale of these operations they are nonetheless vital for shipowners if they want to avoid unscheduled drydock visits for their vessels.

Hydrex on-site hull repair services include the renewal of both small and large areas of damaged hull plating. These repairs can be carried out above or below water, according to the circumstances, with tailor-made mobdocks. Normal commercial activities can therefore continue without disruption. These operations follow the Hydrex procedure for welding cracks and inserts in the vessel's shell plating and they are approved by the major classification societies.

Hydrex diver/technician teams carry out these on-site hull repairs all over the world. In most cases the damaged area can be replaced with a permanent insert and no condition of class is imposed. On the rare occasions where the damage does not allow such a repair, as was the case in Uruguay, a temporary doubler plate is installed over the affected area. This allows the owners to keep to their schedule and have a permanent repair carried out during the next scheduled drydock visit.

### PERMANENT INSERT REPAIR IN ANTWERP

A cavitation hole needed to be repaired in the shell plating of a 164m ro-ro during the ship's stop in Antwerp. A Hydrex diver/technician team therefore carried out a detailed inspection of both the onboard as well as the water side of the shell plating, after which they installed a cofferdam over the affected area.

This allowed them to remove the frame covering the damage and cut away a round area with a diameter of 300mm. Next they positioned a new insert plate of the same dimensions and secured it with a full penetration weld. An independent tester

then carried out ultrasonic testing and the repair was approved by the Lloyd's Register surveyor who was present during the operation. The diver/technicians then reinstalled the frame and removed the cofferdam, concluding the repair.

### AFLOAT DOUBLER PLATE INSTALLATION IN URUGUAY

Hydrex was contacted to install a doubler plate over a grounding-related crack located on the flat bottom area of the first port side ballast tank of a 235m bulker in Punta Del Este. After arriving in Uruguay, a diver/technician team set up a workstation on a workboat and sailed to the location of the vessel.

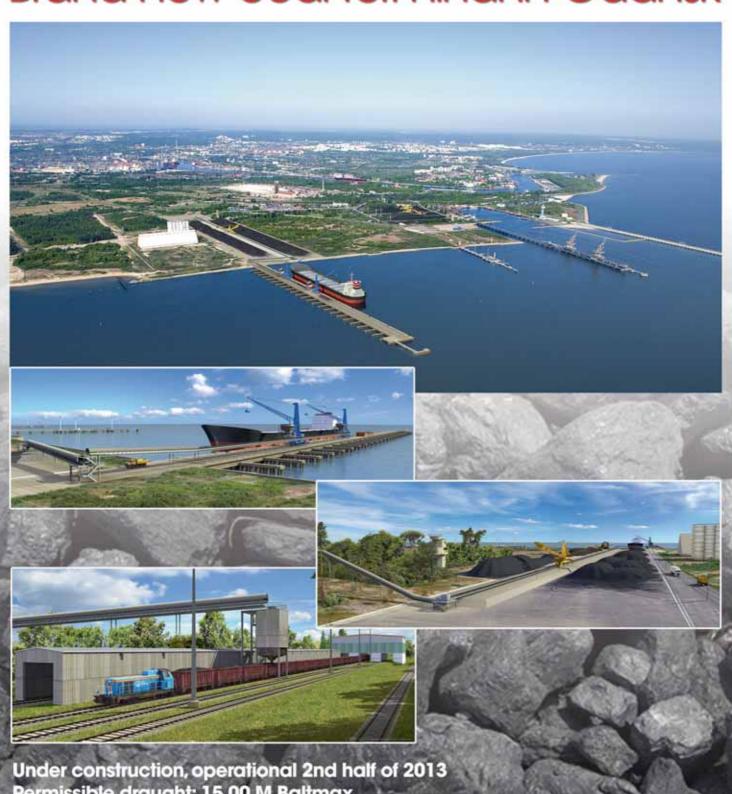
A detailed inspection revealed that the L-shaped crack was 480mm long and between 4mm and 8mm wide. In the area of impact, a 250mm deep and 25m long indent was also found. In the ballast tank, the team then removed the frames that had bent during the grounding. This allowed the diver/technicians to access the damage and make crack arrests on both sides to prevent the crack from spreading further. The team then installed a doubler plate over the crack on the water side as well as the in board side. The vessel could sail safely until the next scheduled drydocking where permanent repairs will be carried out.

Repairs of this kind can only be done rapidly and successfully by trained divers/technicians who are familiar with them and who have the relevant know-how to resolve all of the technical difficulties encountered during underwater operations. This is why all Hydrex technical staff from all offices undergo stringent training after which they are able to perform a wide range of operations. Throughout these operations they stayed in close communication with each other and with the technical department in the office. This allowed them to finish these jobs within the shortest possible time frame and to a very high standard.





### Brand new coal terminal in Gdansk



Permissible draught: 15,00 M Baltmax

2 cranes of 60 MT lifting capacity

Conveyor belts: 4.000 MT / hour

Reloading to train: 2.400 MT / hour

Raw materials gateway to Poland and Central - Europe

### E-Crane wins repeat order at Van Heyghen Recycling in Belgium



Ghent, Belgium: Three years after the installation of the first large E-Crane to offload Panamax-sized vessels at the Van Heyghen Recycling export terminal in the harbour of Ghent, Belgium, a second identical unit was erected. The E-Crane erection crew finished the first phase in October.

Commissioning of this new 2000 Series E-Crane is planned for mid-November, followed by an official inauguration on 16 November.

In the past, scrap loading, unloading and stockpiling operations on the dock were carried out by contracted large rubber-tyred mobile harbour cranes. The first E-Crane has proven itself for several years and has passed numerous tests verifying reliability and hourly production rates with flying colours. It was time for Van Heyghen to move forward again. The first

E-Crane has realized ship loading rates that were 100% higher (!) when compared with the mobile harbor cranes. The filling factor of the 12m³/15 yd³ grab with fast opening and closing times also provides a substantial contribution in achieving these unsurpassed loading and unloading rates. When loading



Handymax vessels, loading rates of 3,500 to 4,000 tonnes per shift are no exception for the E-Crane.

Rik Debaere, CEO of the Galloo Group, said: "The E-Crane at Van Heyghen has shown us clearly that the loading of scrap into large ocean going vessels on our export terminal at Ghent could be done with more efficiency, with increased safety and in a more economical manner when compared with the past."

With this multimillion dollar investment in a second dock side E-Crane, Van Heyghen Recycling offers its worldwide clientele better service and optimizes the use of their quay by substantially reducing vessel loading times. Galloo Group is now one of the most highly performing, state-of-the-art scrap terminals in Western Europe.

At the time of writing, commissioning of this second unit was planned for mid-November. The inauguration is set to take

place at the Van Heyghen Recycling terminal in Ghent at 11:30am Friday, 16 November, 2012. The inaugural celebration is scheduled to begin on Thursday, 15 November, with an evening of festive performance and dinner and ends Saturday 17 November.

### E-Crane acquires Polish 'Famaba' company



In mid-August this year, the E-Crane® Group of Companies, a major manufacturer of cranes for handling bulk materials, announced that it had succeeded in the acquisition of the Polish company 'Famaba', an ISO9001-certified company with 275 employees and revenues exceeding US\$20 million/€16

Harsco Metals, one of three 1000
Series E-Cranes, operating 24/24
handling scrap for steel plant in
Belgium.

million in the year 2011.
Another milestone in E-Crane's ambitious business plan has been reached.

With this acquisition, E-Crane® fully owns a strategic



supplier of high grade steel constructions for the crane industry while at the same time, Famaba stays an important European player in the market for foundations and towers for wind turbines.

Within the E-Crane® Group, Famaba will be operating as a fully independent unit. The already excellent co-operation between the E-Crane® organization and Famaba will be optimized and intensified. It is expected that in the short term this will result in a substantial increase in the capacity for assembling harbour cranes in Adegem (Belgium) as well as important savings in several logistics processes.

This acquisition guarantees employment for E-Crane® personnel at the Adegem assembly facility. Depending on market conditions, a further expansion is under consideration. The board and management of the E-Crane® Group of Companies stay committed to keeping and even increasing employment at the Adegem facility as well as at the Dutch and US-based subsidiaries despite the tough economic conditions.





### Highlight of the month

The bag palletizer with stretcher and printers from SMB has a capacity up to 4000 bags per hour. All operational machines as well as installation parts are equipped with all necessary protection features in accordance with the machinery protection law and the accident prevention regulations of the occupational governing body and meet the latest EC guidelines and the EC harmonized norms. The electrical equipment corresponds to the VDE regulations, especially VDE 0113 as well as the accident prevention rules for electric installations and operational regulations as well as the updated EC guidelines and the EC harmonized norms.

Line Filling System
Pallet Filling System
Single Place Filling System

### **Bag palletizer for cement bags**

Palletizing plants have two main tasks: The handling of a high volume of packages at high speeds in the final packing, and the precision of the positioning with the product preparation. At SMB International GmbH, the goal is to convert each customer requirement into a practical application. We emphasize our vast in-house know-how in terms of design, manufacturing, electro-technology application and control philosophy. With the modular kit system and features like the bag turning device, stations, and bag-rows — bar-band, layer palletization or empty-palette-magazine — the installation of small and larger systems is made possible.

For bag handling, like cement bags, the customer can choose a low or high finish. The result is a standard or a very high performance package. Typically application pictures of the 3 layer, 5 layer, 6 layer, 8 layer, or 10 layer group combined with a bag-trick-equipment, provides for an optimally geared, space saving and stable stacking of the bags on the palette.





Level Detector MBA 100
Rotating Paddle MBA
200/2.2/3.2
Vibrating Paddle MBA 700
Perpendicular MBA 369
Radar MBA 300/400
Fluidization Silo-Flo
Conductivity MLA 900

Compact Storage System Palletising Systems Transportation Systems





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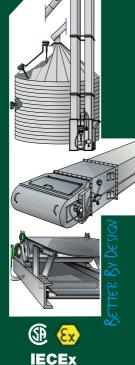


### The Safer option for hazard monitoring

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- Misalignment switches
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- Level indicators
- Inductive sensors







### Watchdog Elite

Complete Hazard Monitoring System for Bucket Elevators and Conveyors!

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- Triggers an alarm at 15° and a shutdown of the machine at 30°
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### 4B extends range of deep-drawn SPS **Super Starco** elevator buckets



4B has announced the introduction of more and bigger sizes of the popular pressed steel SPS elevator bucket. The biggest bucket of the range is now the SPS 630-215; and there are also more stainless steel options available.

The deep low profile design of the Super Starco™ elevator bucket is the result of intensive research to achieve the maximum individual bucket capacity. Additional capacity has been engineered into the bucket while still maintaining the perfect fill and discharge characteristics of the original Starco™ bucket. This means that fewer buckets are required per metre, fewer bolts and punching, and reduced costs for belt and bucket installation.

The SPS elevator bucket is a versatile bucket, available in many sizes and suitable for a wide range of applications, from grain, feed and pellets through to sticky materials, chemicals, sand, cement, coal, aggregates, powder and fertilizer.

4B also offers free engineering to complement its elevator bucket systems.

### **ABOUT 4B BRAIME ELEVATOR COMPONENTS**

Founded in the 1971 as a subsidiary of The Braime Group, 4B has been an industry leader in developing high quality, innovative, and dependable material handling components for the agricultural and industrial

4B's product line ranges from elevator buckets, elevator bolts and drop forged conveyor chain to level monitors, speed switches and hazard monitoring systems. With offices in North America, Europe, Asia, Africa and Australia along with a worldwide network of distributors, 4B can provide practical solutions for applications in any location.

### Mobile Siwertell unloaders meet multiple port needs

New mobile Siwertell units have been ordered from Cargotec to meet the specific needs of three ports; all will benefit from high-capacity, dust-free bulk handling operations and low noise levels, ensuring minimal environmental impact

Over the past four months Cargotec has secured orders for three new mobile Siwertell ship-unloaders for ports in Turkey, Denmark and Sweden, confirming its position as an advanced bulk-handling technology provider.

"Cargotec has delivered more than 300 Siwertell units worldwide, 100 of which are mobile systems," says Jörgen Ojeda, Cargotec sales director. "Clients recognize our experience and the well-respected Siwertell mobile unloader technology."

He adds: "The Siwertell road-mobile unloader is a perfect choice for clean, dust-free, handling of dry bulk material. Its unique design makes the Siwertell unloader one of the most environmentally friendly shore-based ship unloading systems available. Dust-

free handling, and low energy consumption, along with minimal exhaust and sound emissions also mean that it has the advantage of being able to be used in sensitive sites or those close to populated areas."

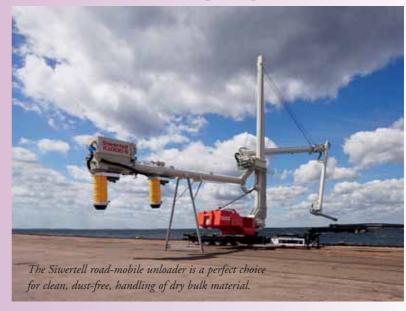
The first of these new orders has now been commissioned and sees a diesel-powered, trailer-based Siwertell 10 000 S unit with a dual bellows system and dust filters in operation for Muhammet Gümüstas, in Trabzon, Turkey. The new unit handles cement at a rated capacity of 300tph (tonnes per hour).

"The mobile Siwertell unloader was originally designed for handling cement, so it is naturally perfect for the job. With its enclosed conveying line, this system is also environmentally friendly as it ensures dust-free and high-capacity unloading operations," explains Ojeda.

A similar unit is due to be commissioned for Aalborg Portland in Aalborg, Denmark. It will handle fly ash at a rated capacity of 250tph.

"For this installation, a mechanical solution was preferred by the client as it had to be smoothly integrated into an existing mechanical receiving system at the jetty."

He adds: "Low maintenance and operational costs of the



mobile Siwertell unloader, combined with a high unloading capacity, will also ensure cost-efficient operations for Aalborg Portland for a long time to come."

The third order is for an electrically-powered, gantry-based, ATEX-classified Siwertell 15 000 S unit. It will be commissioned by the end of next year for Fortum Värme, which is co-owned by the City of Stockholm, Sweden.

The unloader will be installed in Stockholm and has a rated capacity of 330tph. It will handle biomass including olive kernels, wood pellets, and wood briquettes. It will also be equipped with tube sleeves and noise hoods to minimize noise pollution.

"For this contract, our focus is to deliver an unloader with the required capacity, minimal dust emissions and low noise generation."

Fortum Värme is the Swedish part of Fortum Heat Scandinavia, which produces district heating, district cooling and electricity in combined heat and power plants. Fortum Värme is building a new fuel handling facility, Energihamnen, in Gothenburg, so that it will be able to increase the amount of biofuels in Värtaverket, Stockholm. "An important part of the company's plan is to invest up to 15 billion SEK in new combined heat and

power plants, as its goal is to provide resource and climate neutral district heating by 2030; our Siwertell units will be an integral part of this," Ojeda says.

Cargotec improves the efficiency of cargo flows by offering solutions for loading and unloading goods on land and at sea - wherever cargo is on the move. For handling dry bulk materials, Cargotec provides engineering solutions through its Siwertell brand, including design, installation and after sales services worldwide. Siwertell ship-unloaders and loaders are based on unique screw conveyor technology, in combination with belt conveyors and aeroslides, and can handle virtually any dry bulk cargo, such as coal, cement, fertilizer, agribulk, clinker, sulphur and grain. Cargotec can supply plant and terminal design, ship unloaders, ship loaders, mobile ship unloaders, mechanical and pneumatic conveying systems, and storage solutions, all designed to ensure environmentally-friendly and efficient cargo operations.





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### Superior appoints new national sales managers

Superior Industries, North America's only combination manufacturer of conveyor systems and their related accessories, has announced the appointments of two new national sales managers to its conveying equipment and conveyor components divisions. Company veterans Jeff Steiner and Mike Domnick will still maintain strong roles within each of the divisions, however their focus will be operations.

Effective immediately, Scott Gulan assumes sales management of the company's conveying equipment division. His duties will include supervision of territory managers throughout the United States and Canada and customer care from point of sale to the company's internal customer service estimating team.

During his first five years at Superior, and up until the point of this assignment, Gulan was a territory manager representing the Southeastern United States. Before coming to Superior, he had a quarter decade of sales and marketing experience in the industry working for companies like REMA TIPTOP North America Inc. and Fenner Dunlop.

"If you have not met Scott yet, you'll quickly realize he's committed to extraordinary customer service," says Bob Domnick, Superior's vice president of sales, marketing and engineering. "He's sharp-witted, thoroughly organized and was a born leader."

Meanwhile, Mike McFerren accepts the same role in

Superior's conveyor components division. McFerren's new responsibility is to oversee the company's idler, pulley and conveyor accessory territory sales managers in the United States and Canada. Along with his new team, McFerren will work to ensure Superior's component's distribution and bulk material producing customers are well supported.

Until now, McFerren was a territory manager representing Superior conveyor components in the Northeastern United States. Previously to his employment with the company, he spent time with REMA TIP TOP North America Inc., FMC Technologies and was an industrial sales consultant.

"Mike is an innovative strategist and very detailed tactical planner," says Domnick. "He will work closely with our sales managers and distribution to develop, maintain and complete their goals."

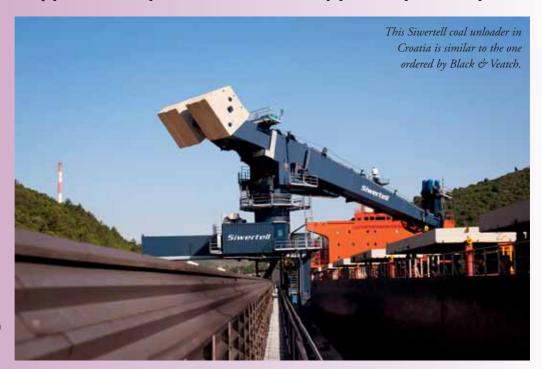
#### **ABOUT SUPERIOR INDUSTRIES**

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

### Siwertell screw-type CSU specified for Philippines power plant

In addition to reliability, efficiency and environmentally friendly operations, benefits of a Siwertell ship unloader recently ordered from Cargotec include reduced jetty construction costs.

A rail-mounted
Siwertell ship-unloader
with a rated capacity of
1,500tph (tonnes per
hour) will be used to
discharge coal at a
greenfield power plant
under construction near
the city of Davao,
Mindanao Island, in the
Philippines. The unloader
is scheduled for delivery in
December 2013 and will
be transported to the
installation site in pre-



assembled sections. The order is booked into Cargotec's third quarter 2012 order intake.

Cargotec received the order from global engineering, consulting and construction company Black & Veatch Corporation, which has its headquarters in Kansas, US. The project will be implemented by the Black & Veatch regional office in Beijing.

"The client had an early preference for a continuous ship-unloader [CSU], and for a screw type unloader in particular," said Ola Jeppsson, Cargotec sales manager. "This was because of its efficiency, reliability and environmentally friendly operation. The system's slim footprint and low weight also mean that it offers savings in jetty construction costs."



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# Hitachi dealer celebrates 60th anniversary

Belgium's official Hitachi dealer, Luyckx, celebrated its 60th anniversary with its largest ever open house event, which attracted more than 15,000 visitors. A total of 100 machines were on display at the two-day gathering in September, which also marked Luyckx's 30th year as a Hitachi dealer. These included several new Zaxis-5 models for customers to test drive, as well as the ZH200 hybrid and EX1900-6 mining excavators.

Managing director Jos Luyckx was delighted with the success of the occasion: "Our focus was on the operators, the engineers and their families — everyone was welcome. The theme was 'See the difference, feel the experience'. It was a good opportunity for our customers to try new machines, including the new ZX250-5, ZX290-5 and ZX350-5, and feel the difference — particularly between the Zaxis-3 and Zaxis-5 models."

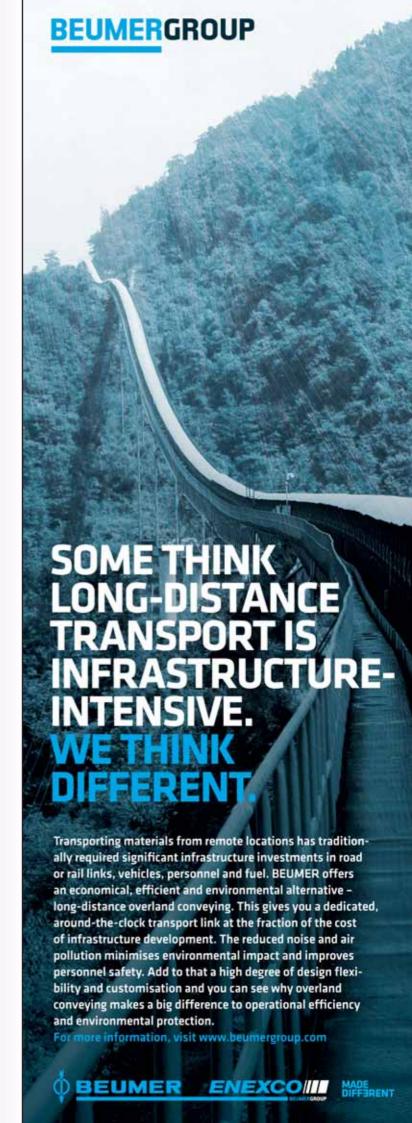
Senior representatives of Hitachi Construction Machinery Co., Ltd. and Hitachi Construction Machinery (Europe) NV also attended the celebrations, along with representatives from other national Hitachi dealers, including the UK, Finland and The Netherlands.

Since 1985, Luyckx has helped the Hitachi brand to establish itself and remain as market leader in the Belgian market for crawler excavators. It recently sold the first EX1900-6 in Belgium, which will be the largest Hitachi machine in the country when it is delivered to Heidelberg Cement next year.

The family-run company, based in Brecht, also prides itself in providing customized solutions and is capable of modifying machines to suit customer requirements at its state-of-theart 17,000m² workshop. "Making the impossible possible is the strength of our company," says Luyckx.

Luyckx also has locations in Antwerp, Izegem and two mobile product support units based in Dinant. Earlier this year, it opened a branch in Abu Dhabi to support its growing number of customers operating in the oil and gas industry in the Middle East.







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

### Tenova TAKRAF wins repeat order from New Zealand

After the successful supply and installation in 2011 of a lignite-capable plant to New Zealand's RCR Energy Systems, RCR has now requested Tenova Takraf Africa, formerly Bateman South Africa, to extend the cross Redler conveyor to cater for a second boiler installation. In essence, the system draws coal from an in-ground holding bunker at a constant rate of 68tph (tonnes per hour) and feeds it to overhead boiler day hoppers.

TENOVA Takraf Africa's Andrew Wager describes the system as consisting of a reclaim Redler chain conveyor, drawing a pre-determined volumetric load from a holding bunker and transferring it to a belt conveyor, which lifts the coal and inclines it 24m up a 21° incline. "From the belt conveyor it transfers into a cross Redler conveyor, which distributes the coal evenly in the bunker above the boiler, via three pneumatic slides on each of two hoppers and a final outlet," he says.

He adds that because lignite is a 'sticky', relatively poor grade of coal, which is not free flowing, special design considerations had to be taken into account in the calculations and ultimate design.

RCR project engineer, Craig Weston, explains that the second boiler installation is an independent structure to the first, and in light of the recent catastrophic earthquakes in New Zealand, and with the project being near the epicentre of the first earthquake, more emphasis has been put on personnel and equipment protection.

Wager says that the brief from RCR was to cater for a combined movement of I20mm from one bunker to the other in the event of an earthquake. "After due consideration, we opted for a slip joint design in the casing and a spring assisted tension

end," Wager says.

Weston says that the ingenuity and excellent service they have received from Tenova Takraf has encouraged RCR to continually do business with them. "They are excellent engineers and go the extra mile to provide equally excellent service," he concluded.

This is the third order received by Tenova Takraf Africa from RCR Energy Systems in New Zealand for fuel handling systems over the last five years.

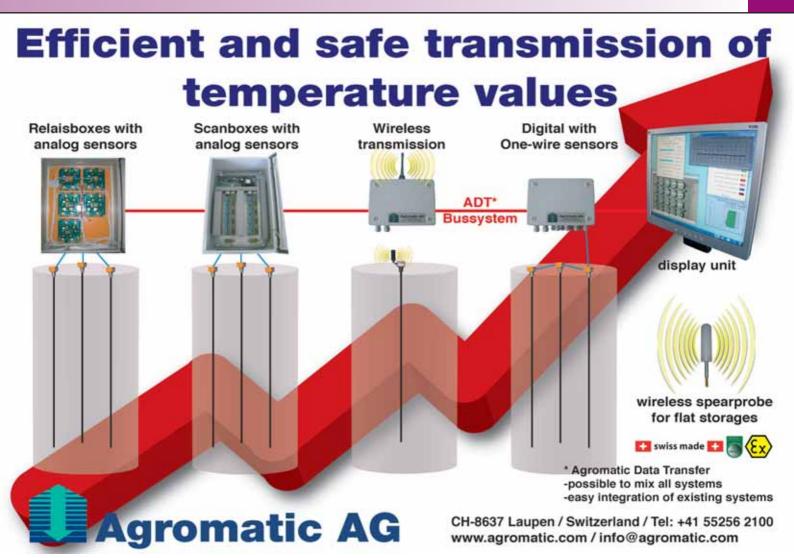
RCR Energy provides comprehensive turnkey Engineer, Procure and Construct solutions for utility, power and industrial energy projects, as well as overhaul and refurbishment of plants utilizing renewable energy, biomass, coal, gas and liquid fuels.

RCR's service business is one of the largest fully accredited service and packaged boiler company in Australasia. With an extensive workshop and service network in key utility and industrial centres throughout Australia and New Zealand, RCR provides 24/7 emergency and service support to the local market.

Tenova TAKRAF is a major supplier of a complete range of systems for the mining and bulk handling sector and Tenova Bateman Technologies provides solutions covering; leaching, solvent extraction and electro-winning, beneficiation, purification, sulphuric and phosphoric acid plants.

Tenova is a worldwide supplier of advanced technologies, products and engineering services for the iron and steel and mining industries providing innovative, integrated solutions for complete process areas.

Tenova's network companies operate in 26 countries on five continents with more than 4,900 people.





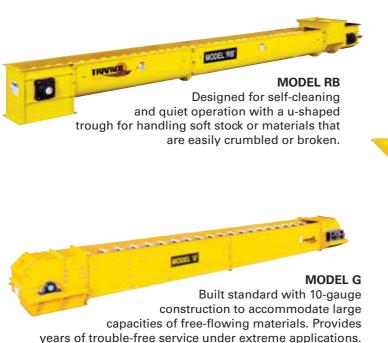




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### Sennebogen maXcab industrial cab: optimal ergonomics and outstanding overview



The SENNEBOGEN maXcab industrial cab is used wherever challenging material handling tasks are carried out. To make the working environment even more ergonomic and safe for drivers, SENNEBOGEN offers an optimized industrial cab model in the special equipment range to replace the maXcab comfort cab. The industrial cab offers an outstanding feeling of space and optimal overview thanks to the tilted vertical front windscreen with armoured glass and a bigger field of vision.

#### **ERGONOMIC AND SAFE**

The straight and continuous glass panes on the front and the roof give the driver an optimal overview from the maXcab industrial



cab. The workplace is made even more spacious and ergonomic with the vertical front windscreen and the extra room this provides. A further window in the base offers an unrestricted view of the work areas underneath from an elevated position. The front windscreen made from 30mm thick armoured glass provides optimal protection for the driver. Armoured glass is also used in the roof. As an elevating maXcab, the industrial model combines optimal overview of the work area with the highest possible safety features. The sliding door included as standard and a robust step grid with rails provide additional protection. The cab sets new standards with regard to background noise.

### UNRESTRICTED VIEW, EVEN IN ADVERSE WEATHER CONDITIONS AND HEAVY SOILING

The tilted windscreen remains unimpaired in even dusty and dirty environments. Rain and dust are unable to stick on the vertical tilted windscreen and flow off quickly. The rest is taken care of by the two windscreen wipers. This means that work can be carried out safely and comfortably, even under extreme adverse conditions — whether at the scrap yard or at the port. Of course, the industrial model also includes the features of the maXcab comfort cab. With automatic heating and climate control and an individually adjustable, air-sprung driver's seat, the cab offers a pleasant workplace for the drivers, helping them use the machine to its full potential.

### Stewart Group becomes ALS Inspection

Stewart Group, the Liverpool-based inspection and analysis company has rebranded to form ALS Inspection. The move follows the acquisition of Stewart Group last year by Australian testing services company ALS Group.

Stewart Group has been integrated into the core ALS vision and has become an integral part of the ALS team. From October 2012 the Stewart Group brand will cease and the group will officially operate as ALS Inspection.

The full range of leading services offered by the inspection and analysis provider will continue and there will be no change to the company's extensive range of facilities. The new brand will enable ALS Inspection to capitalize on the existing strength and

network of ALS Global, providing a more expansive offering for all customers.

The company's flagship office and laboratory in Knowsley will remain as the head office for ALS Inspection and will continue its investment in technology advances to enhance its offering.

Chris Walker, general manager of ALS Inspection, said: "We are very excited about the new brand and welcome this new era in our company. We have some ambitious plans to take our business to new markets and expand our offering, and the new brand puts us in a strong position to achieve these."

As of 9th October 2012, the Stewart Group brand has ceased

### New onboard truck ramps save time



Superior Industries, North America's only combination manufacturer of conveyor systems and their related accessories, offers time-saving onboard truck ramps as a new option for its line of portable RazerTail® truck unloaders.

Packaged with the machine, these onboard ramps reduce setup time for owners by up to an hour. Without the new technology, earthen ramps are constructed so belly and end dump trucks can access the hopper. Over time, ramps made of earthen material can settle, requiring maintenance. In addition, each move of a Superior or competitor brand portable unloader requires these earthen ramps to be arranged or deconstructed; a process requiring up to an hour to complete.

According to Superior, the new onboard ramps unfold from their transport position in as little as five minutes. A loader or forklift operator simply connects chains or straps to hooks and reverses to initiate ramp setup. To return the ramps to a transport position, the loader or forklift performs the same function while traveling in the opposite direction.

These new onboard truck ramps are available on all model 48-inch (1200mm) and 72-inch (1800mm) RazerTail truck

unloaders. The patented machine, exclusively manufactured by Superior Industries, allows full belly or end dump trucks to unload in as little as 90 seconds. Customers often combine the equipment with the company's TeleStacker® conveyor to eliminate bulk material segregation from truck to stockpile. Other applications for the portable truck unloader include barge, ship and railcar loading.

Current owners seeking to retrofit the truck ramps to an existing RazerTail truck unloader should contact their local Superior dealer or the company directly.

### **ABOUT SUPERIOR INDUSTRIES**

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

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Grabs

### New Martin screen vibrators deliver efficiency and design freedom

A world-renowned provider of engineered vibration for bulk material handling has introduced a new family of electric screen vibrators for regular duty and hazardous environments. Designed to deliver up to 16,500 pounds of centrifugal force for efficient material separation, Martin® screen vibrators are built specifically to withstand the rigors of industrial applications and continuous use, and can run 24/7 as needed.

"With a traditional screen vibrator, the drive functions as the energy source," explained Robert Nogaj, Martin Engineering vice president of operations and product management. "The energy is transferred via structural bridge to the vibratory box which is isolated by the springs. With our new design, the energy source is an integral part of the structural tube that can be mounted to the sides or top of a vibratory box, making it much easier for designers to engineer and manufacture new kinds of vibratory screens."

The new line of vibrators is designed and engineered in the USA and will be manufactured in most Martin Engineering facilities worldwide to facilitate short lead times and service response. Nogaj said that the designs are likely to find utility in high frequency vibratory screens, dewatering operations and other vibratory equipment for the oil and gas industries, as well as processing of gold and other elements, silica sand, pharmaceuticals and even food applications.

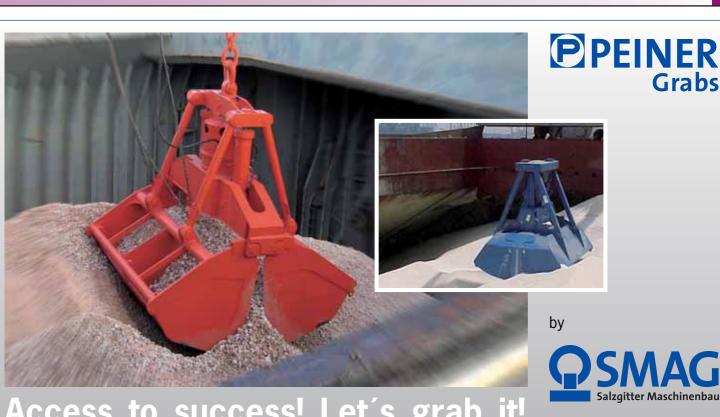
"The new Martin® screen vibrator is our own design," Nogaj continued. "We started with several models, some of them direct retrofits for the Derrick® shaker. But our drives are fully adjustable, so the customer has more flexibility and creativity in how the vibrators are used. We're now in the process of

expanding the product line beyond the models engineered to retrofit OEM equipment, including a line of much larger drives," he added. The new vibrators can be used with variable frequency drive (VFD) in ordinary and hazardous atmospheres. Explosionproof models are ETL/cETL/ATEX/IECex certified for hazardous

The versatile dual-voltage product line can be used anywhere in the world, and the eccentric weights can be adjusted with hand tools to match 'High G' or standard performance screens. No adaptors are needed to fit Derrick vibrating screens, as these direct-replacement units can be bolted and wired to existing connections. Designed for low maintenance, the only service required is lubrication with a standard grease gun every 2,000 hours, and the long-life bearings produce less noise than OEM oil bath bearings.

Martin® screen vibrators provide the power to sort or separate material efficiently, and the sturdy designs have been proven in demanding lab trials and field applications. The units are manufactured to the highest quality standards, effective for use in industries where bulk materials, solids and powders are stored or processed.

Martin Engineering offers a comprehensive selection of vibration products, delivering the highest force to weight ratio of any electric vibrator manufacturer. The firm has more than 70 years of experience in designing and manufacturing vibration products of the highest quality. Backed by a worldwide support network of experts, the company's vibrators are supplied with an industry-best three-year warranty and an 'absolutely no excuses' guarantee. Availability may vary by region.



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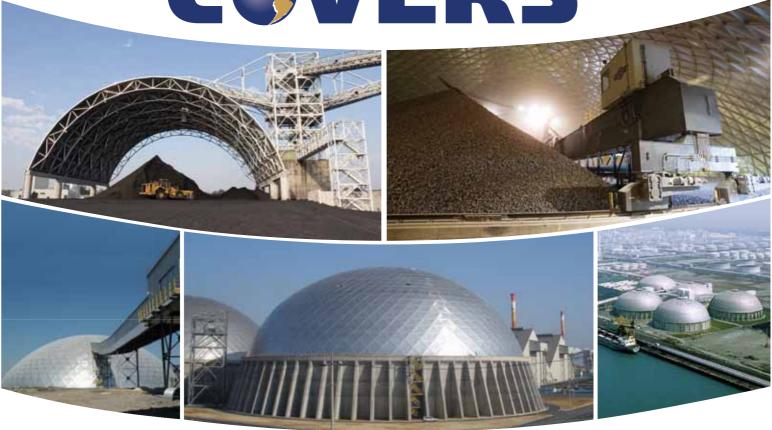
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### **Dulevo International's industrial sweeping machines offer total material reclaim**

Cleaning equipment supplier Dulevo International offers a range of solutions to help keep the bulk handling process clean and safe. The bulk handling environment can be extremely dusty and dirty, and it is important that all operators are able to ensure that they have a reliable, effective cleaning system.

Dulevo International's equipment has wide applications, and its equipment can be found not only in the bulk handling environment, but also in other commercial applications, such as offices, hospitals, factories, warehouses and so forth. It also has a range of street cleaning machines.

Dulevo International has grown to establish itself as a worldrenowned floor sweeper and scrubber company, offering top quality industrial cleaning machines, sweepers, scrubbers, vacuums, cleaners, tools and burnishers.

As a company Dulevo believes that its sweeper and scrubber technologies are amongst the best in the world. Its products can be found all over the globe, and Dulevo prides itself in the quality of its machines, which offer a high level of reliability and performance. Today, Dulevo International is a major quality supplier of industrial sweepers, street sweepers, vacuumcleaners, scrubbers, burnishers and waste compactors.

### **COMPANY CLIENTELE**

Dulevo's presence in more than 80 countries around the world places it in the top five most important manufacturers of cleaning machinery. As such, the company is fully internationalized, and can offer local support around the world through its extensive territorial presence. Dulevo's product line focuses on four lines of production: road sweepers, industrial sweepers, small commercial sweepers and scrubber dryers. Dulevo, thanks to over 30 years of experience, has been chosen

worldwide as supplier by many local authorities (such as Rome and Milan in Italy, Athens in Greece, Dubai in the United Arab Emirates, Lyon in France, Singapore and many others), civil and military airports, Ministry of Defence, Ministries for the Environment, Seaports, motorway companies etc. The high quality of Dulevo sweepers mean that they are also used in industrial fields. For many years, Dulevo industrial sweepers have been used in many cement plans, mines, concrete plants and so forth.

### KEEPING COMPETITIVE

Dulevo International appeals to the heavy industry market as well as the mining sector as a proven manufacturer of a dry sweeping system, thanks to its patented mechanical-suction collection system.

Dulevo's system benefits the end user by:

- achieving a higher standard of plant cleanliness;
- up to three times higher speed cleaning compared with most other sweepers on the market;
- \* a completely dry sweeping process which allows for total reclaim of the picked up material;
- saving huge sums of time and money in labour costs; and
- absolute adherence to modern environmental laws.

### **RECENT ACTIVITY**

Dulevo International is experiencing a very successful period. Since July this year, 61 machines have left the company's headquarters in Fontanellato in Italy. The destination of all these machines is the Port of Shuwaikh, 40km south of Kuwait City. Kuwait is one of the smallest countries in the world. It has no natural water sources, and has summers in which the



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temperatures rarely drop below 50°C. Forty-seven 5000 sweepers and fourteen New Commando (special machines set up specifically for this tender) are already in Kuwait ready to face the hard work specified in the fiveyear contract.

This delivery is the result of very complicated and difficult negotiations, which involved both Dulevo and its Kuwait dealer Tanzifco.
Thanks to the dedication and expertise of Mustafa and Abdul Alayan, what a year ago looked like a pipedream is now reality. The long running relationship that binds Dulevo and Tanzifco is not only professional, but is based

on ongoing trust, appreciation and mutual respect that go beyond geographical and cultural distances, gradually transforming into sincere friendship.

Thanks to this kind of relationship and frank exchange of information, it was possible to develop a machine that would be absolutely perfect for an extreme environment such as the Middle East. Dulevo has invested years and substantial resources to develop an efficient vehicle, which is able to withstand high temperatures such as those in the desert.

The results are already extremely satisfactory, though will be even more evident in five years' time, at which point the contract expires. Then, the various contractors involved will assess the purchased machines and will realize that the way to achieve great, long-lasting results is to rely upon a supplier that has many years' experience, combined with passion and a high level of expertise.

As an important testimony of the hard work Dulevo has carried out in the Middle East, for the first time, technical specifications for tenders involving 'mechanical-suction sweepers' were issued. This is a step-change for Arab customers, as tradition has always dictated that contracts be awarded to major American manufacturers with their large, slow suction machines.

To date, Dulevo has sold nearly 1,200 machines, over 400 of which are road sweepers. The company's success in this region serves as a warning to other manufacturers that it is vital to have the appropriate expertise to deal with such extreme environments.

#### **RECENT TECHNOLOGICAL DEVELOPMENTS**

The Gore® filter, which is available on all industrial and road models, from model 1100 to model 5000) guarantees:

- minimum filter maintenance. The filtering surface is completely impenetrable to particulate matter: self-cleaning even in the event of a total lack of maintenance;
- over 99% filtration of PM10 particulate matter. Dulevo and Gore® technology reachs filtration standards for PM10, PM5, PM2.5 and PM1 considered impossible to achieve;
- long-lasting filtering quality over time. PTFE enables the filtering quality of the machine to be maintained absolutely intact over time, leaving the particulate matter outside of the membrane;



- a better standard of cleaning. A 35% increase in the air flow of your sweeper ensures improved suction of particulate matter and light waste;
- total resistance to external agents. Water, oil, vegetable and animal fat and chemical agents are no longer a threat to the top performance of a Dulevo sweeper;
- useful life of the filter guaranteed without limits for five years. Even if used in extremely dusty environments, the Gore® filter still has an unlimited guarantee of five years.

The patented mechanical-suction-filtering system adopted on the Dulevo sweeper, already renowned for its fine and ultrafine particle filtering properties, has now been perfected thanks to the exclusive application of Gore® filters and it confirms itself as the only one able to guarantee the absolute damping of PM10 particles in urban and industrial environments.

#### **COMPANY HISTORY**

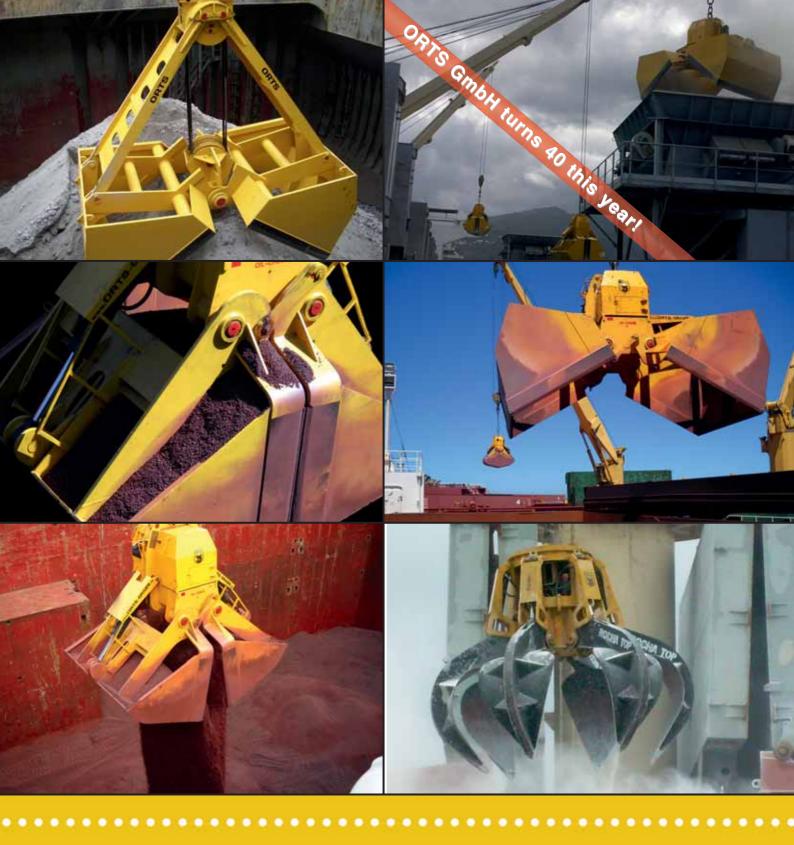
Dulevo has come a long way since it was founded in a small garage in a provincial village in Italy. Today, Dulevo is present in more than 80 countries, and ranks among the five most successful companies globally, as far as production and distribution of machines for industrial and urban cleaning are concerned.

Besides the production centre in Fontanellato, today Dulevo can count on another production site in Puebla, Mexico, and on three business affiliates spread in the following countries:

- **Dulevo France**, in Macon, right in the heart of Europe;
- Dulevo India, in Noida, in the centre of the Asian continent;
- Dulevo Australia, in Melbourne, servicing the Far East and the Oceanic continent.

Thanks to a widespread direct presence on the ground and an extensive network of dealers, today Dulevo is able to provide support and spare parts in any corner of the planet within a maximum of 36 hours.

More than 200 specialized and duly trained technicians from the headquarters provide a 360° assistance: full service maintenance contracts (supported by more than 50 Dulevo After Sales centres), spare parts, technical specifications, training courses, and much more. Dulevo's Support Offices are there to help its customers in any way to ensure the best possible maintenance of their Dulevo products.



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# iSAM commissions new EMO shiploader

servicing barges and oceangoing vessels at major transshipment terminal



In June 2012 iSAM AG finished commissioning its first shiploader for barges and seagoing vessels at Europees Massagoed-Overslagbedrijf (EMO) BV in Europort Rotterdam, Netherlands. In line with other equipment at the largest transshipment terminal for iron ore and coal in Western Europe, the new shiploader has a maximum throughput capacity of 6,000tph (tonnes per hour) for iron ore and will be fully automated for man-less operations by the end of 2012. Even at lower rates,

like 2,500tph, the new machine enables EMO to load barges and combined barges in under two hours. Stacking on land is possible, too. To reduce the impact of the machine on its environment it is designed for low electrostatic discharge (ESD) and sound emissions. To prevent dust nuisance it is equipped with a position-controlled dust chute.

The automation system for shiploaders is the newest product of iSAMs high tech portfolio, which co-operates perfectly with



the coherent solutions for stacker reclaimers and grab unloaders. iSAM's product line now offers unique automation and optimization solutions for man-less operations in every business handling dry bulk materials like import/export terminals or mines. At EMO all eleven machines, which were automated

by iSAM, can be controlled by only one operator from a central control room.

Like the iSAM solution for grab unloaders and stacker reclaimers the new automation for shiploaders is based on the same main components as existing equipment on the terminal,

# **iSAM AG** – integrated automation for bulk material handling



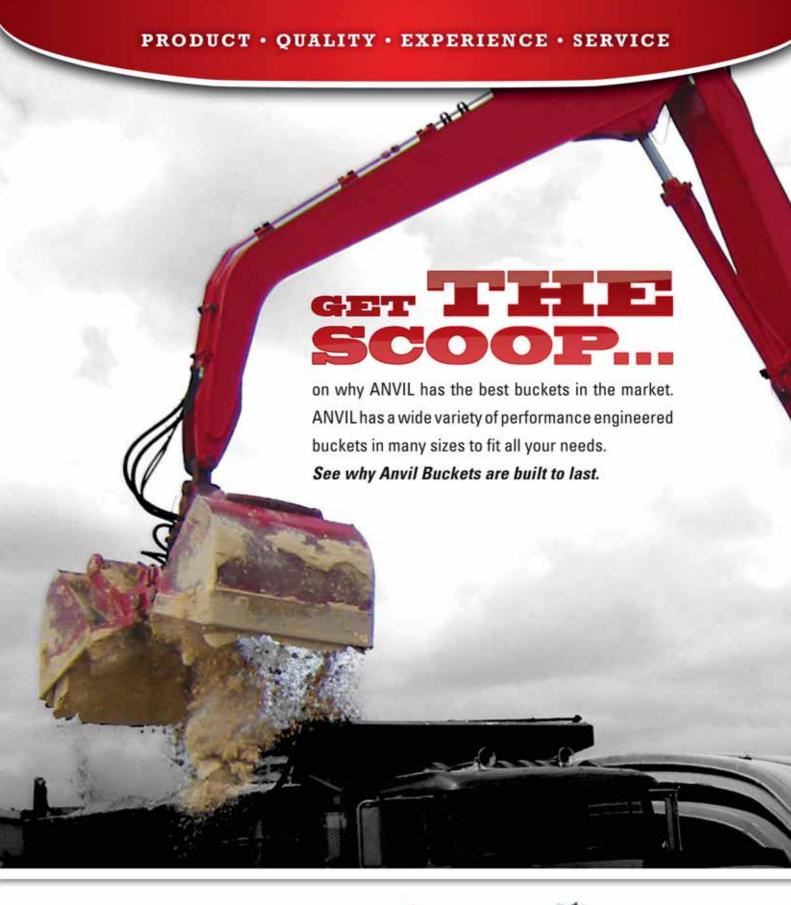
**iSAM AG** Gesellschaft für angewandte Kybernetik



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- driverless ship unloaders
- driverless ship loaders
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- material transport and flow control systems
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Single Line Clamshell Bucket – Model PLSLR-1

minimizing the effort for maintenance training and spare part management. The positions off all four axes including the telescope are detected by a state of the art RTK GPS system offering a availability of 99,9% and an accuracy of one inch, while positioning of the machine is controlled by an industrial type PC. The environment, including ships and stockpiles, is scanned by a high performance 3D-laser. Due to its low remission, coal greatly limits the detection range of optical systems. Being the most sophisticated 3D-laser scanner available, it overcomes this obstacle offering a scan radius of up to 100 metres. As the laser is a class-I system no further personal protection equipment, like goggles, is necessary to work in the operating range. The collected data of the 3D-laser scanner can be displayed on a site map, offering accurate and reliable information about the stored material. It can also be linked to existing site management systems, delivering updated data without having the planning department get accustomed to a new system.

To allow communication between the ship's loadmaster and the automation system, for example to request hatch changes or to trigger a quick stop, the shiploader is equipped with a remote panel, communicating through Wi-Fi. The panel can also be used to display useful information like the amount of loaded material overall or per hatch.

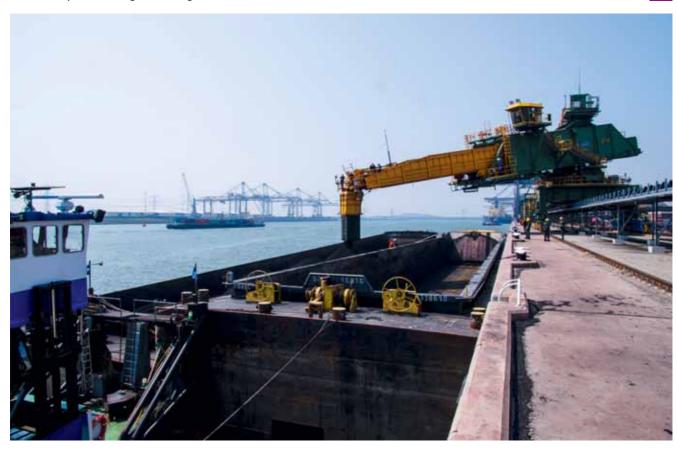
To protect the shiploader from collision with vessels or stockpiles a work proven collision protection system was put into place, supplemented by new features for the unique situation of a shiploader. It consists mainly of sonar sensors on selected positions and a microwave barrier to protect the length of the boom. New to the system is a 2D-radar scanner which spans a defined area underneath the boom to protect it against floatation of ships, in case of rising tide, or to fast emptying of the ship's ballast tanks. In addition two radar probes at the tip of the boom will trigger an emergency lifting if their readings fall below a safe distance. During normal operation the radar probes are used to detect and monitor the dropped material to assure an optimal loading or stacking result.

To fulfil today's requirements for electrical efficiency, but also availability and maintenance the whole electrical equipment of the new shiploader was redesigned, integrating only components of the newest generation. The safety PLC, the frequency drive converters and also the motors are from one supplier, to guarantee the highest possible interoperability. All major brands are possible and for the customer to choose from. No matter if it is a complete new design or an automation upgrade, the assignments of the new European machine directive are fulfilled in every aspect.

One highlight of the shiploader project was the on-time delivery of the manual control system within a very tight schedule. With a motivated and experienced team of electricians and automation engineers and a project management which worked together with EMO closely, from the conceptual phase until completion, it was possible to achieve this goal. Every company and every machine are different and so iSAM is continuing its efforts for optimization to make it the perfect machine for its everyday tasks.

Apart from automation solutions for bulk material handling equipment iSAM AG, Gesellschaft für angewandte Kybernetik develops and implements automation solutions that enable industry, commerce and service suppliers to increase their performance in the field of mining, transport and logistics, steel and metal making and manufacturing, tube welding and pipeline construction, mechanical engineering and plant building, electronics, aerospace etc. all over the world. Accordingly, iSAM's business and turnkey solutions are available all over the globe.

The company itself is located in Mülheim an der Ruhr, a city in the Ruhrgebiet, Germany's renowned centre of high technology. Here, company experts are concentrating efforts to keep on increasing customers value. iSAM's team covers specialists from the sectors engineering, computer sciences, physics, as well as business economics, best skilled and ready to create customized solutions.





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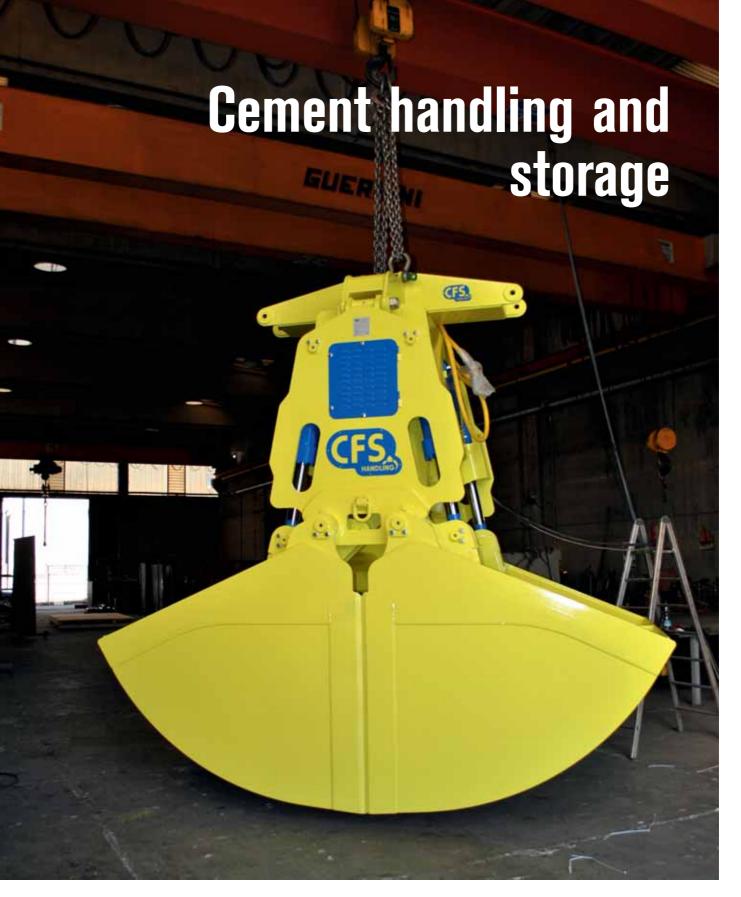
diesel-power and multiple mobility options, there's a model to suit every terminal application.

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Find out more at www.flsmidth.com





#### **CFS International grab for Bulgarian cement customer**

CFS International Engineering Handling is a major designer and manufacturer of bulk handling equipment.

The company's product range includes mechanical, hydraulic and electro-hydraulic buckets as well as hydraulic and electro-hydraulic grabs.

CFS is able to offer a wide range of buckets and grabs to meet the needs of its customers. Its equipment is widely used in industry sectors including: ports, cement, steel works, scrap, coal,

grain, zirconium, demolition, waste, shred material, turning chips, urban solid waste, paper, cast iron ingots, ores, slag, bales and so forth.

The CFS team aims to meet its customers' needs as closely as possible, as each different material handled has its own specific characteristics that may require its own grab.

The company has 30 years of experience, so it is able to guarantee high quality, good prices, excellent design quality

#### IBAU HAMBURG supplies road-mobile ship-unloader to Sanghi Industries in India

IBAU HAMBURG has recently delivered a road-mobile ship-unloader, ordered by Sanghi Industries Ltd. for its Mumbai Cement Terminal

The road-mobile ship-unloaders (pictured) for mini bulk tankers are usually mounted on trailers (for road transport) as the ship-unloader has to serve several terminals or because it is not possible to have stationary units in the harbour. Road-mobile, trailer-mounted ship-unloaders have a self-supporting structure, weigh approximately 30 tonnes and do have a high degree of manoeuvrability.

According to the requirements, starting from the transport position, the unit must be ready for operation in less than 30 minutes. During operation, the individual screws can be tilted or rotated within fixed angles, so that all areas of the ship's hold can be reached from a given position. The loading screw can either load the material directly into trucks or

transfer it to a downstream mechanical or pneumatic transport unit. For direct truck loading, the loading screw is equipped with a loading chute and an integrated filter unit.

Rod-mobile mechanical ship-unloaders from IBAU HAMBURG fulfil the strictest client requirements and



expectations, with the lowest energy consumption and the highest flexibility. The ship-unloader integrates the latest modular design, which allows for customized functions and features and specifically engineered downstream cement transport systems to the final storage.



and customer focus.

Illustrated here is one of CFS's electro-hydraulic buckets, that has recent been shipped to Varna, Bulgaria, for use in a cement plant. It is a 8m3 bucket equipped with sensors in digital currents, in order to be interfaced by a PLC and to work in the storage area for materials like: clinker, limestone, slag and so on.

This bucket will be operated according to the company's 'Arricetta' formula, which is designed for the PLC-controlled storage of bulk material.

In order to prevent the grab's oil overheating when handling clinker at temperatures of up to 500°C, the handling bucket is equipped with an oil cooler.









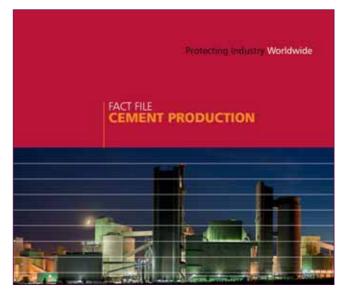
#### Kingfisher publication shows how to reduce cement production costs

Kingfisher Industrial is equipping companies in the cement industry with the means to optimize their businesses and achieve reduced total production costs. The company's new, free, industry-specific publication on wear protection shows cement manufacturers how to get more life from their plants, reduce maintenance and improve productivity. It highlights the benefits of employing wear protection to new or existing cement manufacturing plant, providing users with 10-year or even 20-year life from their installations.

The Cement Manufacturing brochure is the latest in a series of publications that Kingfisher has produced to highlight the benefits of wear protection across all process engineering sectors. It is the result of Kingfisher's long and successful industry experience of providing wear protection solutions and full turnkey project to most of the major companies involved the manufacture of cement.

The publication provides an easy-to-assimilate graphic of a cement manufacturing plant, breaking down the process to show key equipment used and outlining how wear protection can improve its life performance.

This is complemented by a description of the value added benefits of using wear protection, outlining how the process of coating or lining key plant and equipment, such as cyclones, separators, hoppers, pipework and chutes, with ceramic, metallic



or polymer protection systems which extend plant life considerably. The benefits of providing such protection are evidenced by research by Kingfisher that shows users of its wear protection systems benefit by a factor of five times their initial outlay, with many installations providing wear life of up to 20 years following appropriate wear treatment.

"We have produced this brochure to educate the cement manufacturing sector in the strategic cost saving benefits of wear protection of plant and equipment," said Kingfisher MD, John Connolly.

"Wear protection is critically under-employed in Cement Manufacturing, generally, and especially so in the UK, and this is costing British industry millions of pounds annually in unnecessary maintenance costs and lost production time."

#### ABOUT KINGFISHER INDUSTRIAL

Kingfisher Industrial provides wear solutions for process plant used to convey, process or store bulk solid materials, in either dry or hydraulic states. Such plant often suffers premature wear due to handling large quantities of materials at velocity in a constant operational cycle. With its range of ceramic, metallic and polymer protection systems, Kingfisher can overcome wear problems; engineering suitable protection systems that can add many years of life to a plant, and in some cases outlast the design life of a process completely. These solutions cater for the operating criteria, budget and life cycle of either new equipment - particularly when initially installed — or existing equipment, which can be retrofitted with a protection system to add to its current asset value.





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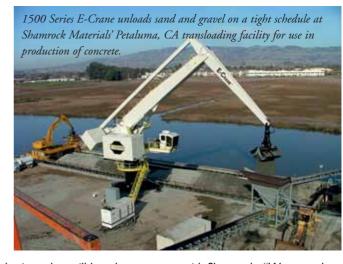
#### Shamrock Materials 'turns the tide' with E-Crane transloading

Shamrock Materials, Petaluma, CA provides ready-mix concrete and a diverse line of concrete accessories and building materials, as well as masonry, stone products and landscaping materials from six CA locations. The company has been in business since 1954.

In 2005 Shamrock built a transloading facility at Petaluma to unload sand and gravel to be used for production of concrete. These materials arrive by ship from Canada and are transferred to barges at anchorage in San Francisco Bay. After staging, barges are taken one at a time up the Petaluma River, a tidal waterway that joins the San Pablo Bay to the north end of the San Francisco Bay. The barges must reach the Shamrock facility on the high tide and be unloaded well before low tide, which is about six hours later.

Robert McIntosh was the President of Shamrock's Landing Way Depot for this start-up project and ran the operations for

several years. He is now an independent consultant with his own business, but still has close contacts with Shamrock. "We started with a self-unloading barge," McIntosh said "but that was a slow, inefficient, low capacity operation. We needed something much better for full scale operations.



"Next we considered a 700hp diesel excavator that could unload about 650 tonnes per hour. That was still too slow, reach was marginal, and we anticipated high maintenance and downtime due to wear and tear on the complex hydraulic arrangement. We expected we would have to replace the excavator every 10,000 to 15,000 hours. That cost plus the risks and likely interruptions to our operations were unacceptable. Further, the clamshell bucket was very awkward to use and required lots of operator training. So we continued our search"

McIntosh explained that during the investigation process, Shamrock became aware of E-Crane's uncomplicated equilibrium design with its high capacity, simple maintenance, long service life and ease of operation — all the things the Shamrock transloading operation absolutely needed. E-Crane people came to Petaluma to explain how the E-Crane works and learn about the Shamrock operation. "We explained our situation," McIntosh said, "and they came back with a comprehensive proposal that made it very clear very quickly that the E-Crane was perfect for Shamrock's unloading application. Their approach was very simple and accommodating: 'Here's what you need'."

Shamrock chief operating officer Jeff Nehmens further explained: "This was an entirely new type of operation for us, and we were making long-term decisions about equipment we were unfamiliar with. The E-Crane USA sales team, and Mark Osborne in particular, gave close support to our evaluation and decision process, and it became clear that E-Crane was the only rational choice. That decision and the continued relationship with E-Crane has vindicated our selection, and we would enthusiastically recommend E-Crane to anyone with similar needs.

"The essential machine design is ideal for



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**The Group** 

the controlled-motion "lift-and-drop" cycle we need," Nehmens said. "The E-Crane configuration and power options enabled us to get the reach, lifting capacity and cycle times we needed, with the fewest possible moving parts. Being able to do that with electric power is a huge advantage, and one we underestimated in the early stages."

Shamrock utilizes a Series 1500 E-Crane with optional 300hp motor (250hp is standard) and has a 1,200tph (tonnes per hour) capacity. The machine has an 86ft. outreach, 18.2 US ton duty cycle capacity, and 20.9 US ton lifting capacity.

"We gave E-Crane the order in June 2005," McIntosh said. "They installed it in early December, and the E-Crane offloaded its first barge on December 22nd. The assembly and construction crew was very professional, very knowledgeable — they really knew what they were doing. Everything went smoothly in spite of heavy rains and generally horrible weather. When that first barge was unloaded, we knew we had a winner," McIntosh enthused. "Smooth, quiet, efficient operation, and the E-Crane can unload faster than the 1,000tph shore equipment can handle.

"As the E-Crane clamshell bucket closes, there is a corresponding lift so that the jaws close directly against each other and can closely scrape the bottom of the barge," McIntosh added. "The E-Crane puts a skid loader into the barge toward the end of the unloading process to scoop material into piles, and the clamshell picks up these dregs."

E-Crane trained Shamrock's operators and maintenance personnel on site. Nehmens said that the operators took to the machine immediately because of easy operation, cabin comfort and clear visibility. Operators perform a spray-lube on the swivel before each shift, and they check and top-off the auto-lube system as needed. The maintenance group services the bucket lube points daily.

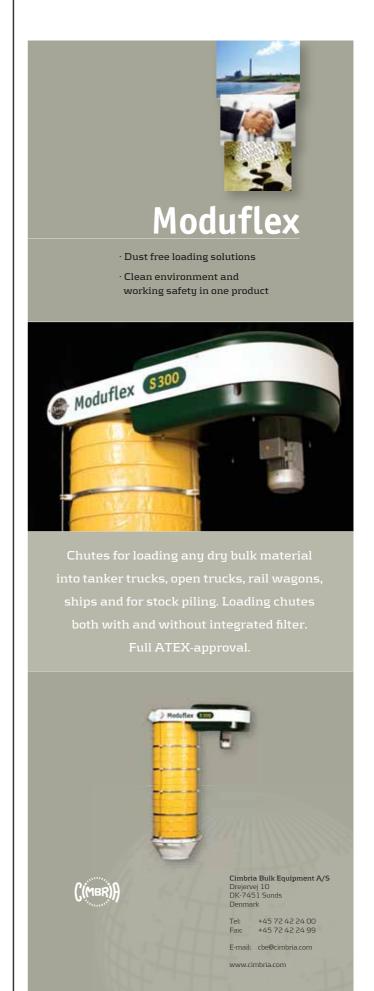
Other than regular inspection and fluid checks, there has been "impressively little" maintenance needed, according to Nehmens. "We've been operating the E-Crane 1500 since the end of 2005 with no serious problems of any kind."

"The operation and maintenance manual is very comprehensive and easy to understand," McIntosh added. "The E-Crane has a very short learning curve. Standard maintenance involves a fifteen minute routine at start-up for each barge transloading cycle. The automatic lubrication system does almost everything else."

"We engaged the E-Crane service team to do the early service work on our machine," Nehmens said. "And we expect to continue with service calls periodically just to have an experienced eye to look for possible wear, to critique our operating and maintenance work, to update training for our maintenance staff, and to offer tips to our operators."

Shamrock has purchased an additional bucket since the original purchase. The new bucket was hard-faced before going into service; and the original bucket was rebuilt, hard-faced and held in reserve. "We originally intended to buy the new bucket from an aftermarket supplier," Nehmens said. "But as we experienced the E-Crane equipment in the service environment, we decided to stick with the factory bucket."

The E-Crane product line includes five series of machines based on capacity requirements: 700, 1000, 1500, 2000 and 3000 models for scrap handling and offloading or transloading bulk materials from barges and ships up to Panamax class. Outreach ranges up to 165 feet and duty cycle capacity up to 50 tonnes. The hydraulically pivoting, mechanically linked boom design keeps the machine in near perfect balance throughout its full working range. Having gravity work for you instead of against you reduces horsepower requirements and power consumption as much as 50%.



#### ABB to supply state-of-the-art equipment for new cement plant in Turkey

Major power and automation technology group ABB has received an order to provide electrification, automation and drive solutions for Medcem's greenfield cement plant project in Turkey. The contract was awarded in July 2012.

The new plant will be located in Mersin, on the Mediterranean coast. With an estimated 10,000 tonnes of clinker per day, the plant will have the largest production capacity in Turkey. Production start-up is planned for March 2014.

ABB's scope of supply for the greenfield project includes its state-of-the-art control System 800xA, Expert Optimizer process optimization software, medium and low voltage electrical motors, ACS800 series low voltage drives, ACS1000 and ACS6000 series medium voltage drives, ZS1 series medium voltage cubicles, MNS series low voltage cubicles, site erection,

installation, commissioning and services. The equipment will provide high availability of the complete production process and raise efficiency through high-quality production at low energy consumption.

Medcem Mining & Building Materials Inc. is part of the Eren Holding. Starting its commercial activities in 1969 in the textile sector, Eren Holding and its affiliates are now also operating in the energy, paper, packaging, retail, cement, textile and tourism sectors. By adapting a growth strategy based on equity, the group became one of the leading business conglomerates in Turkey.

ABB's well-established relationship with the Eren Group, the ability to provide all solutions as single source supplier as well as its extensive cement engineering experience and knowledge of local electrical regulations were major factors for winning this order.

#### Oman's Port of Duqm to have cement terminal





The port of Duqm in Oman is to have a specialist terminal for the importation of cement. The port will also have a terminal for the



import of bitumen. These terminals are required to support the development of the regional Special Economic Zone.

The cement import terminal will be managed by a well-known Oman manufacturer, while the bitumen terminal is being offered to one of the world's leading producers of the substance.

The cement terminal will have a 150,000-tonne annual capacity and will be located on the port wall. It will be linked by system of pipelines and conveyors to a 4ha site within the port where storage, bagging and other added value services will be undertaken.

A completely separate project will result in the development of a manufacturing plant for cement within the port.

The bitumen terminal will cover a 3-4ha area.

Both terminals are expected to be operational by the end of 2013.

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#### Guttridge conveyors for abrasive duties in new Lafarge aggregate blending unit

Guttridge Ltd, a renowned manufacturer of materials handling solutions, has supplied a suite of conveying equipment to the Lafarge Barnstone Works (Nottinghamshire, UK) for feed and product transport through a new aggregate blending unit. Specified to ensure maximum reliability for highly abrasive process streams, the six Hi-Load bucket elevators and the Kleenbelt belt conveyor incorporate sensors for upset detection as well as a number of features that streamline maintenance. Lafarge is major global producer of building materials and has installed the new plant to make sand/cement/aggregate blends for specific applications within the construction industry.

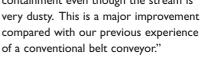
"We already had Guttridge machines working reliably on site," explains Adam Elmes, project manager for Lafarge, "so we were well aware that the company could provide us with quality systems at an acceptable price. Beyond that, though, we were impressed with the company's willingness to innovate new solutions that would help us to achieve the very highest levels of reliability — a major goal for our site. The Guttridge engineers are both responsive and knowledgeable and this was an important factor in ensuring the success of the project."

The six bucket elevators are used to vertically lift different streams — cement, aggregate, sand and associated mixtures at various points in the process. The belt conveyor is a completely enclosed system that transports a cement and sand mixture some distance, from a vibratory screen to the elevator feeding the mixer. All equipment was supplied with a host of carefully engineered features designed to ensure reliable longterm abrasives handling with minimal manual attention, as well as to ease maintenance.

"All the systems came on stream quickly and easily and are working well," continues Elmes, "but we're especially impressed with the Kleenbelt. It's a really robust design with an excellent sealing system. All of the incoming material is fed cleanly onto the belt without spillage and we have complete product

> containment even though the stream is of a conventional belt conveyor."

The Kleenbelt conveyor is a unique but well-proven solution for applications where it is especially important to avoid product spillage or emission. Capable of handling flow rate up to 800m3/hour, it is suitable for the widest range of materials — from rolled oats to rubber crumb, coal to cement.



#### **ABOUT GUTTRIDGE LTD**

Guttridge Ltd is a major manufacturer in the UK of bulk materials handling equipment, with a history of supplying efficient and reliable solutions that extends over five decades.

With a wealth of practical experience, the latest 3D design and state-of-the-art manufacturing facilities, Guttridge designs and manufactures elevators, conveyors, hoppers, bins and all the associated ancillary equipment need to engineer robust, customized, cost-effective handling systems, for even the most demanding applications.

Headquartered in Spalding, Lincolnshire, UK, Guttridge incorporated the Carier brand in 2004, to strengthen its offering to the agricultural sector. Across the UK the company sells via a team of regional, expert sales representatives while exports are currently either direct or via local distributors and agents.

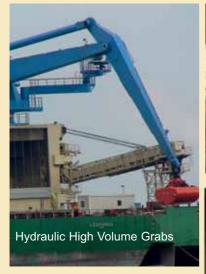
Guttridge capabilities extend to maintenance and spares supply for a significant number of other brands of materials handling equipment including Carier, for which the company offers an extensive repair and upgrade service.





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#### Tenova TAKRAF: always at the ready

TAKRAF India Pvt. Ltd. is a wholly owned subsidiary of TAKRAF GmbH. Tenova TAKRAF is a competent, experienced, capable and reliable partner for its customers and offers system solutions within the core areas — open-cast mining and bulk material handling technology. The company offers a wide range of equipment for a variety of markets, including the cement handling sector.

Tenova TAKRAF offers a time-effective service and a highly regarded experience-based approach for bulk materials handling. Operational readiness for an immediate response to customer needs, reliability and a proactive style are integral elements of its business. Skilled teams of Tenova TAKRAF technicians and engineers guarantee a rapid on-site response in an emergency, giving customers the security of engineering added value. Tenova TAKRAF has supplied more than 250 items of equipment in the past five years to major cement and power producers in India and Middle East and Africa.

The company's current activities include:

- studies into capacity expansion and the refurbishment of existing facilities;
- complete supply, erection and commissioning of bulk material facilities/mining systems;
- preventative and regular maintenance refurbishment and modernization of existing facilities; and
- \* maintenance contracts.

Tenova TAKRAF's supplies equipment for open pit mining (bucket wheel excavators, spreaders etc.) and bulk handling in mines, ports and yards. These include stackers, scrapers reclaimers (bridge type, portal and side scraper reclaimers), circular blending systems and conveying system (yard, overland, pipe conveyors, ship loaders and unloaders.

#### HANDLING A WIDE RANGE OF COMMODITIES

Tenova TAKRAF's equipment is engineered and customized to handle materials of different physical and chemical properties. In cement plants, these are used to handle limestone, additives, reactive and coal. Apart from cement plants, TAKRAF's equipment handles all kinds of dry cargo at ports, steel, power and fertilizer plants. In mine sites, its equipment is used to handle ores, as well as overburden.

#### **M**AJOR CUSTOMERS

Tenova TAKRAF equipment is used by a number of major cement customers, including: Grasim Cement, Chettinad Cement, JSW, Ambuja, ACC Cement Ltd., Dangote and Neyveli Lignite Corporation (NLC).

#### KEEPING AHEAD IN A COMPETITIVE MARKET

Tenova TAKRAF believes in developing and maintaining good, long-term relationships with its customers to understand their needs and serve them better. Its key strength is the knowledge base, skilled manpower and technological expertise, which is derived from a global presence and gathered through decades of experience. The company does not just try to sell a machine; it sells the Tenova TAKRAF concept.

Finally, the company's price competitiveness comes from optimizing cost. It always works hand-in-hand with the customer and ensures delivery of the machine on or before time. Having a wide network of suppliers' coverage within India and a global procurement team with a rich database of prices helps attain the most competitive prices.

#### RECENT CONTRACTS

TAKRAF India recently won a contract worth INR 330 Crore for the supply of two bucketwheel to NLC. Scheduled to be completed in 36 months, this is one of the major projects handled out of India. The scope involves the engineering, fabrication, supply and installation of the machine in Neyveli (TN), India.

The 9.02 MMTPA Guru Govind Singh Refinery Project of M/S HPCL-Mittal Energy Limited (HMEL) at Bathinda (Punjab) is a recent installation from TAKRAF India. This petcoke handling system included the entire conveying system, a luffing and slewing bucketwheel stacker-cum-reclaimer, a truck loading system and a rail loading system.

#### RECENT TECHNOLOGICAL DEVELOPMENTS

The bulk handling industry in India is currently going through a technological change as a lot of upgrades and assimilations are taking place. The customers in this segment have been instrumental in encouraging and implementing the latest technology. The range of stackers and reclaimers is used for the

pre-blending stockpile and continuous homogenizing of raw material and solid fuel (coal, lignite, petcoke) in the modern dry process. Mechanization and automation of existing or new facilities have created the need for higher-performance machines. Automation, together with the communication system, safety and self-diagnostic features on the equipment allows unmanned operation of the machines. Continued improvements in materials used for manufacturing the equipment have substantially improved the availability and reliability of the equipment.



#### Silo cleaning technology keeps material flowing at Illinois Cement

One of the major US manufacturers of cement and other building materials has overcome a severe blockage of Type I cement in its 80,000-tonne capacity storage silo by employing an innovative pneumatic cleaning technology that was remotely controlled from outside the domed structure, writes Elizabeth Allen. The Eagle Materials Illinois Cement facility experienced the blockage when a support cable on the reclaim screw conveyor came loose, sending thousands of pounds of material down into the silo at one time. But with the unique whip design of the cleaning equipment and some round-the-clock dedication from a Martin Engineering crew, the accumulation was efficiently cleared and loaded out, allowing repair personnel to set up a crane

The unique design of the equipment allowed it to be lowered from the top through a manhole opening, and although the crew was on-site around the clock for nearly a month, the material could be loaded out with normal operating procedures. "During the process, we were able to use our auto load-out system from the bottom of the dome, because the material being knocked down fell primarily in the center," recalled chief chemist and quality control manager Kevin Jensen. "There was no need to transfer cement in the tunnel, and that helped minimize the disruption."

and lift the auger back into position.

Founded in 1964, Eagle Materials is one of the nation's largest cement providers, with four plants supplying a combined total of about 4mt (million tonnes) annually. The company's Illinois Cement facility in LaSalle manufactures approximately 1.1mt of that total each year.

Like most cement manufacturers, the plant uses large storage vessels to hold finished material until it's ready for shipment. At the LaSalle facility, the domed storage unit is 99 feet tall and 186 feet in diameter.

During the course of normal operations, the cable connectors on the reclaim screw worked themselves loose, causing the auger to fall onto the pile and halting the flow of material. The only way to rectify the situation was to position a crane over the top and lift the conveyor out, so the cable could be reattached. But to do that, operators first needed to clear out enough material to access the disabled equipment, a massive task in light of the nearly-full dome.

"Our first step was coming up with a plan to tackle the load-out job," recalled Jensen. "We needed to remove a significant amount of material in order to make the repair, and there was just no easy way to go about it."

Jensen contacted Martin Engineering (Neponset, IL) for assistance, and technicians were on site to inspect the situation the next day. They reviewed the options and determined that the best approach was to employ the Martin® Heavy Duty Whip, one of several technologies making up the company's Silo Cleaning product line.

Powered by compressed air, the Whip's patented gyro motor can use a variety of flails and cutting edges to knock down accumulated material without damaging storage vessels.



Abrasion-resistant steel chain is best suited for most applications, with non-sparking brass chain for combustible materials. Urethane flails can also be employed to protect lined

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## **RioTinto Alcan**

vessels that could be susceptible to damage from metal tools.

"With this technology, there's no need to send a man inside and risk injury," observed Martin Engineering territory manager Jim Densberger. "The equipment can be set up quickly outside the vessel, and it's portable enough to move easily around various bin sizes and shapes." In most cases, the technique allows material to be recaptured and returned to the material stream.

With safety harnesses in place, Martin
Engineering technicians secured the equipment through an access hatch at the top of the dome.
Though all of the company's silo cleaning crews are OSHA and MSHA certified for confined space entry, they instead used remote control from outside the vessel to safely guide the head. The two-man crew

As dislodged material fell to the bottom of the vessel, Illinois Cement was able to use its auto load-out system.

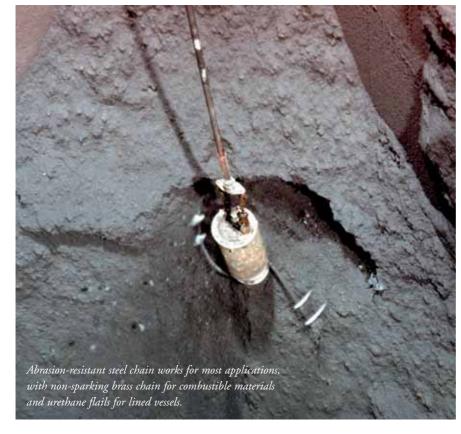
lowered the whip through an opening created in the blockage,

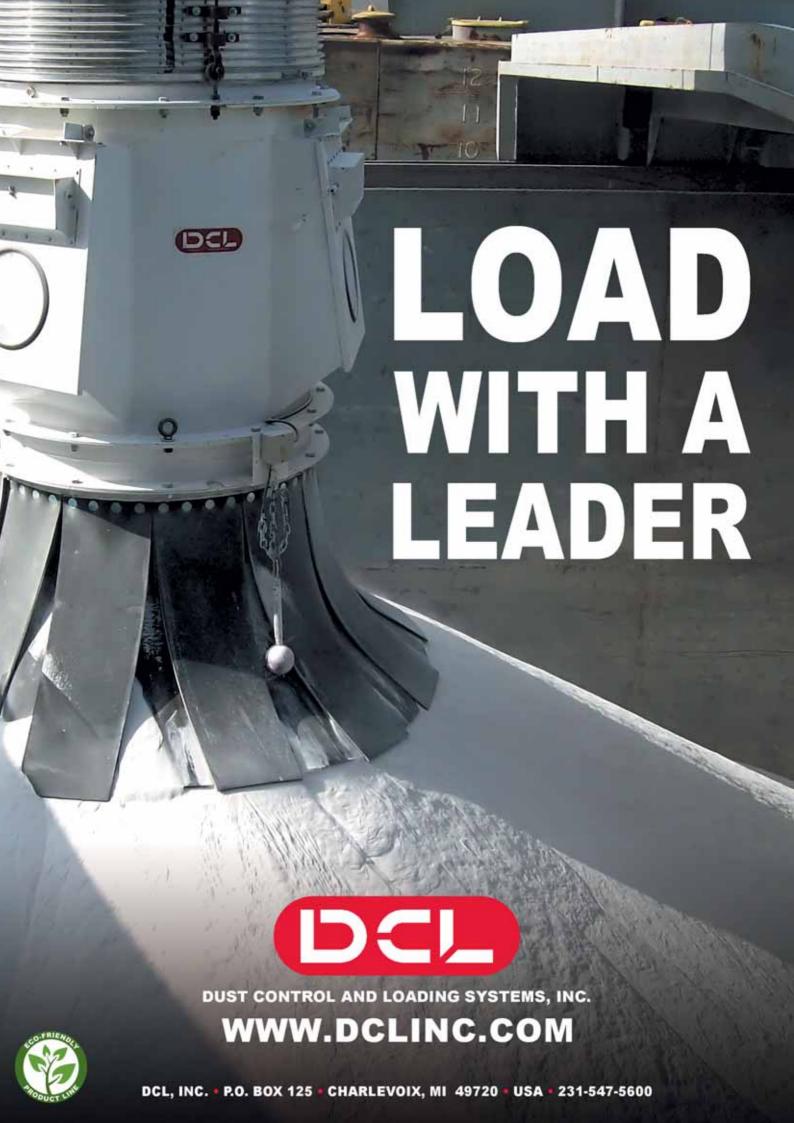
then worked their way downward from above, dislodging

material as they went. By undercutting the wall accumulation, it eventually began falling in sections from its own weight. The modular boom of the Martin Heavy Duty Whip extends up to 8.5 metres (28 feet) and can clean vessels up to 18 metres (60 feet) in diameter from a central opening of just 450mm (18 inches).

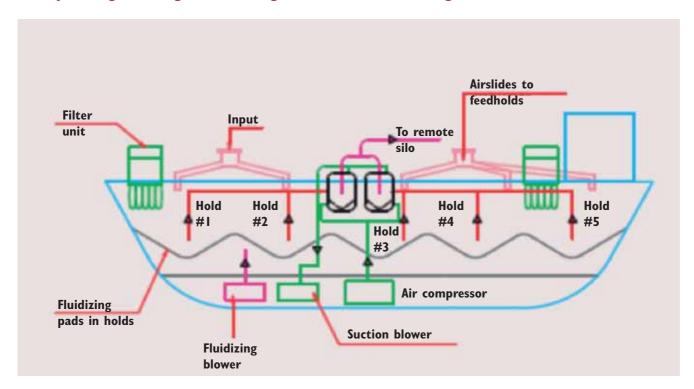
With the reclaim conveyor repaired and the process back up and running, Jensen was asked to summarize the experience. "The crew's performance was excellent," he concluded. "Martin Engineering was very responsive, and provided an innovative solution to the problem. We had good communication throughout, and all work was done in a safe manner."

Founded in 1944, Martin Engineering is a major manufacturer, making bulk materials handling cleaner, safer and more productive. The firm is headquartered in Neponset, IL, offering manufacturing, sales and service from business units in Brazil, China, France, Germany, Indonesia, Mexico, South Africa, Turkey, India and the UK.





#### Scorpio Engineering offers range of cement handling solutions



Scorpio Engineering is a specialized bulk material handling systems company with more than 25 years' experience. Cement distribution and logistics is one of the company's key offerings in terms of special equipment and systems. Scorpio's portfolio in this area includes the following:

#### Conversion and retrofitting of river and coastal barges to cement self unloaders

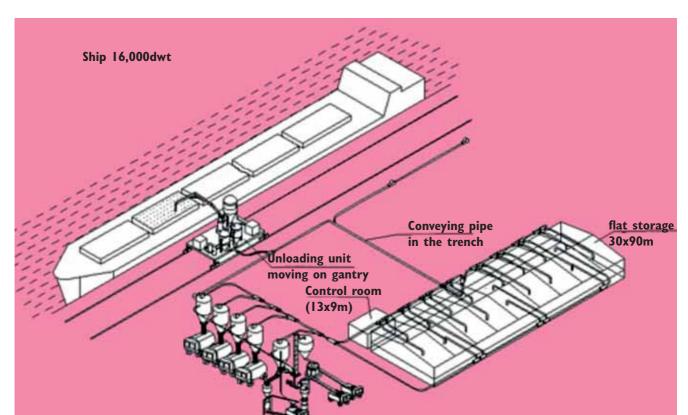
Self-unloaders use the principle of cement fluidization. The bottom of the barge holds is aerated and sloped to a central point. Cement is then sucked from this central point to a pair of pneumatic dense phase transporters located at the deck level of the barge. Compressed air is used to pump out the cement in sequence from these transport units. Cement can be pumped to shore silos

about 200m to 500m away. Typical barge sizes for such retrofits would be from 2,000dwt to 10,000dwt.

#### **❖** Cement flat storage:

Self-unloading barges can be used in conjunction with shore based flat storage warehouses which will receive the cement pumped in from the self unloaders. The same fluidization principle is used to lift cement from the storage heaps in the flat store to adjoining packing plant or bulk trucks.

The flat store is a low cost option to building large and expensive cylindrical silos which also take time to build. The simple flat store structural buildings can be dismantled and 'recycled' when the cement market demands moves to new locations.



#### Pneumatic ship unloaders:

Where it is not possible to retrofit barges and where one has to use commercial barges, bulk cement loaded in such barges (through air gravity conveyors) can be unloaded by using shore based mobile pneumatic ship unloaders. Scorpio designs and manufactures these units to suit each customer's needs. Capacities range from 100tph (tonnes per hour) to 400tph. The units are essentially



industrial duty 'vacuum cleaners'. A hydraulically manoeuvered suction boom digs into the cement in the barge hold and a suction pipe sucks out the cement to a pair of dense phase transporters on a wharf-parked

mobile trailer unit. This unit houses the suction boom, dense phase transfer units, suction blowers and compressors, filters and controls. The cement is pumped from the suction units to far silos.





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Jay Venter

#### Rubber conveyor belts for sealing purposes

#### **COMPANY PROFILE**

SIG Società Italiana Gomma SpA is a renowned Italian manufacturer of rubber conveyor belts. More than 50 years of experience in this industry means that the company is at the forefront of the industry, with excellent references in the majority of the world.

The customer-oriented approach that distinguishes SIG SpA means that it is possible for it to meet its customers needs in an extremely flexible way, especially when customization and the development of new products is required.

The entire manufacturing activity is located at SIG's factory close to Milan in Italy where the company's sales and R&D resources are also located.

#### INTRODUCTION

For decades, conveyor belts have been the most suitable method to convey loose materials over variable distances, from a few metres to a few kilometres. The application fields are varied; more often, rubber conveyor belts are used in non-conventional sectors, such as the one that is described in this article.

Indeed, there are specific applications where rubber conveyor belts are not even used for handling purposes, but to protect and prevent the material conveyed by another belt from being scattered. This is the sector in which Sealtex belts, which are characterized by high crosswise stiffness and longitudinal flexibility, offer performances that were inconceivable up to a few years ago.

Environmental protection requirements, which are increasingly included in project specifications of modern conveyor systems, allowed significant development of the aforesaid technology in the last few years. Thanks to its mechanically simple system, it offers striking solutions to different problems.

#### APPLICATIONS OF THE SEALTEX BELT

The picture (Fig. 1 above) schematically shows the effectiveness of a Sealtex belt. It is installed above another conveyor belt and

allows for the displacement of material loading and unloading points as required, as well as keeping the conveyor structure sealed in the remaining part of its development.

Thanks to their flexibility of use, Sealtex belts are typically installed along port quays. Here, the need to empty ship holds or to unload the material into different points within the storage area, requires the presence of movable openings along the entire development of the conveyor.

There are different technologies to meet the aforesaid requirements, but it is unquestionable that the use of a rubber belt offers incomparable simplicity of use, reduced maintenance, perfect sealing and essential absence of mechanical interferences.

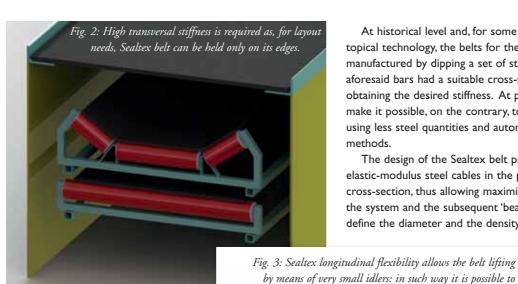
So, for example, next to the loading hopper that receives the material from a continuous ship unloading system, it is possible to lift the Sealtex belt to offer suitable space and, by means of suitable chutes, the material can correctly reach the conveyor belt below.

Similarly, if you need to load a set of tanks or a large storage area, the Sealtex belt passes over the unloading movable carriage (tripper) and then it goes back to the original position after having surpassed the obstacle.

In both cases, loading and unloading carriages are equipped with suitable roller ways to allow lifting and re-positioning the Sealtex belt.

There are also simpler applications to cover the tunnels that pass on the side of the conveyor and that usually connect lower silos or contain pipes and service cables. Often, in the aforesaid cases, it is enough to adopt belts with reduced performances compared with Sealtex; however sometimes the use can be compared with the above-mentioned cases, for example when the project includes specific safety requirements because people may have to walk directly on the Sealtex belt.

The last evolutions of this covering and sealing technology provide for the use of the Sealtex belt in conveyor systems with telescopic belt. In the aforesaid projects, the Sealtex belt has to be fixed to the movable unloading end, while the fixed part of the conveyor includes a winder that recovers the exceeding part



when the conveyor is shortened.

The Sealtex belts are usually manufactured starting from 600-800mm widths for silo channels and openings, up to widths of more than 2m to cover and seal high-capacity belts being used for continuous loading or unloading of ships.

#### **CONSTRUCTION DETAILS**

The Sealtex belt is self-bearing because, for layout needs, it can be held only on its edges by means of specific side

supports(Fig. 2). Indeed, to allow the passage of hoppers or movable unloading systems, it is not possible to support the belt in crosswise direction by means of nets or metal crossbars. This project restriction adds to the need to be able to lift the belt next to loading and unloading openings by means of very small diameter rollers. Fig. 3 clearly stresses these needs.

So, it is possible to understand the peculiarity of this type of belt that has to oppose suitable longitudinal flexibility to high crosswise stiffness. The manufacturer of the Sealtex belt is in charge of designing a product that, as a consequence, must be able to exploit the elasticity of rubber and of synthetic fabrics, and steel stiffness, as well.

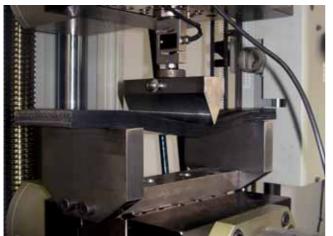


Fig. 4: Sealtex transversal bending test clearly shows how abnormal and not linear the deformation of the sample is, with respect to the behaviour of a simple steel beam.

At historical level and, for some manufacturers it is still a topical technology, the belts for the aforesaid applications were manufactured by dipping a set of steel bars into the rubber. The aforesaid bars had a suitable cross-section, which allowed obtaining the desired stiffness. At present, the available materials make it possible, on the contrary, to obtain the same results by using less steel quantities and automated manufacturing

The design of the Sealtex belt provides for two layers of high elastic-modulus steel cables in the peripheral areas of the belt cross-section, thus allowing maximizing the inertia modulus of the system and the subsequent 'beam effect'. This way, if you define the diameter and the density of steel cables and the

loading and

points along the

whole conveyor.

unloading

distance between the two respective layers, you can obtain the stiffness level that is required by design specifications.

The method to calculate the stiffness of the Sealtex belt derives from well-known elastic deformation equations for steels, with empirical (Fig. 5) and non-linear corrections to the model due to the presence of a different elastic means, rubber, which binds the two layers of steel cables one to the other in a non-

homogeneous way. Fig. 4 is representative, as it shows the result of a bending test where you can clearly see an abnormal deformation in the test piece, with respect to the behaviour of a simple steel beam.

It was previously mentioned that people may have to walk on the Sealtex covering belt: it is a crucial requirement to establish the stiffness level of the same belt. However, you cannot omit specific phenomena, such as the accumulation of water, the possibility of snow falls at a port, even if it is a remote possibility. In particular, slight differences in height for the two side supports are used to prevent water stagnation.

On this subject, particular importance is given to the size of side supports: they must be sufficiently large as to provide for a stable support to the belt, without allowing excessive side displacements that, on their turn, may cause the belt to fall from the supports.

Last but not least, it is absolutely necessary to supply the correct longitudinal tension to the belt to prevent twisting due to inevitable frictions that are generated during the movement of loading and unloading carriages. To assure it, an end of the belt is firmly fastened to the structure of the conveyor, while the other end is tightened by using a gravity counterweight.

#### **CONCLUSIONS**

Modern belt conveyor systems must preserve the features of the conveyed material and prevent it from being scattered within the relevant areas.

Particular loading and unloading needs not always allow using fixed enclosing structures; it is the typical application of Sealtex covering and sealing belt. It is a valuable component that comes

Fig. 5: Deflection tests on real scale samples are performed to define empirical and non-linear corrections to the well-known elastic deformation equations for steel. This is due to the non-homogeneous structure of the belt where an elastic mean, rubber, binds two layers of steel cables one to the other.

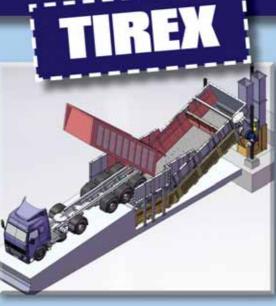


from the same construction technology of rubber conveyor belts, which is expressly designed to be self-bearing and, at the same time, flexible to allow creating temporary material loading and unloading openings. So, it is a simple solution that requires a thorough analysis of the requirements and the conditions of use, as well as a suitable design of the bearing structure, of tensioning and displacement systems, with special attention to the construction of the belt.



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#### Bedeschi commissions two transshippers - 'Ore Fabrica' and 'Royal Sesa'



In the year 2012 two transshippers on which cargo handling systems have been supplied by Bedeschi have been commissioned — *Ore Fabrica* and *Royal Sesa*. One is for discharging iron ore from ocean going vessels and other one is for loading iron into them.

With the commissioning of floating transfer station (FTS) *Ore Fabrica* the world has witnessed a totally new phenomenon. The FTS *Ore Fabrica* is the world's largest transshipper. It is set to revolutionize the way iron ore transportation is done in the world. To take advantage of the economy of scale, i.e. the larger the size of the vessel the lower the unit freight of the cargo, Vale has ordered vessels in excess of 400,000dwt, known as Valemax, to transport iron ore from Brazil to the Far East. Since these huge vessels cannot be accommodated in most of the ports, there was a need of a transshipment device, which could transfer the iron ore from the Valemax vessels into more manageable Capesize vessels. For this the transshipper which has been implemented is *Ore Fabrica* which is of 280,000dwt capacity.

The transshipper is fitted with five Liebherr-made cranes and each one feeds a separate 50m³ hopper located adjacent to them. Cargo is extracted from the hoppers by variable speed drive belt feeders, which deliver the cargo on a longitudinal conveyor belt. A combination of cross conveyor and another longitudinal conveyor, then leads the iron ore to a mobile shiploader capable of delivering cargo at 5,000tph (tonnes per hour) to the shuttle vessel's holds. Thus the cargo transfer is done in a triple banking operation, with the FTS *Ore Fabrica* in the middle and the Valemax and shuttle vessel on either side. In case there is no shuttle vessel available then the cargo is loaded

into the holds of the *Ore Fabrica*, by using the same shiploader, to be retrieved by the cranes later on.

The system is fully remotely operated, and is capable of working in conditions up to 2.5m of wave height and wind up to 20ms. The table shows some of the salient features of the cargo handling system:

SALIENT FEATURES OF THE CARGO HANDLING SYSTEM		
Hoppers	Five of 50m³ capacity each	
Belt feeders	Five 2000tph each	
Conveyor system	More than 550m long with 2,000mm-wide belts	
Belt speed	2m/s	
Shiploader	45m long	
Handling rate	5,000tph	

The system was commissioned in the first half of 2012, and is presently carrying out operations in Subic bay, Philippines. After the successful commissioning of the system, Bedeschi has received a repeat order for designing and supplying equipment for a second transshipper *Ore Sossego*, from Vale, the implementation of which is under way.

The second system which has recently completed the successful trial run is the FTS *Royal Sesa*. This system is implemented for Sesagoa and will be used for transferring iron from barges into ocean going vessels up to Capesize in Goa, India. The system comprises of two hoppers which receive

cargo from two Liebherr cranes. Each hopper is equipped with a variable-speed drive belt feeder, which feeds cargo to an array of conveyor system leading to a shiploader capable of delivering cargo at 3,000tph into ocean going vessels.

The shiploader is fitted with a shuttle system through which cargo can be delivered into all parts of the holds of the vessel. All the systems have been designed by Bedeschi and manufactured inhouse in Italy, before being shipped to China where they were installed on the FTS *Royal Sesa*, under Bedeschi supervision. Trial runs of the system have been carried out successfully. The system will now be transported to India to commence operations.





#### **GROWTH THROUGH INNOVATION**





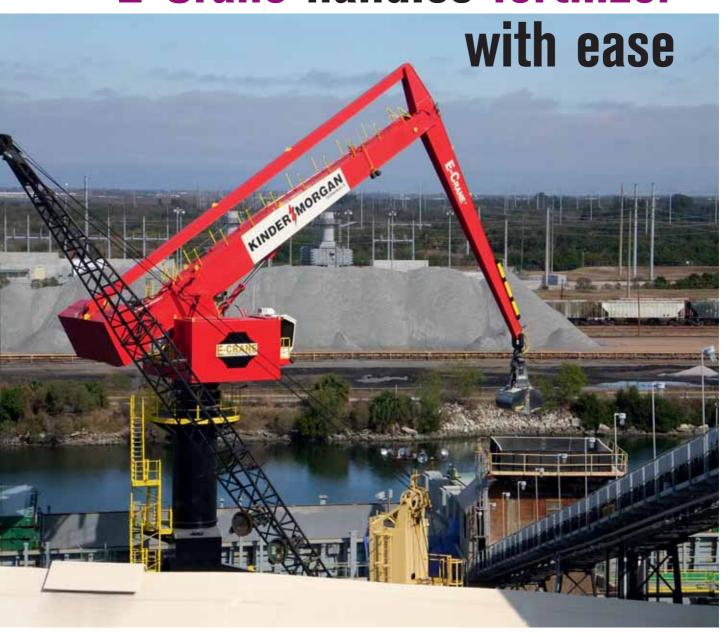
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## E-Crane handles fertilizer



#### **Energy efficient bulk material handling solution**

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

The standard E-Crane product line consists of five series of balanced hydraulic cranes (Equilibrium Cranes): 700 Series, 1000 Series, 1500 Series, 2000 Series, and 3000 Series. E-Cranes provide longer outreach and higher duty cycle capacities than typical material handlers. Outreach ranges from 24.8 to 47.8 meters (82 to 157 feet) and duty cycle capacity ranges from 5.5 to 39 metric tons (6 to 42.9 US tons).

#### **EQUILIBRIUM DESIGN** — THE GREEN ALTERNATIVE

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



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#### Case study: Kinder Morgan Port Sutton

Kinder Morgan replaced an old, diesel powered cable crane with a 1500 Series E-Crane that runs on clean electric energy at its Port Sutton dry bulk fertilizer terminal in Tampa, Florida. This replacement increased ship-unloading capability and efficiency dramatically and helped cut down maintenance time and costs. The installation of the E-Crane also virtually eliminated unplanned downtime, according to project manager Robert Desselles.

#### Limited with outdated equipment

"Our old cable crane presented various operational and maintenance issues," Desselles said. "For one thing, we used an extensive amount of expensive diesel fuel. The E-Crane uses very little electric power. So we've gained a major cost saving there. Also, the maintenance of the

old crane was beginning to interfere with our production, and the repairs were often very expensive."

Port Sutton terminal manager, Scott Stevens, also mentioned that parts became harder and harder to get for the old cable crane. "Eventually new parts were not available at all, and used parts were very scarce, often requiring that a part be fabricated. In addition, we were replacing the cables after unloading every ship. You can imagine what that was costing us in time and dollars."

#### Time for change

It was obvious that the Port Sutton Terminal needed to make a change. "Refurbishing the old crane was obviously out of the question," Desselles said. So Port Sutton began looking for an alternative solution. "We got a great response from E-Crane." Desselles also emphasized that E-Crane was very accommodating in meeting the specifications, working with Kinder Morgan and its engineering firm, making recommendations, and providing it all on a timely basis. E-Crane



provided the complete, detailed drawings for the project with everything well thought-out and clear.

The I 500 Series E-Crane met the needs at Port Sutton. They were able to justify maintenance procedures and costs which were simpler and more economical with E-Crane, making E-Crane the obvious choice for a solution. The E-Crane was fabricated and delivered on time and E-Crane service technicians handled the installation and erection. E-Crane engineers also optimized the main boom pivot height so that the operator can see into the hopper and has great visibility overall.

#### Higher efficiency and capacity with the new E-Crane

Shortly after the installation, Port Sutton began to see results. The first ship unloaded by the E-Crane was an 'average sized' vessel, and offloading went well. The second ship unloaded by the E-Crane was a 50,000dwt vessel that Desselles said was very large for the Port Sutton facility. Offloading went smoothly, just as if it were a 30,000–35,000dwt vessel. "We could not have unloaded the 50,000dwt ship with the old crane," Scott Stevens

explained. "It just didn't have sufficient reach. But we had no problems at all with our new E-Crane. And the clamshell grab gives excellent penetration into the fertilizer, affords maximum fill, and eliminates spills and carryback."

#### E-Crane meets all needs

Desselles said in summation, "We have been extremely pleased with E-Crane equipment and E-Crane people right from the get-go, through all phases of the project, and in our present relationship with them." Stevens emphasized that the E-Crane balance is "remarkable" and provides smooth, efficient operation. "The balance is so good that I don't think the E-Crane would shift or tip even if it were not so securely bolted down."

Kinder Morgan's 1500 Series E-Crane has 105ft outreach, 15.4-tonne duty cycle capacity, and 17.1-tonne lift capacity.

DCi





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## Behind closed doors at the Dunlop laboratory



#### An inside view of Dunlop's secret weapon

When the going gets tough, many companies resort to cutting back on sales staff or research and development. Sometimes they do both. Netherlands-based Dunlop Conveyor Belting is doing neither and judging by its order books, it seems to be working. Dry Cargo International decided to take a closer look at what Dunlop describes as its 'secret weapon' — its laboratory! Leslie David reports.

#### **TESTING TO THE LIMITS**

The huge laboratory housed in its manufacturing plant in the Netherlands is clearly at the very heart of Dunlop's renowned quality process. It is here that every single batch of rubber compound is checked and tested to the limit before being allowed to be used to produce conveyor belts that are guaranteed to perform exactly as they are designed to do. Dunlop fully admits that it can be a painstaking process but insists that it creates a consistency in the quality of every belt it makes.

Exceeding the highest international standards rather than just simply complying with them is a long-established part of the quality culture that exists within the company and Dunlop insists that this can only achieved by having the most highly skilled technicians using the most sophisticated testing equipment available.

"We are very fortunate to have a very experienced and dedicated team of laboratory technicians and engineers here in Dunlop," maintains Sytze Brouwers, Dunlop's chief application engineer. "Most of them have worked for Dunlop for many years and they are very passionate about what they do. They need to be, because conveyor belt technology is far more complex than some people might believe."

Brouwers points out that there are literally dozens of international standards relating to almost every conceivable aspect of a conveyor belt. He should know because he also happens to be the chairman of the international standards committee for conveyor belts!

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- Will the high demand for coal in China and India continue?
- Will the rise of resource nationalism in key markets inhibit investors?

This event will operate under Chatham House Rules and will be closed to the press.





#### STANDING STILL IS LIKE GOING BACKWARDS

Dunlop maintains that, because of the growing demand for longer belt life economy — as well as rapidly evolving technology — failing to move forward is the equivalent of going backwards. So, despite increasing market austerity, especially in terms of research and development, the company has taken the bold step of expanding its laboratory and investing huge amounts in the very latest technology.

Technical director Dr. Michiel Eijpe has been charged with the task of heading up a new wave of R&D. "Our competitors seem determined to try every trick in the book to cut costs so that they can offer lower prices but the old saying that you only get what you pay for has never been truer," says Eijpe, "so we are sticking to the principle of greater economy for our customers through longer belt life."

Thanks to the groundbreaking developments that take place in the laboratory, Dunlop is creating 'new generation' conveyor belts that are increasingly able to withstand just about anything that can be thrown at them. From highly abrasive, razor sharp materials to ozone pollution. From extreme heat to extreme cold, Dunlop belts can handle it, they say, because the wizards of the laboratory make sure that they can. But simply maintaining Dunlop's reputation for producing the best conveyor belts in the world is only part of the story.

#### **N**EW DEMANDS, NEW TESTS

The world of conveyor belts is changing in other ways just as quickly and none more so than the awareness of health and safety and the environment. For example, Dunlop Conveyor Belting claims to be the very first conveyor belt manufacturer to achieve full compliance with REACH (Registration, Evaluation and Authorisation of Chemical substances) regulation EC 1907/2006, which came into force in 2007. And once again, it was the Dunlop laboratory boffins who made it happen. All European manufacturers (not just those who make conveyor belts) are legally obliged to comply with the regulations relating to chemicals, preparations (mixtures) and substances used to create finished products. Perhaps not unsurprisingly, many European manufacturers have chosen to ignore this legal requirement because of the impact on production costs.

Due to the increasing importance of ozone resistance, Dunlop also invested in the latest, testing equipment so that they



could introduce mandatory testing to EN/ISO 1431 international standards. Although the damaging effects of exposure to ozone are now internationally recognized, what is less well recognized are the extremely harmful effects on the cover surfaces of rubber conveyor belts. Belts that do not operate under shelter are prone to surface cracking, which has serious consequences in terms of the performance of the belt and its working life as well as significant environmental and health and safety issues, especially where fine particles penetrate the cracks and are then discharged (shaken out) on the return (underside) run of the belt.

To combat this problem, Dunlop's technicians successfully focused on providing increased protection by using special additives in all rubber compound recipes, thereby extending the operational life of Dunlop belts further still. The same 'we can do it' approach resulted in not just some but all of Dunlop's belts exceeding EN ISO 284/DIN 22104 electrical conductivity standards so that they can be used within ATEX regulated areas. And where ISO or DIN standards do not exist, such as resistance to oil and grease, Dunlop promptly applies a suitably tough alternative, in this case the ultra-demanding American ASTM D 1460 standard. The company does seem to love a challenge!

#### PROVING THE DIFFERENCE

When not testing Dunlop's own belts to destruction, the lab technicians also have a constant stream of competitors' belts to test in order to produce scientifically based performance comparison datasheets that their colleagues in sales use to prove the difference between Dunlop and 'normal' belts. Sales and marketing director Andries Smilda is naturally a big supporter of this work. "In any business, you always need to keep one eye on the quality of the competition and from our point of view, the results are invariably motivating. One recent example was a so-called fire resistant belt that burned like paper!" said Smilda with a twinkle in his eye.

So if you thought that all conveyor belts were just long pieces of black rubber and that there is not much to choose between them then think again. Think of men and women in long white coats working quietly behind closed doors!



## Mobile Stockyard Management Systems





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# Flexible stockyard management systems



## Enhancing efficiency and reliability in the bulk handling stockyard

The storage of bulk material is still a very important factor with transferring/processing materials globally. The fluctuation of commodity pricing/supply means the management of the material, especially iron ore and coal, can have a large bearing on the selling prices and profit margins, to ensure they reach the market at the correct time. This emphasizes the need for efficient stockyard management processes and procedures to boost a company's turnover and growth.

Typical stockyard management operations in either developing a green-field site or upgrading a current stockyard operation would use a stacker/reclaimer system for all their needs in terms of stockpiling and reclaiming of the bulk material. There are many manufacturers of stacker/reclaiming systems worldwide with varying associated capital costs depending on the customers' requirements. Also, other substantial costs associated with this type of installation includes civil requirements, planning permission, government legislation





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and so forth, which further increase the capital expenditure and time frame of the project.

The Telestack mobile systems offer a cost-efficient alternative or supporting option to stacker/reclaimer systems. For those upgrading their current system from an older stacker/reclaiming system to a new design, the robust design of the Telestack equipment ensures that the operator can maintain current tonnage per annum while limiting capital expenditure. For those developing new greenfield sites, the Telestack equipment is perfect for the initial 'start-up phase' of the project. The lower capital costs and no civil requirements/limited planning permission are the main advantages of the equipment in



comparison to fixed stacker/reclaiming systems.

The utilization of the Telestack mobile stockpiling and reclaiming systems in the stockyard, ensures the operator has options to increase flexibility and facilitates:

- emergency back-up system in the event of a break-down or planned maintenance for the both the stacking and reclaiming process;
- dead areas of the stockyard there are areas within the stockyard which would be 'dead' which cannot be reached by the current stacker/reclaiming system. This again needs dozers/wheel loaders to push the material back into position, which increase fuel, labour and double handling of the material. The Telestack system can easily operate in these 'dead' areas and offer a cost effective alternative to control these areas efficiently.
- clean up of material during the reclaiming process with bucket reclaimers. There is always a layer of material at the base of the stockyard which cannot be reached at the end of the reclaiming process, this has be piled together with dozers/wheel loaders for the reclaimer to pick up on its next



pass. Telestack's mobile stackers and reclaimers can eliminate this problem and feed directly into the conveyor system. This ensures a productive and efficient process, reducing the reliance on the stacker/reclaimer equipment and dozer/wheel loaders.

- expansion in the stockyard stockpiling/reclaiming in areas which are not used where the stacker/reclaimer cannot reach. The space has not been developed for use of the stacker/reclaiming system. The Telestack mobile system can be used in this area instead of extending the current stacking/reclaiming system, which would involve large capital investment, civil requirements and long delivery times. This is very important for short term expansion projects within the stockyard.
- inter-yard transfer the mobile reclaim hopper can be used to reclaim onto the stacker line for transferring material between yards (depending on space and production requirements).
- the use of this equipment can work in conjunction with a current stacker/reclaiming system or as an alternative for phase one/two developments to enhance productivity and minimize 'bottlenecks' within the processes. The aim of these systems is to offer flexibility and mobility for greater capacities at less capital expenditure and reduced operating costs.
- access to reclaim between the belt and the stockpile for the mobile reclaim alternative, Telestack has developed radial boom conveyors on the reclaim units to ensure the units can operate in tight spaces between the stacker/reclaimer belt and the stockpile within the yard. This ensures access and easy loading directly onto the stacker/reclaiming belt from the stockpiles.

The range of systems offered by Telestack offers a new way of thinking to identify the problems/bottlenecks in the stockyard management system and eliminate/minimize these issues for the operator. This ensures a more reliable and flexible operation, to enhance production and storage capacities in the yard.



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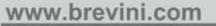
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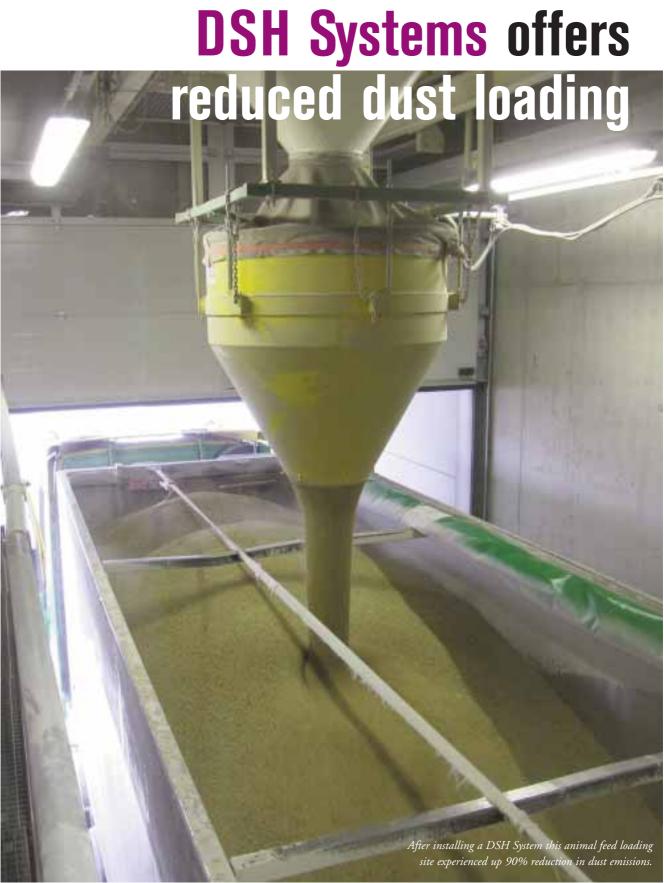
## Solutions for ship unloaders

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









The DSH (Dust Suppression Hopper) System cleverly avoids the need for more complicated equipment currently used in truck, rail and out-loading applications.

#### How does DSH work?

The DSH System is installed under a feed point where it can be suspended above the target and kept at operating level. A small

degree of natural agitation as the hopper is filled helps exclude air from the material being transferred. At the point of loading, or transferral, the DSH system concentrates the discharge of dry goods as a solid column through free air into any target repository including trucks, rail cars, barge, stock piles, storage containers or bags.

The standard models require no utilities and have no internal



dust cloud. Uncomplicated to install and easy to operate and maintain, the DSH System reduces hazards, health risks, dust and wastage.

By reducing product shrinkage, you can sell more of your product. Calculate your many benefits. Ease OSHA, EPA and other regulatory organization concerns.

Academic interest from international universities and consultants continues to expand upon the research and science behind this revolutionary system.

## PRODUCT CATALOGUE DSH Systems Sizes

**DSH** Systems currently

produces 11 hopper sizes: DSH Demo, DSH Mini, DSH 1, DSH 2, DSH 3, DSH 4, DSH 5, DSH 6, DSH 7, DSH 8 and DSH9.

moving parts while the top of the range PFC (programmable feed control) system automatically configures the hopper for variable product weights.

The DSH System is designed for dry, granular (or gritty), freerunning products.

Due to international customer demand, DSH Systems Ltd is constantly researching and developing its system to enable the efficient transfer of a wider range of products.

Previously, trucks taking on a load literally disappeared in the

#### **DSH System Construction Materials**

Customers can specify the construction material of each DSH system to suit their requirements, which could be any of the following but not limited to this list:

- polyethylene rotational moulded hoppers to cover most applications;
- Corten and Hardox steel and hoppers for warm or abrasive products:
- 304/316 stainless steel hoppers for food grade and corrosive situations; and
- steel examples are electro galvanized, mild steel, Corten, Hardox etc.

#### **DSH** SYSTEM APPLICATIONS

The DSH Systems hoppers are used to reduce dust while transferring dry, granular, free flowing products. The hoppers are used for bulk loading fertilizers, stock foods, meals and pellets, wheat, barley, sugars, some limes, salt, sand and gravel etc.

#### **ENGINEERED SOLUTIONS**

DSH Systems analyzes clients' requirements, their existing loading facilities and will provide the best dust reduction solution for the client's environment. Site specific engineering may be required to suit these requirements. To date customization has included features such as steel or filter fabric covers, dust socks with or without covers, custom-made springs and frames.

#### DSH SYSTEM MODELS

DSH Systems produces two models that can be any size or construction material:

- the standard and most widely supplied model requires no utilities and has no internal moving parts; and
- the PFC model (positional feed control) has a computerized discharge rate control system for products with different specific gravities; thus allowing the load-out of various materials on the same conveyor system. All DSH System models can be configured for PFC configuration.

## DSH SYSTEMS – WE CARE ABOUT YOUR AIR!

Solve the world-wide industrial material handling problem — dust fallout while transferring dry, granular goods.

At the loading point, the DSH System concentrates the discharge of dry goods as a solid column through free air into any target repository including trucks, rail wagons, storage containers, bags or stockpiles.

The standard DSH Dust Suppression System uses no utilities and has no internal moving parts. PFC (computer controlled) model available.

Winner (joint) of the Inaugural Innovative Technology Award at BulkEx 2006. Winner of the Dust Control Technology "Application or Practice" at BulkEx 2007. The DSH System gives you:

- · Cleaner, safer working environments
- Dust explosion risk mitigation
- · Reduced maintenance, cleaning and dust handling
- · Faster, continuous, cleaner loading of trucks and rail wagons
- · Enables operation in closer proximity to urban areas
- Reduced product shrinkage.
- Reduced environmental agency concerns

Clients include companies handling fertilizers, grains, stock-foods, salt, sugar, sand, etc in Australasia, USA, Canada, South Africa, South America, and France.





W: www.dshsystems.com

## **Expanded range of DSH Systems dust control hoppers**



As part of its ongoing R & D work to solve its clients' dust issues, DSH Systems has recently expanded its range of dust suppression hoppers with the addition of the 'Tardis', Mini, DSH6, DSH7 and DSH8.

The DSH system allows dry, dusty, granular, free-running materials to flow coherently en masse and the company claims the virtual elimination of dust emissions.

Technically, the standard hopper is a 'low dust discharge system' for bulk solids delivery which continuously discharges product through free air as a solid column. At the point of loading or transferral, air is extruded from the hopper and the product is concentrated into a moving solid column falling through free air while containing the dust fines in the centre of the column.

Global supply and implementation of hundreds of standard DSH hoppers have enabled DSH Systems' industrial customers to solve or greatly reduce their dust issues. With this global success has come a requirement for further innovation driven by its customers differing needs.

The DSH system is proven at reducing the dust once the product is delivered into the hopper, but the company does not control the delivery system. This is not usually an issue when loading 50tph (tonnes per hour) of fertilizer inside a shed but with recent larger installations of over 1,000tph and loading various different dry granular products, the amount of dust generated prior to the hopper taking control was becoming as important as the correct working of the hopper itself. Exposed outdoor loading environments such as the port area on the shores of the North Sea and barge loading on the Rhine can also be problematic.

In response to these issues DSH Systems' R&D department created the 'Tardis' hopper. The Tardis unit works as an interface between the standard DSH hopper and the customers' existing feed system and consists of a steel cover which fits over the standard DSH hopper with a specially configured flange. Spigots are added to enable specified dust socks to be fitted.

Where required the spigots and socks are replaced with welded-in inspection hatches with filter inserts. These have the dual function of working as filters plus enabling product sampling through the hatch.

The Tardis unit has greatly enhanced the DSH System, particularly when ship loading. It can either be hard-bolted to the existing ship-loader for permanent installations or the flange supplied can be of a quick release version to allow to easily changing of the hopper for a trimming unit when operational requirements deem that necessary.

A Utah client loads salt into trucks. The prime requirements were for 316 stainless steel construction and inspection hatches for dust filtering and sampling. The hoppers were fully enclosed with a flange fitting directly onto their existing slide gate valve

resulting in a fully enclosed unit with hatches for the air to escape but with dust contained. The salt now looks like milk when flowing from the hopper.

A company in France loads a variety of corn-based products, from standard corn to corn gluten, crushed corn (waste) and pellets for animal feed. They needed to reduce their dust levels but at an affordable capital outlay. DSH Systems supplied a standard DSH hopper manufactured from polyethylene (its most economic unit) coupled with a mild steel Tardis cover and flange. A couple of dust socks were added to the cover and the result is a fully functioning enclosed dust control unit at a minimum outlay.

The final example is based at Napier Port, New Zealand where DSH Systems supplied a unit for shiploading of wood pellets. Here the requirement was for robustness and strength. The amount of dust and the operational pummeling of the equipment were extreme so the company supplied a totally encased Tardis style hopper made from Hardox 450 Steel. It was made to be easily removed from the shiploader (due to multiple products being loaded by the one unit) and supplied with a custom made stand, for when the unit was not in use.

DSH Systems configure its dust suppression systems in response to its clients' needs. Research and development is its ongoing commitment to enable its clients to have an efficient, affordable solution to their environmental and health and safety concerns.







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- **Dr. Segfredo R. Serrano**, Undersecretary for Policy, Planning, Research and Development, and Regulations, Department of Agriculture – **Philippines**
- Franciscus Welirang, Chairman, Wheat Flour Producers Association (Asosiasi Produsen Tepung Terigu Indonesia, APTINDO), Director, PT Indofood Sukses Makmur Tbk
- Ping Zhang, Director of the Oils & Oilseeds Research Centre, Sinograin Oils Ltd - China
- **Roderico R. Bioco**, Founder, Member of the Board of Directors, COO & General Manager, Mindanao Grain Processing Co., Inc. – Philippines
- Iyengar Vijay, Managing Director, Agrocorp International Pte Ltd -
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## **Building better bulk**



In the Polish Port of Swinoujscie, a northern, island city, Buttimer has been putting considerable experience and expertise into designing, fabricating and installing a complex bulk handling system for one of the country's largest food production companies. The project presented a challenge, with requirements to simultaneously handle two tricky bulk commodities, load to Panamax ships as well as being integrated into the on-land transportation network. The project, while complex, has allowed Buttimer demonstrate significant capability in port design, bulk handling, processing, and complex project management.

Bunge is a major presence in the field of edible oil manufacturing; its manufacturing activities in Poland require large imports of soyabean cake and exports of rapeseed cake. The challenge for Buttimer was to handle the storage, loading and unloading of these bulk products to ships, trains and trucks. Both soyabean and rapeseed cake are low density, sticky, bulk commodities; prone to significant cohesiveness and compaction. Buttimer designed, fabricated and installed a 50,000-tonne storage capacity, a ship-loading capability of 600tph (tonnes per







hour) rapeseed cake and ship-unloading capability of 800tph of soyabean cake. The facility is fully aspirated and can also load and unload to rail and road. Buttimer's context-specific solution has met with the client's high expectations, and demonstrated the benefits of better system design and bulk management, as opposed to 'one-size-fits-all' solutions. The project in winouj cie is just one element of Buttimer's on-going activity in the port management area; the company has over 30 years experience in bulk handling and it continues to draw on that acquired expertise to help ports and businesses tackle complex bulk handling requirements and environments.

In the Port of Cork, Ireland, for example, Buttimer has installed two dock-side mobile loaders, and a rail mounted loader, all fully aspirated and dust-free. In a patented technology, Buttimer has designed a hydraulic suspension, breaking and jacking system, designed to keep loaders and hoppers stable, secure and level on the uneven, rough surfaces common on ship unloading quays worldwide. The company is also working on an innovative mobile shiploader, with Telestack — a global player in radial ship-loading conveyors — which will maximize loading efficiency, minimize loading time and will use limited loading quay space effectively. Buttimer is determined to make complicated bulk handling situations as simple and sensible as possible for its clients, through well engineered system design and innovative bulk handling; well-designed ship loading, unloading and bulk handling systems not only ensure that the bulk product retains its quality and quantity, but also maximizes time and energy efficiency, and results in long lasting, hard wearing bulk handling equipment. Equipment that Buttimer has designed, fabricated and/or supplied includes:

- shiploaders and unloaders;
- hoppers;
- conveyors;
- bulk processing equipment (including grains, timbre, aggregates and many more);
- storage (including silos, flat stores, tanks, etc.); and
- integration with rail and road transportation.

#### **B**UILDING BETTER BULK HANDLING SYSTEMS

The Swinoujscie port project is one of the many projects on which Buttimer has built its bulk handling expertise and experience. From coal in Colombia, agricultural grains in Dublin, iron ore in Liberia and aggregate handling for CRH Europe, Buttimer offers better bulk handling equipment and systems in ports and plants around the world. While competitors focus on 'off-the-shelf' solutions to every situation, Buttimer believes that, to really build better bulk handling systems, knowing the product, the client and the context is crucial. The company insists that to meet the challenge of complexity, experienced project management and customized process design are key. "It is safe to say that no two projects are the same; each has its own uniqueness and limitations," says company director, Fergal Buttimer. "We pride ourselves on being able to solve problems that others have no desire or ability to do." Buttimer offers its clients everything from one-off unique equipment pieces through to full, complex turnkey solutions, system design, installation and maintenance. Some frequently offered services are:

- equipment supply;
- equipment design and fabrication;
- installation and construction;





#### Contact Buttimer Ireland...

Carrigeen Industrial Estate, Cahir, County Tipperary, Ireland www.buttimer.ie e-mail: info@buttimer.ie Tel: +353 52 7441377 Fax: +353 52 7441087

- system design/turnkey solutions; and
- \* maintenance.

#### **TAKING ON CHALLENGING TASKS**

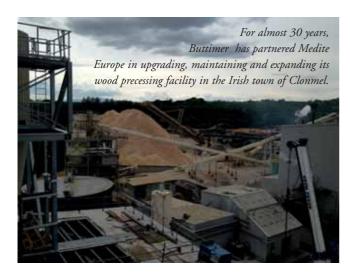
In the Irish town of Clonmel, Medite Europe operates a major wood processing plant, turning logs into wood-fibre boards, doors and other timbre products. The plant intakes tree-size logs, transforming them through a variety of processes including debarking, chipping, waferizing, treating, drying, gluing, re-constitution and more. The challenge of handling a difficult bulk product such as wood, in the many forms required at different stages of this process, necessitates a hard-wearing, versatile and wellmaintained system of conveyors and processing machinery. Buttimer, for almost 30 years, has partnered Medite in upgrading, maintaining and expanding the facility; the company has developed significant expertise and experience in the designing, manufacturing and installation of complex bulk handling systems through this on-going project.

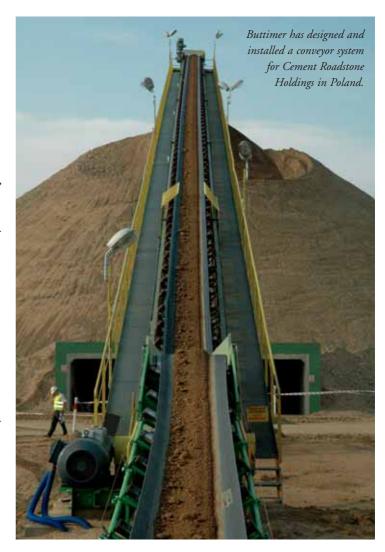
Cement Roadstone Holdings (CRH) is one of the world's largest diversified building materials, and aggregates, producers and suppliers. Across three sites in Poland Buttimer has designed — including process, layout and equipment design — and installed approximately two kilometres of aggregate conveyors for CRH, their throughput ranging between 200tph and 800tph. The system includes stackers, radial stackers, reclaimers, and screening processes.

The bulk handled by Buttimer's systems, and the specific requirements of the client and the handling environment are different on each project. Buttimer's determination to meet the client's high expectations is not.

#### **BUILDING BUTTIMER**

Buttimer was founded in 1978, by Edward Buttimer. It primarily offered engineering and bulk handling services and equipment to the agricultural industry in Ireland, starting in dairy and growing to include all types of agriculture and much more. The range of expertise developed within the firm, and available to clients, ranges from port management, to grain handling, power generation, heavy bulk, pharmaceuticals and more, only some of which are demonstrated by the projects described here. The diversity in engineering skills across mechanical and civil projects in particular, leaves Buttimer uniquely capable when it comes to





designing large, complex ship loading and unloading systems and bulk storage, where environmental context and existing infrastructure are of substantial importance to the project. The company's current director, Fergal Buttimer, son of the founder, is determined to utilize and build on the substantial experience and expertise that they have developed, and bring Buttimer's capacity for better bulk handling to new markets and clients.

#### **F**UTURE FOCUSED

Buttimer work hard to bring satisfaction to new and established clients. It is testament to the company's customer service ethic that almost 80% of new projects come from existing clients. Nonetheless, new and exciting challenges are what keep the company growing its experience and renewing its expertise, both vital in serving the international bulk handling market. Ongoing projects include the aforementioned, innovative mobile shiploader, with Telestack; the prototype, to handle iron ore, is to be delivered to ArcelorMittal in Liberia. Buttimer is also part of a contract with Diageo Ireland (Guinness) to provide world-class malting barley and rice handling facilities at the famous St. James' Gate Brewery in Dublin, including storage, intake, drying and processing systems.

Handling bulk products in complex contexts is a challenge that keeps evolving — whether through new technology, changes in world trade and global development or environmental constraints — Buttimer aims to evolve with that challenge. By offering clients a customized design, project management and equipment supply services, Buttimer hopes to develop, and continue to deliver, the promise of better bulk handling systems.

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## 4

## **Bulk in bags**



### **Nectar Group adapts its equipment to local conditions**

Nectar Group has provided an expert and bespoke service to the dry bulk handling market since its inception in 1972. The success of services provided by the group has been recognized with international awards and accolades through the years. Striving to be the best in the market has meant that the company is always looking at ways in which it can further add value to the already beneficial level of service provided to clients around the world.

As a result Nectar has developed a level of unrivalled flexibility and knowledge in operations covering 74 countries globally. The demand for bulk handling and bagging services of the group has changed significantly over the last decade. Whilst the company's core business, providing mobile bagging facilities, was once solely operating within a select few countries in Africa, Nectar's bagging units can now be seen in nearly every continent around the world. With a constantly changing bulk import and export market throughout the world, new locations generally bring with them new handling challenges and often new logistical difficulties to be resolved. Rather than trying to fit a round peg in a square hole Nectar Group has successfully made alterations to its existing range of equipment in order to meet the specific

demand in newly developing geographical areas.

For example South America generally differs from other continents in that bagging systems often incorporate valve bagging rather than filling standard open mouth bags. To conform to this, Nectar went back to the drawing board and designed a completely mobile bagging machine contained within a 10ft container that utilizes a screw feed conveyor to automatically fill valve bags with just two operators. This is a variation of Nectar's 10ft Impac bagging machine. The single line ultra-mobile bagging unit, which comprises of the same advanced double weighing technology and electrical control systems as Nectar's award winning Compac M140, was developed for operation with restricted space as it occupies a minimal footprint area but maintains a bagging speed of 60 tonnes per hour.

Various other locations have called for different design briefs including multiple line fixed bagging systems capable of up to 6,000 mts pwwd feeding straight from a silo or bagging bulk cargo in a port straight from containers into one-tonne bags. Ultimately, however, the principle remains the same whatever the method — fast, simple, bagging solutions anywhere, anytime. In

its endeavours to fulfil its brief the company encounters many challenges. Despite features, such as the most advanced double weighing bunkers and electronic weighing control systems on the market, Nectar frequently encounters problems in relation to the other aspects of the handling process which in turn affect the overall cargo handling chain.

It is said that a chain can only ever be as strong as the weakest link which is very true with the cargo handling

process. As such, deficiencies along the chains can often disappoint parties involved in the chain including final users of a commodity. Even today, labour-intensive manual bagging is in operation in many locations with unsatisfactory consequences for the end users or the receivers. This type of operation often leads to various issues such as unreliable bag weights, slow speed due to lack of labour and damaged or stained bags as a result of multiple handling processes. Nectar's mechanization of this process has had a knock-on effect with pressure being put on trucking companies and storage providers to step up to the

Manual bagging operations are labour-intensive, time-consuming and can lead to significant degradation of quality.

plate and increase their performance. Not only is it a case of speed of handling and transport but it is also one of quality of product and reduction of loss. Although Nectar's bagging systems operating in discharge ports have been proven to significantly reduce damage and loss from multiple handling and traditional manual bagging, there are still issues which need to be seriously considered in order to modernize the overall handling chain. Nectar often experiences cases where the onward handling of the product, following from where Nectar's responsibility ends, proves to be detrimental to the overall



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## Chronos BTH flour bagging system for Australasian customer

Chronos BTH's special working partnership with leading Australasian milling specialists Weston Milling is going from strength to strength. Following extensive trials and a two-year technical collaboration, the first four machines out of eight CHRONO-BAG™ OML BF Series open-mouth bagging lines are now factory accepted for Weston's flour mills in Sydney, Australia and Auckland, New Zealand. These first installs are part of a major upgrade program for Weston involving its five mills in Australia and three in New Zealand. When completed, the overall bagging project, valued at over €6m, will include not only the integrated bagging lines, but also palletizers and stretch hooders. The Weston project incorporates a combination of OML-1030 BF single spout lines, OML-2060 BF dual spout lines and OML-3090 BF triple spout lines.

Weston Milling has a strong reputation and tradition of quality. The company is committed to be the leading cereal conversion business in Australasia by fulfilling customers' needs through the supply of reliable, high quality products and services. The company engenders the same ideology for flour milling, which has proved successful for thousands of years.

The extensive project has gone beyond the bagging lines

to encompass a complete redesign of Weston's bag styles and types. Joint collaboration has also seen the evolution of Chronos BTH's new and highly innovative BlockTop  $^{\text{TM}}$  bag closing technique for flour and other food related industries.

Chronos BTH's sales director Robbert van den Biggelaar has worked closely with Weston personnel throughout the project and is extremely positive about the partnership. "This has been a challenging, yet highly rewarding two way experience for our engineers and other team members. In parallel Paul Woosley and his team from our exclusive agent in the region, Australian Prime Fibre Pty Ltd. (APF), have played a pivotal role throughout the project. We are delighted to have met or exceeded all Weston's criteria and their input to the project has been invaluable."

The OML BF bagging system features highly effective, dust free 'Bottom-up' filling techniques. Chronos BTH has pioneered developments in this type of filling for dusty powdered products such as flour and this proprietary technique ensures high accuracy, whilst also bringing important reductions in bag costs. At this year's INTERPACK from 12–18 May, Chronos BTH displayed one of the openmouth bagging systems OML-1030 BF sold to Weston Milling.

quality of the accumulative services in the handling chain. Whether it be the tearing of bags by poor handling or the sub-standard storage before delivery, there needs to be a joint effort in the industry in smoothing out the process to ensure the end user receives the best possible quality product on time. After all, a healthy and efficient supply chain will promote a healthy demand for these products and thus, overall, lead to a healthy and profitable market.

Although the trend towards containerization continues in developing ports, the standardization of bulk handling operations lessens the risk to those knowledgeable enough to ship in bulk and bag at destination

utilizing the advanced technology now on offer from Nectar. Besides, the financial rewards are becoming more and more prevalent.

Despite the different practices seen in various parts of the world, the company is involved in many Greenfield and general facility improvement projects displaying a general shift towards more standardized procedures being implemented in the developing world. In the last few years Nectar has developed a new role in the market from purely providing mobile bagging services to growing its consultancy and development arm to



incorporate this shift in the general perception and therefore control a larger portion of the chain. This demand, whether in relation to a coal terminal, stevedoring procedure or safety standards surrounding port activities has largely been driven by the desire not to be left behind in the ever developing international market. As a company with 40 years of experience in extraordinary cargo handling projects around the world, Nectar is well placed to advise and implement streamlined solutions in line with its motto — 'Driven by innovation, performance guaranteed'.

## SMB flexible filling system: big bags filled safely

The demands on filling systems are increasing all the time — the time factor plays an ever greater role and, depending on the product, statutory conditions also have to be considered. High performance and operating safety in constant operation, as well as special technologies for faster, risk-free bag filling: these are properties that go side by side with systems from SMB International GmbH. As one of the front-runners in the bag filling sector, the company produces co-ordinated filling systems, barrel filling systems, canister filling systems and keg filling units. Through flexibility in design and close co-operation with the individual customer, SMB contrives to design and produce a very diverse range of solutions meeting all requirements. "We distinguish between standard, semi-automatic and fully automatic filling machines," explains Jens Hachmann, a chartered engineer and technical director with

the SMB Group. "With the latest systems, a single employee simply selects the stored product record on the control panel and controls the machine — everything else runs automatically."



Production system optimization plays an important role in filling processes. With a multi-functional and flexible bag filling system, SMB, based in Quickborn, Germany, has achieved a fast and, at the same time, highly accurate method for weighing and packing goods in big-bags.

With the design of a big-bag filling system for food granules, SMB has fulfilled the wishes of one of its customers, an international trading company in the food processing and bag





filling sector, with considerable rationality and functionality.

The big-bag filling device consists of a fixed ground gantry. To this are secured hoppers, an MBA200 overflow protection unit from SMB's sister company, MBA Instruments GmbH, a dust filtration system and a dosage valve unit. A vertical drive unit is incorporated on the inner gantry, with which big bags of varying heights are filled. A connected scales system checks the filling to an accuracy of one gramme. Sacks are then stacked on a pallet. Pallets are taken individually from an empty pallet rack upstream - an automatic sheet applicator prepares pallets to accommodate the big-bag.

For good accessibility in the hanging process, the hooking loops, which are fitted with a pneumatically controlled release, are moved to the user. In the same user-friendly movement, the filler head is forced with a stretch sleeve, which is responsible for the air-tight closure of the sack opening. "We have developed a variety of filling systems with the market of the future in mind, which we have tailored specifically to the needs of our customers and integrated into their existing production lines as necessary," declares Andreas Heckel, one of the SMB Group's directors, in conclusion.

#### THE SMB GROUP

The SMB Group unifies the areas of filling and materials handling, vessel loading, warehouse technology, filling level measurement technology and conductivity measurement under the brands SMB and MBA. The SMB Group sees itself as a complete system solution provider with its business focus on planning, development, production and the worldwide distribution and service of highly complex systems, as well as warehouse logistics. Long ago, SMB took the deliberate decision that a high percentage of its products would be manufactured in-house at its production site in Quickborn. The main reason is to respond quickly to customer wishes and to achieve consistently high quality. The decision for a high amount of production depth and consequently, increased reliability with regard to quality and on-time deliveries is achieved by SMB through its own design and production of mechanical and electrical assemblies. The installation and service teams support both large national and international projects. A comprehensive, worldwide operating sales network provides for quick implementation.

## CorrPakBPS's intermodal container liners for dry or flowing bulk products

CorrPak Bulk Packaging Systems, LLC. specializes in intermodal sea bulk container liners for dry or flowing bulk products. The company offers bulk bags (FIBCs) and woven PP bags in addition to a variety of hard-to-find specialty packaging products.

CorrPakBPS manufacturing facilities located around the world produce flexible bulk, semi-bulk, and non-bulk packaging products. It is capable of producing millions of bags and liners, assuring a consistent flow of packaging materials at all times.

CorrPakBPS bulk container liners are manufactured in its plant near Shanghai, China, that is a joint venture by CorrPakBPS and Chinese Nationals. By combining the best from two different parts of the world, CorrPakBPS provides maximum value to clients though global production of its products.

#### **BULK CONTAINER LINERS**

Dry bulk container liners, also known as shipping, sea bulk or sea land container liners, are manufactured using a variety of materials including polyethylene or polypropylene. Dry bulk container liners come in both woven fabric and blown film varieties. Woven PE or PP dry bulk container liners come in either coated or non-coated fabric, depending upon the application.

Blown film cargo liners are made from virgin polyethylene resin, and even though they have been replaced by less expensive woven liners in most applications, they continue to be used for moisture-sensitive applications. CorrPak Bulk Packaging Systems, LLC offers numerous styles of intermodal (cargo) container liners capable of transporting any non-hazardous dry, flowing product weighing up to 58,000 pounds.

Specific bulk liner sizes conform to any corresponding intermodal shipping container for cargo transport; however, the most common sizes are for standard 20 foot and 40 foot export containers. CorrPakBPS can design any size container liner desired by the customer. These shipping container dry bulk liners are used in many industries to store and transport chemicals, petrochemicals, minerals, agricultural products, seeds and food products.

#### **Bulk liners:**

- are used in the containerized bulk shipment of dry freeflowing cargoes.
- are mass produced.
- provide a range of benefits and cost efficient savings for the shipping of bulk raw materials, chemicals, and foodstuffs in grain, pellet, granule or powder form.
- \* are quick and simple to install.
- enable bulk cargos to be shipped door to door with a minimum of handling.
- are made from virgin polyethylene (film or woven polyolefin). Thus agricultural produce and high value chemicals can be transported safely in an enclosed chamber.
- \* avoid cargo contamination from pollutants and salt air.
- minimize cargo spillage and waste.
- \* avoid unnecessary container cleaning costs.
- maximize container utilization by enabling return loads of a different nature to be carried. (A bulk liner may be sent with the outward-bound cargo.)

#### **Bulk container liner styles**

- standard woven PE or PP
- ❖ barless woven PE or PP

- ❖ woven PE baffle
- \* blown film bulk container liner
- non tilt bulk container liners
- ❖ wide access aluminium barrier
- roll-off bulk container liner
- dewatering bulk container liner
- wide access hide
- fluidized bulk liner for hard-to-flow products
- specialty film/woven
- woven PE bulk liner/combination baffles-I bar
- bulk liner for maximum safety

#### **BULK CONTAINER LINER TYPES**

#### End fill bulk container liners

A totally enclosed liner which can fit any standard container.

#### Open top bulk container liners

The open top bulk liner was developed specifically for cargoes carried in open top containers. Grain is common, although plastic or chemical powders, cement, milk powder, sugar and salt are also carried. Open top bulk liners can also be used in top fill bulk containers, thus providing a very economical alternative.

#### Top fill bulk container liners

A totally enclosed liner made to fit bulk containers specially equipped with filling hatches on the roof of the container

#### Wide access bulk container liners

This is basically a huge bag, suspended inside a container and sealed after the cargo has been loaded. A very simple and totally enclosed versatile liner used to protect ANY containerized cargo. The wide opening allows for unrestricted access to the container during the loading.

#### **B**ULK BAGS (FLEXIBLE INTERMEDIATE BULK CONTAINERS)

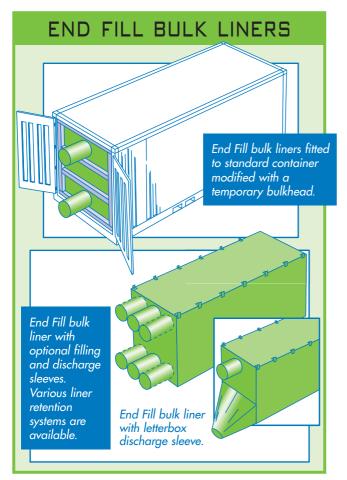
Bulk bags, also known as FIBCs, semi-bulk bags, totes, or jumbo bags can be manufactured from flat woven or circular woven fabrics and can be uncoated or coated depending on the application. CorrPak offers many styles of bulk bags that will hold non-hazardous dry, free-flowing products weighing up to 4,400 pounds or hazardous dry products weighing up to 2,204 pounds. These FIBCs can be fitted with liners that prevent moisture from reaching the product. They also reduce the possibility of contamination. CorrPakBPS's FIBCs are used in many industries to store and transport chemicals, petrochemicals, pharmaceuticals, minerals, crumb rubber, agricultural products, seeds and food products.

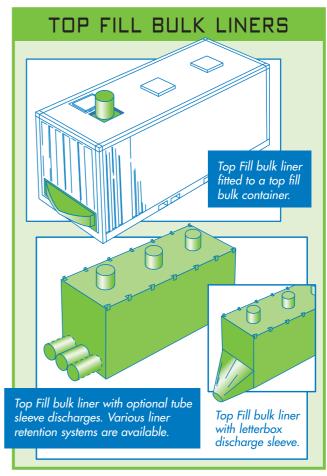
#### **WOVEN PE & PP BAGS**

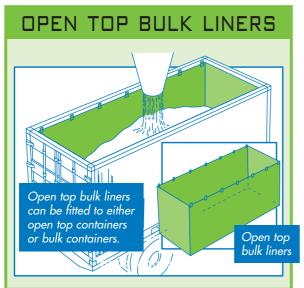
CorrPakBPS is renowned for its 25kg woven PE and PP bags. Its 25kg and 50kg bags come with open top, with or without gussets. CorrPakBPS manufacturing facilities produce these bags in massive quantities. Woven polyethylene or polypropylene bags are designed to ship divided large quantities of dry product in a cost-effective manner. Woven PP bags are the most common bags in packing industry due to their wide variety of usage, flexibility and strength. These are commonly used in packing fertilizers, feeds, grains, flours, salt, sugar, cement, seeds or any other palletized and powdered materials.

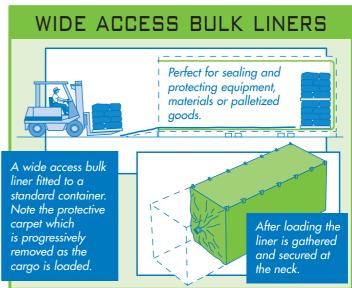
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CorrPakBPS offers a complete range of sea bulk container liners designed to transport your dry bulk products safely, efficiently and cost-effectively.









Bulk Liners are the perfect solution for shipment of dry, free flowable goods such as: PE, PVC, PET, PTA resins, sugar, minerals, grains, malt, and other products in flake, granule, powder or pellet form.

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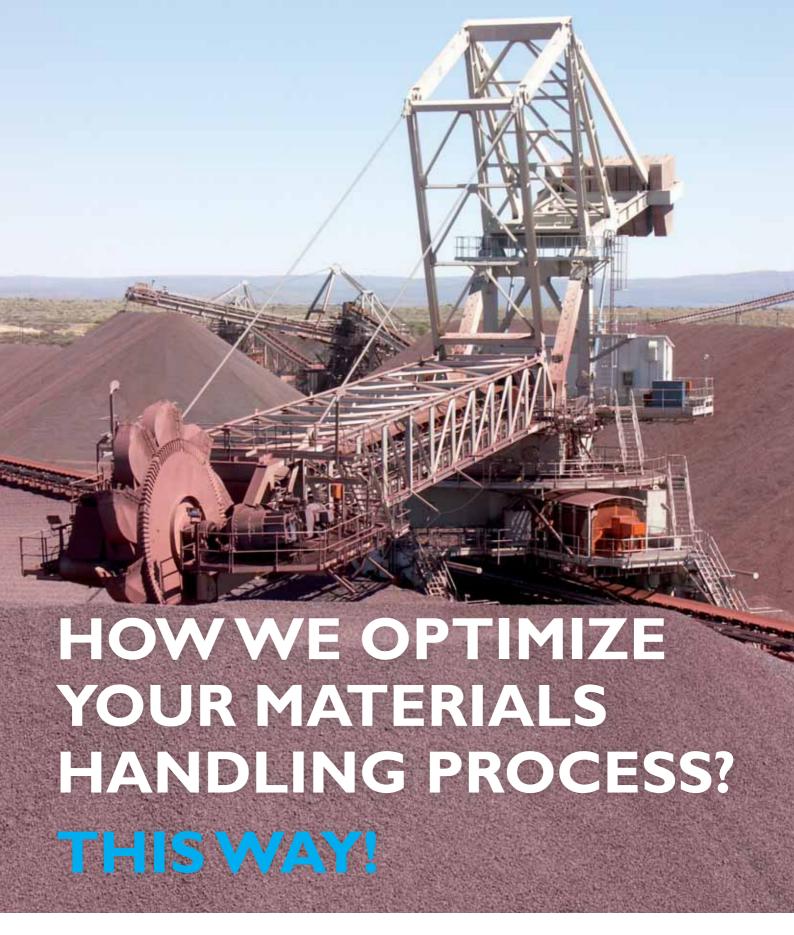


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R. Debaere, CEO at Group Galloo Recycling, Belgium

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