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JANUARY 2015 issue

featuring...

Grain and soya trade contrasts

After growing fairly briskly in the past twelve months, global import demand for dry bulk commodities can be expected to see a solid advance in 2015. But restraining influences are prominent. Some distinctly negative elements are currently evolving in the coal, grain and several minor bulk trades.

Could a pick up in economic activity around the world provide more impetus? Following the huge reduction in oil prices recently, prospects for GDP and industrial output in a number of countries are looking more encouraging. The IMF sees this advantage as "a shot in the arm" for the global economy, possibly resulting in a 0.3 to 0.7 percentage points GDP gain during 2015, a sizeable boost, especially after continuous downgrades in the past year.

Grain

One negative feature presently evolving is weakness in grain import demand, partly offset by positive signs in the soya sector. The latest International Grains Council estimates put world trade in wheat, corn and other coarse grains at 297mt (million tonnes) in crop year 2014/15 ending June, as shown by table 1. This total is 10mt or 3% below the previous period's volume.

Lower forecast purchases by the European Union, North Africa and China account for most of the decrease, resulting mainly from improvements in their domestic grain harvests. Conversely, further soya trade growth is envisaged. US Dept of Agriculture calculations show a 6mt (3%) rise in global soyabeans and meal movements in marketing year 2014/15 ending September. China's soya imports could be 6% higher at 74mt.

Iron ore

Additional iron ore imports into China, Japan, South Korea, and several other countries, in 2015, are predicted by Australia's Dept of Industry in a new report. By contrast, the EU's volume could decrease. The result could be 39mt or 3% growth in global trade this year, to 1392mt.

Most of the expansion is likely to be contributed by China, which is forecast to import 973mt, a 4% rise. Changes among the other main elements of world import demand are likely to be relatively small, including a 1mt increase in Japan to 138mt, and a similar 1mt increase in Korea, to 64mt. The EU volume could be 2mt lower at 123mt.

Coal

Estimates of global metallurgical coal trade by the same forecaster suggest a modest 6mt (2%) increase in 2015, to 310mt. This category includes coking coal and steam grades used within the steel industry, and calculations are based on all trade, the majority of which is seaborne. These movements comprise about one-quarter of the entire coal sector.

Metallurgical coal trade is limited to a greater extent than iron ore by slow growth in steel production in raw materials importing countries. Currently, steel output expansion in many of these countries this year is expected to be minimal, at around 1% or less. However, upside potential has been created by a possible improvement in economic activity following oil price reductions.

Minor bulks

Among minor bulk commodities, cement is a sizeable component. Global seaborne trade is estimated at around 100mt annually in the past couple of years and may increase in the twelve months ahead. Construction industry progress in a range of importing countries will determine the outcome. The USA, Asian countries and Middle East area are key markets.

Bulk carrier fleet

During 2014 growth in the world fleet of Handysize (10–39,999dwt) bulk carriers was much slower than seen in other size groups. As shown by table 2, the Handysize fleet's capacity is estimated to have expanded by only about 1%, although there are signs of a possible acceleration this year, when newbuilding deliveries could rise. Deliveries were lower in the past year, while sales of ships for scrapping also receded.

TABLE 1: GLOBAL WHEAT & COARSE GRAINS IMPORTS (MILLION TONNES)

	2009/10	2010/11	2011/12	2012/13	2013/14*	2014/15*
Asia (excluding Japan)	50.1	55.5	58.4	58.3	73.0	71.3
Japan	25.4	24.7	23.0	24.3	23.1	23.8
Middle East	42.5	34.9	46.0	48.4	53.9	57.2
Africa	52.6	53.3	59.0	55.9	64.9	62.9
Others	69.8	74.3	84.6	82.0	92.3	81.5
World total	**240.4**	**242.7**	**271.0**	**268.9**	**307.2**	**296.7**

source: International Grains Council, 27 November 2014 **forecast* *July/June crop years*

TABLE 2: HANDYSIZE 10–39,999DWT BULK CARRIER FLEET (MILLION DEADWEIGHT TONNES)

	2009	2010	2011	2012	2013	2014*
Newbuilding deliveries	5.5	8.7	10.3	10.4	6.2	5.5
Scrapping (sales)	5.6	2.7	5.3	8.3	6.7	4.5
Losses	0.2	0.0	0.2	0.1	0.1	0.0
Plus/minus adjustments		0.9	–1.1	–0.7	0.0	0.0
World fleet at end of year	**76.3**	**83.2**	**86.9**	**88.2**	**87.6**	**88.6**
% change from previous year-end	–0.3	+8.1	+4.4	+1.5	-0.8	+1.1

source: Clarksons (historical data) & Bulk Shipping Analysis 2014 forecast **forecast*

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

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W: www.coalmarketsasia.com

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17–20 March
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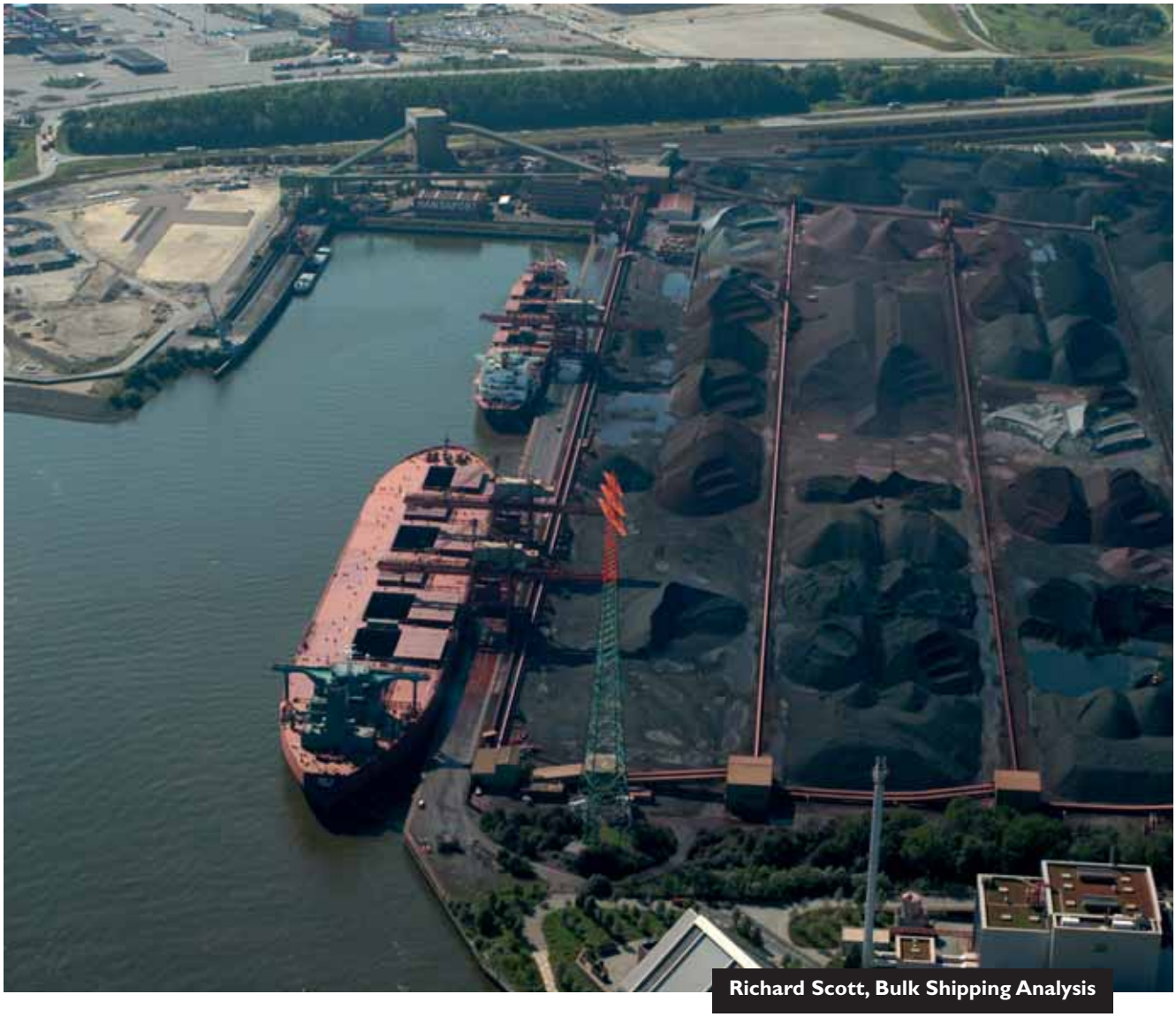
Dry bulk trade's varying evolution



Richard Scott, Bulk Shipping Analysis

Some of the key influences affecting global seaborne dry bulk commodity trade became less supportive during the past twelve months. Consequently, trade growth was not maintained at the brisk expansion rate seen in the previous few years. A deceleration emerged, and signs appearing recently suggest that this slowing tendency could continue through 2015.

The performance of dry bulk trade as a whole last year was relatively healthy, however, compared with global economic activity, an important influence. Provisional calculations point to world seaborne dry commodity movements increasing by around 3.5% in 2014, following 6–7% annual rises in each of the preceding three years. Currently a similar, perhaps slightly reduced increase of about 3% looks possible in 2015.

Economic output growth attainments in many countries around the world proved disappointing last year. While the USA achieved a fairly robust pace, other countries which have a large impact on import demand for commodities — the European Union, Japan and China — saw either sluggish performances or, in the case of China, a persistent slackening trend. Against this background, some negative effects on seaborne trade were clearly discernible.

But dry bulk trade benefited in the past twelve months from more specific factors, especially additional iron ore cargoes which contributed a large part of the overall growth. Conversely, the coal picture was not so positive, and some tentative estimates suggest that seaborne coal trade declined marginally. In the year ahead there are expectations for a continued outperformance by iron ore movements, accompanied by modest extra impetus in several other sectors.

Global economic growth

Uncertainty and anxiety about global economic growth

TABLE 1: GDP GROWTH IN KEY ECONOMIES (% CHANGE FROM PREVIOUS YEAR)

	2009	2010	2011	2012	2013	2014*	2015*
USA	-2.8	2.5	1.6	2.3	2.2	2.2	3.1
Eurozone	-4.5	1.9	1.6	-0.7	-0.4	0.8	1.1
Japan	-5.5	4.7	-0.5	1.5	1.5	0.4	0.8
OECD area#	-3.7	3.0	1.9	1.3	1.4	1.8	2.3
China	9.2	10.4	9.3	7.7	7.7	7.3	7.1

source: IMF, OECD Economic Outlook (25 November 2014) ** forecast* *# mainly USA, Europe, Japan and Korea*

prospects intensified last year, as it became clearer that an improving trend was not becoming firmly established. At year end, however, it seemed possible to envisage a boost during 2015 from the unexpected sharp fall in oil prices which had taken place. Although not advantageous to all countries, some could be strengthened.

Organisation for Economic Cooperation and Development estimates, published at the end of November, pointed to only a limited improvement in economic activity during 2014 as a whole, preceding a further modest acceleration in the current year. As shown in table 1, GDP growth in the OECD area — advanced countries mainly comprising the EU, USA, Japan and Korea — was estimated at 1.8% last year, following 1.4% in the previous twelve months. In 2015, 2.3% growth is envisaged.

The OECD's assessment of prospects concluded that "growth is expected to remain modest by past norms". Nevertheless, a gradual strengthening over the next two years seemed foreseeable, assuming that there is no intensification of the prevailing uncertainty, and also assuming that the downside risks do not materialize. Goods and services output (GDP) could be expected to gain momentum, assisted by supportive monetary policies.

But the EU's weakness has become more of a concern, emphasized by a poor performance during 2014 when widespread expectations of a slight pickup proved over-optimistic. Moreover, the risks of persistent stagnation appeared to multiply. Although several influences are expected to assist recovery over the next 12 months, disinflationary pressures are evident. Forecasts suggest that GDP in the eurozone during 2015 may reach only about 1%.

Japan's economy entered a 'technical' recession last year, with two declining GDP quarters, immediately after sales tax was introduced in the spring. It was another example of progress falling short of many expectations, which had been raised by the success of 'Abenomics', the prime minister's strategy for reviving economic activity. In the year ahead, forecasts indicate low or minimal growth at around or under 1%.

In China, economic output has been growing at a less rapid pace than seen previously, but the slowdown is consistent with signs of a longer-term slowing trend. Government policy has envisaged this pattern, amid intentions to shift the balance away from capital investment and exports, and towards consumer spending. GDP growth in 2014 below the preceding year's 7.7% could be followed by further deceleration towards 7% in 2015.

For numerous economies, upside potential is created by the dramatic oil-price fall recently. Some countries could gain substantial benefits, based on a similar impact to that of a tax cut, resulting in increased spending and strengthening economic activity. But there are many complicating factors and offsets, so a huge boost is not guaranteed. Also, the size of additional impetus provided depends upon how long the reduction persists, its average magnitude, and expectations for future oil prices, none of which is easy to predict.

Steel industry minerals

Patterns of spending shaping economic activity are key influences affecting steel demand and production. In countries purchasing foreign supplies of raw materials, changes in steel output are linked to iron ore and coking coal import volumes. In the past twelve months, many large steel producing countries saw flat or slightly increased production volumes.

Recent World Steel Association estimates highlighted changes in steel demand, increases or decreases in which are not always the same as actual production variations. For 2014, EU domestic steel demand was expected to be about 4% higher than seen in the previous twelve months, while in Japan a 2% rise seemed to be evolving. China's earlier strong trend appeared to have ended, with a marginal 1% advance estimated.

Signs indicating how 2015 steel demand would unfold suggested no improvement compared with last year's estimated outcomes. The WSA foresaw a slightly reduced 3% growth rate in the EU this year, amid weak economic growth and possibly a small 1% contraction in Japan, reflecting a fading impact from government economic policy changes. China's receding property market and switching emphasis towards rebalancing the economy was expected to result in minimal, less than 1%, growth in steel demand.

The steel industry's main raw materials movements, iron ore and coking coal, comprise one-third of all global seaborne dry bulk commodity trade. Last year iron ore trade apparently grew by about 9%, based on partial information, reaching over 1,310mt (million tonnes), as shown by table 2. Coking coal trade may have been about 2% higher, at 310mt.

Continued growth in 2015 is suggested by forecasts. Another

TABLE 2: WORLD SEABORNE DRY BULK COMMODITY TRADE (MILLION TONNES)

	2009	2010	2011	2012	2013	2014*	2015*
Iron ore	905	1,005	1,069	1,124	1,210	1,315	1,370
Coal	842	954	1,014	1,111	1,180	1,190	1,210
Grain (including soyabeans)	295	297	313	328	349	365	375
Other dry bulk commodities	1,132	1,283	1,374	1,425	1,505	1,510	1,550
Total dry bulk trade	**3,174**	**3,539**	**3,770**	**3,988**	**4,244**	**4,380**	**4,505**
% growth from previous year		11.5	6.5	5.8	6.4	3.2	2.9

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

large increase in iron ore trade could result mainly from further expansion of China's import demand, accompanied by some limited positive changes elsewhere. Coking coal movements could benefit from higher purchases by Indian importers and other buyers.

Iron ore imports into China expanded rapidly over the past twelve months. Steel production growth receded, but substitution of domestic iron ore supplies by foreign purchases benefited import volumes. Much lower international iron ore prices greatly improved the relative attractiveness of ore supplied from foreign mines, especially Australia's greatly increased output.

China's iron ore import requirements dominate global seaborne iron ore trade, comprising more than two-thirds of the total. After reaching 820mt in 2013, estimates pointed to at least a 10% rise in the past year, possibly followed by another big increase during 2015. This expectation reflects an assumption that competitively-priced supplies, from foreign sources, will continue displacing an enlarging portion of higher-cost production from Chinese domestic mines.

Positive changes in the remaining one-third of iron ore trade may be limited. The major importing countries of Europe, Japan and South Korea could see subdued growth in purchases if positive steel demand developments result in production growing as well. Additional iron ore imports into India also are a possibility, given the constraints affecting domestic mines' output amid rising usage resulting from rising steel production.

Coking coal seaborne trade is not dominated by China, as seen in the iron ore sector. Another feature is that global coking coal movements are much smaller than iron ore shipments. Although China is a large coking coal importer, Japan and the European Union are equally big buyers and India is catching up, so the global trade breakdown by importing country is more evenly distributed.

Provisional estimates for 2014 suggest that China's coking coal imports fell, compared with the previous year. By contrast, India's volume apparently rose sharply, while South Korea also seems to have raised its annual requirements. Japan's quantity may have been slightly lower while Europe's rose. This year, a number of major importers may see increases, but China's trend is more difficult to predict.

Power station fuel

Trade in steam (or thermal) coal, used chiefly in power stations but also in the cement and other industries, forms a much larger part of overall coal trade than coking coal. Seaborne trade in steam coal, which had been growing vigorously, apparently saw only a marginal increase in 2014, compared with the previous year's 890mt volume.

Support for steam coal trade is still being derived from several factors. Rising demand for electricity in countries where

Soya handling at the Port of Bordeaux in France.

coal-fired generation capacity is expanding is a positive influence. Growing reliance on foreign supplies of coal, resulting from these trends, contributes to the favourable picture, sometimes assisted by inadequate domestic coal production.

However, environmental concerns about coal burning have become increasingly prominent, leading to political interventions to curb coal use, such as those seen in Europe and China. This pattern, in turn, often limits potential for imports growth or reverses upwards trends. Switching to cleaner fuels is likely to remain an objective in many countries although, elsewhere, the economic advantages of coal remain compelling.

Prospects for steam coal import demand growth are most evident among Asian countries. The two biggest regional importers are India and China, both of which continue to enlarge their coal-fired power generation capacity. But, last year, foreign coal purchasing patterns diverged: India's trend remained positive, while China's turned negative.

Rising steam coal imports into India reflect power plant additions and growing electricity output. Several massive new power stations are being built at coastal locations, adding to potential future consumption and imports growth. Supply shortfalls in the huge domestic mining industry and inadequate rail capacity are also factors. Steam coal imports may have grown by over 15% last year, from 144mt in the previous period, and probably will increase again in 2015.

China's steam coal imports.trend is now surrounded by greater uncertainty. Adverse influences have become prominent, especially steps aimed at reducing air pollution in cities. The upwards trend in domestic coal production slackened last year. Hydro-electricity output was higher. Amid coal market weakness, imports of steam coal were sharply down compared with the previous year's 252mt (including low-grade lignite).

Influences with unfavourable implications are also visible in Europe and Japan. Within the EU, coal-fired electricity generation is being partly phased out as tougher environmental regulations are implemented, implying reduced scope for coal

imports. In Japan, an eventual return of activity in the huge nuclear power sector, which remains closed following the Fukushima accident four years ago, could reduce coal's contribution.

Food and feed

Global seaborne grain, oilseeds and other bulk agricultural commodity trade is often determined, at least in the short term, largely by the effects of changing weather patterns. These changes greatly affect domestic crops in importing countries (with implications for import levels), as well as influencing harvests in exporting countries. Underlying consumption trends are a longer-term factor.

During the past 12 months, world seaborne grain trade (usually defined as comprising wheat, corn and other coarse grains, plus soyabeans) was affected by sharply contrasting influences. First half 2014 trade movements saw a continuation of the events seen in the previous six months, when a strong expansion started. After mid-2014, this positive pattern faltered, and signs of weakness began to emerge.

Crop year figures illustrate clearly how movements are evolving. Recent International Grains Council figures suggest that world trade in wheat and coarse grains (but excluding soya) could decrease by about 10mt or 3% in crop year 2014/15 ending June 2015, to 297mt. In the previous 12 months a large 14% increase was seen.

In 2013/14 the rapid surge was caused by a widely-spread global import demand expansion, spurred by lower international grain prices. About one-quarter of the overall increment was caused by China's almost doubled volume. The balance comprised higher purchases by other Asian countries, the Middle East area, North Africa, Europe and elsewhere.

Within the current 2014/15 year, recent good harvests in several importing countries may be reflected in lower foreign grain purchases. EU imports are likely to fall sharply for this reason, while volumes into China and North Africa could be lower, partly offset by an increase in the Middle East. The EU's total could be down by 40%, to 12mt, following another large harvest in mid-2014, substantially reducing feedgrain (livestock feed) import requirements.

Abundant domestic grain availability in China is set to have negative effects on imports. Although the latest summer/autumn Chinese harvest was no higher than the previous year's output, it was sufficient to keep the market well supplied. Coupled with apparently adequate stocks, pressure from rising usage trends has become less intense, implying an imports decrease, based on IGC estimates, of 29% to under 14mt.

A differing evolution is unfolding in the soyabeans sub-sector. After growing strongly by 15% in the 2013/14 marketing year ending September, US Dept of Agriculture calculations point to another increase, albeit much slower at 2%, to 113mt in 2014/15.

Continuing expansion of China's import demand provides a large part of the impetus for rising global soyabeans trade. After increasing by 18% in 2013/14, Chinese purchases could rise by 5% within the current year, reaching 74mt. Expanding consumption is the main explanation, both soyameal usage in livestock feed and soyaoil usage in food manufacturing and home cooking. Lower domestic soyabeans production is also a contributory influence.

The outlook for grain and soya trade later in 2015 is still hazy. Domestic crops in northern hemisphere importing countries' mid-2015 grain harvests will be a large factor determining foreign purchases. But these harvests are not yet predictable, because weather conditions over the growing season cannot be forecast accurately.

Minor bulks miscellany

An extensive category, the minor bulks sector is comprised of many commodity trades, some of which individually are large. The diverse range comprises cargo movements related to industrial and construction activity, while agricultural commodities are also significant. Altogether this group provides one-third of total seaborne dry bulk trade.

The most prominent elements within the 'industrial' sub-group are steel products and forest products. Other large parts are bauxite/alumina, iron and steel scrap, cement, salt, petcoke, plus nickel and other ores. Among 'agricultural' minor commodities are sugar, rice, oilseed meals, phosphate rock, other fertilizer raw materials and semi-processed fertilizer products.

Last year, based on tentative calculations, growth in the entire minor bulks group may have been minimal. This outcome followed a robust performance in the preceding twelve months, when total seaborne trade reached around 1,500mt, as shown in table 2. In 2015, an upwards trend may resume.

Changes in individual commodity trades are often linked to specific factors, but broader economic growth patterns are also relevant. During 2014, import demand for industrial minor commodities was limited, in a number of countries (in Europe, for instance), by subdued economic progress with unfavourable implications for manufacturing and construction activity.

In many minor bulk trades, global trends are closely related to China's import demand. Chinese buyers of bauxite/alumina and nickel/other ores influence high proportions of world movements. In 2014 Indonesia's ban on unprocessed mineral exports (extensively shipped to China) caused trade in some minor bulks to diminish.

World seaborne bauxite/alumina movements apparently declined sharply last year from around 140mt in the previous twelve months. Reduced imports into China was the main reason. This downturn resulted from buyers earlier anticipating Indonesia's export ban and consequently raising their stocks, followed by the ban's adverse effects when introduced at the start of last year.

Brazil anticipates difficult year due to slowing Chinese economy

The slowing of the Chinese economy, together with falls in the price of many of the commodities which are crucial to Brazil, means prospects for 2015 are less good than for a decade, *writes Patrick Knight.*

Brazil has benefited enormously from the fast growth of the Chinese economy during the past ten years. Strong growth in demand for most of the commodities it exports, with iron ore and soya beans in the lead, but also including market pulp, timber, leather, alumina and cotton, and with maize an important newcomer in recent years, have meant Brazil has earned more from its exports than imports have cost.

The recent slow down in the Chinese economy, which has caused imports to fall sharply in the past few months, means exports to China will earn much less this year than they did in 2014. This will cut the profits of miners and farmers, which is likely to cause output and exports to fall in the next few months, possibly for years.

China has gradually moved up the list of the countries with which Brazil trades, overtaking giants such as the United States and neighbour Argentina in the process. In the past couple of years, China has been Brazil's leading market, as well as the main source of what it imports. The export of commodities, both hard and soft, have been responsible for more than half of all Brazil's export total earnings in recent years, and have guaranteed a surplus in visible trade for several years.

For more than a decade, the Chinese economy grew by more than 10% a year. Growth was spurred by massive spending on infrastructure works, as well as construction of all kinds, which resulted in the country becoming the world's leading manufacturer of steel.

The migration of tens of millions of people from the countryside to cities each year, led to a surge in demand for a many foodstuffs, notably grains, oilseeds, meats and dairy produce. Much of the extra feed and food came from Brazil.

China has had to abandon its long term policy of being entirely self sufficient in food. With limited supplies of land and water available, there is no going back on this.

With growth in China now in single figures, and the news that rather than growing, as they have done for many years, imports fell in 2014, the price of most commodities, which fell in 2014, can be expected to tumble further this year.

The price of iron ore, which had neared $100 per tonne in several years, averaged only just over $80 per tonne in 2014. Many expect the ore price to fall to little more than $50 per tonne later this year and to remain there for several years. While demand for ore is falling, supply continues to increase. This is because most of the world's largest mining companies all embarked on massive expansion projects aimed at increasing supply by up to 50%. Despite the risk of oversupply, the mining companies felt that if the price of ore fell by enough, many mines in China, where production cost are well above average, would be forced to close down. This would allow the price of ore from Brazil and Australia, which is better quality than what exists in China, to recover.

But the expected mine closures in China have not occurred and although some mines there may eventually be shut down, a reduction in the supply of Chinese ore may not come soon enough to prevent the profits of miners such as Vale, Anglo American, Billiton and Rio Tinto, from falling sharply.

Another worry for the miners, is that the supply of scrap steel in China, which has been negligible until now, is beginning to increase, as many more cars and consumer durables reach the end of their useful life. This will allow much more scrap to be used to make steel, resulting in demand for iron ore to slow. This has already happened in the United States, Japan and many European countries, which all import far less iron ore than in the past.

Vale has already announced that it will slash spending both at its Carajas complex, where output was due to almost double to 200mt (million tonnes) by about 2018, as well as in the higher cost mines in Minas Gerais state, whose ore is shipped from terminals such as Tubarao in Espirito Santo state.

The Anglo American company, which made its first experimental shipments of ore from its newly opened mine in Minas Gerais state in October, the ore taken in slurry form along a 500km pipeline, is unlikely to ship the 12mt or so promised for this year, as demand slows and competition increases.

Several of Brazil's steel companies, hit by low prices of steel and weaker than anticipated demand on the domestic market, had switched from buying most of their ore from Vale, to using ore from their own reserves in the past few years.

Some of them, notably the National Steel Company, the CSN, often earned more from the export of their ore, than from the sale of steel. With the price of ore down sharply, Vale will give more emphasis to the domestic market, virtually abandoned in the past few years of soaring world ore prices. This may prove a major challenge to the steel companies, whose mines are mostly higher cost than those of Vale.

The impact of the slowdown in China, coupled with the continued stagnation of most countries in Europe, has affected the iron ore market faster and more dramatically than that of most soft commodities. Work on building new railways, roads and apartment blocs can easily be brought to a halt or slowed. But people continue to need to eat, while the populations of numerous large countries notably in Asia continues to grow, while more continue to move to cities, where they eat better than in the countryside.

The price of several soft commodities, notably soya and maize, as well as sugar and wheat, have fallen steadily in the past few months, which has benefited consumers. The lower price of grains is mainly because farmers in many countries around the world responded to several years of high prices and increased plantings. Many also improved plantation care, notably by using more fertilizer and farm chemicals. This all adds to cost, but allows yields to rise. If farmers margins continue to be squeezed, however, this process may be reversed, although it will take some time to come about.

Several years of high profits allowed the tens of thousands of farmers who grow soya in Brazil, to pay off debts accumulated when they bought more land, which resulted in the planted area increasing by up to 4% each year for many years.

Disregarding the fact that prices have now started to slip, and trusting that as happened so often in the past, prices will recovered later in the year, farmers who plant soya and maize in leading producing state Mato Grosso, 2,000km from the nearest port, are expected to produce up to 4mt more soya this year than in 2014.

The 2014/15 soya crop could total more than 95mt, which will help push up world stocks to record levels, inevitably causing prices to fall further.

While on the one hand prices continue to fall, while on the other, costs, notably of transport, continue to rise, so many farmers may come to regret the decision to plant much more 2014/15. Many farmers are already complaining that they will make losses this year and it remains to be seen how long their financial reserves will last, before farmers are forced to cut plantings, as well as reduce plantation care. This will mean less fertilizer will be both used and imported.

Approximately 50mt of soya beans will be exported from Brazil this year, 4mt more than in 2014. The price of beans is expected to average about $370 per tonne, compared with the $510 per tonne for the beans exported last year. As a result of the lower prices, the soya beans, meal and oil to be exported this year is on course to earn between $23–24 billion, almost 25% less than the $30 billion the export of soya products earned in 2014. The difference will be sorely missed by both farmers and traders, although to a lesser degree by the shipping companies, who will carry more.

The lower earnings from soya and maize exports will make a big dent in Brazil's export earnings this year. The trade account will almost certainly slip into the red as a result, as soya is Brazil's leading export earner, followed by iron ore, which will contribute less.

On the positive side, 3mt of soya products, the majority beans, were shipped from ports in the north and north east of the country last year. More than a million tonnes were taken to ports close to the mouth of the Amazon along the river Tapajos from close to where it was grown in Mato Grosso state for the first time. But almost 3mt will use two new terminals started up by Bunge in 2014.

Getting beans from farms to ports in the north using a combination of road and water, costs about $100 per tonne. This compares with the $150 it costs to take a tonne of beans by truck to Santos or Paranagua along precarious and congested roads. The ports in the north and north east of Brazil are also three to four fewer days sailing time to leading destination China, than from ports such as Santos and Paranagua, so further savings are being achieved because of this.

What happens to the Brazilian currency, the Real, helps determine both demand and prices. A weak currency has worked in favour of farmers and miners in the past few months, when the Real fell by up to 25% against the $US dollar.

Brazilian farmers and miners were fortunate that the price of most of the commodities it exports were above average during the period when the Real was relatively strong, relative to the $US dollar. This meant their earnings were protected.

Although the prices of most commodity have fallen, the weaker Real means farmers are getting as much in the local currency in which most of their costs are incurred, than they did when commodity prices were higher. On the other hand, inputs

such as fertilizer, of which almost 30mt is used, 70% of it imported, will cost more from now on. This means farmers can be expected to use less fertilizer from now on, which will be reflected in lower yields in the years to come.

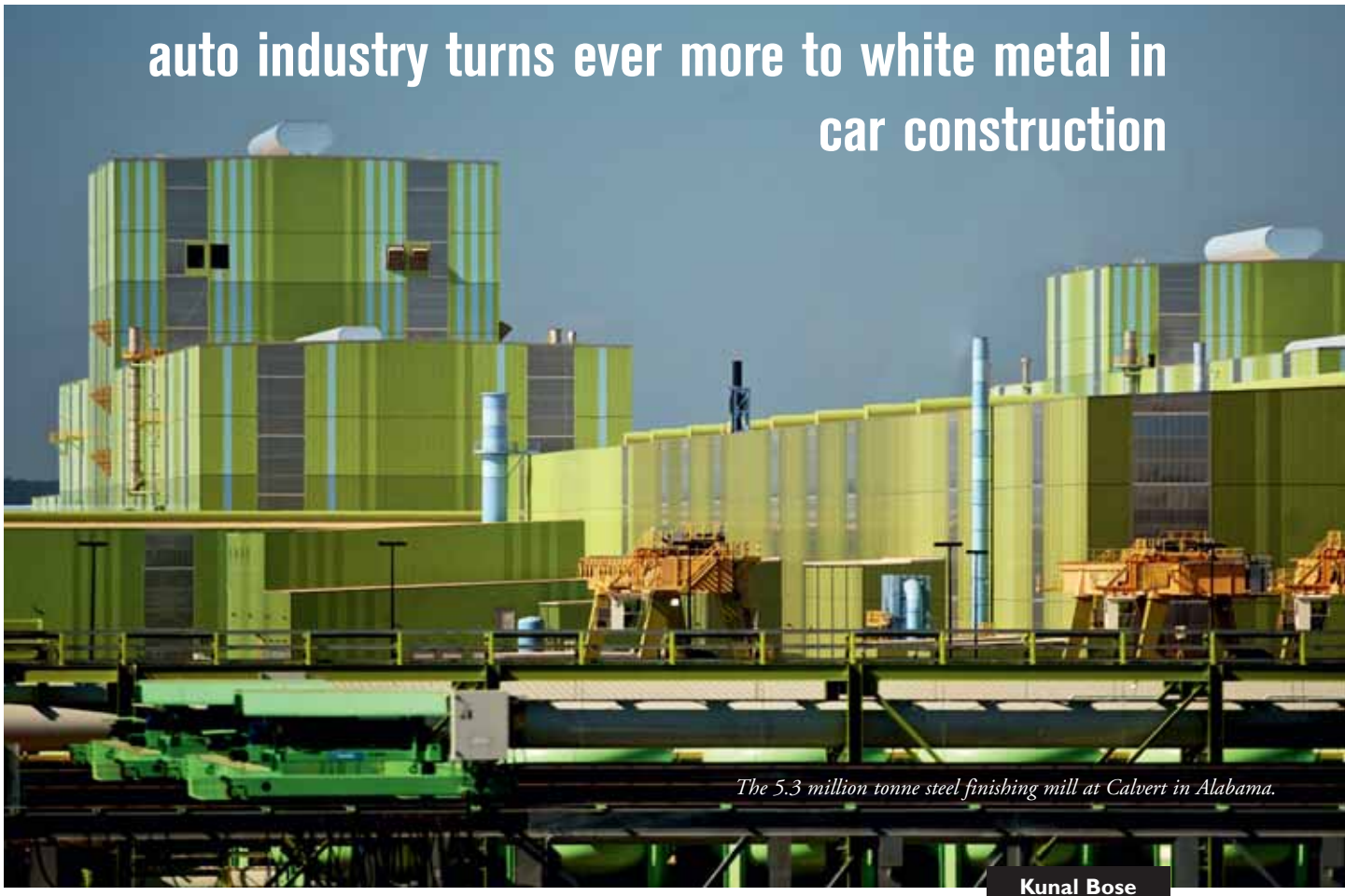
For the time being at least, demand for the bauxite and alumina of which Brazil is one of the world's leading producers and exporters, have not slowed significantly as a result of the slow down in China.

But the situation is much less positive for the companies which use alumina to make primary aluminium in Brazil. No new aluminium smelter has been built in Brazil for 25 years, while the amount of aluminium consumed there has been growing steadily, with more having to be imported each year. The main reason the for smelters reluctance to invest, has been the relatively high price of electricity in Brazil, far higher that in almost all the other aluminium producing countries. The exceptionally dry weather which damaged both the sugar and the grains crop in many parts of Brazil last year, resulted in water levels at most of the lakes which power hydro-electric power stations falling so low as to oblige the authorities to start up the much higher cost gas and coal fired plants during all last year, instead of just at times of peak demand. The high cost of running these "thermal" plants non stop, means that the cost of electricity will rise by at least 25% this year, and could rise further next. Lakes are still dangerously low, so will take several years to recover. Brazil looks certain to have to import increasing amounts of aluminium this year, even though with the economy unlikely to grow for the second year running and key industries, notably the motor industry, is set to produce fewer units.

DCi

Industry steels itself for aluminium revolution

auto industry turns ever more to white metal in car construction



The 5.3 million tonne steel finishing mill at Calvert in Alabama.

Kunal Bose

At the time when the use of aluminium was restricted to marquee models in the stable of Audi, Jaguar Land Rover and Mercedes Benz, steelmakers were smug in the belief that the white metal would find fringe application in cars. They had no forebodings of it facing serious competition in its long-held exclusive domain of the world automobile industry. It is, however, not that leading steel companies like ArcelorMittal, Nippon Steel and Posco were not engaged in developing flat steel, used in making car body, thinner and lighter but stronger. All that was, however, done under pressure of car companies, which are required by law in the US, European Union and Japan in varying degrees of severity to improve fuel efficiency of vehicles and cut their carbon footprint on an annual basis.

Besides bringing about improvements in car engine efficiency, the other mantra for making vehicles increasingly environment friendly is to reduce their weight. This is where steel started getting challenged by a lot more expensive but light in weight aluminium in automobile application. As it is to be, in the progressively intensifying scrap over positives of the two metals, the steel brigade is led by Lakshmi Mittal, chairman of the world's by far the largest steel producer ArcelorMittal. Seen as the bellwether of the world aluminium industry, Alcoa of the US is ever on alert to counter steel's claim to superiority on grounds of safety, endless recycling possibility and superior life cycle approach (carbon emitted from the point of metal making to its uses and finally to its recycling) compared to other metals.

Transportation is inviting increasingly greater attention of the authorities in developed and emerging countries because the sector is found to be a major source of environmental degradation. For example, in the US transportation, principally cars, is found to be the second largest source of carbon emissions behind power plants. The situation is no different in EU. Globally transportation accounts for approximately 25% of energy demand and 61.5% of all oil used yearly.

The past one decade has seen an explosion in car use in China principally and also in India and Brazil earning for emerging nations the dubious distinction of becoming the 'epicentre of global air pollution'. Five years ago, China became the world's biggest auto market leaving the US behind. Even while economic growth in China has slowed, auto sales there grew 14% in 2013 to over 20 million units. Indian annual car sales have remained around two million units. However, German

consulting firm Roland Berger Strategy has forecast that Indian car demand will from here record a compound annual growth of 12% to 5 million units by 2020.

A less known fact is global air pollution, for which CO_2 emissions by vehicles are a major contributory factor, along with obesity, has emerged as the fastest cause of death. The US regulations are obliging carmakers to almost double their vehicles' average fuel economy from 27.5 miles per gallon in 2012 to 54.5mpg by 2025. The European Commission in its turn has put in place a more stringent and comprehensive legal framework to reduce CO_2 emissions. Law requires manufacturers to ensure that by 2021 cars use 4.1 litres of petrol or 3.6 litres of diesel to run 100km and their carbon emissions restricted to 95gms a kilometre by 2021.

However, in spite of the EC going all out to control lethal air pollution, it is found to be the cause of 400,000 premature deaths in Europe each year. China, which claims to be trying hard to rid itself of polluting industrial units, loses around 500,000 lives each year to the 'airpocalypse,' a new coinage for killer air pollution.

Steel Authority of India chairman Chandra Shekhar Verma says the "nirvana" for the automobile industry coming under increasing glare of governments and environmentalists is to go on taking out weight from vehicles by using metal which is "light but strong. This holds good for new generation steel." Mittal will not accept aluminium is "invariably lighter than steel." The problem, according to him, is the aluminium industry will conveniently be referring to sets of "outdated data" to give advantage to the white metal. But aren't there forms of steel which can compete with aluminium on weight? In a statement more in the nature of disabusing aluminium's claim as the fast emerging favourite metal for automakers, Mittal says "steel can provide all the weight reduction that auto producers require to satisfy the new fuel efficiency standards, for all types of vehicles. Essentially we need to deliver a 25% reduction in the weight of structural components and closures, in other word the body-in-white (BiW). Steel can already do this, and we can do it in a more cost effective and environment friendly manner than any other material."

Whatever the assertions, the proof of the cake is in eating. Claims that steel can match aluminium in every way are in evidence at the 5.3 million tonne steel finishing mill at Calvert in Alabama which ArcelorMittal in equal partnership with Nippon Steel & Sumitomo Metal Corporation bought from ThyssenKrupp in February. Equipped with new generation finishing technologies, the Calvert mill is rolling out steel much more thinly than was thought possible earlier while retaining its strength. No matter that automakers are working with special steels "ten times stronger than mild steels" in use a few years ago. The *Financial Times* has quoted Alcoa saying that aluminium has "physics on its side. We're one-third the density of steel and we can be equally strong. Steel folks are certainly investing a lot of money and they are certainly a formidable competitor. But at the end of the day they can't change the destiny of the material they're working with." A factor that may tilt the balance in favour aluminium is that for the pickup sector fuel economy rather than payload is becoming prime focus for manufacturers.

Aloca's is not the lone constituent in aluminium industry in believing that steel's application in automobile has "reached a point of diminishing return." The US based consulting firm Ducker Worldwide says 18% of all vehicles will have all-aluminium bodies by 2025 compared with less than 1% now. In no way this is a farfetched forecast. Ford launching all aluminium body F-150 pickup in 2015 and General Motors' aluminium-bodied versions of Chevrolet Silverado and GMC Sierra to hit the road in 2018 come as warnings that the white metal are to make incursions in kinds of vehicles which steelmakers believed will always remain their sole preserve. Ford claims switchover to aluminium has led to light weighting of F-15 by 318 kg. GM is hopeful of securing more weight saving by welding panels together instead of riveted and bonded aluminium panels in F-15 of Ford. Alcoa and Novelis will stay in forefront as suppliers of body sheet to GM and Ford. In fact both are investing heavily in R&D and manufacturing facilities in anticipation of automobile industry's growing appetite for aluminium.

Hollywood stars keen to be seen as environmentally conscious must have the $70,000-and-up electric Tesla cars with aluminium-intensive construction. Principally for their low greenhouse gas emission, electric cars are finding increasing favour in developed economies and also in China where city air quality is compromising people's health. Electric car sales target for China are over five million units by 2020, which would account for about one-seventh of all vehicles to be sold by then. Here is a point of concern for steel. Electric cars are heavy users of aluminium. Therefore, rises in electric car sales will leave an impact on auto steel demand growth. DCi

The Tesla electric car range uses significant amounts of aluminium.

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Last 'saltie' departs Duluth-Superior in late December

On Friday 19 December last year, the last oceangoing vessel ('saltie') to have called on the Port of Duluth-Superior in 2014 departed just after midnight – passing beneath the Aerial Lift Bridge at 12:26 a.m. Saturday morning, to be exact.

The *Palmerton* had arrived earlier in the week to discharge project cargo at the Clure Public Marine Terminal in Duluth. The 436ft, Antigua-flag *Palmerton* was the last saltie of 2014 to make the full 2,342-mile transit of the Great Lakes St. Lawrence Seaway system from the Head of the Lakes to the Atlantic Ocean.

Both the Welland Canal, which connects Lakes Erie and Ontario, and locks on the Montreal-Lake Ontario section of the Seaway closed on 31 December.

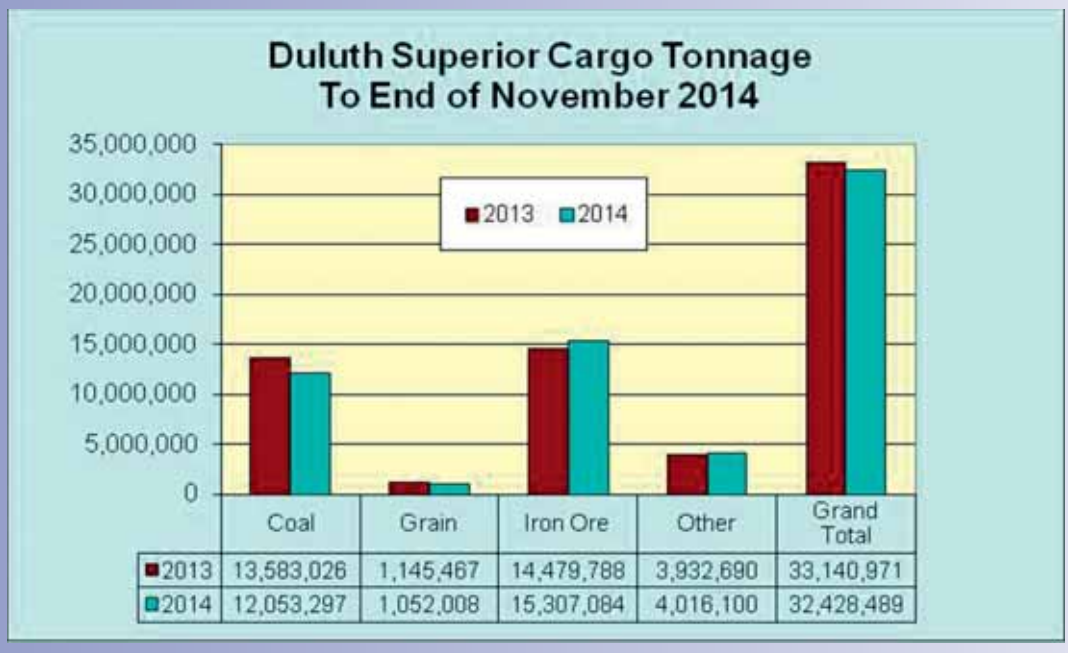
Laker traffic, however, continued on the Great Lakes for a further four more weeks as the 'Soo Locks' (i.e. locks at Sault Ste. Marie, Mich.), did not officially close to vessel traffic until midnight on 15 January. Those locks are scheduled to reopen for the 2015 commercial navigation season on 25 March.

The final push

Despite coming off the most brutal winter in decades to start the 2014 season and dealing with rail capacity issues, Great Lakes freighters have worked hard to make up for tonnage and transits lost in the ice-choked months of March and April. In fact, on many fronts, year-to-date shipments through the Port of Duluth-Superior have nearly caught up to where they were at the same time the previous year — sitting at 32.4 million short tons through November. Shipments of iron ore (to domestic and Canadian steel mills) are up nearly 6% to 15.3 million short tons; and increases in commodities like limestone and salt plus general cargo shipments helped offset declines in coal and grain this season.

"Higher water levels across the system this year helped tremendously in making up time and tonnage. Thousand-footers, for example, were able to load to another foot deeper draught allowing some 3,000 additional tonnes of iron ore or coal on every downbound delivery," noted Vanta Coda, Duluth Seaway Port Authority executive director. "General cargo shipments also ranked significantly higher than last year. By the time 2014 ends, we will have welcomed 14 vessels to the Clure Public Marine Terminal here in Duluth, nearly twice as many as last year, representing a tonnage increase of more than 200%."

Although ice has already formed on Lake Superior and elsewhere in the system, shipping has not been significantly impacted so far this winter. Freighters continue their end-of-season push to deliver iron ore to mills on the Lower Lakes to ensure sufficient inventories for steelmaking while locks are closed … to build up stockpiles of coal at utility companies and other customers in that same region … and, on the inbound side, to ensure there are sufficient supplies of limestone, salt and other bulk commodities on the ground here in the Twin Ports to last until the locks reopen in March.



	Coal	Grain	Iron Ore	Other	Grand Total
2013	13,583,026	1,145,467	14,479,788	3,932,690	33,140,971
2014	12,053,297	1,052,008	15,307,084	4,016,100	32,428,489

ISS focuses on Africa with key hire to regional management team

Inchcape Shipping Services (ISS), provider of marine, cargo and supply chain solutions, has announced another key hire to its African regional management team as the company gears up for ambitious growth across the region in 2015.

Joining ISS on 1 January, Riaan Blom takes up the position of Vice President Sales, Africa and will be based in Nairobi. With a career spanning over 20 years, Blom brings to the role extensive ships' agency experience with specialisms in project management, freight forwarding and large oil & gas contracts. His most recent appointment was as Regional Manager Oil & Energy, East Africa at DHL Global Forwarding, also based in Kenya.

Using his expansive industry knowledge, Riaan will be working across all of the company's business verticals, expanding and enhancing the value proposition that ISS offers in the region.

Senior Vice President, David Mackay, said: "We have been strategically growing the company's presence in Africa, which is a key growth platform for ISS. We have been able to consistently demonstrate our ability to deliver excellent levels of service to our customers measured against international standards in some of the world's most challenging locations, which is one of the reasons why we have been able to attract some of the best talent in the business."

Blom adds: "ISS has a number of exciting initiatives in the pipeline and I am delighted to join the company during this significant period of expansion. I look forward to engaging with ISS's existing and future customers in the region and supporting them with the successful development of their own businesses."

Inchcape Shipping Services is a leading maritime, supply chain and cargo solutions provider. With some 300 proprietary offices in 67 countries, and a workforce of over 3,900, the company's diverse global customer base now includes owners and charterers in the oil, cruise, container and bulk commodity sectors as well as naval, government and inter-governmental organizations. ISS provides landside commercial and humanitarian logistics, transit, offshore support, informational and other associated marine services. The company also offers 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.

Better cargo hold cleaning from Wilhelmsen Ships Service

STANDARDIZED SOLUTION COMBINES HIGH QUALITY CHEMICALS WITH SUPPORT FOR CREW AND CONSISTENT GLOBAL SUPPLY TO HELP CUSTOMERS MANAGE COSTS

Wilhelmsen Ships Service (WSS) has unveiled an upgraded cargo hold cleaning solution, combining high-performance cleaning agents and mobile equipment to help ship owners, operators and their crews stay safe and compliant on a global basis.

With port turnarounds increasingly short and customers demanding consistent cleaning regardless of location, the solution offers a way to demonstrate best practice while managing compliance risks, says Jan Fredrik Bjorge, Product Manager at Wilhelmsen Ships Service.

"With Unitor's standardized hold cleaning solution, owners and operators know exactly what to expect when it comes to costs. The cleaning products are made for purpose and highly concentrated for more cost-effective cleaning. Equipment is low-maintenance and durable, and therefore more cost effective in the long run. Customers are less likely to incur additional costs by failing to pass hold surveys," says Bjorge.

The kit includes everything the crew needs, it is easy to assemble and ready to use. The improved design makes it easier to manoeuvre and operate, resulting in safer operations in accordance with MLC (Marine Labour Convention) regulations.

In addition, the equipment is combined with high-performance chemicals, all supported by clear documentation and literature, e-learning and demonstration videos.

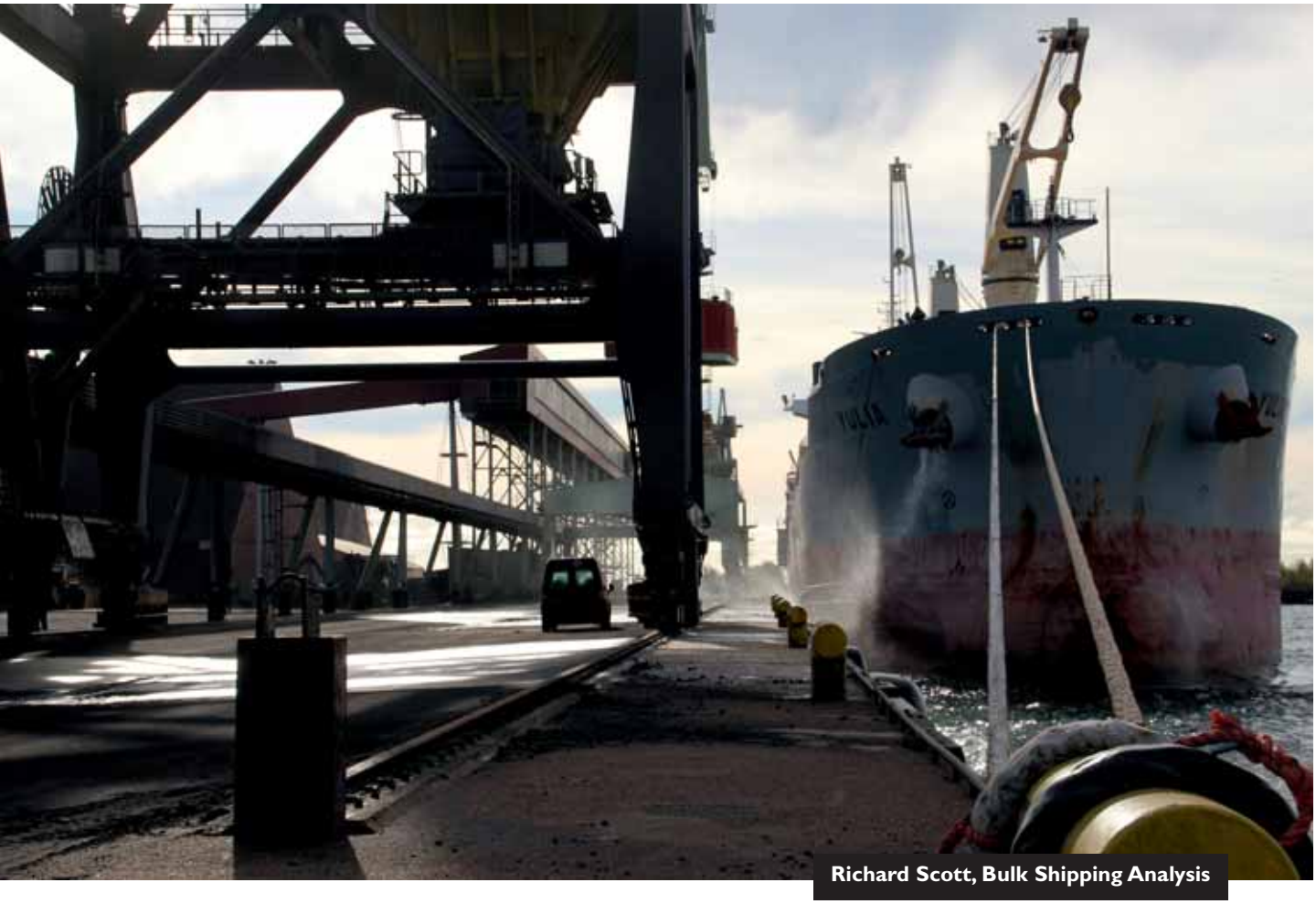
"Our cleaning solutions are designed to achieve the same results every time: safe, simple cargo hold cleaning and reduced turnaround times in port. With supplies available across our global network, we help customers stay compliant and save cost," Bjorge adds.

The process of cargo hold cleaning is more regulated than ever before. Any cleaning agents that may be discharged with waste water after cleaning must not be harmful to the environment. The Unitor cargo hold cleaning agents are not only effective, but also fully compliant with current regulations, notably Marpol Annex V.

Also available is Unitor Slip-Coat Plus, which provides a waterproof barrier to protect the hold, according to US Food and Drug Administration (FDA) approved standards, enabling carriage of grain and other foodstuffs.

All Unitor products and equipment are supported by a dedicated service team, providing practical advice and technical assistance on all aspects of cargo hold cleaning. Accessible to customers worldwide, they offer a level of expertise that ensures effective cleaning and gives customers the confidence that their vessel stays compliant.

Bulk carrier market: a shaky outlook?



Richard Scott, Bulk Shipping Analysis

Events in the bulk carrier freight market during 2014 were not quite what many players thought would happen. Unforeseen outcomes, of course, are not especially unusual for those with long memories. What can be predicted in 2015?

At the beginning of last year, after some apparently clear signs in the previous months, a sober assessment pointed to the possibility of an improving freight market through the year ahead. Fundamentals had started to look more favourable (or less unfavourable) from a shipowner's viewpoint. This approaching change, towards a rising market rates trend, reflected perceptions of diminishing over-capacity.

While key concepts — the demand for, and supply of tonnage, and the gap between the two (over-capacity) — defy precise measurement, a couple of features seemed to be evolving. Bulk carrier fleet expansion was slowing sharply, while seaborne dry bulk trade was still growing at a healthy rate. An assumed continuation of these patterns suggested a firmer market ahead or, at least, a consistent move in that direction.

By the end of last year, it was obvious that the results for 2014 as a whole had not been in accordance with such prognostications. Whether the 2015 results will be any closer to expectations is probably unpredictable.

Slower fleet growth

During the past twelve months, capacity expansion in the world bulk carrier fleet has slackened, after a sharp slowdown in the preceding year. In 2013 the growth rate fell from the double-digit annual increases seen earlier, to under 6%. At the end of 2013, the fleet total was 724 million deadweight tonnes, according to Clarksons Research data. Last year's increase probably was about one percentage point lower, raising the total to about 760m dwt.

The further, limited, deceleration in 2014 reflected lower newbuilding deliveries than seen in the previous twelve months, accompanied by lower scrapping. The reduction in the newbuildings volume was much larger than the reduction in the scrapping volume. Moreover, scrapping offset a larger proportion of newbuilding deliveries, and so the incremental deadweight capacity added to the fleet during the year was below that seen in the previous period and the growth rate slackened.

Based on provisional figures, which will be subject to revisions (probably large) over a lengthy time ahead, bulk carrier newbuildings delivered during 2014 appear to have totalled around 50m dwt. This total is down by about 20% compared

with 63m dwt in the previous year. Scrapping or recycling, based on reported demolition sales, seems to have totalled about 16m dwt last year, down by over 30% from the previous year's 23m dwt volume.

Fleet growth rates in the various main size groups — Capesize, Panamax (including Kamsarmax), Handymax (including Supramax) and Handysize — varied, although several were in a fairly tight range. The main exception was the Handysize 10–40,000dwt size group, where only a slight increase of under 2% seems to have occurred. In the Handymax, Panamax and Capesize groups expansion was evidently close to the fleet average of about 5%.

What is not so clear is how actual capacity for cargo transportation evolved. There are no readily available precise statistics, because data for calculations is not normally obtainable for the entire world bulk carrier fleet. How much capacity for transport is supplied depends upon how productively ships are used. It is determined by a productivity factor, reflecting in particular average vessel speed, ballasting patterns and speeds, and amount of time spent in port, among other influences.

For example, an increase in the fleet's deadweight capacity during any period, especially if a small percentage change, could be offset by a slower average operational speed. A slight average speed decrease of a half knot maintained for a year results in a significant deduction from the fleet's annual cargo transportation capacity, assuming other influences are unchanged.

Decelerating trade growth

According to provisional data, global seaborne trade seems to have decelerated quite markedly in the past twelve months. A separate article in this edition of *DCI* ('Dry bulk trade's varying evolution' on p4–7) provides a detailed overview of developments, so only a brief summary is included here.

World seaborne dry bulk commodity trade in 2014 apparently grew by 3–4%, a much weaker rate than seen in the previous three years when 6–7% annually was the norm. A feature of last year's expansion, raising the annual total to around 4,500 million tonnes, was that a very large proportion (perhaps about three-quarters) of the additional cargo volume was comprised of extra iron ore shipments. Iron ore trade grew strongly while, by contrast, coal trade apparently saw little or no growth. So the overall increase was unevenly distributed among commodities.

Furthermore, most of the iron ore trade growth, perhaps over three-quarters, was caused by China's robustly increasing imports. Conversely, however, China's coal imports and imports of some minor bulks appear to have declined. It is evident that global bulk carrier trade's upwards trend remains heavily dependent on China's purchases expanding vigorously.

A problem arises when using trade volume changes as an indicator of demand for ships' transportation capacity. The transport distance, as is well known, is also a factor. Longer loaded voyages cause demand for ships to increase even when there is no increase in cargo volume moving. Figures based on tonne-miles are therefore a better indicator. But, again, there are no easily available up-to-date, precise and comprehensive statistics for this, so cargo volumes shipped are often the best guide obtainable.

The demand/supply balance

As highlighted, calculating figures for shipping demand and shipping supply in the global fleet is not a straightforward exercise. So the best, readily available proxy is to compare the fleet's deadweight growth with trade volume growth, to get an idea of how the primary influences affecting freight market rates are progressing. Even this task involves much estimating and guesswork, with figures greatly revised over a lengthy period.

It seems clear that last year's disappointing (for shipowners) market performance was influenced greatly by bulk carrier fleet expansion outpacing dry bulk seaborne trade growth. When related to the surplus capacity already existing, it can be seen that the combination of these changes was not helpful in closing the large gap, between global vessel supply and vessel demand.

In addition to the broad 'fundamental' trends, changes in other influences, as usual, were evident. Variations, from one month to another, in cargo volumes loaded and geographical trade patterns resulted from a variety of factors, some seasonal. In several trades, inventory building or destocking by importers

had a marked impact. Port congestion and delays sometimes disrupted cargo flows. Moreover, market sentiment and expectations also contributed to short term fluctuations in market rates.

The progress of bulk carrier rates during 2014 reflected all these trends and events. As measured by the Baltic Dry Index (BDI), a broad global indicator of the bulk carrier market, rates began the year at a high level equivalent to 2100 index points, after an improvement seen in the preceding months.

A steep decline followed in January 2014 down towards the 1,000 level before a rally in March peaked at 1,621. Another sharp fall then rapidly took the index below 1,000 where it remained until August (the actual low point was 723 in late July). Subsequently, a recovery eventually returned the index to 1,484 in early November. But this revival again proved unsustainable, and by late December a rapid retreat to the 800 territory had been experienced, a level less than half that seen twelve months earlier.

Market prospects

At the beginning of the new year, what is the global bulk carrier market outlook over the next twelve months? It might seem likely that market rates will not remain depressed at the late-2014 level. However, a solid improvement in 2015 as a whole, compared with last year, may be difficult to achieve and sustain.

Signs suggest that the bulk carrier fleet's deadweight capacity growth could at least maintain last year's expansion and perhaps exceed it by around one percentage point, towards 6%. Orders for new bulk carriers, scheduled for delivery in 2015, have increased greatly, potentially resulting in a higher volume of new capacity joining the fleet than seen in the past twelve months. It is a possibility, although there is uncertainty about shipyard order book slippage (including postponements). This upturn in newbuilding deliveries may not be fully matched by higher scrapping.

On the opposite side of the ledger, the outlook for seaborne dry bulk commodity trade suggests 3–4% growth in 2015. Further rapid iron ore trade enlargement is expected, although forecasts are highly dependent on assumptions about China's import demand. A modest expansion of global coal movements could be seen also, supported by India's strong upwards trend. These advances probably will be accompanied by rising volumes in the grain/soya and many minor bulk commodity trades.

A tentative conclusion can be attempted. Based on these partial indicators, additional demand for bulk carriers currently seems unlikely to equal or exceed additional supply of transportation capacity during the year ahead as a whole. This result would provide limited scope for a strengthening market rates trend to evolve. While opinions vary about the key calculations, several analysts seem to broadly agree.

For example, in its latest market outlook published in mid-December, BIMCO analysts stated that "2015 looks a bit dull on the (bulk carrier) demand side", while on the supply side new capacity entering the market could be the same as seen last year. The resulting impact "will not improve the fundamental market balance".

Conclusions might need to be modified by the ramifications of lower oil prices, which are not yet fully factored into forecasts, partly because there are great uncertainties. Where oil prices will stabilize over the year ahead, and at what lower level, remains a puzzle. But there are signs indicating that at least a large part of the recent huge reduction will continue for an extended period.

If that assumption proves correct, a number of countries, including China, could benefit from a boost for economic growth, which may be reflected in dry bulk commodity imports and demand for bulk carriers. However, lower ship's fuel oil (bunker) prices eventually could alter the economics of slow steaming. If that change causes vessel operating speeds to increase, even only slightly on average, a boost for ship supply (transportation capacity) will be seen as well. DCi

Port of Sept-Îles welcomes first ship of the year

The Port Of Sept-Îles hands out its 28th cane to the first ship of the year

The *Cape Nelson*, a Chinese registered vessel, sailing from Imbutiba Brazil, was the first ship to arrive in Sept-Îles this year, at 0925hrs on 4 January 2015.

The vessel arrived laden with 14,328 metric tonnes of petroleum coke for Aluminerie Alouette, and set sail again on 7 January 2015, destined for a foreign port.

During a short ceremony, Shawn Grant, harbour master of the Port of Sept-Îles, presented Captain Jin Qiu Ze, with the prestigious cane bearing the Port of Sept-Îles insignia.

Several gifts were presented to the Captain by Aluminerie Alouette and Lower St-Lawrence Ocean Agencies.

This tradition, now in its 28th year, marks the arrival of the first ship of the year to call the port. To be eligible, the vessel must come directly from a foreign port and be bound for a destination outside the country without making any other calls at a Canadian Port.

About the Port of Sept-Îles

Boasting a variety of state-of-the-art facilities, the Port of Sept-Îles is one of North America's leading iron ore ports. Sept-Îles' port facilities play a vital and strategic role in the operation of a number of businesses from the region's primary sector. The port's annual economic impact is estimated at nearly $1 billion, with some 4,000 direct and indirect jobs. Port activity at the Port of Sept-Îles therefore remains a significant source of wealth creation in Quebec and Canada.

Captain Jin Qiu Ze receiving the Port of Sept-Îles' 28th cane from harbour master Shawn Grant.

Transnet and BHP Billiton sign RSA agreement

In South Africa, Transnet and BHP Billiton have signed a ten-year contract worth $218 million a year to move coal by rail to Richards Bay Coal Terminal. This forms part of the state company's plan to expand capacity on the existing rail link to the port from 73mt (million tonnes) to 81mt over the next seven years. In total, it is to invest $27 billion in its entire rail network, including the acquisition of 100 new heavy-haul locomotives for the RBCT line.

According to Transnet chief executive Brian Molefe similar agreements will also eventually be signed with 28 other coal producers this year.

Nevertheless, some industry analysts in South Africa are questioning where the additional 8mt of export coal will be sourced from, given that many of the largest coal mines have all but reach the end of their productive life, leaving Glencore the only one with substantial reserves.

Barry Cross

Santa Fe upgrading port accesses

The government of the Argentinian province of Santa Fe is to invest $4.22 million in improving access to cereals exporting ports. It has already begun work on expanding and repairing the access roads to the north of San Lorenzo to serve the Santa Fe-Rosario provincial highway and will shortly begin work on a link to San Martin port. By the time of the next harvest, it's anticipated that 80% of the new infrastructure will be in place, with all work to be finished within 12 months. *BC*

Ponta da Praia to continue grain handling

An attempt to overturn a decision to annul legislation introduced by Santos municipality to prevent the storage of grain at Ponta da Praia in the port of Santos has been rejected by the Federal Supreme Court. The advocate general defended the injunction, pointing out that the earlier ruling would undermine reform of the terminal. The original legislation dates back to July 2011 and established rules for the installation and marketing of dry bulk traffic at ports. However, this runs contrary to central government control of this area, while an argument put forward by the municipality that lifting the injunction could result in environmental damage or health to the population was also rejected, since dry bulk has been handled in the port for over 40 years.

In particular, the central government was keen to see dry bulk handled in the port given that it amounts to nearly 22 million tonnes; equivalent to 35% of Brazil's total dry bulk exports. *BC*

Bulk movements end on São Francisco River

This year's drought in Brazil has made it difficult to make use of the São Francisco River to transport dry bulk consignments from the 'new agricultural frontier' of western Bahia in ports in the north-east. The suspension of services, whilst due mainly to drought, also reflects a lack of investment in the waterway.

The last company able to make use of the river stopped services as long ago as May, with local producers forced to dispatch consignments by road.

Just a single barge used the river in 2014, transporting 2,600 tonnes of cotton seed between Muquém de Sao Francisco and Juazeiro. In the event, the trip took 30 days, ten more than average, because of silting and low draught, prompting the total withdrawal of services.

Icofort originally began operating on the river in 2006, being 20% cheaper than parallel highway services. However, after having initially invested $12 million, the company began operating at a loss of $950,000 annually. It has now switched all consignments to road, with the loss of 120 jobs.

The last major dredging of the river was undertaken in 2011, but subsequent programmes have never been implemented, with no maintenance dredging at all. This has left an operational draught of 1.1m, whereas a minimum draught of 1.5m is necessary for barge operation. In September, a start was made on some maintenance dredging in 21 key points over a distance of 320km, but has not come in time to save the existing service. *BC*

Barcarena now handling export soya

Reports from the Brazilian port of Barcarena (in Pará state) suggest that it handled 492,080 tonnes of soya from Mato Grosso between May and August. Recently opened, it now provides a major maritime outlet from the centre-North region of the country.

In the first eight months of this year, Mato Grosso exported 30.5mt (million tonnes) of soya beans, of which 7.09mt were handled by Santos. This was followed by Paranaguá with 1.48mt and Vitoria with 1.3mt. Significantly, Manaus dispatched 851,700 tonnes. Mato Grosso also makes use of São Francisco do Sul (743,400 tonnes) Santarem (615,100 tonnes) and São Luis (423,200 tonnes).

The use of Barcarena for the first time has been prompted by the shorter distance trucks have to travel when compared to Santos, despite additional inland waterway costs and having to use dirt roads. However, this new port does not suffer from heavy congestion that those ports in the south and south-east do. Barcarena is therefore expected to increase the amount of soya that it handles in future. *BC*

Silopor concession annulled

The Portuguese government has annulled the concession of Silopor to the ETE Group after it did not pay an agreed deposit, thereby costing the state €40 million. The original tender dates back to 2011, following the liquidation of the company, which owned terminals and grain storage areas at Trafaria and Beato in the Port of Lisbon.

The ETE Group was awarded the subsequent concession, in a deal that would involve payment to the state of €40 million this year and a further €125 million over the 25-year concession. For this, the group was awarded storage capacity of 340,000 tonnes were divided between three areas: Trafaria (200,000 tonnes), Beato (120,000 tonnes) and Vale de Figueira (20,000 tonnes).

In January, ETE was asked to immediately pay a deposit of €2 million, although the group sought a court injunction to prevent this, although this subsequently failed, prompting the government to determine that the provisional award of Silopor to EFE had expired. *BC*

Cherbourg coal terminal closes

Louis Dreyfus Armateurs has announced that it is pulling out of the bulk terminal at the French port of Cherbourg, where it is estimated to have lost up to €30 million over the last five years. It is currently in negotiations with two potential buyers. The existing facility will close on 31 December 2014.

The French subsidiary was set up in 2008 and opened its coal terminal two years later, 12 months later than planned and at a time of a major contraction in the coal market. It had hoped to handle around 4 million tonnes in that period, but traffic amounted to only 10% of this. The company sees no possibility in striking a financial equilibrium and has therefore decided to close. *BC*

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GME moves into Avilés

García-Munté Energía (GME), which currently handles 500,000 tons annually of coal and coke at the Port of Gijón, has reached a 14-year agreement to also make use of the neighbouring Northern Spanish port of Avilés to handle similar commodities. It will occupy a 67,000m² area on Raíces quay, which, unlike its existing terminal in Gijón, is rail linked. *BC*

Almeria handles imported marble

The southern Spanish port of Almeria has received its first shipment of Turkish marble, inbound from the port of Izmir and imported by Cantursa. The initial consignment consisted of 4,000 tonnes in a dedicated 2,000m² storage area in the port, which now serves as an extension of the inland production centre. *BC*

New bulk terminal for Tenerife

Santa Cruz de Tenerife Port Authority has received a request from Cementos Cosmos Sur for a concession, which will involve operating from a 6,850m² area on the Dique del Este. Here, it intends to establish a dry bulk terminal. *BC*

Full steam ahead for Novorossirisk export terminal

The NCSP group and Metalloinvest have signed a memorandum of intent to build an iron ore and pig iron export terminal at the port of Novorossirisk. This will have a capacity of 10 million tonnes annually and be rail-linked.

It will almost certainly occupy an area currently operated by Novorossirisk Shipyard, which is also part of the NCSP group. It is slated to commence operations in 2015–2018.

Metalloinvest says it will use the facility to export iron ore pellets, hot bracketed iron and cast iron two countries in the Mediterranean, North Africa, the Middle East, and the Asia-Pacific region. *BC*

Coal export traffic up at Vysotsky

The Russian Port of Vysotsky reported coal traffic up 23.6 % in the first 10 months of 2014, during which it handled 18.48 million tons of thermal coal. In October alone, the Universal Handling Terminal shipped out 488,900 tonnes of this commodity. A second facility, the Specialized Coal Terminal, reported traffic of 14.7mt (million tonnes) in the same period, up 20.2%.

Vysotsky, which is located in Russia's Leningrad region, has two handling companies: Port Vysotsky LLC and RPK-Vysotsky-LUKOIL-II LLC.

Currently, capacity is being expanded, with each terminal to have a capacity of 3mt per year. Much of the coal exported goes to customers in Western Europe. *BC*

Plans afoot for leading Indian ports to run Chabahar Port in Iran

India's two leading ports Jawaharlal Nehru Port Trust (JNPT) and Kandla Port Trust (KPT) are in the process of forming a special purpose vehicle likely to be named Indian Ports Global (IPG) to take on long-term lease two berths for development and running at Chabahar Port in Iran. In IPG equity, JNPT will have ownership of 60% and KPT 40%. In all likelihood, around the time a memorandum of understanding is signed between India and Iran in the New Year for execution of the project at an investment of $85.21 million, IPG will induct an Iranian partner. An Iranian partner will prove useful in sorting out local issues that will keep cropping up. An Indian shipping ministry official says the investment is required to equip the two berths — one to handle general cargoes and the other containerized materials — within 12 months of the signing of the MOU.

Standing as India's first overseas port venture, the project has significant strategic bearing in that two berths at Chabahar Port will give India a sea-land access to Afghanistan's major cities like Herat, Kandahar, Kabul and Mazar-e-Sharif through Iran's eastern borders. The access will be facilitated through the Zaranj-Delaram road, which India built in 2009. China and India are locked in competition to gain influence in strategically important land-locked Afghanistan, which abounds in minerals like iron and copper ore, uranium, lithium, cobalt and gold. Afghanistan, a country nearly the size of Texas, is described as a geological gold mine valued at $1 trillion by US scientists. Both China and India are keen to expand their participation in infrastructure development of Afghanistan, including building of ports in Iran to find favour with Kabul in securing access to minerals deposits. Like China India is eyeing iron ore and copper deposits in Afghanistan.

IPG is taking the two berths at Chabahar on a ten-year lease and it will transfer ownership of port equipment to be installed to make the berths operational to Iran's Port and Maritime Organization (P&MO) without claiming any payment on lease expiry. Parties involved in the two countries could be engaged in negotiations post phase I lease expiry for further participation by IPG in "building, equipping and operating" the terminals during phase II on build, operate and transfer basis. IPG's winning of a lease extension will depend on its performance in equipping and running the terminals in phase I. To make the operation of the two terminals attractive, Tehran has promised to consider extending free trade zone facilities. Chabahar Port located in the Sistan-Baluchistan province on Iran's south-eastern coast lies outside the Persian Gulf, which is easily accessible from India's western coast.

Dhamra Port expansion: soon after Adani Ports & Special Economic Zone bought Dhamra Port at Rs55bn ($925m) in May, it began the preparatory work for expanding the capacity of the deep sea port in India's coastal state Orissa from 25mt (million tonnes) to 100mt. The port was built by a joint venture company equally owned by Tata Steel and L&T Infrastructure Development Projects.

Expansion of capacity involving creation of 11 new berths will need 736 acres of land adjoining the present port site. The land is to be acquired from Orissa government. Dhamra Port director Santosh K. Mohapatra says, "the government is keen that the port expansion work is taken up quickly. It has sanctioned land allotment and we hope to get 736 acres from the state land bank." The fourfold port capacity expansion will require investment of Rs100bn.

Dhamra's two operational berths have capacity to handle 13mt of cargoes for export and 12mt for import. Commissioning of 11 new berths will give the port an extra capacity of 75mt, allowing Dhamra to occupy space with India's all-season very big ports. Execution of Dhamra's second phase growth will also create condition for building a 5mt liquefied natural gas (LNG) terminal within the port compound by Indian Oil Corporation, the country's largest company owned by the central government. Building of the specialized LPG terminal to occupy 150 acres will need investment of Rs50bn. Created as a port to handle dry bulk cargoes like iron ore, coal and steel products, Dhamra's cargo profile will undergo change as it will start handling containerized cargoes on completion of second-phase growth. At the same time, the port will also be adding many new general items, including clean goods in its cargo profile.

Against its present capacity of 25mt, Dhamra handled cargoes of 14.31mt in 2013/14, an improvement of 29.3% over the previous year. "Expansion work will start soon. The target is to complete expansion in 30 months. It is part of our aim to increase our cargo capacity to over 100mt by 2020," says Mohapatra. Expansion will also call for strengthening ex-port infrastructure like a four-land freight road through Dhamra to Bhadrak corridor and doubling of the rail track. *Kunal Bose*

Dhamra's two operational berths have capacity to handle 13mt of cargoes for export and 12mt for import. Commissioning of 11 new berths will give the port an extra capacity of 75mt.

Bulk in the Netherlands

Top marks for European bulk hub

Growing coal traffic allows Amsterdam to plan for a healthy future

The provisional figures of 2014 show that the Port of Amsterdam handled more than 34.4mt (million tonnes) of dry bulk, *writes Barry Cross*. Although this was a rise of only 1% compared with the 33.7mt handled over the same period in 2013, Lex de Ridder, who takes care of the energy cluster in the port authority's commercial division, believes that this is a really good result, compared to figures being posted by rivals. Only Rotterdam, he notes, is having a similarly good year in north-west Europe.

Given the relatively stable market position, some commodities being handled by the port nevertheless remain sluggish, while others continue to do really well, with coal very much leading the way. In fact, while 2013 broke all existing records for coal handling, so far, tonnage reported for 2014 has been even higher, up around 7% on the year.

De Ridder points out that it is not a coincidence that Rotterdam is also showing growth in coal handling, prompting him to speculate that the two Dutch ports' superior inland waterway connections are resulting in north-west Europe coal imports being consolidated there.

"As for 2015, coal tonnage will not continue levels of growth seen in the last two years, although we remain confident that we can hang onto existing traffic levels for the foreseeable future," he says.

In order of importance, Colombia, Russia and the US are the three main providers of coal for Amsterdam-based importers. However, the market downturn in China has resulted in producers in South Africa now shipping to the Netherlands, too, while Amsterdam has handled shipments for the very first time this year from both Indonesia and Australia.

Russian exporters, nowadays, appear to view Amsterdam as their main regional hub, one which can serve customers in both north and south Europe. Furthermore, given the growing importance of blending, which is often requested for Russian shipments, Amsterdam has the equipment in place to do this, helping to consolidate its current healthy position in this sector.

The largest coal shipments arrive in 170,000dwt vessels, although these cannot access the main port without being lightered outside the locks. This task is currently done by floating cranes on the approaches to the port, at IJmuiden, where the port authority maintains a capacity of up to 2mt annually. Here, coal is mostly transshipped to barges, which then wind their way along the inland waterway network to destinations in Germany.

However, as of 2015, the amount of coal undergoing lightering will grow to around 4.5mt, although this will require the

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deployment of a new system of 'water curtains' around the floating cranes to prevent dust emissions causing distress to the more than 300,000 local inhabitants.

"Now that we have the necessary permits in place, lightering activities at IJmuiden will increase notably, with additional coal business generated, we hope, by importers in the UK, who will benefit from these enhanced operations outside the locks," says de Ridder, noting that the UK used to be a major customer of Amsterdam's for this commodity.

Tata Steel currently operates the steel plant at Ijmuiden.

He concedes that getting the necessary permits to boost coal traffic on the approach canal has not been easy, because of environmental concerns. Residents, for example, already have to live side-by-side with the former Corus steel plant at IJmuiden, which is nowadays operated by Tata Steel.

In addition, there are regular flows of coal inbound to serve the NUON/Vattenfal power plant, which consumes about 1.5mt of coal annually, and which should continue to operate at least for the next 20 years.

Yet despite projections of an eventual drop off in coal traffic, de Ridder remains confident that coal will remain a major commodity for Amsterdam for the next few decades, particularly if the enhanced lightering activities do boost trade with the UK.

"Germany, also, will have to continue importing coal to replace the generating capacity lost following the closure of its nuclear plants. There was some suggestion that gas-fired stations would benefit, but the high price of gas is making coal more attractive, at least in the short term," he says.

Planning for the future

While the drop off in coal traffic has long been predicted, it remains stubbornly at the heart of the Port of Amsterdam's success in attracting dry bulk. Nevertheless, the port authority is not resting on its laurels. New bulks are, slowly but surely, making their way to the port...

One of the commodities that might eventually displace coal is biomass. Wood pellets are being imported as a growing rate, with a large, specialist facility able to handle this already in place at the port. However, pellet handling is generating large-scale investment, with several smaller installations also being developed close to the port. At present, consignment sizes dictate the deployment of Handysize vessels of up to 50,000dwt.

Even more intriguing is the current upswing in the handling of municipal and industrial waste, which has the potential to become a major new money spinner for the Port of Amsterdam.

The majority of this is imported from the UK, with around 300,000 tonnes of waste being currently processed by specialist facilities. One of the world's largest and most advanced incinerators is located close to the port, although the owners are unable to source sufficient waste from the Netherlands alone, so have gone further afield, signing contracts with companies in the UK, where appropriate processing plants are not yet in place.

"The handling of waste, which only began three years ago, is now growing in importance and tonnage is forecast to increase in the future," says de Ridder.

Continuing the recycling theme, a new scrap terminal opened earlier in the year, which he says is currently doing "quite well". Operated by ALBA, it has effectively doubled the amount of scrap that was previously handled, much of which is sourced in north-west Europe, processed in the port, then despatched to steel producers in both Turkey and China. Indeed, such is the importance of this traffic that consignment are invariably sent in 80,000dwt Panamax vessels.

Another commodity flagged up for future growth is minerals traffic, because this is a sector where Amsterdam has yet to make a big impact, says de Ridder, who points out that his optimism is predicated on signs that some companies in the port are definitely trying to further develop this market.

Cocoa is also an up-and-coming commodity, with Amsterdam already the world's leading port in the amount of tonnage handled, thanks to a possible large investment in processing facilities by a leading provider of LME warehousing and logistics services. Should the negotiations lead to a positive closing, the investment will result in 70% of inbound consignments being processed locally.

Infrastructure boost

Today, of the 30mt of dry bulk being handled by the port, just 3.7mt are exported. In the past, while exports probably accounted for about 20% of dry bulk traffic, Amsterdam remained a net importer. And that is a situation that is unlikely to change any time soon.

In terms of capacity, de Ridder says that Amsterdam has enough to cope with existing dry bulk traffic and also sufficient to absorb growth. The port authority plays a crucial role in maintaining this healthy position, he adds, noting that a close eye is kept on how well terminals are coping with traffic levels. As and when they are required, new quays are also put in place, he says.

"A MAN WHO STOPS ADVERTISING TO SAVE MONEY IS LIKE A MAN WHO STOPS A CLOCK TO SAVE TIME"

– Henry Ford

Terminals can also require remodelling

OBA, for example, requested the port authority for more space, so 12ha was transferred to its concession from EDF/Rietlanden, permitting it to revamp the layout of its now 70ha facility to make it more efficient, thereby boosting capacity.

However, by far the most important investment in new infrastructure is the new lock, being built alongside the existing one on the approaches to the port. Scheduled to open in 2019, it will displace the existing lock as the largest facility of its kind in the world.

"The new lock will be deeper, wider and longer. It will also improve the already excellent reliability of the port in that it will ensure that vessels can continue to access terminals if one lock is temporarily closed for maintenance," notes de Ridder.

Investing in agribulk

As ever with agribulk, tonnage rises and falls in relation to a constantly shifting trading environment, which is, in turn, impacted by global harvests.

"In recent times, agribulk traffic has seen a notable shift away from the European market, with more and more commodities sourced from South America and the Far East," says de Ridder.

For 2013, he forecasts a slight overall downturn in tonnage at Amsterdam. However, he stresses that this is a reflection of events taking place late last year and early this year, when companies were building up their inventory, resulting in significant increases then, offset by a slight downturn now. Nevertheless, 2015 should produce some growth, he suggests, especially now that investment is planned by the port authority in new flat warehousing facilities.

Over the last 20 years, de Ridder adds, agribulk has become one of the port's main dry bulk sectors. In the 1990s, volumes grew from 5mt to 10mt, declining just slightly to 8.5mt in 2013. Much of the strength in this area is down to the presence of two major stevedores — IGMA and OBA — which are the most important regional players in this market, something which has allowed them to increase their market share.

Since agribulk tends to be a relatively light material, no lightering is required outside the locks, with Handy and Panamax size vessels passing directly to the facilities in the main port.

Amsterdam also benefits from a local processing sector for inbound agricultural products, with 3mt of mainly soya and oil seeds imported.

Coal handling at the OBA terminal in the Port of Amsterdam.

Building for the future

Amsterdam retains a strong position as something of a regional hub for building materials for companies in north-west Europe. These are mostly sea-dredged aggregates, sourced from both Scotland and Scandinavia.

However, this year, the port has seen something of a slow down, although expectations are for a recovery.

"The construction sector in north-west Europe has been a bit sluggish in recent times, although we are beginning to see signs of recovery and forecast more grow in the near future," says de Ridder.

Such commodities, he suggests, are also relatively captive to the port, since Amsterdam has been able to leverage its strategic location to rotate consignments out by barge to various localities across the Netherlands and also into Germany.

Given a draught of 17.8 metres, Amsterdam can also accommodate bulk carriers of up to 170,000dwt, which are typically deployed on aggregates traffic. In this sector, producers tend to operate their own, very large bulk carriers on what are, essentially, pendulum services, connecting the same origin and destination port.

Indeed, next year, Amsterdam is to start receiving consignments of granite from both Scotland and Scandinavia in such bulk carriers, which will definitely require lightering at IJmuiden.

Logistically ideal

In terms of landside movements at Amsterdam, 20% goes by rail, around 70% by inland waterway to Germany or by coastal vessels to the UK, with the remaining 10% processed in the port.

"Dry bulk isn't really suitable for road shipment anyway," says de Ridder, noting that this particularly healthy situation has evolved naturally, taking advantage of the port's unique position and infrastructure to ensure trucks are kept off the road.

Terminal operators, too, recognize the importance of intermodal options, with OBA, in addition to recently revamping its conveyor system, also improving equipment at its rail head to expedite deliveries.

However, de Ridder also emphasizes the presence of nearby Schiphol airport, around ten minutes' travel time away from the port, since this makes it easier for all concerned to access the port without having to rely on other modes and has undoubtedly contributed to the success of the port, too, he says.

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Ovet finds solution for blending and grinding sticky and high moisture cargo

Dry bulk stevedore Ovet offers a high level of quality in all its services at its terminals in the ports of Vlissingen (Flushing) and Terneuzen. It is able to unload dry bulk cargo at a rate of 70,000 tonnes a day using its four floating cranes. Almost all of the company's equipment is mobile, enabling it to provide highly flexible service to all its customers.

Handling cargo that is sticky and with a high moisture content can be problematic. Ovet has found a solution to this problem, and is able to blend and grind these cargoes.

Ovet's innovative solution involves the use of a mobile conveyor belt with two bunkers. In the second bunker, a grinding machine is installed. By means of a small crane, the grinding machine is provided with 'sludge' material. The grinded sludge falls on the belt and is blended with dry, high quality material coming out of the first bunker.

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Port of Rotterdam enjoys successful year in dry cargo

Rotterdam is one of the main ports and the largest logistic and industrial hubs of Europe. With an annual throughput of 450mt (million tonnes) of cargo a year, Rotterdam is by far the largest seaport of Europe. The port is the gateway to a European market of more than 350 million consumers.

Rotterdam owes its position to the excellent accessibility via the sea, the hinterland connections and the many companies and organizations, active in the port and industrial complex. The port stretches out over 40km and is about 12,500 ha (including Maasvlakte 2).

In the past year, Rotterdam's dry bulk throughput has grown slightly, with a notable increase in agribulk.

THROUGHPUT RESULTS

(million tonnes)

	2013	2014	+/-
Agribulk	10.32	11.27	+9.2%
Iron ore & scrap	35.94	34.08	–5.2%
Coal	30.68	30.40	–0.9%
Other dry bulk	11.77	12.57	4.9%
Total dry bulk	**89.2**	**88.59**	**0.7%**
Total port throughput		**444.73**	**+0.9%**

Agribulk

This has performed surprisingly well, rising from 8mt in 2012 to 11mt in two years time.

Most of this is due to the overall increase in agri trade, but also to the performance of stevedores like Marcor and EBS and the increase in storage capacity which has been well received in the market. For example, EBS has a contract with Glencore for the export of grain that comes central Europe by rail. It has expanded its storage capacity with a new shed with a capacity of 67,000m³, and the port authority is investing in a new jetty with 16m depth. This jetty will become operational this year.

Likewise ZHD's investments include new sheds for the storage of sugar and wood pellets.

Iron ore and scrap

The steel market has improved somewhat. Prices for iron ore have crashed, which is good for an industry that is completely dependent on imports.

Nevertheless, there was no growth in iron ore throughput, mainly because of the closure of the largest blast furnace of TKS in Duisburg for a period of four months. This closure cost the Port of Rotterdam around 1mt of iron ore throughput. Scrap exports to Turkey were down last year; on an annual basis, scrap exports from Rotterdam are around 2.5mt.

Coal

Coal plants have performed well against gas fired plants, which is good news for coal throughput. However, because of energy efficiency, low economic growth, strong increase in renewable

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energy (wind, solar) and a very mild winter in Rotterdam's largest market — Germany — coal throughput did not increase. However, the port expects more coal in 2015 because two new coal-fired power plants will come into operation in Rotterdam at the Maasvlakte (E.On and GdF Suez). In the longer term, market developments are very uncertain because of energy policies: in Germany the Energiewende and the objective to reduce CO_2 emissions by 22mt is not good news for coal plants. And in the Netherlands, under the Energy Agreement, older power plants will have to close by January 2016.

With regard to coking coal things look brighter, the EECV terminal has expanded its coal terminal and all coal for TKS now goes through this terminal (6.0mt p/a). Also, HKM in Duisburg has increased capacity of its coke battery from 1.1 to 2.3mt.

Biomass and other dry bulk

Throughput of biomass (mostly wood pellets) is around 0.5mt which is more or less the same as last year and far less than in 2012. The main reason is that the Dutch subsidy scheme for co-firing of biomass has ended. However next year a new scheme (SDE+) will come in place which will probably mean that utilities will start to burn wood pellets again. There has also been an increase in imports for the residential heating market (Germany, Austria); this is slowly picking up because their domestic production cannot keep up with the increase in demand. Another interesting development is an investment in a biomass torrefaction plant at the EMO terminal called Bioforce (look at the EMO website for details).

Other dry bulk has increased (industrial minerals, construction materials) because of improved demand from construction and industrial production.

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The EMO terminal in Rotterdam has a draught up to 23 metres.

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EMO is able to accommodate the world's largest dry bulk vessels, and yet it never ceases to look to the future and plan ahead — now more than ever. It has strongly increased its storage and transshipment capacity and efficiency. This will ensure that it is fully equipped to enhance is safety, efficiency and sustainability performance, and to continue to serve its customers as a reliable partner in dry bulk transshipment in the coming decades.

EMO EQUIPMENT

- five unloaders, 3 × 85 tons, 2 × 50 tons lifting capacity
- one floating crane, 36 tons lifting capacity
- seven fully automated stacker reclaimers
- three barge loaders
- one sea ship loader
- three fully automated coal wagon loaders, two for coal, one for iron ore
- 160 ha stockyard
- high-tech operations centre

EMO can load 22 trains daily.

EMO operates 24 hours a day, seven days a week. Its unloading capacity is 47mt (million tonnes) and its throughput capacity is more than 70mt.

EMO is a partner that its customers can rely on. The company stays on top of the latest developments in the market. EMO continually analyses customers' needs, the quality of its services and its terminal's performance. In anticipation of market trends and

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LOOK TO THE FUTURE AND PLAN AHEAD

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

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

EMO

energising your business

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Operating around-the-clock, RBT has a wide knowledge of dry bulk commodities and is continually expanding its specialization to understand and provide the right answer to all your challenges. Our future lies in serving our clients not only with effective transhipment and storage, but also by being a solution thinking partner.

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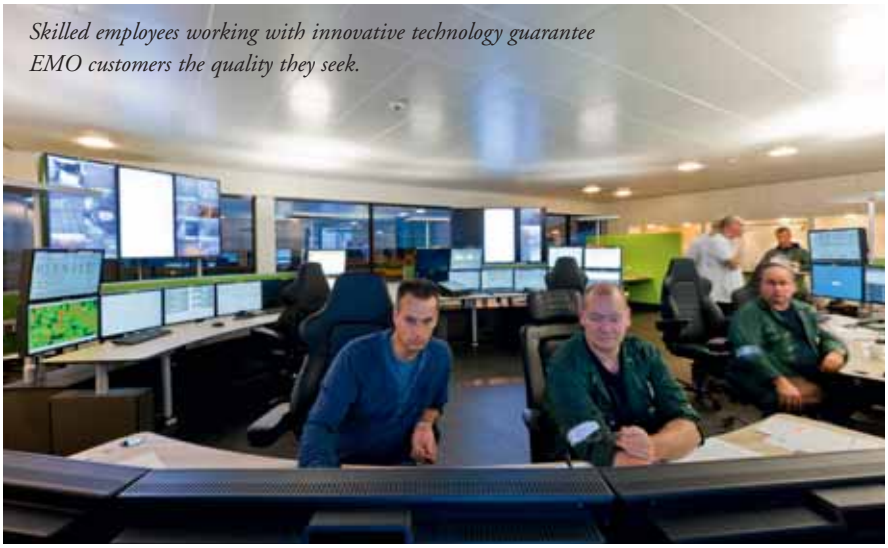
E-mail: info@rbtrotterdam.com

customer needs, it is continuously geared towards offering a more efficient, cleaner and safer terminal, one designed to meet all expectations.



Skilled employees working with innovative technology guarantee EMO customers the quality they seek.

Meeting market demands

On its 160-hectare stockyard, EMO is able to store 7mt of cargo. EMO is ideally located on a 23m-deep waterway connected directly to the North Sea. The Port of Rotterdam has excellent rail and waterway connections to the rest of Europe.

New plants E.ON en GDF Suez in Rotterdam

A new 1,070MWe coal/biomass-fired power station built by E.ON on a neighbouring site is currently in the test phase. The same applies to the 800MWe coal/biomass-fired power station built by GDF Suez on the eastern section of the EMO site. Both of these ultramodern power stations will be supplied by EMO.

The EMO terminal in Rotterdam is fully equipped to meet customer expectations.

EMO FIGURES 2013

Unloading	35mt
Throughput	61mt
Storage capacity	7mt
Trainloading	22 trains daily

European Bulk Services Rotterdam

European Bulk Services (E.B.S.)B.V.

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EBS: Rotterdam stevedore continues to improve facilities and services

European Bulk Services (EBS) B.V. is an internationally respected stevedoring company with a focus on the storage and transshipment of dry bulk goods. EBS operates from two strategically located terminals in the Port of Rotterdam and has its own fleet of crane vessels. Approximately 180 full-time employees work for EBS, generating around €45 million in revenues per year.

Terminals

European Bulk Services (EBS) B.V. conducts its business operations from two strategically located areas in the Rotterdam port area, namely the EBS Europoort terminal (at the Capesize dolphins), and the EBS St. Laurenshaven terminal, a Panamax terminal. The terminals have excellent connections to deep seaways, hinterland by inland waters, railways and trucks by highways. The terminals can be reached without having to pass a single lock. All types of ships can be handled at these terminals, from Capesize to coastal and river barge. The Europoort terminal is one-and-a-half-hours' sailing time to/from the pilot station and the Laurenshaven terminal is three hours' sailing time to/from the pilot station.

Europoort Terminal

European Bulk Services has built a 65,000m³ storage shed at its Europoort Agri Terminal. The existing deep-water jetty is being

extended by the Port of Rotterdam. On this new jetty, which will accommodate vessels with a draught of up to 16 metres, EBS will install a new hopper and a new conveyor system linked to the existing conveyors. The existing train/truck loading station will be modified and extended. Completion of the conveyors on the jetty and extension of the train/truck loading station is expected in the first half of this year.

Laurenshaven Terminal

This site, a Panamax terminal, mainly handles minerals, coal, scrap, biomass and agribulk products.

EBS offers various open and covered storage facilities. The new storage shed, with a net volume of 30,000m³, consists of three compartments of 10,000m³ each. This storage facility, is suitable for dry bulk products of all kinds. The roof has movable steel hatches which can be opened and closed remotely by the crane operator. Due to an advanced security system, the grab cannot cause any damage to the walls of the shed. The two existing sheds of 32,000m³ each have been fully refurbished.

Magnetic separators of iron parts of coal

In order to meet the special requirements of the coal import market, EBS has invested in several (electro) magnet systems for cleaning contaminated coal with iron parts. The Laurenshaven terminal, with a depth of 13.85m, is perfectly equipped to handle and store, amongst others, coal from Russian load ports. These load ports have a similar maximum draught to the St. Laurenshaven. Receivers of Russian coals can be extra sure of the quality of their coal if their product is cleaned for metals via the EBS de-ironing installation. The electro magnets are installed in such a way that the coal can be cleaned either via storage or via board to board discharge operations.

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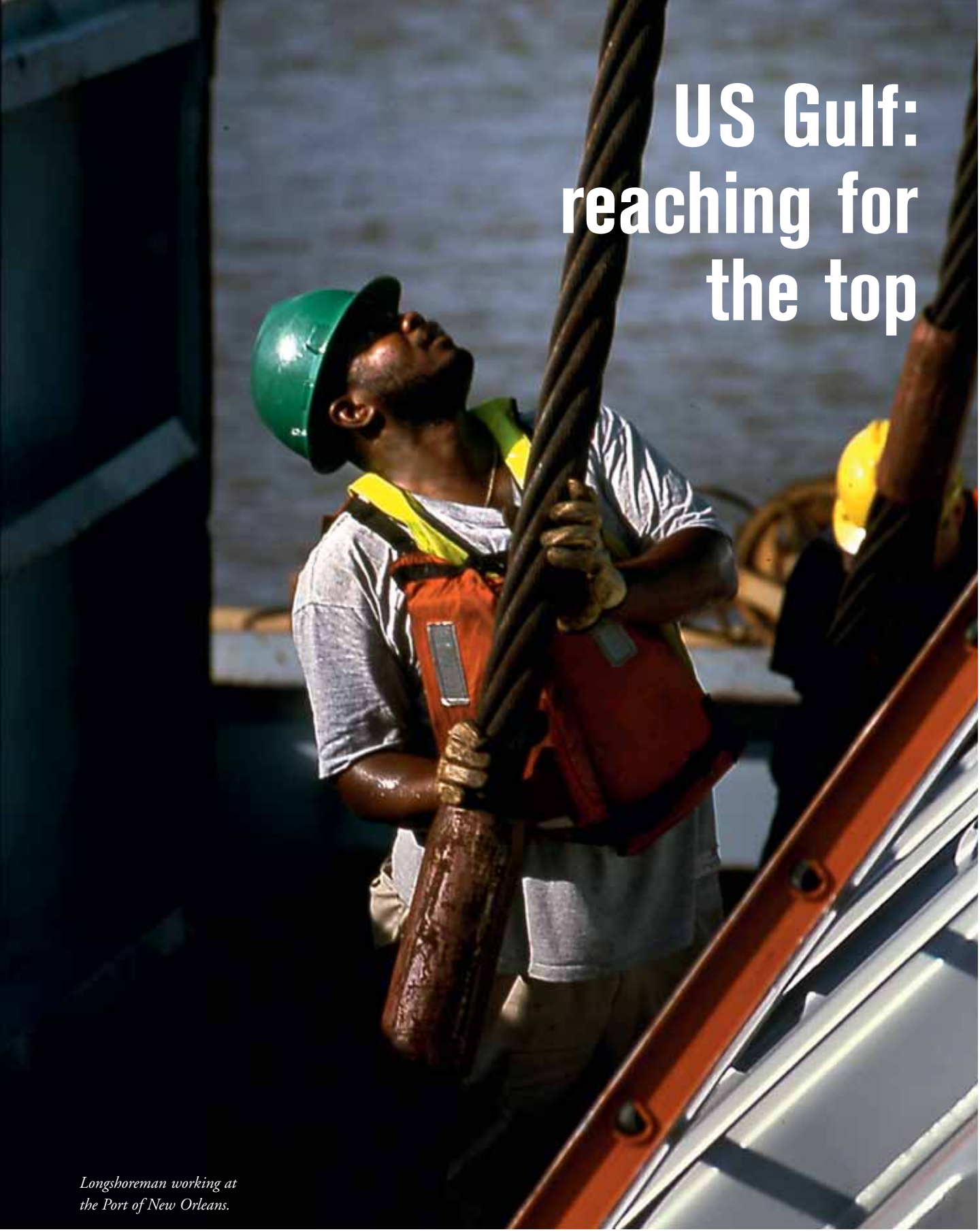
US Gulf: reaching for the top



Longshoreman working at the Port of New Orleans.

Port of New Orleans: America's most intermodal port

The Port of New Orleans is a major link in the bulk handling chain in the US Gulf region. The port has as its mission "To be a proactive, customer-oriented, financially healthy service organization whose primary purpose is to maximize the flow of foreign and domestic waterborne trade and commerce with relevant markets by providing, directly or through third parties, highly productive facilities, equipment and support services to meet the specialized needs of shippers and ship operators."

The port's facilities include 20 million square feet of cargo handling area and more than 3.1 million square feet of covered storage area and 1.7 million square feet of cruise and parking facilities.

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Vessel transshipment at the Port of New Orleans.

The port accommodates an average of 1,800 ocean going vessel calls each year. More than 5,000 oceangoing vessels annually move through New Orleans on the Mississippi River.

Maritime activity within the Port of New Orleans is responsible for about 160,500 jobs, $8 billion in earnings, $17 billion in spending and $800 million in taxes statewide.

An estimated 380,000 jobs in the US are dependent on the cargo that is handled by the Port of New Orleans. Those jobs account for $16.9 billion in annual earnings. In addition, $37 billion in national economic output is supported by the port's cargo, which creates $2.8 billion in annual federal tax revenue.

Top commodities handled at the port include: steel; coffee; rubber; forest products; aluminium/copper/zinc; frozen poultry; and chemicals

The Port of New Orleans is a diverse general cargo port, handling containerized cargo, such as apparel, food products and consumer merchandise.

The Port of New Orleans is the only seaport in the U.S. served by six Class I railroads — Burlington Northern/Santa Fe, Canadian National, CSX, Kansas City Southern, Norfolk Southern and Union Pacific.

In addition to excellent rail service, which features all six Class I railroads, 50 ocean carriers, 16 barge lines and 75 truck lines serve the Port of New Orleans.

The port operates defined areas where foreign merchandise may be brought into the United States without being immediately subject to the usual US Customs regulations.

World's longest wharf

The 2.01-mile quay between Henry Clay Avenue and Milan Street terminals on the Mississippi River can accommodate as many as 15 vessels simultaneously.

Imported steel

The Port of New Orleans is a leading port for the movement of imported steel. Top origin countries include Japan, South Korea, Brazil, Turkey, Italy, Taiwan, India and China.

No. 1 in natural rubber

The Port of New Orleans is the nation's top port for imported natural rubber. Countries of origin include Indonesia, Malaysia and Thailand.

Port news: port terminal completes 718-tonne project cargo lift

718-ton absorption tower successfully discharged at Louisiana Ave. Wharf

On 12 January this year, Fracht USA/Germany, a global freight forwarder, completed one of the heaviest project cargo lifts in the Port of New Orleans' history, when it successfully discharged a 718-tonne, 164-foot-long absorption tower from ship-to-barge.

The *SAL Amoenitas* arrived at the Port's Louisiana Avenue Terminal on 10 January, after a 45-day trip from Shanghai, China. The lift was completed on 12 January by SAL Heavy Lift, Fracht, Roll-Lift, McDonough Marine and the terminal's stevedore — Coastal Cargo Company LLC.

"This lift underscores the Port of New Orleans' ability to handle the largest and most complex cargo in the industry," said Port President and CEO Gary LaGrange. "Our stevedores have realized a real boost in project cargo in the past year, due to the historic industrial expansions and new construction both on the Lower Mississippi River and along the Gulf Coast."

The absorption tower is destined for a major plant project in Donaldsonville, La.

"This is great business for Coastal as well as for the Port of New Orleans," said Dan Haeuser, President and CEO of Coastal Cargo Company LLC. "Project cargo of this type and magnitude has not been traditional in the Port of New Orleans. It's wonderful to have this type of diversity added to the port's cargo mix."

Fracht officials said the successful move took more than a year of careful planning.

"When you look at this move, project forwarding isn't just calling the vessel lines and calling the stevedore," said Reiner Wiederkehr, Fracht's Chief Operating Officer. "There are so many things involved with such a huge task. The port and Coastal Cargo have been very accommodating and helpful, but we picked the port for a reason — they have the best people to handle this type of cargo."

Port of Corpus Christi: lifeblood of South Texas

Port Corpus Christi (POCC) has been generating business and jobs in South Texas for 88 years. Strategically located on the western Gulf of Mexico, POCC is the fifth-largest port in the United States in total tonnage. The port provides a straight, 45ft-deep channel and quick access to the Gulf of Mexico and the entire United States inland waterway system. The port delivers outstanding access to overland transportation, with on-site and direct connections to three Class-I railroads, BNSF, KCS and UP, and direct, vessel-to-rail discharge capabilities through Corpus Christi Rail Terminal. The Joe Fulton International Trade Corridor, now fully operational, provides direct, non-congested access to Interstate 37 and Highway 181. POCC is ideally positioned for Global Trade in the South Texas Region.

As a leader in environmental awareness, POCC adopted an environmental management system (EMS) in 2004. The port's EMS is ISO 14001 certified and initiatives include an anti-idling campaign, a port-wide recycling programme, and an annual Gulf Ports Environmental Summit to share ideas on common environmental issues faced by all Gulf Ports.

The port offers more than 125 acres of open storage and fabrication sites, heavy lift capabilities, more than 295,000ft^2 of covered dockside storage as well as a cold storage facility. POCC operates Foreign Trade Zone #122, encompassing 25,000 acres with four active, general-purpose zones and 14 subzones.

Wind energy industry

POCC continues to prove one of America's most important wind energy logistics ports.

POCC has handled wind energy components since 2006 from all top wind manufacturers worldwide with a total of 210 vessel calls and more than $4m in revenue. The first wind farm development to bring POCC into the wind energy industry arena was Papalote Creek in Taft, Texas. The construction of Phase II was completed in 2011. It can produce 380MW of power, enough to serve approximately 115,000 homes. The Papalote Creek Wind Farm has added more than $500m in value to the property tax base of San Patricio County and local school districts.

Apart from its strategic location in the Gulf of Mexico, POCC's advantages include:

- short steaming time from Gulf of Mexico;
- 45ft-deep channel (approved and permitted to 52ft)
- multiple uncongested berths;
- approximately 100 acres open laydown yards;
- large manufacturing sites available;
- direct highway/rail access;
- service from three Class I railroads (BNSF, UP, KCS);

PORT CORPUS CHRISTI SHIP AND BARGE ACTIVITY

Year	2013	2012	2011	2010	2009	2008	2007	2006
Dry bulkers	376	372	430	416	341	789	1,077	942
Tankers	1088	948	965	992	971	962	1,057	1,019
Barges	5406	4762	4,018	4,360	3848	4,281	4,610	4,672
Total	6,870	6,082	5,413	5,768	5160	6,032	6,744	6,633

TONNAGE FIGURES - 2004 TO 2013

Year	Breakbulk	Grain	Chemical	Dry bulk	Liquid bulk	Petroleum	Totals
2013	348,059	2,984,208	1,951,762	8,700,428	475785	74,994,238	89,454,480
2012	390,967	2,578,847	1,966,012	7,939,684	554,336	65,367,343	78,806,189
2011	306,631	4,214,821	1,743,708	8,692,368	533,543	64,819,146	80,310,217
2010	339,259	4,113,277	1,468,244	6,866,446	506,211	68,900,860	82,194,297
2009	317,993	3,951,347	1,410,028	6,443,658	131,100	64,265,522	76,519,648
2008	552,590	5,423,867	1,630,019	7,891,343	301,007	70,060,614	85,859,440
2007	445,204	3,377,386	1,848,875	8,241,554	513,036	74,893,638	89,319,693
2006	256,697	2,031,610	1,569,993	7,700,130	248,355	75,176,048	86,982,833
2005	444,982	2,098,829	1,795,329	8,396,055	518,403	73,532,352	86,785,950
2004	503,016	1,836,090	2,142,736	7,289,403	407,906	74,214,650	86,393,801

All tonnages are given in short tons.

- dedicated port-owned railroad;
- direct discharge vessel to rail or vessel to truck;
- competitive rates;
- efficient stevedoring services;
- state-of-the-art security; and
- FTZ available throughout the port.

POCC has been successful not only in the logistics sector of the wind energy industry, but is also the only port in the US with a wind farm on its property. In February 2011, Revolution Energy, LLC inaugurated the first phase of its 'Sunrise Wind Farm' in the north side of the port's inner harbour. At a cost of $20 million, the wind farm generates 30,000,000kWh/year of clean energy, equal to the electricity needs of nearly 2,500 homes.

Recent news: Voestalpine Texas construction at La Quinta Trade Gateway progresses quickly

At the La Quinta Trade Gateway at Port Corpus Christi, construction of the world's largest and most advanced Hot Briquetted Iron (HBI) plant is well under way. Steel construction of the 136 metre-high tower supporting the reduction shaft, or metallurgical reactor, is advancing. This will be the heart of the Voestalpine Texas operation where South Texas natural gas will function as an agent in creating purified iron briquettes. In turn the briquettes will be exported and used in the production of high quality steel components. Dock construction along the shores of the deep-water La Quinta Ship channel is also advancing at a timely pace.

The construction phase of the Voestalpine Texas project at the Port Corpus Christi La Quinta Trade Gateway is on time and expected to wrap up by December of 2015.

Port of South Louisiana reaffirms and extends Panama Canal agreement

Locks open on the Panama Canal.

Governed by a board of seven Commissioners, the Port of South Louisiana, which stretches 54 miles along the Mississippi River, is the largest tonnage port district in the western hemisphere. The facilities within St. Charles, St. John the Baptist, and St. James parishes (counties) handled over 278 million short tonnes of cargo in 2012, brought to its terminals via vessels and barges.

Over 4,000 oceangoing vessels and 55,000 barges call at the Port of South Louisiana each year, making it the top ranked in the country for export tonnage and total tonnage.

With exports of over 61 million short tonnes of cargo in 2012 — more than any other port in North America — Port of South Louisiana cargo throughput accounts for 15% and 57% of total US and Louisiana exports, respectively.

The Port of South Louisiana has five first-rate port-owned facilities, ranging from grain elevators to general cargo facilities. It serves as landlord of these, which are leased to operating companies such as Occidental Chemical and Archer Daniels Midland.

The exception is the Globalplex Intermodal Terminal, purchased by the Port in 1992 that is being redeveloped into a world-class complex to accommodate a variety of dry bulk and breakbulk cargo.

The port's stated goals are:

- to serve the maritime transportation needs of its resident industry;
- to assist resident industry in the development of maritime and/or industrial facilities;
- to encourage foreign and domestic investment within the River Parishes Region and Louisiana; and
- to attract foreign and domestic cargo to the Globalplex Intermodal Terminal.

MoU signed with Panama Canal Authority

In October last year, representatives from the Port of South Louisiana, led by Executive Director Paul G. Aucoin and Commission President D. Paul Robichaux, travelled to Panama to sign an amended Memorandum of Understanding with the Panama Canal Authority (ACP). The amended MoU was signed by ACP Administrator Jorge Quijano and Aucoin at the Panama Canal Authority headquarters in Panama City, Panama.

The original MoU, signed by the Port of South Louisiana and the Panama Canal Authority on 23 January 2013, launched a co-operative alliance directed at facilitating international trade and generating new business between Asia and the Port of South Louisiana (PSL) via the Panama Canal. The amendment, signed in October, solidifies this agreement for a period of five years, renewable upon mutual agreement. Under the MoU, PSL and ACP will agree to partake in, among other things, joint marketing initiatives that promote the sailing route, exchange of cargo movement/transit information and results from relevant market studies, and share knowledge regarding improvements or modernization efforts aimed at satisfying increase in demand.

At least 30% of PSL exports, primarily grain, are shipped to Asian countries. The most efficient and fuel-saving route to that region of the world is via the Panama Canal. "It makes total sense to work with the Panama Canal Authority in cross-promoting our respective entities and regions. Our partnership would not only increase revenues, but also encourage job opportunities from the increase in traffic," said Aucoin. "Economic growth is the ultimate goal."

The Panama Canal Expansion is 79% complete. It involves the construction of a third lane of traffic allowing the passage of bigger vessels, which will double the Canal's capacity and have an important impact on world maritime trade.

Associated Terminals acquires St. James Stevedoring Co

Associated Terminals is a large and diverse cargo handling logistical solutions company which operates terminal facilities on the Lower Mississippi River. It offers dry bulk and breakbulk cargo shippers an extensive range of services, including the total co-ordination of movements to provide customers with a comprehensive transportation and stevedoring package.

Founded in 1990, the company's operational bases include Myrtle Grove, Chalmette, Reserve and Port Allen, Louisiana. Over the years, it has continually expanded its capabilities, assets and geographical locations in order to meet the growing needs of its customers. It is committed to providing consistent, high quality, customized services, including agricultural commodity exports, in-plant services, midstream operations, and terminal port operations, for both the import and export of commodities. Its success has been made possible by the strong support of its customers and their confidence in its ability to deliver world-class service on every job.

The company takes great pride in having assembled a team of hardworking professionals who are truly dedicated to helping its customers succeed. As such, it is focused on handling each job, each tonne and each business opportunity in a manner that exceeds the expectations of its customers.

Associated Terminals has also developed a company culture that promotes teamwork and a friendly, family-oriented atmosphere.

Associated Terminals acquires St. James Stevedoring Company

In mid-November last year, Associated Terminals announced that it has reached an agreement to acquire the assets of St. James Stevedoring Company (SJS). The combined company will create the largest and most diverse stevedoring and terminal services provider operating on the Lower Mississippi River. Transaction highlights include:

- combined fleet of 14 high capacity Gottwald crane barges;
- 21 deep draught berths capable of facilitating ocean vessel transloading;
- operating locations from mile 55 AHP to mile 228 AHP on the Lower Mississippi River;
- multiple dockside and in-plant service locations along the Gulf Coast in Louisiana and Texas;
- SJS senior management to join the Associated team;
- SJS proprietary technology to be deployed throughout Associated's operating footprint; and
- strategic alliance established between Associated Terminals and St. James Technologies.

Associated Terminals and St. James Stevedoring have shared a strong commitment to customer service, capital investment and continuous improvement through significant capital expenditures and utilization of innovative new technology. The combined company will continue this commitment to offer its customers the most efficient cargo transfer while minimizing time in port by leveraging the combined enterprise's high-capacity equipment, technology and berthing locations. Customers working with Associated Terminals will have additional locations to create a logistical and economic advantage.

"We are excited to work with the SJS team and their customers. We know many of them very well and the transition will be seamless for all. Our organizations have shared common philosophies that focused on delivering premier customer service, driving a culture of safety, and creating fulfilling careers for our team members. We look forward to building upon this foundation to provide our combined customer base with unmatched service, flexibility and operating capabilities," stated Todd Fuller, President of Associated Terminals.

"The Associated team has built an impressive operating footprint that provides their customers with a number of options for their cargo movements. Bringing together St. James' focus on technology and innovation and Associated's strong geographic and operating history will create a company with a unique set of services and capabilities never available before to cargo interests on the Lower Mississippi River. We are eager to join the Associated team and look forward to executing the organization's strategic goals as we begin to work together as a combined entity," stated Paul Morton, President of St. James Stevedoring Company.

"We are pleased to add the SJS equipment, personnel and technology to Associated. St. James Stevedoring is truly an innovative company being the first to invest in cranes from Gottwald Port Technology as the future of the midstream stevedoring business. SJS also has enhanced the capacity of their equipment through sophisticated technology which we feel will become the industry standard. This acquisition will create efficiencies that will benefit our present and future customers," stated Associated Terminals Director and owner, David Fennelly.

American River Transportation Co., a subsidiary of Archer Daniels Midland Company, and its 50% interest in St. James Stevedoring Partners LLC, will not be involved in the transaction.

St. James Stevedoring is a mid-stream stevedoring company and in-plant service provider operating on the Lower Mississippi River. The company is an innovator of integrating technology into stevedoring and terminal operations.

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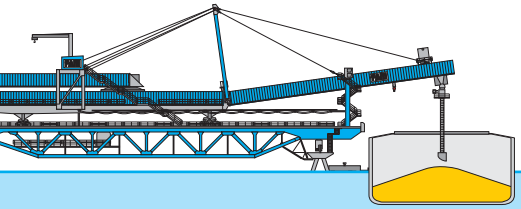

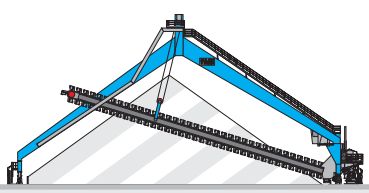

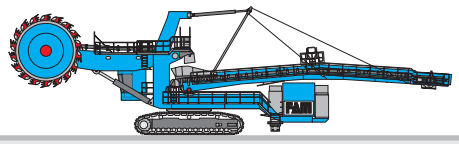

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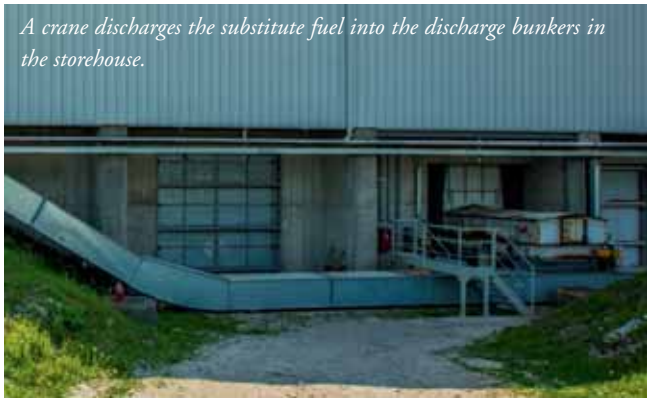
SCHWENK Zement KG's new Pipe Conveyor, from BEUMER Group, is customized to fit perfectly into the local features of the environment.
(©BEUMER Group GmbH & Co. KG)

'Made in Germany'

quality in bulk handling

Jay Venter

SCHWENK Zement KG relies on BEUMER Group Pipe Conveyors: operational gains with minimal disruption and without any material loss



A crane discharges the substitute fuel into the discharge bunkers in the storehouse.

SCHWENK Zement KG is replacing its old drag chain conveyor line with a modern pipe conveyor from BEUMER Group. SCHWENK required a solution that would transport alternative fuels such as crushed plastic material, textiles and paper from the warehouse to the feeding system of the oven in its cement plant in Bernburg, Germany; this fully closed conveying system makes transporting bulk material more environmentally friendly and energy efficient. Maintenance costs are also considerably lower and the system can be optimally adapted to the ambient conditions.

SCHWENK's product diversity and production capacity make the cement plant in Bernburg one of the largest and most efficient building material plants in Germany. The production of cement along the river Saale has a rich history due to the prevalence of high-quality deposits of limestone in this area. The plant has been in existence since 1960. SCHWENK took over the plant in 1990 and tore down the existing systems to build an entirely new plant. Today, SCHWENK's product portfolio includes a wide range of efficient, specialized cement marked by consistently high quality. The company produces the ideal product using modern mixing technology, as required for tunnel, road and well construction, as well as for geothermal and environment engineering.

One topic of great importance to the SCHWENK plant is sustainable production. Production of cement has always been one of the most energy-intensive operations. This is why SCHWENK minimizes the use of primary fuels such as coal and oil and focuses increasingly on substitute fuels. These substitute fuels are mainly a mixture of high calorific waste materials, comprised mostly of plastic and packaging residues and textiles. They are processed to high-grade fuels with defined product parameters in external processing plants.

Heat-intensive processes

For the manufacturing of cement, limestone is quarried, crushed and homogenized with additional raw materials. Belt conveyors then transport the crushed material with other materials from the blending bed to the plant. It is ground to the necessary grain size in the raw mills and then dried. The raw meal is then homogenized and temporarily stored in large silos. To obtain Portland cement clinker, a coarse intermediate product, the raw

The chain belt conveyor lifts the material to the height of the Pipe Conveyor. (©BEUMER Group GmbH & Co. KG)

meal is first transported into the cyclone preheater, then into the calcinator, both powered by alternative fuels. The limestone portion of the raw meal is deacidified at temperatures of over 950° Celsius. The material then moves into the rotary kiln where it is burned at temperatures of approximately 1,450°C.

Up until now, SCHWENK relied on a drag chain conveyor line for transporting the fuels from the storehouse to the feeding systems of its main burner. The baffle plates on these mechanical continuous conveyors are mounted to an endless chain, transporting the bulk material in a trough. "We had been using this system for more than ten years. This meant that we had to put more and more maintenance work into it," says Dirk Fabian, production manager at SCHWENK in Bernburg. Another problem: after further development of the dosing technology, the drag chain conveyor was no longer able to transport enough bulk material, with a density of only 0.2 tonnes per cubic metre, to the weigh feeders (and thus to the main burner). "We were looking for an alternative solution that would be ecological as well as low in maintenance," explains Fabian. In addition, the new conveyor should also be optimally adapted to the curved routing in the plant.

Comprehensive expertise, optimum support

For the building material manufacturer, BEUMER Group was their first choice supplier of the optimal conveying technology. SCHWENK has a long-standing and close partnership with BEUMER as an internationally operating system supplier. BEUMER has provided SCHWENK Putztechnik GmbH & Co. KG, headquartered in Ulm in southern Germany, with several BEUMER paletpac® high-capacity layer palletizers, equipped with the newly developed twin-belt turning device. BEUMER has been well-established in the building industry for nearly 80 years as a supplier of conveying technology solutions. BEUMER has bundled its comprehensive expertise in the building material industry and established different centres of competence, in order to offer optimal support for global building material manufacturers by offering single-source solutions. The 'Pipe Conveyor' segment is one such centre of competence. These centres are in charge of worldwide project management and sales. They collect and process the expertise from the individual local group companies and pass it on to the global group experts in each respective field.

High level of environmental protection, low level of maintenance

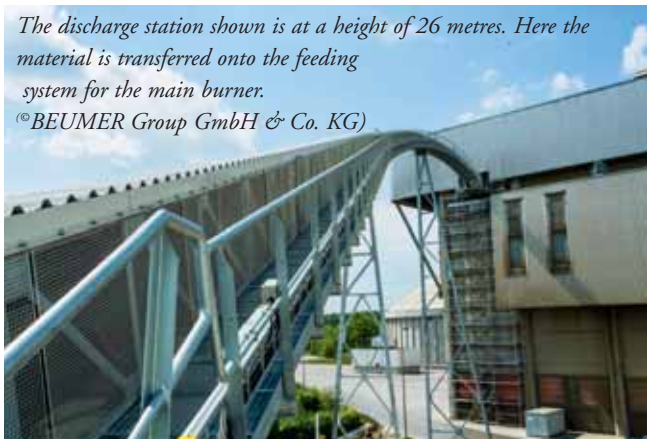
"Together with the management team in Bernburg, we developed a solution that is tailored exactly to match

The first support is mounted directly to the storehouse. (©BEUMER Group GmbH & Co. KG)

SCHWENK's requirements," says Michal Mikulec, managing director at BEUMER Group Czech Republic a.s. and supervisor for this project. The first idea was to combine a new drag chain conveyor with several open belt conveyors, but it was quickly abandoned. It became apparent that a pipe conveyor was the best solution offering environmental protection and low maintenance. "Its closed design protects the environment from transported goods falling down. Another advantage is the lack of dust development on the running line," explains Mikulec. These conveyors offer many other advantages. They are able to navigate long distances and tight curve radii. Due to their ability to negotiate curves, considerably fewer transfer towers are required compared to other belt conveyors. This results in substantial cost savings for the customer and delivery of a system customized for individual routing. BEUMER Group supplied and installed a system with a diameter of 200 millimetres and a length of 230 metres. It conveys up to 15 tonnes of material per hour. BEUMER was also responsible for the design of the system and the entire steel structure.

Durable conveyor belts guaranteeing tensile strength are used in the SCHWENK solution. "To find the ideal belt version for SCHWENK, we calculated the tractive forces as well as the forces that occur during acceleration and deceleration — always considering the net weight of the belt and the transported item," reports Mikulec. The engineers also pre-calculated the belt positions in different curve radii for the empty and loaded belt. Another system advantage is the reduced noise emission of the pipe conveyors. "Special idlers as well as low-noise bearings and electric motors work very quietly. This improves the quality of our employees' day-to-day work environment and ensures the

The inclination of the Pipe Conveyor measures 18.6 degrees at the point shown. (©BEUMER Group GmbH & Co. KG)



The discharge station shown is at a height of 26 metres. Here the material is transferred onto the feeding system for the main burner. (©BEUMER Group GmbH & Co. KG)

people living near the plant are not disturbed," says Fabian.

Trouble-free operation

Cranes pick up the treated substitute fuels in the storehouse and unload them into the discharge bunker with the discharge system. From here, the chain belt conveyor continually transports the material to the new pipe conveyor that then transports it to the weigh feeders of the main burner.

BEUMER was able to optimally customize the routing of the conveyor to the plant. Another requirement met by the experts: no supports underneath the pipe conveyor that would otherwise obstruct vehicles. This is why the technicians mounted the first support directly to the storehouse. The conveyor take-up system was designed by BEUMER as a take-up tower. It is located right next to the feeding station.

It took only eight months from the time the contract was awarded until commissioning of the new system in February 2014. "We have been working with the BEUMER system for several months now," says Fabian. "We are very satisfied. It is very robust and we no longer have any failures."

About the BEUMER Group

BEUMER Group is an international manufacturing leader in intralogistics in the fields of conveying, loading, palletizing, packaging, sortation and distribution technology. Together with Crisplant a/s and Enexco Teknologies India Limited, the BEUMER Group employed some 3,700 people in 2013. The group generated an annual turnover of approximately €627 million. With its subsidiaries and sales agencies, BEUMER Group is present in many industries worldwide.

Professional cargo handling at the port: Freyer GmbH uses a new SENNEBOGEN 860 in Germersheim

Freyer GmbH uses a new SENNEBOGEN 860 Mobile at the port in Germersheim for handling bulk goods of all kinds.

From grain to waste glass, Freyer GmbH handles all kinds materials at the port in Germersheim. Since October 2014, a new SENNEBOGEN 860 Mobile has been in use for this variety of requirements. The machine will be moving some 350,000 tonnes of material every year.

Freyer GmbH is a family-owned company that can look back on a 100-year history. In 1969, extensive logistics activities were added to the gravel works and excavator operation business sectors. This has formed the basis for the cargo handling in the port of Germersheim in the German state of Rhineland-Palatinate.

Located directly on the Rhine, Freyer today is a specialist for cargo handling, storage and transport of bulk goods and piece goods.

The sales and service partner Schlüter Baumaschinen placed the new SENNEBOGEN 860 with Freyer for these extremely varied requirements and has been managing the project since.

Loading takes place at several locations in the port, either onto trucks, in piles, on conveyors or into hoppers. A height difference of up to 11m must be overcome at tide levels between –3 and –7 metres.

The machine is equipped with 20m-long equipment and kinematics engineered specifically for long reaches when offloading the ships.

The SENNEBOGEN 860 is powered by a 268kW 6-cylinder Cummins diesel engine.

The materials handled range from sensitive types of grain or fertilizer to pea gravel, sand and crushed stone or waste glass. The operator has a choice of two two-shell grapples with 3m³ or 4.5m³ and one 3.5-tonne multi-shell grapple with a capacity of 2m³. Using these, maximum hourly throughputs of up to 300 tonnes of scrap, 600 tonnes of pea gravel or 400 tonnes of glass can be moved.

At the same time, the model 860 is compact in size and offers convincing manoeuvring characteristics. This was an important purchasing criterion in addition to achieving maximum possible capacity. The heavy wide-track design of the mobile undercarriage ensures stability.

The Maxcab Industry cab, which can be hydraulically elevated by 2.7m, offers the operator an ideal overview. Thanks to the straight, uninterrupted windshield and the floor window of armoured glass, the operator is ensured optimal visibility of the work area below and ahead. Additional assistance is provided by two cameras and eight LED work lights that permit operation at night and in the fog.

Operator Martin Will praises the power and stability of the machine as well as the joystick control, which in addition to intuitive operation ensures optimal visibility from the cab.

World innovation: HAVER & BOECKER ROTO-PACKER® ADAMS® MINI

HAVER & BOECKER ROTO-PACKER® ADAMS® MINI With its all new small-bag packing machine, HAVER & BOECKER presented a world innovation at POWTECH 2014. The ROTO-PACKER® ADAMS® MINI is based on the proven ADAMS® technology and for the first time fills powder products into compact PE bags, reaching speeds of up to 600 bags/hr at steplessly selectable weights from 1 to 10kg.

For the first time powder products can be filled into small compact PE bags

HAVER & BOECKER ADAMS® technology stands for the filling of powder bulk products, also those with difficult flow properties, into airtight PE packaging. With the ROTO-PACKER® ADAMS® MINI, which is based on the proven ADAMS® technology, HAVER & BOECKER has expanded the packing weight spectrum so that packages of 1 to 10kg now can be filled for the first time. This innovation was celebrated at its world premiere at POWTECH 2014.

The HAVER & BOECKER ROTO-PACKER® ADAMS® MINI reaches speeds of up to 600 bags/hr at steplessly selectable weights of 1–10kg. Today filling into bags made from a tubular film or into every type of pre-manufactured bag is possible. And by using an additional module, the bags can be formed directly from a flat film within the ROTO-PACKER® system.

The bags are closed airtight and are weather-resistant, clean and compact. Moreover they provide for perfect appearance. Also from a marketing standpoint PE bags offer additional advantages in that they allow for full-surface, multiple-colour print and photo-quality images, product information and barcodes. With this high quality packaging, customers increase the value of the product's image and can present it standing up on store shelves. Customers save on packaging and stocking costs, and have fewer customer complaints.

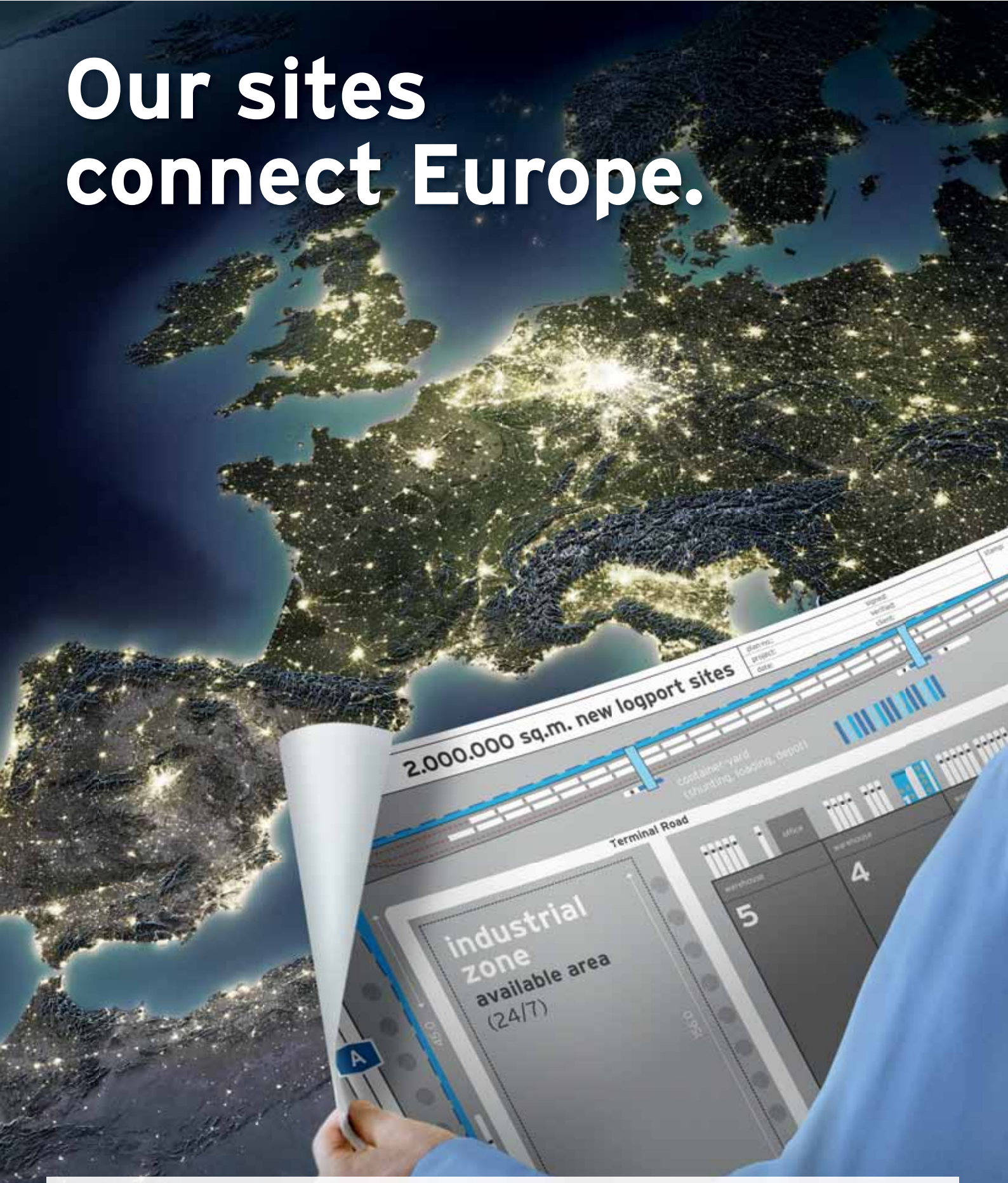
"The market had recognized the general advantages of filling into PE bags and made positive experiences. So about one year ago we got the request to expand the technology so that it would also handle the typical package sizes of 1, 5 or 10 kilograms," recalls Burkhard Reploh, Manager of the Building Materials and Minerals business unit. Since then the specialists at HAVER & BOECKER have been busy expanding the filling weight range.

Product compaction plays an important role during filling. Depending on the product, not only the proven techniques such as the vibrating bottle are used with the ROTO-PACKER® ADAMS®MINI, but also new methods. "Our concept for success is the removal of air at and in the bag," explains Reploh . The technology will be ready for the market by the end of the year.

Meanwhile the experts at HAVER's Innovation Management are already concentrating on increasing the speed to 1,200 bags/hour.

HAVER & BOECKER ROTO-PACKER® ADAMS® MINI Small bag prototype.
The bags are closed airtight and weather resistant, and are clean and compact. Moreover they provide for perfect appearance. Customers save on packaging and stocking costs, and have fewer customer complaints.

Our sites connect Europe.



duisport/logport is the leading logistics hub in Central Europe

As a multifunctional cargo handling platform offering integrated industry and logistics solutions, we connect companies from all over the world with European markets. With the continual development of new logport sites throughout the Ruhr area, you too can become part of this international network and benefit from our comprehensive range of services – from real-estate development to tailor-made transport solutions. For more information visit **www.duisport.com**

duisport
excellence in logistics

Coal complex at duisport is expanding

duisport Kohleninsel (photo: ©duisport/Rolf Köppen)

In 2013, the duisport group, which is the holding and management company of the Port of Duisburg, took over the operations of the 'Kohleninsel' (coal complex) in Duisburg, Germany.

The coal complex, which had previously been operated by RBH Logistics, a subsidiary of DB Schenker Rail Deutschland AG, is one of the most efficient facilities in Europe for handling and mixing coal and for its intermediate storage. It has direct proximity to the ports of Rotterdam and Amsterdam and, due to its excellent trimodal connections, loading can also be carried out on the water directly into inland waterway vessels. The 20ha site, which is operated 24 hours a day seven days a week, has a total capacity of around 4mt (million tonnes) per year.

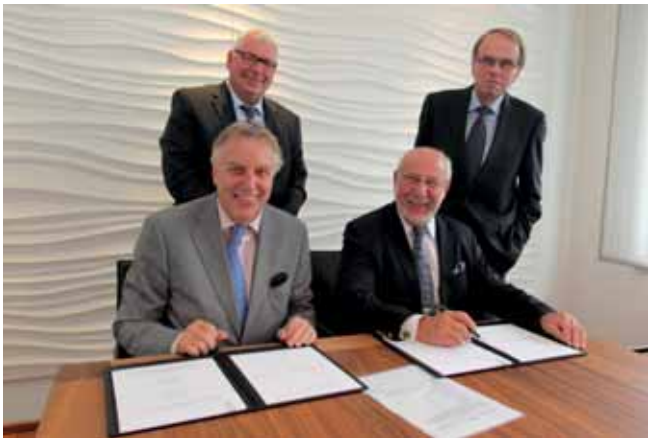
In October 2014 the duisport Group entered into a long-term partnership with the HMS Bergbau AG Coal Division (HMS) for the further development of the coal complex. HMS is an internationally active company that, in co-operation with HMS Bergbau AG which is active worldwide, specializes in reliable shipments of power plant coal, coking coal and solid fuels for power plants and other industry consumers. Together with the duisport Group, a coal handling facility will be constructed and operated, which can also be used for classifying and mixing coal. The facility is slated to go into operation in the spring of 2015 with the aim of handling up to 500,000 tonnes of coal per year. The total investment volume is more than €10 million.

"Last year's takeover of the coal complex has set the stage for further growth. The positive developments over the past few months have shown that the complex is one of Europe's most modern facilities and very competitive. With HMS we have acquired a well-known company and ensured that the entire area of the coal complex will return to full utilization within a short time period," says Erich Staake, chief executive officer of Duisburger Hafen AG.

"The Port of Duisburg is the leading hinterland hub for the western ports, with excellent connections to Central European markets. The planned innovative dosing facility will allow us to supply exact mixes with a homogeneous composition on a just-in-time basis and at a consistent quality. This is not just a real competitive advantage but also a prerequisite for long-term customer retention," emphasizes Heinz Schernikau, chief executive officer of HMS Bergbau AG.

The coal complex has an extensive and modern infrastructure. For example, eight trains can be processed per day on train-length tracks. The permanently installed crane has a daily capacity of over 8,000 tonnes, which can be increased flexibly by using an additional mobile crane. The conveyor systems available have a daily output of 9,000 tonnes for loading wagons.

The Port of Duisburg has a total of five import coal terminals that can handle up to 10mt of imported coal per year.



Front, from left: Erich Staake (CEO, Duisburger Hafen AG), Heinz Schernikau (CEO HMS Bergbau AG Coal Division). Back, from left: Volker Schmitz (managing director, duisport agency GmbH), Dr. Hans-Dieter Harig (chairman of the supervisory board, HMS Bergbau AG). (photo: ©duisport/Rolf Köppen)

Port handling - environmentally- and cost-friendly: SENNEBOGEN 835 Mobile Electro at Twente B.V.

A new SENNEBOGEN 835 recently began to unload incoming ships on the Twente Canal in the Dutch city of Hengelo. The electric machine impresses with operating costs that are reduced by up to 50 %, as compared with the diesel operated predecessor.

SENNEBOGEN's sales and service partner, Kuiken N.V, was able to deliver a new SENNEBOGEN 835 Mobile Electro in the Dutch city of Hengelo. At Op- en Overslagbebrijf Twente B.V. the material handling machine unloads the bulk goods freighters arriving on the Twente Canal.

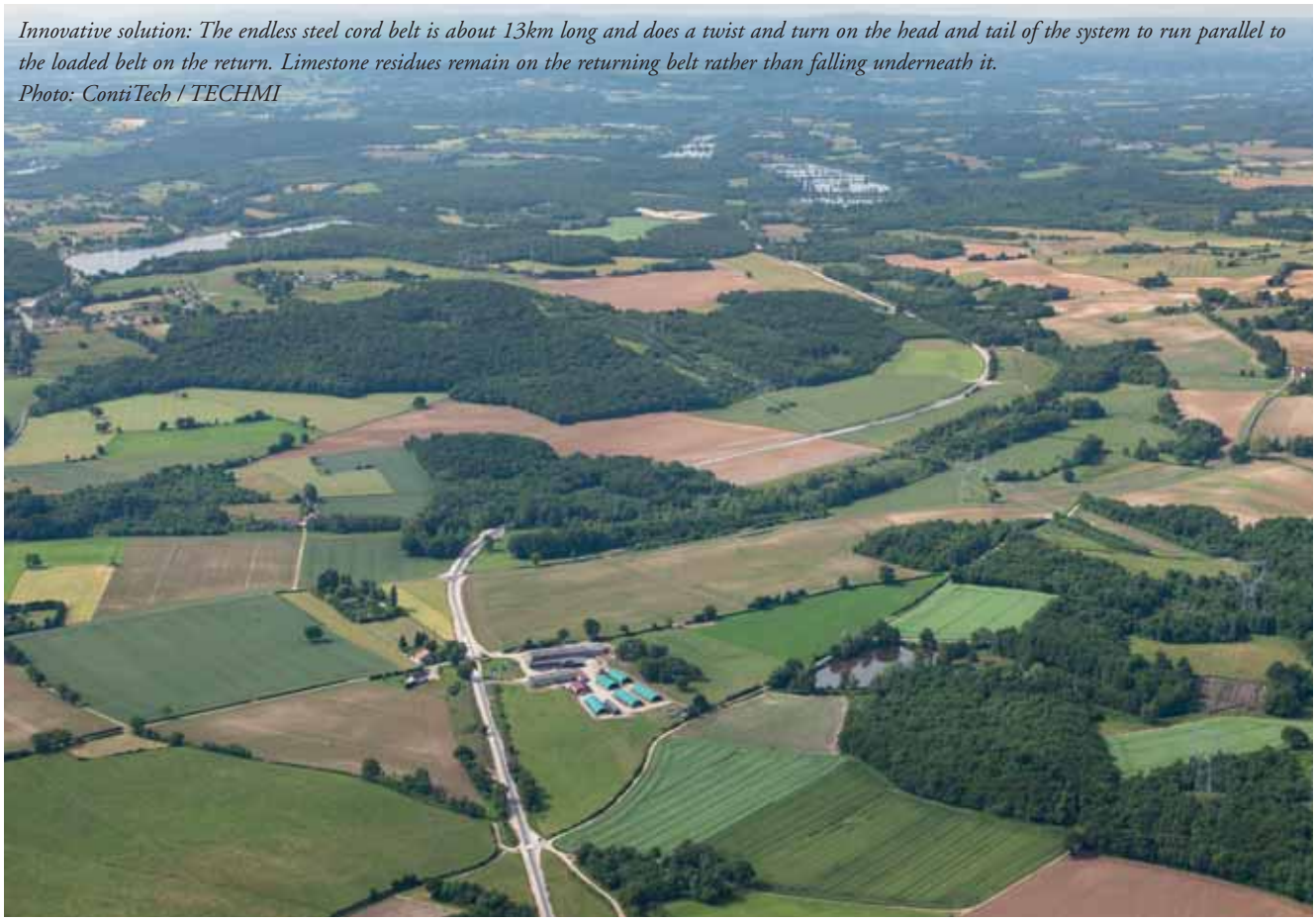
Twente B.V. has specialized in the storage and handling of all types of bulk goods since 2004. It is primarily animal feed that is shipped via the Twente Canal and unloaded with the new SENNEBOGEN 835 Mobile. The current E-Series machine replaces a proven B-Series 835, which with 26,000 operating hours has reliably done its service. Compared with the predecessor machine, now for the first time, Twente is relying on the electrically operated variant. It is not just the 50% reduction in operating costs that convinces. The machine is also significantly quieter in operation and very service-friendly. For the employees the work environment has become more pleasant, more comfortable, and more quiet, reports operator Henry Louwrink. In direct comparison with the predecessor machine the new 835 is more powerful, and even more reliable in daily operation. The combination of a strong hydraulic system and simple control enables fast and safe work.

The SENNEBOGEN 835 is fitted with equipment of 18 m in length and a 160kW electric motor. Power is supplied via a cable that is safely installed in the ground. Through the combination of mobile undercarriage and electric drive, the machine offers flexible implementation and can be easily converted, maintaining however the advantages of the electric drive. In addition to economic aspects, concern for the environment is also important. Emission-free operation and low-noise work, combined with the use of biodegradable hydraulic oils make the SENNEBOGEN 835 a particularly green machine.

The overview from the industrial Maxcab of the 835 is ideal. For this purpose, the hydraulic cab elevation function that bridges a height differential of 2.7 m was increased by an additional meter. The contiguous windshield and a floor window together with three surroundings cameras offer an optimal overview of the work area. Thus operator Louwrink not only has an unobstructed view of the feed hopper, he also has the ship in constant view.

"We have long been convinced of the SENNEBOGEN material handling machines." says CEO Johan Stufken, Op- en Overslagbebrijf Twente B.V. "The new 835 Electro impresses with minimal operating costs and it was specially designed for our requirements in the area of bulk goods handling."

ContiTech and Techmi built Europe's longest conveyor for French cement factory



Innovative solution: The endless steel cord belt is about 13km long and does a twist and turn on the head and tail of the system to run parallel to the loaded belt on the return. Limestone residues remain on the returning belt rather than falling underneath it.
Photo: ContiTech / TECHMI

Conveyor belt installed across a distance of 6.2km
Techmi's innovations make is possible to put the return belt beside the carrying belt
Splicing by skilled ContiTech service team

Faster, longer, more innovative: when it comes to peak performances, ContiTech knows a thing or two — and now has another achievement to add to its portfolio together with its partner Techmi. The longest conveyor belt in Europe recently went into operation at a cement factory in Montalieu, France.

The community of Montalieu lies in eastern France between Lyon and Geneva. It is a small town located on the banks of the Rhône and home to the cement plant Vicat. To bring in limestone from the quarry 6.2km away, Vicat required a cost-effective solution and launched a project to realize its transport needs by conveyor belt. It engaged Techmi, the French expert in bulk handling to build up the entire conveyor system. Techmi compiled in 2012 a quotation including specific requirements concerning the belt. In 2013, ContiTech beat a large number of other bidders to the contract and so became Techmi's strategic partner.

"Requirements for this conveyor belt are tough, especially for return solution," reports Stefan Hoheisel, Segment Leader for Industry at the Conveyor Belt Group. The result of the project is something to be proud of: the endless belt is about 13km long and does a twist and turn on the head and tail of the system to run parallel to the loaded belt on the return. "For Vicat and Techmi the classic return solution wasn't really an option on this occasion. The innovative turn solution means we now have a base construction which is not higher than just 80cm," explains Nicolas Raphaël, team leader of the French conveyor belt team. Another advantage is that limestone residues remain on the returning belt rather than falling underneath it. This makes the system considerably easier to clean and is an advantage not just for Vicat but also for the environment.

The system blends into its surroundings without any difficulty — based on a patent of Techmi. Concrete walls and a cover encase the conveyor belt. People, animals and vehicles can cross over the construction without any problems.

Convincing materials expertise

"We opted to work with ContiTech for a number of different reasons," explains Techmi's owner René Brunone. "ContiTech is a convincing partner because it has many years of practical experience with conveyor belts that negotiate bends and delivers high-quality and eco-friendly products. In addition, they were able to manufacture the belt very quickly, which also impressed us." The belt as well as the steel cords for the carcass were produced by ContiTech Imas in Volos, Greece. "It's basically a STAHLCORD ST1000-5+5 X, a steel cable conveyor that's resistant to abrasion, weather and corrosion. It's also thermally stable, highly durable and low maintenance," explains Raphaël. ContiTech produced and delivered it within the space of just five weeks, which is extremely competitive compared to usual production time. In a first step, 13 rolls of one kilometre weighing 20 tonnes each were shipped from Volos to Fos-sur-Mer on the French Mediterranean coast. From there they were transported in a spectacular heavy duty truck convoy over 360km to Montalieu.

In Montalieu the team from ContiTech France and the service team from HQ in Northeim, Germany, were on site to assemble the belt. "We did the job in two stages and spent a total of two months on location," says Jan Poppe, Head of Field Service

The system blends into its surroundings without any difficulty. Concrete walls and a cover encase the conveyor belt. People, animals and vehicles can cross over the construction without any problems.
Photo: ContiTech / TECHMI

ContiTech delivered a STAHLCORD ST1000-5+5 X, a steel cable conveyor that's resistant to abrasion, weather and corrosion. It's also thermally stable, highly durable and low maintenance.
Photo: ContiTech / TECHMI

International. Together, the team spliced the 13 sections of belt to each other – in the middle of winter, no less.

The 250 tonnes conveyor belt is now in operation, powered by three electric motors delivering 250kW each. In normal conditions, the belt can transport up to 700 tonnes of limestone an hour. At maximum capacity, it can shift as much as 1,000 tonnes. The belt has officially been in operation since mid October. "We're more than happy with the way this project has turned out. With Techmi and ContiTech, we had two extremely competent partners by our side," says M. Eric Galloy, project manager at Vicat.

Continental develops intelligent technologies for transporting people and their goods. As a reliable partner, the international automotive supplier, tire manufacturer, and industrial partner offers sustainable, safe, comfortable, customized, and affordable solutions. The corporation with its five divisions Chassis & Safety, Interior, Powertrain, Tire und ContiTech generated sales of approximately €33.3 billion in 2013 and currently employs around 189,000 people in 49 countries.

The ContiTech division numbers among the leading suppliers of a host of technical rubber products and is a specialist for plastics technology. The division develops and produces functional parts, components and systems for the automotive industry and other important industries. ContiTech currently has a workforce of approximately 31,400 employees. In 2013 it recorded sales of about €3.9 billion.

Port of Kiel posts positive results: cargo and passenger figures continue to rise

Port of Kiel. Foto by Peter Luehr

The Port of Kiel has shown positive results for 2014. Both cargo handling and passenger totals continued to rise. The port turned over 6.43mt (million tonnes) of cargo, 1.6 % more than in the previous year. Stena Line's Kiel-Gothenburg route recorded the biggest increase in general cargo handling while Color Line's Kiel-Oslo service posted the strongest growth in passenger transport. During the year a total of 1.98 million passengers started or ended a ferry or cruise ship journey in Kiel — an increase of 1.9 %. Dirk Claus, Managing Director of the Port of Kiel (SEEHAFEN KIEL GmbH & Co. KG) said: "along with the growth in transport to and from Scandinavia and a rise in bulk cargo handling, there was, however, a decline in business with eastern Europe. The port currently finds itself in a situation aversely affected by the crisis in the Ukraine, a weak Russian currency and new environmental regulations." While ferry traffic to and from Scandinavia rose by a good 5% to more than 2.7mt, eastern Europe transport showed similar decline to only just about 2.4mt.

An important growth factor in 2014 has been bulk cargo handling — especially the handling of building materials. Thanks to the expansion of outdoor storage areas in the Scheerhafen, the port was able to handle 370,000 tonnes of loose gravel for the first time. "Kiel is ideally located to supply the construction industry in the whole of Schleswig-Holstein and as far as Hamburg", said Claus. "The Scheerhafen is of great regional importance", he declared. On the eastern bank of the Kiel Fiord work is meanwhile under way to expand the Ostuferhafen, Kiel's cargo and logistics hub. Six hectares of additional area are being reclaimed there. Among other things, a new drainage system for the area is being created, interlocking concrete paving laid, lamp posts being erected and the site fenced in to comply with ISPS regulations. "We are creating urgently needed operational and outdoor storage areas to promote further growth in sectors such as forestry products", says Claus. The SEEHAFEN KIEL with the support of the federal state of Schleswig-Holstein, is investing a total of about €12 million in the Ostuferhafen. The work will be completed in the summer of 2015.

Intermodal traffic gains a lot of ground

Last year, 26,450 units were handled at Kiel rail terminals dedicated to intermodal cargo traffic. The figure was an increase of 11.3 %. Dirk Claus said "environmentally friendly rail transport to the point of embarkation has been a complete success and has gained dramatically in significance." To process growing volumes in good time, the Port of Kiel has invested in new handling technology. The Ostuferhafen was first equipped with a high-capacity portal crane and then a comparable unit was put into operation at the Schwedenkai Terminal in autumn 2014.

Intermodal shuttle trains transport Kiel rail cargo five times a week to and from Hamburg-Billwerder, linking up with the national rail network. From there the same rolling stock travels on to Duisburg without trans-shipment, providing a direct connection to the Ruhr. Because of this, two train services have been replaced which have operated directly to Duisburg until now. Those services were dropped from the time-table in December 2014. "Unfortunately, because of trade restrictions imposed on Russia", commented Dirk Claus, "there is at the moment not enough cargo volume coming from the Baltic to fill direct trains to Duisburg."

Volume increases were particularly notable in 2014 on the Kiel-Verona route which is fed by Scandinavian services. In order to offer additional capacity, train combinations can be lengthened by two wagons with immediate effect. Adjustments at the Kiel-Meimersdorf Marshalling Yards mean that train combinations of up to 550m are now possible, compared to 500m previously. It is also planned to take advantage of such longer train combinations on the direct route between Kiel and Verona, which is currently served five times a week. "Switching cargo traffic onto the railways has proved particularly beneficial in Alpine transit. We expect further growth on this route", said Claus.

Eco rules mean new challenges

The introduction of new environmental regulations in the Baltic shipping area as of 1 January has meant that shipping companies now face new challenges. To comply with the new regulations, ships have to be driven by marine diesel oil or be retro-fitted with modern gas emissions cleaning equipment. Claus said, "we welcome steps to protect the environment. However if the increased costs incurred lead to cargo switching back to road transport then neither the seaports nor the environment will be served." The shipping company DFDS Seaways has already retro-fitted the ships it operates on the Kiel-Klaipeda route with scrubbers . The ferries of Color Line are currently being retro-fitted at a Danish shipyard. By contrast, Stena Line has decided to operate its ship *Stena Germanica* with environmentally friendly methanol in future.

As a Kiel port contribution to climate protection, Norwegenkai plans to install a shore-based ship power supply connection. Claus said "plans are well advanced and an application for funding support has already been made to the state of Schleswig-Holstein. We are ready to implement the idea as soon as the EU notification procedure has been completed. Actual building will then take six months."

The Seaports of Niedersachsen are experts for dry bulk cargo and customized logistics solutions

Rhenus Bulk Terminal Wilhelmshaven (BTW) handled in July 2014 more than half a million tonnes of coal in one month for the first time.

The Seaports of Niedersachsen, which includes Brake, Cuxhaven, Emden, Leer, Nordenham, Oldenburg, Papenburg, Stade and Wilhelmshaven are specialized in the transshipment of bulk cargo, creating customized logistics solutions and are experts in handling and warehousing of dry cargo. One example is coal which is transshipped in the ports and stored temporarily before being taken to power plants in the hinterland when required.

Furthermore, agricultural products such as grain, feeding stuff, food-affine products and renewable primary products are transshipped, stored and processed in the Seaports of Niedersachsen, including just-in-time deliveries to customers. Certifications according to GMP, QS, IFS-Logistics Standard, AEO Standard and ÖKO VO 834/2007 vouch for high quality in the transshipment and storage of grain and feeding stuff of vegetable origin. Apart from fertilizers and minerals as well as peat, rock salt or scrap metal, it is mainly building materials (sand, grit, gravel) which are unloaded for the local construction industry.

The seaports invested continuously in new facilities and handling equipment to be able to follow the growing demands of customers. The largest measure will be the installation of a second berthing for large vessels of up to 275 metres in length at the Südpier in Brake (agri-terminal) by the state-owned infrastructure company Niedersachsen Ports. This measure is intended to strengthen the seaport of Brake's position as one of the leading handling sites for the agricultural industry in Europe. The Port of Brake respectively the local operator J. Müller Group is ideally suited for handling and storage of grains, feedstuffs, oilseeds, fertilizer, renewable natural resources, biomass products, sugar, food-related products as well as other suitable bulk and agricultural goods and also offers a wide range of processing services such as aspirating, milling, rough-grinding, mixing, crushing and drying.

In July 2014, Rhenus Midgard handled with the Rhenus Bulk Terminal Wilhelmshaven (BTW) 557,319 tonnes of coal. This is the best figure for one month at the long-standing bulk handling centre. The seaport logistics specialist Rhenus Midgard extensively modernized and expanded the terminal to handle with larger volumes. More powerful conveyor belts, fully automatic stackers/reclaimers and the new train loading station have improved the range of services available. The capacity of the BTW has also been extended through deepening the berth to allow it to handle the big Capesize vessels with a draught of as much as 18.50 metres and extending the storage areas away from the quay's edge.

The state of Lower Saxony and the local operator in Cuxhaven, Cuxport, are planning another berth with further 290 metres of pier and around 85,000m² of space for port handling, available at this site by spring 2017. The creation of the new berth will allow Cuxport to continue to meet the constantly increasing demand for efficient maritime logistics services in future.

Within the Port of Cuxhaven, one of Germany's of Germany s offshore wind base ports, the dry bulk handling partly also refers to the renewable energies sector: building materials like gravel or stones are handled and stored in Cuxhaven before these materials are being shipped to the offshore wind farms where they are being used to fix the offshore foundation structures down at the sea bottom.

The port of Emden plays an important role as a hub for agricultural products and building materials. But the core business of this port is the handling of new cars, the transhipment of forest products and project cargo in the range of wind energy. The renovation of EVAG Terminal II at the port of Emden has been successfully completed. As part of the building work, EVAG Emder Verkehrs und Automotive Gesellschaft mbH has installed a new sheet pile wall with a total length of 150 metres, as well as laying 240 metres of new tracks and lighting columns at the terminal. The approx. 350-metre-long, tri-modally connected quay provides a total of 28,000m² of outdoor storage space and 6,000m² of warehouse space. There is also the central hall, which measures 1,300m², and around 600m² of offices and social rooms.

The seaport of Nordenham which has two terminals, one in the city port Nordenham and one in the neighbouring town Blexen is one of the largest privately-operated public seaports of Germany. Located directly on the deep fairway of the Außenweser (outer Weser) the port serves as a transshipment centre for goods of all kinds, in particular coal, mineral oils, timber, steel products and project cargo. The handling of dry bulk is also one of the core competences of the port which has a long tradition in professional coal handling and warehousing as well as in the just-in-time distribution to coal power plants in the port hinterland via inland waterway or by train.

The three municipal seaports Leer, Oldenburg and Papenburg are also specialists in bulk handling, creating optimum solutions for their customers. Agricultural products and building materials are the main commodities handled in these ports.

Dry cargo is one of the particular business fields in Stade. The northern part of the pier in the port Stade-Bützfleth is used for the unloading of bauxite and the loading of aluminium oxide and aluminium hydroxide. In the inner port, vessels can be loaded via an enclosed belt conveyor system from the warehouses directly into the vessel. The export of chemicals produced in Stade such as hydrogen and sodium hydroxide also contribute significantly to the volume of cargo transshipped. The port authorities of Lower Saxony and the office for water and shipping have implemented a new ordinance for the Nordhafen in Stade. The port can now be entered by ships up to 200 metres in length and make the seaport of Stade more capable.

B&V Laytime Calculation Software: it's about time

Burmester & Vogel from Hamburg, Germany, has recently celebrated its 30th anniversary.

Company growth over past 30 years

B&V's Laytime Calculation system has performed more than 2.5 million calculations over this period and currently has more than 1,000 customers in 100+ countries.

It's a success story resulting from the efficiency, safety and user-friendliness of its software – which means no more headaches with Laytime Calculation. The company's clients are reporting time savings between 60–80% by using the B&V Laytime Calculation system compared with their previous methods. And costly calculation errors are also avoided.

Complete calculations can be imported with a double click from business partners to set up their own calculations. An optional module makes it possible to import statements of fact without re-typing. This saves even more time.

The new version 8.1 also includes an optional licensing model for supporting multi-user terminal services, CITRIX and remote desktop use.

This makes it possible to use the system simultaneously with practically unlimited numbers of users worldwide with one terminal server.

The data is kept private on the company's server.

Maximum precision: Europe's most modern train loading facility enables Rhenus Bulk Terminal Wilhelmshaven (BTW) to precisely fill coal trains

The port operator Rhenus Midgard has not only improved the seaward connections during its expansion work on the bulk handling terminal in Wilhelmshaven. Rhenus Bulk Terminal Wilhelmshaven (BTW) has also put into service the most modern train loading facility in Europe. The high-tech unit enables the company to achieve wagon load factors of more than 99%.

Rhenus Bulk Terminal Wilhelmshaven's new train loading facility in action. (Photo: ©Rhenus Midgard Wilhelmshaven GmbH & Co. KG)

Time is money. People often love quoting this phrase in the logistics sector too. But any unused space in means of transport also increases the costs. For example, the same volume of goods requires more wagons when being transported by rail or a greater number of journeys. The port operator Rhenus Midgard took this fact into account when constructing the train loading facility during the recent expansion work carried out on the long-standing 'Niedersachsenbrücke' bulk terminal.

The facility, which has been operating in the Lower Saxony port town under the name BTW since 2013, is ideally qualified to load the imported coal on board railway wagons quickly and with extreme accuracy. "Speed and precision are competitive advantages for the BTW and our customers are very aware of them," says Matthias Schrell, Managing Director of Rhenus Midgard in Wilhelmshaven.

Rapid loading processes without separating trains

The maximum permissible length of trains in Germany is 740 metres — including the locomotives. That means that a train can consist of up to 54 four-axle FAL wagons. The modern train loading facility at the BTW loads this number of open bulk commodity wagons in one go. So there is no need to separate the trains for loading purposes — which takes a great deal of time.

A stacker/reclaimer picks up the coal from the storage area and conveys it to the train loading facility via a conveyor belt. Reclaimers enable the company to handle 2,000 tonnes of coal per hour. It is therefore possible to load the longest possible

The high-tech unit enables the company to achieve wagon load factors of more than 99%. (Photo: ©Rhenus Midgard Wilhelmshaven GmbH & Co. KG)

trains with 54 RAL wagons, which hold about 3,500 tonnes of coal in all, in less than two hours. If needed, the handling rate can be increased to as much as 4,000 tonnes per hour by using a second reclaimer.

Load factor on the wagons more than 99%

Shunting robots move the train constantly through the train loading facility so that the individual wagons are evenly filled from above from the storage bunker via the weighing hopper. The train loading facility with its technology and calibrated weighing system enables the load factor in the wagons to reach more than 99%. As a result, the load limit for each individual FAL wagon, which is between approximately 62 and 65 tonnes, is almost completely utilized.

"This means that we can use the wagons in the best possible way because of our precise loading equipment. If we don't fully exploit the load factor, we have to use more wagons or even more trains, which would increase the transport costs," Schrell explains. "The locomotive hauling the empty train only has a short waiting time as a result of the fast loading operations at the BTW, which can take place round the clock. It can than haul the fully loaded train again very quickly."

Rapidly supplying power stations further inland

The BTW has been designed to handle up to 10 million tonnes of coal per annum as a result of the successful conversion and expansion work, which also included the handling equipment on the pier and the conveyor belts. Plans envisage that almost two thirds of this figure will be transported further inland — particularly to power stations, but also to customers in the steel and cement industries, for example.

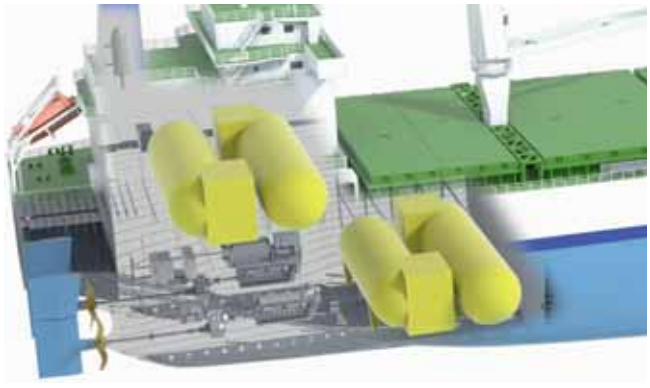
The Rhenus Midgard terminal in Wilhelmshaven is ideally linked to the German and Central European railway network via the Bremen–Oldenburg main line. The rapid loading processes, the best possible load factors for the wagons and the excellent railway link form the basis for reliable and cost-effective deliveries of coal from Wilhelmshaven to customers in Germany and other neighbouring countries.

DNV GL – knowledge and support with global reach and local presence

In today's competitive market, bulk carrier operators prioritize quality, safety and ship availability combined with cost control and operational efficiency, *writes Morten Løvstad, Business Director Bulk Carriers in DNV GL.*

Following the merger in 2013, DNV GL has significantly expanded its global network, with about 6,000 highly skilled employees active to support more than 13,700 ships in its class worldwide. Hamburg is not only the location of DNV GL's maritime headquarters, but also one of its bulker hubs – giving local customers unrivalled access to DNV GL's maritime expertise.

Bulker specialists offer shipowners and operators segment-specific services that range from design concepts review, help with yard evaluations and contracting, follow-ups during construction to emergency response services for ships in operation, port state control support, classification and advisory as well as training and software services.



The DNV GL Advisory Division focuses on helping customers to improve their operational efficiency. Services, such as software solutions for ship management (ShipManager and Navigator software) and the web-based Fleet performance management portal ECO Insight, can enable shipowners and operators to make more informed management decisions.

'Futureproof' bulk carrier concept designs

To ensure that the bulker segment is prepared for any future rules and regulations, DNV GL has also been working to develop innovative concept vessels. These ships illustrate how existing technologies can be applied to ensure compliance and make the bulk carrier designs 'futureproof'.

Concept design of an Ore Carrier — 'Ecore'

An example for this is the '*Ecore*' – a futuristic concept of Very Large Ore Carrier (VLOC). It was developed in co-operation with FKAB, TGE, MAN and Cargotec. The vessel is designed with a v-shaped hull form to reduce the need for ballast water, while keeping the propeller submerged. Reducing the need for ballast water, results in reduced demands from ballast water treatment systems, lower power consumption, easier operation and lower fuel consumption.

The design features a twin propulsion system to ensure high manoeuvrability, increased safety through redundancy and shallow draught. The self-loading system on board reduces loading discharging time, which means there no need for bulldozer switching. '*Ecore*' is also able to run on LNG — with LNG fuel tanks located in the wing tanks, where they are well protected and don't infringe upon the ship's cargo space.

Concept design of a Handymax – 'ECO-ship 2020'

The 'ECO-ship 2020' is an energy efficient and cost effective concept design developed in co-operation with Oshima. It shows how important it is to match a vessel's abilities and its performance to commercial and operational needs.

The Wide-Beam Handymax concept design aims to improve commercial performance by lowering fuel costs through advanced energy efficient solutions, the largest possible cargo deadweight intake on shallow draughts, the largest possible cargo hold volume and the largest available deck space for cargo. These solutions were developed within the design limits of a maximum length and draught range for a Handymax, with an estimated 63k dwt and an unusually large cargo hold volume.

'ECO-ship 2020' is also a LNG-fuelled open hatch bulk-carrier (OHBC) and features an air-lubricated, wide twin-skeg hull, Oshima's Seaworthy bow, lean-burn four-stroke medium-speed gas engines and a flexible propulsion and power-generation system with a shaft generator/motor (PTO/PTI). It also has a waste heat recovery system on board.

The vessel is equipped with four large-capacity electric jib cranes and hatch covers made of a composite material that weighs about 50% less than steel, which is traditionally used in this case. The vessel was specifically designed to comply with future IMO, ECA and Tier III emission requirements, emitting about 50% less CO2 than current OHBCs. A significant part of the reduction is due to its highly efficient LNG propulsion system.

'Futureproof' bulk carriers available for ordering today — Green Dolphin

The Green Dolphin (GD) family was developed by SDARI and verified by DNV GL to ensure an energy efficient and 'futureproof' design. The GD family currently consists of the GD38 Handy, the GD57,5 Handymax and the 84S Kamsarmax.

The GD38 was the first vessel in this new design series. It is a five cargo-hold CSR double-hull bulk carrier that meets current and expected future air and water emissions regulations. The design is fuel efficient, maintenance friendly and ensures

operational flexibility. The GD38 design provides improved overall performance at different loading conditions and speeds. Close to a hundred Green Dolphin 38s have already been ordered and a major share of these belongs to DNV GL class. All the Green Dolphin designs fulfil EEDI Phase 2 requirements, and design options exist for delivery with LNG as ship fuel or later retrofitting (LNG Ready).

All Green Dolphin designs feature the highest structural standards. For example, they are designed for a wide range of cargoes, have a high tank top load capacity, crew protection against piracy and are prepared for cold ironing.

The Handy and Handymax also comes in different versions:

- Single-hull standard bulk carrier
- Double-hull open-hatch bulk carrier

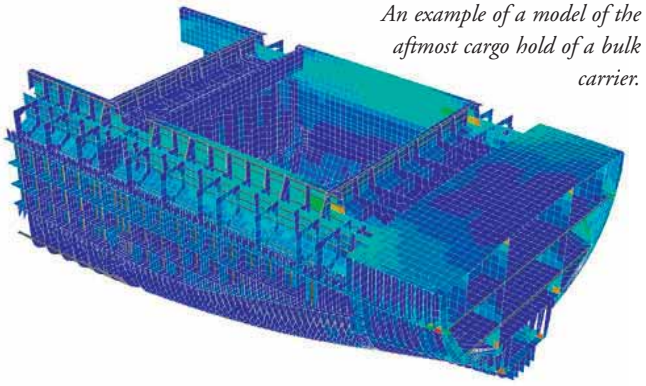
IACS new, harmonized Common Structural Rules for Bulk Carriers

The harmonized Common Structural Rules for Bulk Carriers and Oil Tankers (CSR-H) will come into force on 1 July 2015. CSR-H is one of IACS's most important initiatives over the past ten years for improving the safety of bulkers and tankers and will set a new standard for the ship building industry. Several reports have been published about the consequences in terms of scantling impact and steel weight. However, there are also other consequences, both for ship owners and yards/designers.

The CSR-H is a natural development of the original common structural rules that were introduced in 2006 as two separate rule sets for tankers and bulkers. Since then, the rule sets have been merged into one set covering both ship types, and the design loads and rule criteria have been aligned ('harmonized') with each other.

Increased scope for designers – increased safety for shipowners

For designers, one of the most noticeable consequences of



An example of a model of the aftmost cargo hold of a bulk carrier.

CSR-H is the increased scope of Finite Element Analyses (FEA). It is now required to analyse all cargo holds by FEA, not only those in the parallel midship area. This increased FEA scope will give better control of the structural capacity in the affected areas, resulting in increased vessel safety. The number of mandatory fine mesh analyses has also been significantly increased.

An ultimate strength check has been introduced, to ensure the vessel does not break its back even in the worst storm in the North Atlantic. In addition there are also checks to make sure that even if the vessel is badly damaged in an accident, for instance in a collision with another vessel or in a severe grounding, the vessel will survive.

New design load cases have also been added. One of the new load cases is oblique sea. The new load cases will bring the design verification of vessels closer to what they will experience in actual operation.

How DNV GL will support the industry implement the new Rules

In response to the increased analysis scope, DNV GL has invested heavily in software for CSR-H through the Nauticus Hull package. In particular, the FEA tool Genie has been significantly improved, including easier modelling of curved panels, as we have in foremost and aftmost cargo holds, and better functionality for importing FEA models made by yards and designers. The automatic yield and buckling checks have also been further improved from earlier Genie versions. The cross section analysis tool has been improved as well, and this should ensure that it remains the preferred tool among designers and yards in the future.

Even if the new CSR-H is yet another move towards greater computerization in ship structure design, the knowledge and experience of the people using the rules remain as important as ever. DNV GL has been heavily involved in the development, testing and calibration of the new rules and is well prepared to assist the industry in working with and understanding the new rules.

DNV GL is now scaling up its activities world-wide, especially in the German market, to assist designers, yards, owners and operators in implementing the new rules for bulkers and tankers, through joint development projects, design reviews and knowledge sharing. It has both the expertise and the software tools to assist the maritime industry with the new rules.

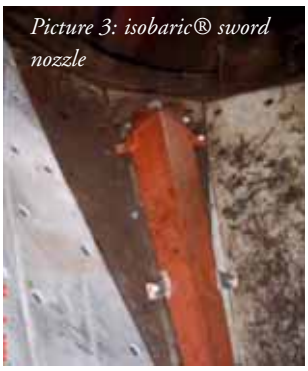
Problems solved - effective components for the bulk handling industry

When handling bulk goods, operators often have to fight against various problems resulting in the fact that the requested conveying capacity cannot be observed. Thus, delays in the production process will occur. Examples of some of these typical problems are:

- Material deposits in transfer chutes cause cloggings inside the chutes, this leads at worst to, that conveying of material is no longer possible.
- Cakings at belt conveyors cause rising wear and lead to

Picture 1: bucket wheel.

Picture 2: transfer chute.



Picture 3: isobaric® sword nozzle

Picture 4: Transfer chute with rubber skirts inside

reduction of the conveying performance.

- Dust emission during loading and unloading the bulk goods, stresses the personnel, pollutes the environment and often results in problems with the government.

Since 1975 VSR Industrietechnik GmbH, Germany has been supplying reliable and cost-saving solutions for bulk solids handling. Among others, the product programme of VSR consist of:

- VSR BLASTER® Air Cannons that disperse cakings, bridgings in silos and cloggings by a straight compressed air impulse.
- VIBREX® Conveyor Belt Cleaner for keeping conveyor belt plants clean.
- DUSTEX® Dust Suppression Systems for the reduction of dust emissions.

VSR BLASTER® air cannons have been offered by VSR since the foundation of the company as an effective solution to bring bulk goods into action and to solve material deposits in hot and cold temperature areas. They blow the compressed air stored at 4 to 10 bar explosively through large-area discharge cross sections of 50–150mm diameter in milliseconds into the critical inner material zones. The high efficiency of these systems rely on the quality of each single component and on the customized Engineering and the master plan for each specific project.

Each air cannon system will be designed individually, according to the requirements of the customer. If necessary, parts like nozzles will be developed especially for the customer. For example, by using the air cannon technology, problems which can occur with material conveying, like material deposits or cloggings can be solved.

For example, the scope of application for coal handling begins in the opencast pits, directly at the bucket wheel (*pic. 1*) and further on at the transfer chute (*pic. 2*) of the bucket-wheel excavator. The air blast to clean up the surface will be formed by the special type of nozzle. The air blast will be generated by the VSR BLASTER®.

For coal handling facilities, the isobaric® sword nozzles (*pic. 3*) is a reliable solution to clean up bigger areas and corners inside the chutes. Another solution for belt transfer points is to blast directly onto rubber skirts to disperse material deposits (*pic. 4*). The blast cycles and sequences can be adjusted via a VSR-SETEX controller and be adapted to the operating conditions.

Another problem at the belt conveyors is, that dirt accumulates, day by day. Many tonnes are spread over large areas and on the conveyor belt construction, obstructing the regular material flow. At worst, important equipment is destroyed. This results in loss of production and high costs. At these points the VIBREX® belt scrapers ensure that the belts are clean and the conveying performance can be kept.

Picture 5

They are the most ideal elements for belt cleaning. Individual spring-mounted, wear-resistant blades are pressed elastically against the conveyor belt (*pic. 5*). They constantly adapt themselves to the belt surface and to wear. This results in very long lifetimes and a high, permanent cleaning effect. Nevertheless the conveyor belts are treated with extreme care as conveyor belts mostly wear due to badly operating cleaning devices.

After the material flow is safe and trouble-free, the next problem that often occurs if bulk goods are dry is the dust. The dust emissions are not only disturbing, but even dangerous to health. For this reason, there are legal rules in most countries for a reduction of dust emissions.

The DUSTEX® Dust Suppression Systems are all able to reduce dust emissions significantly.

In order to match the problem and to offer an optimal solution for dust suppression to each customer, VSR uses several systems enabling them to offer solutions specified for the requirements, even in combination of the several systems.

In Ports and harbours the DUSTEX® Dust Suppression Systems are mostly in use to reduce the dust emissions at the hoppers (*pic. 6 + 7*) of ship-unloaders and further on the belt transfers.

Problems solved— with the know-how and experience of almost 40 years, high quality equipment and customized engineering, VSR Industrietechnik GmbH is able to ensure that material flows, cloggings, cakings and bridgings and dust emissions are no longer a problem.

Picture 6

Picture 7

Recent developments in bulk materials handling for mines, terminals and stockyards from ThyssenKrupp Industrial Solutions

With more than 100 years' experience as a suppliers of materials handling equipment, ThyssenKrupp Industrial Solutions AG – Business Unit Resource Technologies (TKRT) has developed a complete range of products for mines, bulk terminals, stockyards and fertilizer, steel and cement plants.

TKRT today supplies a complete range of products for bulk materials handling, including:

Ship unloading and loading equipment like

- Grab type ship unloaders of different designs;
- Continuous ship unloaders;
- Shiploaders of different designs for bulks and bagged goods;
- Combined shiploaders and unloaders;
- Pontoon based floating transhipment.

Stockyard equipment, like

- Slew type or bridge type bucket-wheel machines of different designs;
- Drum (barrel) type reclaimer;
- Longitudinal and circular stockyard with stacker and scraper reclaimer;
- Homogenization/blending bed with stacker and bridge type scraper reclaimer, both as circular or longitudinal stockyard;
- Combined portal scraper reclaimer with both stacking and reclaiming functions.

Other materials handling equipment like

- Railway car tipplers;
- Truck dumper and unloading station;
- Belt conveyor, curved conveyors and pipe conveyors.

TKF's new development of full-line materials handling equipment has focused on:

- being a global supplier with its own subsidiaries throughout the world;
- a full range of products and designs;
- multipurpose applications;
- suitability of machines for diverse materials with significantly different characteristics;
- design suitable for upgrading to either fully automatic operation or unmanned remote controlled operation.

Recent technical achievements and contracts highlight TKF's development work for the coal handling in terminals and stockyards.

Materials Handling Equipment for Mine and Port of AML Liberia

In Liberia iron ore had already been produced before the Liberian civil war. Today the production of iron ore is developed again by ArcelorMittal and already shipped as raw material. In future the iron ore will be excavated in the Yekepa Mine, upgraded there to a high valuable concentrate product, transported by train to the port at Buchanan and shipped from there to the further processing steel mills. At the end of 2011 TKRT received from ArcelorMittal Liberia (AML) a milestone order for engineering, supply, erection and commissioning of materials handling equipment for their iron ore mine and port in Liberia. The materials handling equipment of TKRT comprises the following machines:

Mine Site

ROM iron ore blending yard stacker and bride type bucket wheel reclaimer;
Product (iron ore concentrate) stockyard stacker and bucket wheel reclaimer

Port Site

High capacity railcar dumper
Product (iron ore concentrate) stockyard stacker and bucket wheel reclaimer
High capacity shiploader

The mechanical, hydraulic and electrical equipment are engineered and manufactured in Germany and Western Europe, while the whole steel structures of the machines are fabricated in China. The steel structure and mechanical parts will be manufactured there under the permanent QA/QC by ThyssenKrupp and then assembled with all mechanical, hydraulic and electrical parts delivered from abroad.

The iron ore concentrate plant at the Yekepa Mine is equipped with a blending yard and product stockyard. ThyssenKrupp will design and supply the blending equipment as well as the stockyard machines as follows:

The blending yard stacker is designed for the stockpiling ROM iron ores in layers with a capacity of 8,300tph (tonnes per hour), while the bridge type bucket wheel reclaimer, having a design capacity of 5,600tph, will feed the concentrate process plant continuously for controlled mixtures of raw materials.

After the process plant a stockyard is arranged with a stacker

Pictures 1.1 + 1.2: Similar blending yard machines working in an iron ore concentrate plant in Brazil

and a bucket wheel reclaimer for buffer storage of iron ore concentrates. The stacker receives the materials from the plant and stockpiles them at a rate of 2,500tph. For shipment of the product a bucket wheel reclaimer takes the stockpiled material back to the conveyor system and further to the railway train loading station. To match the train loading operation the reclaimer will feed the conveyor line at a design rate of 6,000tph.

The end product of iron ore concentrate will be transported to the port via railway for export. At the port, three key

Picture 1.3 : A ThyssenKrupp's high capacity bucket wheel machine working at EMO Terminal Holland, similar to the project

components from ThyssenKrupp will be constructed for operation:

- One unit high capacity railway car dumper;
- Stockyard equipment consisting of one stacker and one bucket wheel reclaimer;
- One unit high capacity shiploader

The car dumper is designed as single cell tippler, designed for max. 5,400tph. The stacker is designed for the handling capacity of 6,000tph to match the car dumper capacity, while the design capacity of bucket wheel reclaimer and the shiploader is

Picture 1.4: A ThyssenKrupp's high capacity bucket wheel machine working at EMO Terminal Holland, similar to the project

10,000tph each.

This configuration gives the port operator one distinct advantage over its competitors in that region, which will also help cut costs by reducing the ship's berthing time.

Modern drive control and PLC system is incorporated in the machines, operation is mainly controlled via the computerized operator's panel for the stockyard machines and in the operator's cabin for the shiploader. The high degree of automation and the visually assisted operator's guide the

Pictures 1.5 + 1.6: ThyssenKrupp high capacity stockyard machines in operation

operating staff to operate the machines easily and in a comfortable fashion.

Follow-up Order from Guangzhou Zhujiang Power Plant, China

Picture 1.7: One of three ThyssenKrupp shiploaders built for TIS Terminal in Odessa, Ukraine

Back to 1994, the new power plant in Guangzhou City, Zhujiang power plant received ThyssenKrupp's ship unloaders for his coal terminal and put into operation. Since then these ship-unloaders have been operating successfully to serve the power plant demand on coals for 3 x 600 MW blocks and transshipment of coals for the region. An annual turnover of 6–8 million tonnes is achieved by these unloaders.

With the increase of power consumptions in this region, the Power Plant began to start the expansion project of Phase II for the other 1000MW block. Through an international tender ThyssenKrupp won again the new order for the two further ship unloaders, and this time a chain bucket elevator continuous ship unloader.

Picture 2.1: Ship-unloaders supplied by ThyssenKrupp working at Zhujiang power plant for 20 years.

The contract was signed in June 2012 for the supply and installation of 2 units CSU. These unloaders will be designed for an unloading rate of 1,500 – 1,650tph and ships sizes up to 70,000dwt, and in the future for 100,000dwt, representing outstanding success of ThyssenKrupp in China by covering >75% of market share.

For ThyssenKrupp, this follow-up order not only means being awarded a further order, but also represents continuity with respect to design, supply, construction and management and demonstrates the client's appreciation of and satisfaction with ThyssenKrupp's performance to date.

Picture 2.2 : ThyssenKrupp's 3 units CSU, similar to those to be installed at Zhujiang , in unloading operation at Huayang Power Plant, China .

The delivery to site and commissioning of the new CSU is schedule for end of 2013, the commercial operation can start from February 2014.

The decision of Zhujiang Power Plant to choose ThyssenKrupp as supplier for all of their important ship unloaders has been made with the confidence in ThyssenKrupp's advanced technology, capability of execution of large scale projects and first-class technical service, as one of the decision makers said, the choice went in favour to ThyssenKrupp after accurate comparisons of several competitors on the evidence of

- world wide and extensive experiences in the development of coal ship unloader technology;
- excellent performance of CSU already built;
- high availability and long service lifetime without intensive repairs;
- reliable technical services during construction, commissioning and operation period;
- good relationship with Chinese partners for manufacturing and erection

With this contract, ThyssenKrupp, has once again contributed to the development of China's coal ports and power plants along with other equipment of more than 60 machines for car dumpers, ship-unloaders, shiploaders, stacker-reclaimers, etc.

This is the first footprint of TKRT for a full range of high capacity iron ore mining and handling equipment set in Peru.

THE ADAMS® TECHNOLOGY

is for the filling of your powder bulk products into airtight PE packaging.

www.packyourpowder.com

WEATHERPROOF. **CLEAN.** PROFITABLE.

HAVER & BOECKER

Packing of powder products into PE bags will become the standard

Product manager Robert Brüggemann (right) and business unit leader Burkhard Reploh (left), experts at HAVER & BOECKER on the use of the HAVER ADAMS® technology in the building materials and minerals industry, look back at the history of the technology and look into the future.

Interview with product manager Robert Brüggemann and business unit leader Burkhard Reploh on the ADAMS® development

The HAVER ADAMS® technology stands for the filling of bulk powder products with difficult flow properties into air-tight PE bags. After its introduction in 2005, the technology quickly established itself on the market. With the ROTO-PACKER® for small PE bags, HAVER & BOECKER has now extended its weight spectrum so that bags with a weight range of 1 to 50kg can be filled.

Both product manager Robert Brüggemann and business unit leader Burkhard Reploh, experts at HAVER & BOECKER on the use of the HAVER ADAMS® technology in the building materials and minerals industry, look back at the history of the technology and look into the future.

Question: *Just a few years ago who would have thought that building products and minerals could be filled into environmentally friendly and weather-resistant PE bags? How was this development achieved?*
Robert Brüggemann: A customer came to us with the wish to fill powder into air-tight PE bags. We took up the challenge and together we developed the HAVER ADAMS® technology.

Question: *What exactly was the real challenge?*
Burkhard Reploh: For granulated and grainy products, packing with Form-Fill-Seal systems has been common for a long time. However very fine powder products have very high dust content. At the same time, compaction of the product inside the bag is the fundamental requirement to get a clean and efficient final result. PE bags for granulate products can be needled or micro-perforated to allow air escape. This is not possible with powder-type products because the product leaks out.
Robert Brüggemann: Using the given requirements, we developed a completely new bag and filling concept. To do this, we solved every technical challenge individually, checked them over thoroughly and developed a compact machine on that basis. Vibrating bottles and vibrating tables or bottom vibrators provide the needed compaction. Thanks to micro-vibration, air bubbles automatically rise inside the product.

The HAVER ADAMS® technology stands for the filling of bulk powder products with difficult flow properties into air-tight PE bags. With the HAVER ADAMS® HAVER & BOECKER offers customers a high-performance system with a universal spectrum of applications and product-specific dosing and compaction systems.

Advantages of PE packaging

- **Water-tight, weather-resistant:** product is protected from the environment, thus even allowing storage outdoors. Also environmental protection against contamination caused by filled product leaking out.
- **Durable:** fewer bag breakages from mechanical damage.
- **Clean:** nothing gets dirty in production, at the downstream facilities, and during the transport all the way to the hands of the end-buyers.
- **Sustainable:** reduced product production through less product loss leads to a smaller CO_2 footprint. Less resource consumption during recycling.

Question: *What was the reaction of the building materials and mineral industry?*
Burkhard Reploh: The first experiences we made with the HAVER ADAMS® technology came from the cement sector. At first, the market was somewhat sceptical because the system meant changing the entire filling process with the FFS technology. However, our customers quickly recognized the advantages of filling their powder-type products into PE bags. So the ADAMS® made its march through the building materials and minerals industry. We shipped out the first ADAMS® system for the building products sector already in 2005.

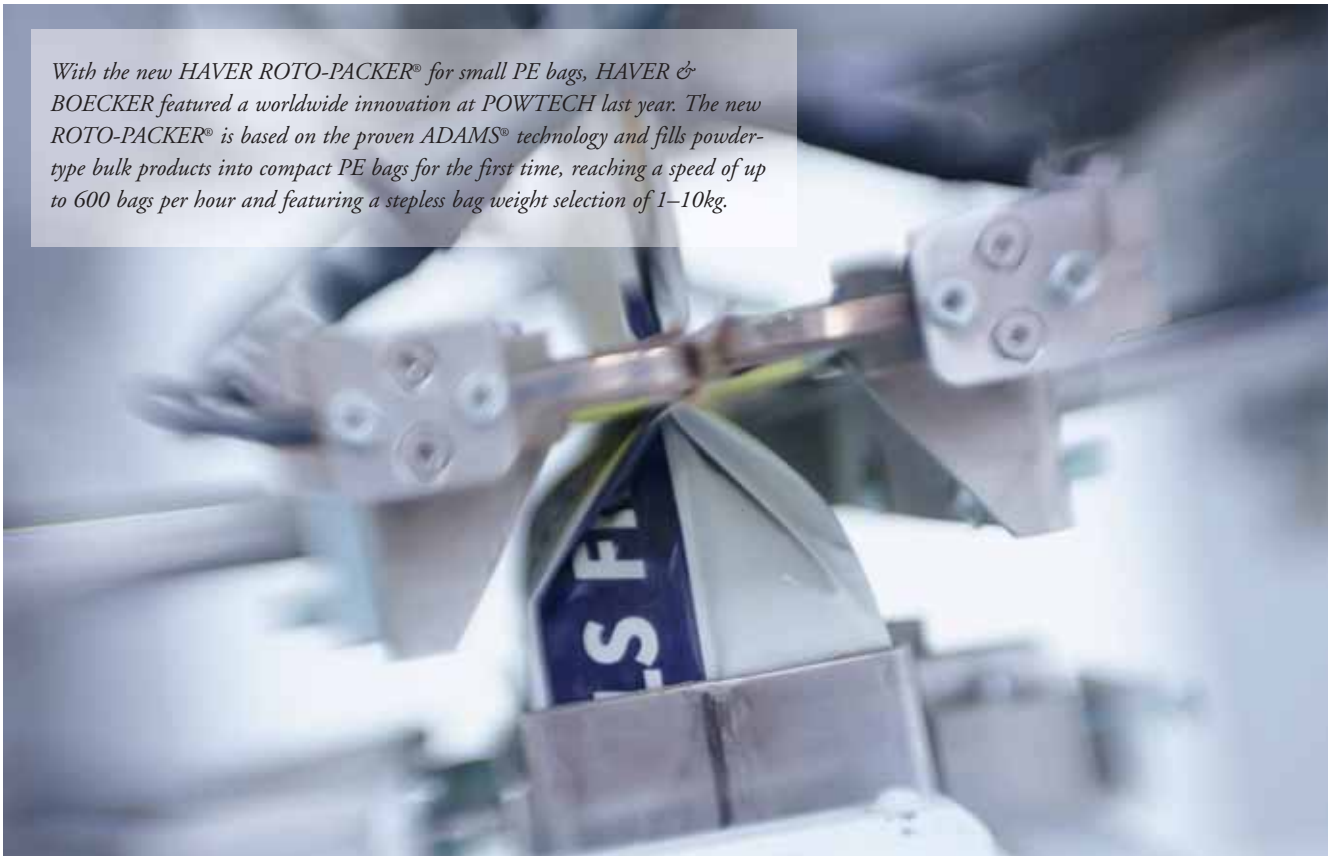
Question: *What advantages does the customer get from filling into PE bags?*
Burkhard Reploh: Foremost our customers appreciate the optimum protection their products get: more security during extended storage, the greater cleanliness throughout the logistical chain, and durable packaging. Also, from a marketing standpoint, plastic bags offer additional advantages over paper bags. Plastic bags can be printed over the entire surface and in multiple colours with photo-quality images, product information and barcodes.

Question: *What makes the HAVER ADAMS® unique?*
Robert Brüggemann: With the HAVER ADAMS®, we offer customers a high-performance system with a universal spectrum of applications and product-specific dosing and compaction systems (vacuum lance; patented vibrating bottle). It is also characterized by reduced height. Our systems are very compact in size. HAVER ADAMS® systems require especially little film because of the efficient compaction function and the compact bags that result. This saves costs for customers.

Question: *How many systems has HAVER & BOECKER delivered so far?*
Burkhard Reploh: So far we have delivered approximately 70 systems in over 15 countries worldwide. For us it is especially important to offer comprehensive service during the installation and start-up phase, and later for maintenance and repairs. We support the customers on-site with highly qualified service technicians.

Question: *In which sectors are the ADAMS® systems successfully being used today?*
Burkhard Reploh: In addition to the systems for the cement, building materials and minerals industry, we have also delivered systems for the chemical industry. Fundamentally, we work also with hygroscopic powders; this is where the advantages in filling into plastic PE bags really come into play.

Question: *What lies ahead concerning the development of the HAVER ADAMS®?*
Burkhard Reploh: Once the first system had a possible speed of up to 1,200 bags/hr, it did not take long before the customer wished for even higher speeds. We optimized the technology and now, thanks to a new filling module and continuous rotating system, we offer a high-performance filling system with up to 12 spouts. In doing so, we combined our experience with the



With the new HAVER ROTO-PACKER® for small PE bags, HAVER & BOECKER featured a worldwide innovation at POWTECH last year. The new ROTO-PACKER® is based on the proven ADAMS® technology and fills powder-type bulk products into compact PE bags for the first time, reaching a speed of up to 600 bags per hour and featuring a stepless bag weight selection of 1–10kg.

HAVER ROTO-PACKER® and the expertise we had in the Form-Fill-Seal technology.

Robert Brüggemann: Last year our ROTO-PACKER® for small PE bags made its debut. This packing machine, based on the HAVER ADAMS® technology, for the first time fills powder-type products into compact and freely stackable small PE bags and can reach a packing speed of up to 600 small bags per hour with a steplessly selectable weight of 1 to 10kg. So with this packing machine for small bags, we are extending the filling weight spectrum. Here it is possible to fill into bags made from a tubular film, or into every type of prefabricated bag. Using an additional module, our customers can form the small bags directly from a flat film inside the ROTO-PACKER® system.

In the R&D centre, HAVER & BOECKER tests and analyses products for filling together with the packaging material. The technical equipment at the R&D centre, which has carried out over 20,000 various analyses since it was founded 60 years ago, allows to find the most optimum solution through systematic filling trials.

Question: *Does HAVER & BOECKER offer potential customers the possibility of testing their own products and their packaging?*

Robert Brüggemann: In our R&D centre, we test and analyse products for filling together with the packaging material. The technical equipment at our R&D centre, which has carried out over 20,000 various analyses since it was founded 60 years ago, allows us to find the most optimum solution through systematic filling trials.

Burkhard Reploh: The product analyses and filling trials are always viewed positively by our customers. They appreciate that we are not only focused on only the machine technology, but also on the packaging and all parameters that play a role in filling. This underscores our expertise and creates customer trust in reliable performance that is supported by filling-trials.

Question: *What about the palletizing systems HAVER & BOECKER offers for filled PE bags?*

Burkhard Reploh: We have made linking our premium technology to form complete systems a top priority. For three years Newtec Bag Palletizing has supplemented and enriched our well-known product line-up with its automatic palletizing systems. The HAVER palletizers made by Newtec Bag Palletizing are customized to suit the requirements of the HAVER ADAMS® filling systems. Our customers get complete plants from a single source. This reduces possible interfaces and leads to greater communication efficiency.

Question: How do you see the future of filling and packaging in the building materials and minerals industry?

Robert Brüggemann: The packing of powder products into PE packaging is becoming the standard and is seeing an even higher degree of acceptance by the market. End-buyers are opting for products filled in PE packaging or even directly requesting it because of their attractive store shelf appearance and other clear advantages, like cleanliness and protection from weather elements.

The bags are sealed air-tight and are impermeable to the weather. They are clean, compact and provide for an attractive appearance. The customer saves costs in packaging, storage, and from fewer complaints.

About HAVER & BOECKER

HAVER & BOECKER is a traditional-conscious, family-run, mid-sized company with headquarters in Oelde, Westphalia, Germany. Under the umbrella of HAVER & BOECKER OHG are the Wire Weaving and Machinery Divisions. Together with over 50 subsidiary companies on all five continents, they make up the HAVER Group which has 2,870 employees and 150 representatives. In 2013 the HAVER Group posted a sales turnover of €470 million.

The Wire Weaving Division produces woven wire mesh and processes it into engineered woven wire products. These are used for screening and filtration by the chemical, plastics, automotive, aviation, aerospace, electronics, foodstuffs and feed industries, as well as for architectural applications and analysis sieves.

The Machinery Division specializes in packing and weighing technology. It develops, produces and markets systems and plants for filling and processing loose, bulk materials of every type. The product range includes packing and loading systems for powder-type and granulated materials, packing machines for filling food and animal feed, as well as filling stations and complete filling lines for liquid and pasty products. The product range is supplemented by screening machines, machines for washing, pelletizing plates, agitators, mixers, palletizing and loading systems, silos, shiploading and unloading equipment.

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Zhang Yuzhu, General Manager, Shenhua Ningxia Coal Chemicals Company
Zhang Dianbo, President of Raw Materials Purchasing Center, Baoshan Iron & Steel Co., Ltd.
Oliver Ramsbottom, Partner, McKinsey & Company
Bob Kamandanu, Chairman, Indonesian Coal Mining Association (APBI ICMA)

TTS expands its service operation with a new Houston facility

TTS has announced the opening of its new service facility in Houston, Texas, USA. This is a significant development for TTS and means that it has expanded the full range of specialized services to the offshore and marine industry in the Americas.

The facility has 14,560ft² under roof and is the head office of TTS's American operations. Services include spare parts and warehousing; repairs and maintenance; inspections, surveys and classification; steel structural repairs; light fabrication and machining; hydraulic, mechanical and electrical repairs.

Stefan Gleuel, Executive Vice President, TTS Services Division commented, "TTS has a worldwide network of strategically located offices and service stations and our coverage is constantly evolving. Establishing a Houston base has considerable importance as it ensures we can now provide the very best service levels to customers operating in the offshore and marine industries around the Port of Houston greater Gulf of Mexico area. TTS has built a reputation for excellence, both is the comprehensive range of services we provide and also for the quality of our personnel."

"We understand the challenges our customers face very well, particularly in their objectives to optimize the efficient operation of their vessels. TTS has an enviable reputation as a manufacturer of key components and has such become one of the top three largest suppliers in its specialized market segments. Our service provision is truly world class and I am delighted that we can now deliver this expertise to existing and new customers in Houston."

TTS's new Houston service station was put into full operation prior to the official opening ceremony which took place in December last year. The event was hosted by TTS's new General Manager for the region, Torsten Paas, and invited guests were provided with a Texas-style barbecue, a guided tour of the facility, and presentations from the senior TTS management team.

TTS Group ASA is a global enterprise that designs, develops and supplies equipment solutions and services for the marine and offshore industries. TTS is one of the top three largest suppliers in its specialized market segments.

igus® launches new square profile linear guide

igus® has extended its Q10 series square guide with the introduction of the drylin® Q20. This new size, with a 20mm profile is ideal for self-supporting and high load applications. The guide's rigid square profile ensures resistance against twisting, while supporting torque of up to 10Nm in all directions. The bearing clearance can be adjusted manually, allowing the running accuracy to be increased or decreased, depending on the application.

The drylin® Q20 can absorb high forces from any direction.

The hollow profile of the drylin® Q20 provides convenient space for services such as compressed air, cables and fluids, and is ideal for use in confined spaces for example in laboratory equipment, packaging machinery, machine guarding and conveyor systems. Due to the space saving and self-lubricating properties, the drylin® Q20 is also suitable for use in the medical and food & drinks industries.

"Previously, to achieve a linear guide system that is self-supporting and resistant to twisting, we used two parallel circular profile shafts or a classic monorail guide that was often mounted to a support structure, rather than self-supporting," explains Rob Dumayne, director of igus. "The drylin® Q20 closes this gap for higher loads and is available as a complete system."

In addition to the adjustable guide carriage, the modular system consists of hard anodised aluminium square profile shafts, available in lengths of up to 4 metres. In addition, the drylin® Q20 guide carriage can be combined with all 20/20 aluminium profile construction systems, commonly used in machine building. The carriage itself offers multiple options for attaching via the use of slots and slot nuts.

Based in Northampton in the UK, and with global headquarters in Cologne, Germany, igus® is the largest producer of injection moulded polymer bearings and reinforced plastic cable carriers in the world. Product lines include industry-leading e-chain cable carriers, chainflex continuous-flex cables, iglidur® plastic plain bearings, igubal® spherical bearings, drylin® linear bearings and guide systems. The company has 26 subsidiaries across 31 countries and employs more than 2150 people worldwide.

With plastic bearing experience since 1964, cable carrier experience since 1971 and continuous-flex cable since 1989, igus provides solutions based on 100,000 products available from stock with between 1,500 and 2,500 new product introductions each year.

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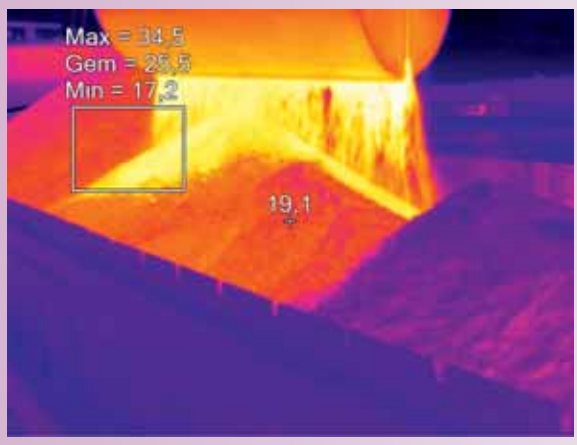
RC Inspection: acknowledged expertise in inspections and analysis of solid fuels



RC Inspection was founded in 2006 in Rotterdam as an independent, privately owned inspection company operation in the field of dry bulk commodities, metals and marine survey related services. Since then, it has expanded its services worldwide. The offices are strategically based around the globe, enabling the company to perform its services promptly upon request and give excellent turnaround times to the customers, irrespective of time zones.

All global services are co-ordinated from the office in Rotterdam, where a permanent team of specialists in sampling, sample preparation and analysis of solid fuels and biomass is based. Highly professional and hard working, these specialists are able to provide fast and reliable results. In order to live up to the company's high standards, all staff understand the value chain from A to Z. This requires the knowledge and experience to give customers the highest quality possible. Team members offer more than 40 years of experience in analysis, ensuring that the specialists of the coal department know all aspects and characteristics on all types of solid fuels and biomass products.

RC Inspection is a member of Verein der Kohlenimporteure and approved laboratory working under globalCOAL's SCoTA (Standard Coal Trading Agreement). The laboratories in use are equipped with the most modern and advanced instruments to ensure accelerated turnaround times and up-to-the-minute reporting through a service-driven approach and innovative use of technology.

The surveyors of RC Inspection perform inspection, sampling and sample preparation on solid fuels under ISO norm 18283. The sampling is performed with ISO-stipulated equipment.

The specialists of RC Inspection also developed special designed internal procedures to inspect and sample the complex heterogeneous cargoes that are the basis and a crucial part of the inspection and analysis process in general.

In the product range of solid fuels, RC Inspection offers great expertise in deep temperature control and infrared temperature control. It owns all the necessary equipment and the expertise to conduct deep temperature control and infrared temperature control during loading and discharge operations, prior discharge operations and as well during the period of stockpiling and reloading operations from the stockpile to avoid spontaneous combustion.

Apart from its skills, RC Inspection prides itself on establishing personal relationships with its customers. By adding a personal touch in its communication and services, RC Inspection aims to make a difference in satisfying its customers' needs. The core business philosophy is to provide independent, fast and reliable services with a direct people-to-people approach as befits a modern inspection company.

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- TRAMCO conveyors offer solutions for delivering product for various industries such as chemical, coal, food and grain, mining, plastic, pulp, rubber and paper, or solid waste and recycling.

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BUCKET ELEVATORS

Heyl & Patterson names Len Walnoha Vice President

Heyl & Patterson Inc., manufacturer of bulk materials handling and thermal processing systems, has announced the promotion of Len Walnoha to Vice President.

Walnoha joined Heyl & Patterson in 2013 as Director of Engineering. He oversees equipment design and drafting of all Heyl & Patterson manufactured products, the technical development of new products, and the direction of field service personnel in the support, installation, inspection and commissioning of equipment. As Vice President, he takes on the added responsibilities of project management and procurement.

Prior to joining Heyl & Patterson, Walnoha had been with Siemens VAI Metals Technologies in Canonsburg, as Engineering Manager and later as Director of Rolling & Processing Equipment. He is a member of the American Society of Mechanical Engineers (ASME) and the Association of Iron & Steel Technology (AIST).

Walnoha earned his Bachelor of Science degree in Mechanical Engineering from Gannon University.

About Heyl & Patterson Inc.

Founded in 1887 in Pittsburgh, PA, Heyl & Patterson Inc. provides high quality, custom engineered solutions for thermal processing and bulk material handling applications around the globe. Thermal processing products and services include some of the largest high-efficiency dryers and coolers in the world, as well as calciners, bulk material processors and pilot plant laboratory testing systems. Heyl & Patterson is the innovator the rotary railcar dumper and offers a wide range of bulk material handling equipment, including railcar and barge movers and barge unloaders.

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Cimbria sets up its own office in Spain

The Iberian peninsula has been an interesting market for Cimbria for many years, not least Spain where, for decades, many customers in the agricultural sector have purchased Cimbria technology. In spite of the general economic challenges of recent years, investments in agriculture have not been affected to the same degree as in other areas, and the Spanish food industry therefore remains well-equipped to face the future.

Farming in the area has always been — and continues to be — characterized by major regional differences in both structural and climatic conditions and variations that enable the production of a large range of agricultural products such as rice, vegetables, sunflower, olives, wine and fruit, as well as the more traditional products such as grain and maize, etc.

Daily management: Ignacio L Pons Llopis and José Sancho (Pepe) González.

Cimbria Ibérica office in Valencia, Spain.

On 1 October 2014, Cimbria set up a liaison office in Spain. The office — Cimbria Ibérica — is situated in Valencia, and day-to-day management is the responsibility of José Sancho (Pepe) González and Ignacio L Pons Llopis. Thanks to many years of experience, both men are very well-known faces in the industry, and with their extensive knowledge of Cimbria's products and process technologies, they are in a good position to provide expert advice to our current and future customers in Spain and Portugal.

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ORTS: bright future ahead

German grab manufacturer enjoys market resurgence

ORTS, which has been in business for over 40 years, has defied a disappointing 2013 and enjoyed a much better year in 2014. The company's grabs — electro-hydraulic, radio-controlled diesel-hydraulic, and mechanical rope — have been produced and delivered to a range of customers in countries around the world.

Many new-build bulk carriers in China and Japan have been fitted with ORTS' electro-hydraulic grabs on board.

Other customers were located in Scandinavia, Germany, Greece, Hungary, Australia, South Africa and America.

ORTS GmbH has already received many order for 2015, and has even received orders for 2016 already.

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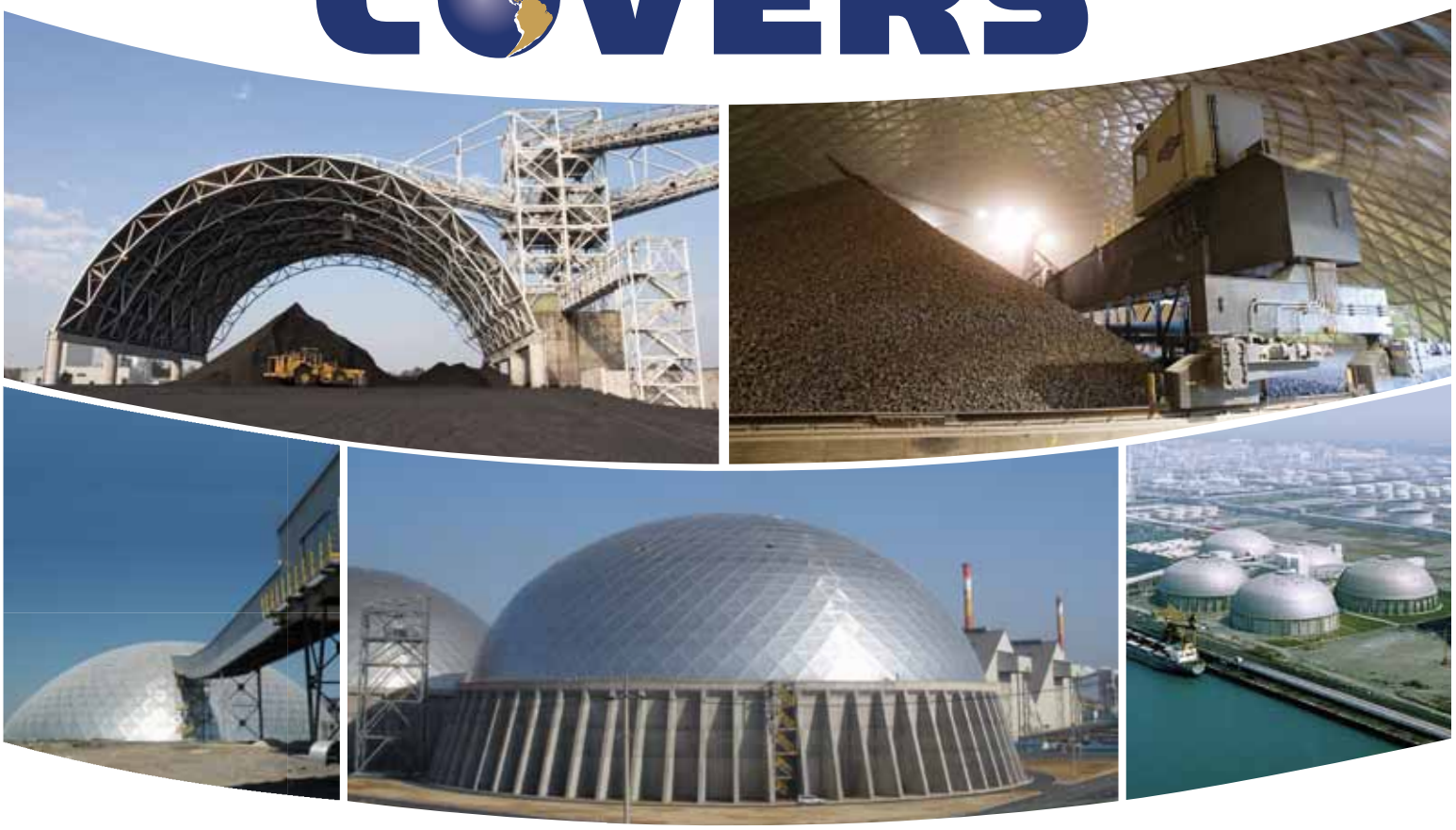

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Top quality grabs are guaranteed, as all units are designed and built in ORTS' own workshop in Germany.

All of ORTS grabs (diesel-hydraulic, electro-hydraulic and mechanical) are well-known for their efficiency (high discharge rates), reliability and long lifetimes handling millions of tonnes of cargo.

The working life of a grab is around 15 years or more. Therefore, the initial purchase price is not paramount as the years go by. Quality, reliability and efficiency are more important over the year. A cheap grab can soon become a very expensive grab: if a grab needs spare parts soon after it starts operating, or has breakdowns, or takes more time because its clamshells are never really full, this can make it a very expensive choice.

ORTS' customers worldwide know and appreciate the technology that it offers. One of the reasons for this is the fact that ORTS continues to supply spare parts for grabs that are

25–30 years old. The company's very first radio-controlled diesel-hydraulic grab — now 21 years old — is still in operation.

ORTS is also an innovator, and came up with many new ideas and inventions relating to grab technology, such as radio-controlled diesel hydraulics. The concept for radio-controlled diesel-grabs was born over 20 years ago, in ORTS GmbH's technical office.

Therefore ORTS GmbH is the only grab maker in the world with over 20 years of experience in radio-controlled diesel-hydraulic grabs.

ORTS has also designed and built big grabs with dead weights of 50 tonnes, 60 tonnes, 80 tonnes and 115 tonnes.

In addition, ORTS is able to custom-design and manufacture special-use grabs, such as a self-floating oil-salvage grab which can take oil from the water surface after vessel accidents, and load beams for up to 100 tonnes are designed and manufactured.

ORTS also offers a container spreader for containers with dry bulk cargo, which can tip over the container by 45° to empty it in a controlled manner, and on the spot. DCi

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Black Sea testing investment

Increased investment in technology satisfies the testing needs of the Black Sea's grains and oilseed exporters

The Black Sea Region continues to increase its exports of grains and oilseed, to satisfy global food supply demands. In 2013, Russia and Ukraine exported more than 55mt (million metric tonnes) of wheat and corn alone. This figure is expected to rise during the 2014–2015 season, due to very favourable wheat production conditions in Russia, resulting in a large and high-quality crop. Oilseed exports are also growing, as is the local capability to crush and refine oilseeds for vegetable oils. Linked to this is an increase in farming investment, with large farms now emerging that are using the latest production technology, enabling them to drive yields higher year on year.
Recent geopolitical issues in Eastern Ukraine had not affected export activity at the time of writing this article. New developments, however, concerning the price of oil and resulting foreign exchange volatility, have resulted in Russia imposing temporary taxation on wheat exports from 1 February 2015. Volumes exported are expected to reduce temporarily due to this, but long-term growth in exports is fully expected.

At the region's ports, the export terminals also continue to develop, with new capabilities coming on line this year. From a logistical point of view, higher monthly export quantities are possible, which will assist the growing demand and avoid vessel waiting time, thereby increasing the efficiency of cargo movement for all parties. At this time, Russia and Ukraine have adequate terminal capacity to export all available grains and oilseed and an increase in terminal capacity is planned in the Ukrainian Ports of Illychevsk and Yuzhny. In addition, there is also a large transshipment capacity at the exit of the Azov Sea. At the time of writing, the Azov Sea outer anchorage area had 20 types of floating crane transhipping grain from coasters loaded in the shallow draught Azov Sea Ports (eg. Rostov, Yeysk, Azov and Taganrog) on to Panamax-sized vessels. Destinations of the first vessels loaded with new crop grain have been as diverse as Malaysia, Indonesia, Pakistan, Saudi Arabia and Egypt.

The movement of such large volumes of cargo brings an increasing need to monitor quality and safety of the goods. Individual destination buyers have varying requirements and the general trend over recent years has been consumer expectation of ever-higher quality and safer food that is proven free from harmful contaminants.

Government food safety legislation is also developing quickly. Many countries are implementing new requirements to allow the importation of food raw materials. These requirements mean that the goods must be tested to determine whether they contain any harmful or prohibited substances. These include pesticide residues, heavy metals, mycotoxins and genetically modified organisms (GMO). Country-specific requirements also vary, thus creating a rather complicated list of potential testing that is required for each destination country. To provide facilities and capabilities to conduct the many and varied testing needs requires considerable investment in facilities, equipment and human resources.

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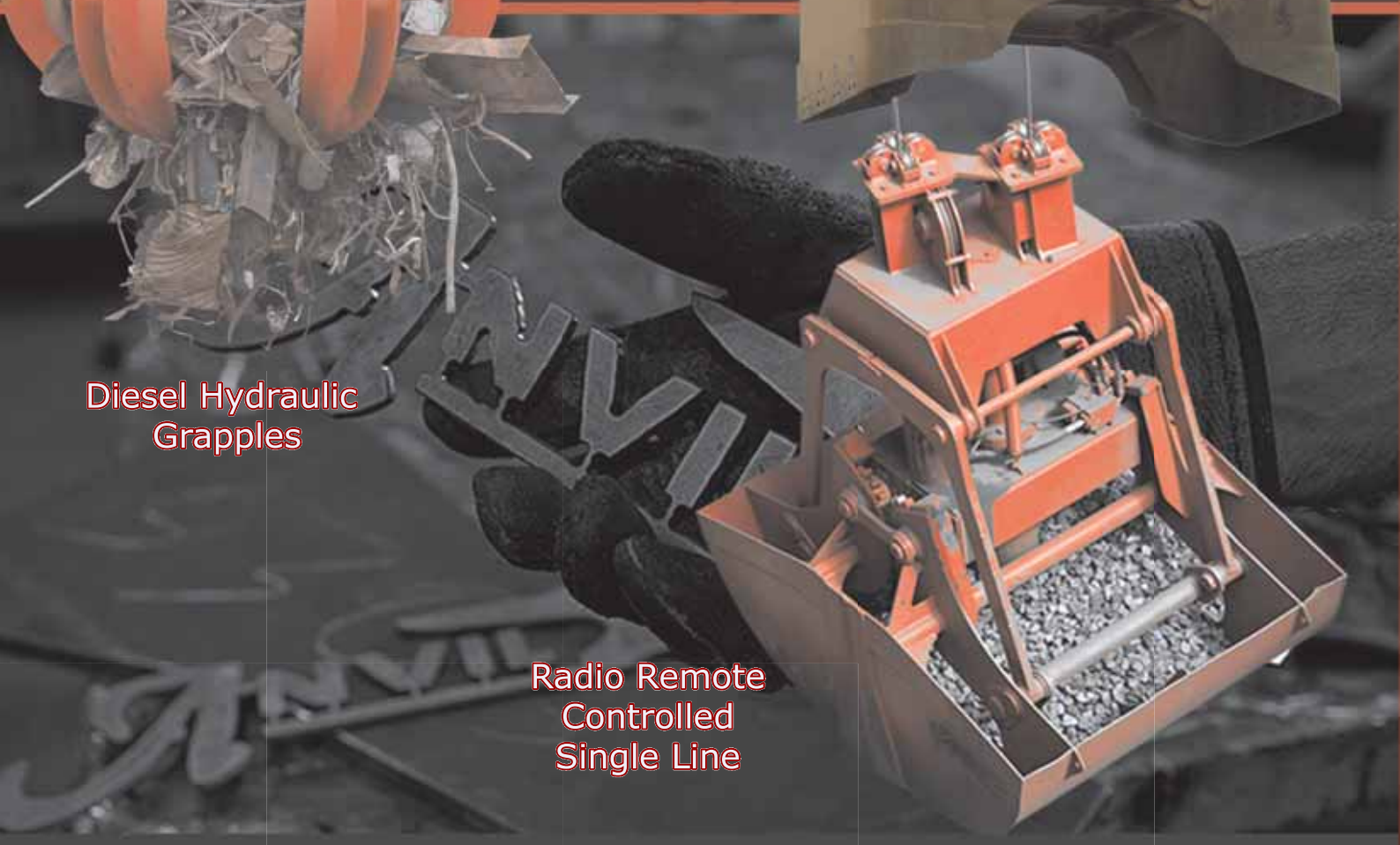

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Investing in facilities and people

Over the last three decades, SGS has been investing in facilities and people to provide testing and inspection services in Russia and Ukraine. Altogether SGS now employs more than 4,000 people across the entire region. The team includes highly qualified engineers, scientists, agronomists, marine experts and specialist technicians.

What has been done this year?

Earlier in 2013, SGS began implementation of a project to increase its capacity and the scope of its testing capabilities in the Black Sea Region. The key laboratory facility, located in Odessa, was a primary focus. As a result of increasing demand form destination countries to identify any GMO presence in cargoes, the decision was made to implement PCR (polymerase chain

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Loading at the OZT Terminal in Odessa.

reaction)-based GMO testing for all products. While Ukrainian authorities do not support the planting of GMO seeds, in recent years it has been noted that the presence of GMO seeds has developed within the local production. This is an increasing concern on rapeseed for example, as a large number of consuming countries implement non-GMO policies. If goods arrive at those countries containing traces of GMO, and therefore not in conformity with their official guidelines, a cargo could be rejected at the port of entry, potentially resulting in severe financial consequences.

In the area of pesticide residue detection, LCMS/MS detection technology has been purchased and commercial activity began in autumn. The long detection list of molecules that are required for complex destinations like Japan and Korea are all covered by this new capability.

Due to the detection of dioxin in some agricultural products in recent years, this testing is also available via SGS Odessa, using Comprehensive two-Dimensional Gas Chromatography with Time-of-Flight Mass Spectrometry.

In the ports, the need for quick delivery of high quality information during loading operations has resulted in demand for faster testing. In 2013, SGS completed implementation and accreditation of satellite laboratories for all the main Russian and Ukrainian ports. Real time quality data can now stream to cargo owners within hours of samples being taken, avoiding out of specification cargo being loaded and improving overall quality.

What's next?

It is clear that the need for complex analytical testing is increasing, which means large investment requirements and professional organizations to deliver such services. The long-term benefits are also very positive, as a safer and more sustainable food supply chain will result.

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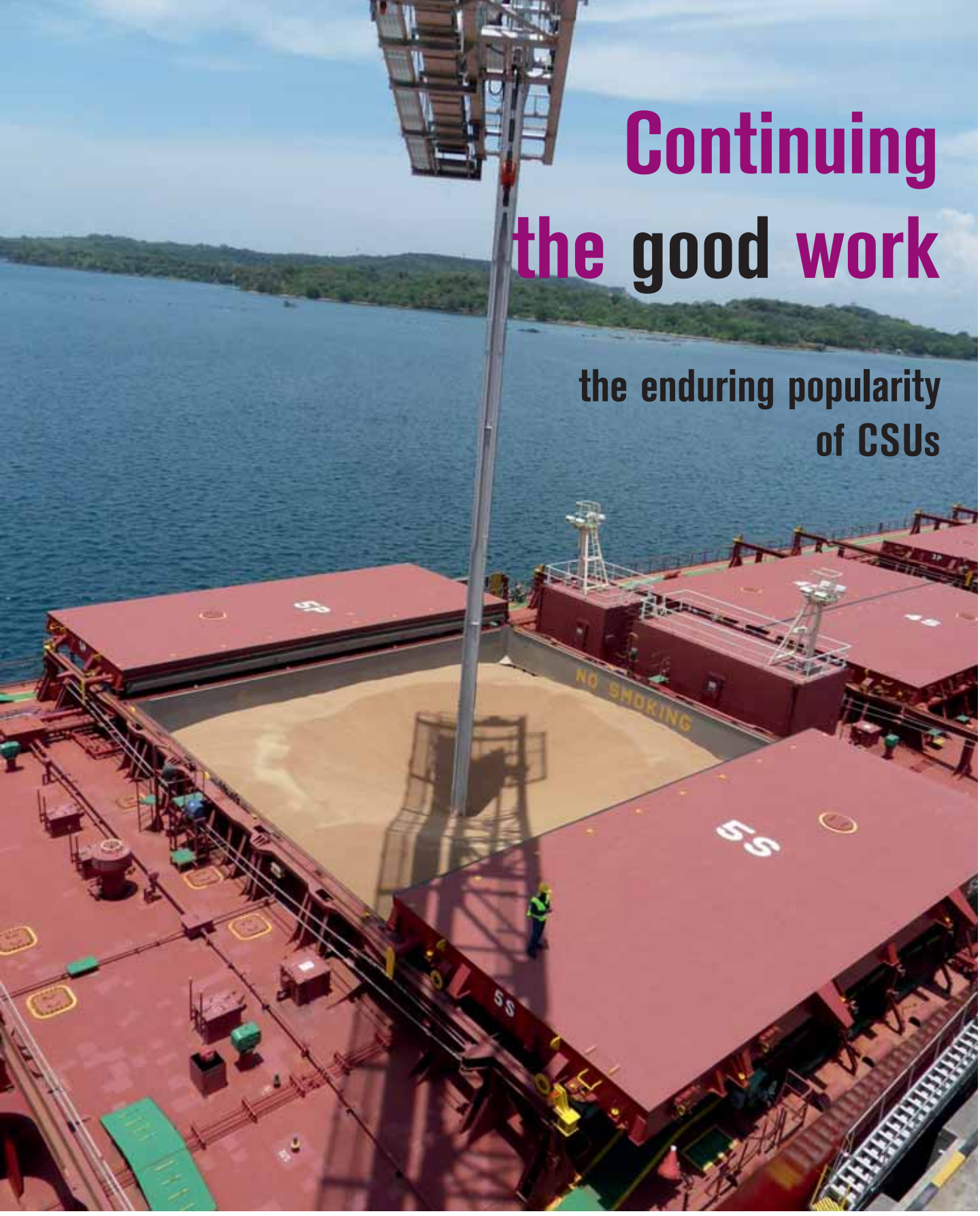

Continuing the good work

the enduring popularity of CSUs

Bühler CSU range includes mechanical and pneumatic unloaders

Buhler AG offers a wide range of products for the gentle and efficient handling and storage of valuable agricultural raw materials such as grains or derivatives. It has long been involved in the design, construction and supply of continuous ship unloaders (CSUs), as well as other bulk handling equipment.

Buhler's product range includes:

- mechanical and pneumatic continuous ship unloaders;
- shiploaders;
- combined systems for loading and unloading;
- silo and storage solutions (steel and concrete silos/flat storage);

In the field of CSUs, Bühler manufactures both mechanical and pneumatic unloaders. The Portalink is its mechanical unloader for seagoing vessels of up to 125,000dwt and has an

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Prima Flour Mills in Sri Lanka installed the Portalino Combi in 2007 on its multipurpose jetty and Portalink 800 in 2012 on its main jetty.

unloading capacity ranging from 300tph (tonnes per hour) to 1,300tph. The Bargolink, also a mechanical unloader, has been specially developed for use with river barges; it has an unloading capacity of 300tph. The Portanova is Bühler's pneumatic unloader, with capacities up to 350tph.

Bühler has extensive experience with CSUs, gained through its large installed base of unloaders and loaders worldwide. Its product range means that it is possible to find the optimum solution for all of its customers, taking into account local demands and conditions.

Hard-to-handle commodities

Bühler's CSUs can be used to handle all free-flowing food products, as well as mealy products such as soya meal. The unloaders are particularly suited to the demands of delicate products.

Bühler has over 150 years of experience in processing and handling food products and has thus developed considerable expertise. Over the years, it has adapted its product portfolios, set new standards, and introduced new technologies to keep it ahead of the competition.

One of the best examples of Bühler's expertise is the company's range of mechanical ship unloaders. At an early stage, Bühler identified that mechanical conveying can be more efficient than pneumatic conveying and results in less product breakage through gentle product handling. Moreover, operating costs are

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Both Bühler CSUs are visible at the Prima Flour Mills facility.

lower than pneumatic CSUs, and the mechanical units are highly efficient due to the easy and auto sink-in function, so this is often an ideal solution for the customer.

The handling and processing of grains can be difficult in operational terms, and this difficulty is exacerbated when you add in the need to carry out these tasks economically. Through its worldwide network of experts, Bühler ensures that customer problems are solved with the greatest care and specified for each problem.

Client base

Most of the clients for Bühler's mechanical CSUs are grain terminals and larger end-users. For example, San Miguel has invested in a Portalink 600 with barge-loading facility, which was

The Portalink 800 in operation on Prima Flour Mills's main jetty.

The Portalink 600 with barge-loading facility acquired by San Miguel.

completed in 2013. The Portalink has a nominal capacity of 600tph for wheat and can handle vessels up to 65,000dwt. Prima Flour Mills in Sri Lanka has installed the Portalino Combi in 2007 on its multipurpose jetty and Portalink 800 in 2012 on its main jetty.

Remaining competitive

Bühler's mechanical unloaders, in particular, are setting industry standards in terms of low energy consumption, high operational efficiency due to easy handling for the operators, and high availability due to reduced maintenance time and low wear and tear. All these factors mean that the units offer a short ROI (return on investment).

In order to remain at the forefront of the market, Bühler is continuously monitoring and reacting to the market, technology, and especially individual customer requirements. Through this Bühler is able to act and develop new solutions for current and future trends, as well as anticipate stricter regulations.

Recent contracts

Contracts that have recently been awarded to Bühler include:

- two midsize Portalinks with capacities of 800tph;
- a second order for a midsize Portalink 800; and
- a midsize Portalink 600 in Asia.

Recent technological developments

After receiving multiple customer requests from around the world, Bühler has developed various service packages for its unloaders and loaders, tailor-made to the specific customer requirements.

One of the new service packages is a complete or part-retrofit of the marine leg, heart of Bühler's mechanical unloaders. With a less than optimal functioning marine leg, not only performance is reduced, but unexpected breakdowns also result in unscheduled and expensive repairs. With the retrofit offered, Bühler will diagnose and intervene ideally before or when interruptions happen, thus reducing risk and or costs.

Another service package which Bühler provides to its customers is an upgrade of the operating system. With an upgrade of the operating system to the latest Bühler standard, not only the outdated and defective hardware is replaced, but a completely new revised operating system is installed. The latest operating system has increasing functionalities such as an easy-to-use touch panel which directly presents error messages. It has an individual selection feature for each motor and sensor, thus saving precious time during operations.

Growing into the future.

Bühler is a specialist and technology partner for plant and equipment and related services for processing basic foods and manufacturing advanced materials. The group is a global market leader in the supply of flour production plants, pasta and chocolate production lines, animal feed manufacturing installations, and aluminium die casting systems.

The core technologies of the group are in the field of mechanical and thermal process engineering. With its expertise and over 150 years of experience, Bühler time and again rolls out unique and innovative solutions for its customers, helping them achieve success in the marketplace. Over the decades, Bühler has come to be acknowledged as a reliable partner, thanks to its distinct commitment to quality and its global presence.

Bühler Group operates in over 140 countries, has a global payroll of over 10,000, and generated sales revenues of CHF 2,322 million in fiscal 2013.

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Sumitomo helps to plug the gap left by closed nuclear power plants in Japan

The Great East Japan Earthquake, which occurred on 11 March 2011, has had a profound influence on electric power generation in Japan. It is a well-known fact that the Japanese government closed down all nuclear power plants after the earthquake, resulting in severe electricity shortages. In this situation, interest in coal-fired power is rising, as a substitute for nuclear power.

However, there are still some obstacles to constructing coal-fired plants. First, it will take a long time to construct power plants of the same size as the existing ones. Second, significant investments are required for such plants. However, on the other hand, small to medium-sized power plants will not require such time or investments, compared to large-scale plants. The recent trend is to have independent power producers build new plants, and their plans are for small and medium sizes.

There is a difference in material handling systems working at power plants, between large-sized and small to medium-sized plants. The large-sized power plants prefer to have high capacity ship unloaders, especially of the continuous bucket elevator type, with rated capacities in the 2,000tph (tonnes per hour) to 2,500tph range, as such plants are usually supplied by larger vessels to satisfy their demand for coal. However, the small to medium-sized power plants do not require such high capacities and tend to choose other types of unloaders. Sumitomo Heavy Industries Material Handling Systems Co., Ltd., has a number of types of CSU (continuous ship unloader), besides the bucket elevator type, namely the twin belt type and vertical screw type, as well as grab unloaders (level luffing type and bridge type). With this comprehensive line-up of unloaders, the company is able to cater to the varied needs of any power plant.

Sumitomo has an excellent delivery record of smaller unloaders, notably the two 700tph twin belt type unloader delivered in 2001, a 400tph vertical screw type unloader delivered in 2007, and a 900tph level luffing type grab unloader (2010), all of which are working at thermal power generating plants.

Focusing on markets outside Japan, there are many plans for small to medium-sized power plants especially in South East Asia. These also need coal unloaders which suit their particular requirements, and Sumitomo has the line-up to propose its most suitable and efficient type for their application.

As a result of Sumitomo's efforts in meeting this demand, it delivered a 1,200tph bucket elevator type CSU, specifically suited for unloading coal barges for PT. Semen Tonasa, which is located in Sulawesi, Indonesia in June 2014. Sumitomo collaborated with local companies to deliver this unit which is now operating successfully.

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Eco-coal unloading technology from ThyssenKrupp Resource Technologies

ThyssenKrupp Resource Technologies (TKRT, formerly ThyssenKrupp Fördertechnik), one of the world's leading companies in the field of bulk materials handling equipment and systems, is active in the design, manufacture, installation and commissioning of complete materials handling equipment and systems, as well as individual machines, such as stackers, reclaimers, shiploaders, ship unloaders and wagon tipplers, crushing and screening equipment and opencast mining plant and systems.

Recently, TKRT's Bulk Materials Handling Business Unit based at Rohrbach in Germany has experienced considerable success with the award of new contracts and the construction of individual machines for continuous ship unloading facilities worldwide. Some examples of machines recently installed or currently in design or under construction as well as the new development of continuous ship unloading technology are described in the following article.

Environmentally friendly coal unloading for PKT Bontang boiler plant, Indonesia

In February 2010, TKRT received an order for the design and supply of a coal handling plant; including a continuous barge unloader (CBU), a circular stacker and reclaimer system and the pertaining belt conveyor system. The order was placed by PT. Inti Karya Persada Tehnik (IKPT) on behalf of PUPUK KALTIM (PKT), a key player in the fertilizer industry of Indonesia for the Boiler Plant of Bontang Fertilizer Complex in Kalimantan, Borneo.

Already at the stage of concept design of the coal handling system, the technical development in the field of ship unloading, coal storage and conveying as well as the following environmental and economic aspects were taken into consideration:

- increasingly strict regulations in the field of environmental protection;
- high-performance unloading and handling under different geometrical and meteorological conditions;
- high operational efficiency, resulting in cost savings for ship berthing time and operation of the handling plant; and
- low maintenance and spare parts costs

Construction site of the recently developed CBU for PKT Bontang coal boiler plant.

Based on this, the following equipment was selected by the end-user and the EPC (engineering, procurement, construction) contractor favouring high efficiency, environmental protection and operation safety and effectiveness:

- chain bucket elevator-type continuous barge unloader (CBU) instead of grab type barge unloader;
- fully covered circular storage with circular stacker and side scraper reclaimer, with full automatic operation;
- covered belt conveyor system for environmental and weather protection.

For this project TKF developed a new generation of CBU which will fulfill all requirements in respect of unloading efficiency, environmental protection and low operation and maintenance cost.

The CBU will be designed for a design unloading rate of 700tph (tonnes per hour) of coal from barges ranging from 7,000dwt to 10,000dwt. The CBU will be of heavy duty design and construction to operate for a continuous period of 18 hours per day and an annual period of 330 days. The machine consists of a rigid supporting frame construction on wheels, which is able to travel along the length of the barge. Reclaiming is done by a chain bucket elevator, hinged onto the slewing and luffing boom. While reclaiming in either longitudinal direction of the barge, the bucket elevator can be positioned sideways of the boom against the coal pile on the barge for effective reclaiming. From the bucket elevators the coal is transferred directly to the boom conveyor, which in turn feeds it to the portal conveyor. The operation is controlled from the operator's cabin or from the pier by remote control. Digging depth, speed of the reclaimer and /or traversing is controlled automatically to achieve the required unloading capacity. The reclaiming is achieved in semi-automatic mode, allowing manual positioning and/or operating.

TKF's CBU in operation at the Bontang site in Indonesia.

TKRT's previous references for continuous barge unloaders and their excellent track record, including the recent milestone of a high capacity 4,000tph CBU to Bontang Coal Terminal, were deciding factors in the contract being awarded to TKF. This special design of the continuous barge unloader is the first of its kind in Indonesia, although all critical components have been proven in continuous barge unloaders previously supplied by TKF. In all, TKF has already supplied more than 50 continuous ship/barge unloaders, mostly to clients in Indonesia, Korea, China, Taiwan, the Philippines, Malaysia, USA, Great Britain, Spain and Germany.

Another continuous barge unloader for Indonesia

Two-thousand-and-twelve is the year for Indonesian CBU. Besides the installation of a CBU at Bontang, another order was received for a 3,000tph CBU for coal, destined for Kalimantan in Borneo. It will be the third CBU operating in Indonesia, designed and built by TKF.

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A similar CBU in operation at Bontang Coal Terminal, Indonesia.

The Arutmin North Pulau Laut Coal Terminal, PT Nusa Tambang Pratama, a company of the well-known Bakrie Group, recently placed the order with TKF. A decisive factor for this decision was, amongst others, TKF's excellent track record of more than 50 continuous ship and barge unloaders in operation worldwide, some of which have meanwhile been in service for more than 25 years.

This latest CBU is designed for unloading 8,000dwt to 10,000dwt open coal barges at a rate of 3,000tph or 3,500m³/h. TKF received in 2008 the order for a CBU with an unloading capacity of 4,000tph. This unloader, operated by PT Indominco Mandiri, has now been successfully in operation at Bontang, also in Kalimantan, since beginning of 2010. Seeing the satisfactory performance of this machine in operation was perhaps what finally convinced the client that the TKF type of CBU design was the right choice. However, not only their high unloading capacity, travelling mobility, low maintenance and installed power and energy consumption, (compared for example to the screw type ship unloader or a conventional grab unloader), but also the efficiency of emptying the hull right down to the bottom of the barges without the use of a Bobcat, and thus making 'sweeping' of the barges practically superfluous, are a special advantage of the TKF type of continuous barge unloader.

TKRT, Business Unit Materials Handling, better known in former days as PHB or PWH, first developed the bucket elevator type of continuous ship unloader (CSU) at the beginning of the 1970s. Its first CSU, designed to unload asbestos, was commissioned in 1974. It took some years before customers, who until then had been working with conventional grab type ship unloaders, saw the advantages of a CSU compared with the conventional grab type used mostly in those days. Since then however, the TKF type of CSU has made its mark in the field of dry bulk ship unloading. Today TKF CSUs are designed for handling such products as coal, iron ore, phosphate, urea, sand unloading bulk carriers of up to 250,000dwt. In recent years, in particular in countries which depend heavily on importing their fossil fuels, coal-fired power plants are invariably built directly at deep water sea locations with the convenience of having their own coal unloading terminal facilities. Two such coal-fired power plants for example, are the Tanjung Bin and Jimah power stations in Malaysia. Here four TKF CSUs are in operation. Another prime example is the Hou Shi Power Plant in Fujian Province, P.R.of China, where three TKF continuous ship unloaders are in operation. However, also large coal import terminals, for example in China, have in the last ten years turned more and more to using CSUs. Until today, TKF has already supplied in total 15 CSUs to China. In South Korea there are already nine TKF designed CSUs in operation in coal fired power plants.

Follow-up order from Guangzhou Zhujiang power plant, China

Ship unloaders supplied by TKF working at Zhujiang power plant for 20 years.

Back in 1994, the new power plant in Guangzhou City, Zhujiang power plant received TKF's ship unloaders for its coal terminal


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TKF's three CSUs, similar to those to be installed at Zhujiang, in operation at Huayang Power Plant, China.

and put into operation. Since then these ship unloaders have been operating successfully to serve the power plant demand on coals for 3 × 600MW blocks and transshipment of coals for the region. An annual turnover of 6–8 millions tonnes is achieved by these unloaders.

With the increase of power consumptions in this region, the power plant started the expansion project of Phase II for the other 1,000MW block. Through an international tender TKF again won the new order for the two further ship unloaders, and this time chain bucket elevator continuous ship unloader.

The contract was signed in June 2012 for the supply and installation of two CSUs. These unloaders will be designed for an unloading rate of 1,500–1,650tph and ship sizes up to 70,000dwt, and in the future for 100,000dwt representing outstanding success of TKF in China by covering >75% of market share.

For TKF, this follow-up order not only means being awarded a further order, but also represents continuity with respect to design, supply, construction and management and demonstrates the client's appreciation of and satisfaction with TKF's performance to date.

The delivery to site and commissioning of the new CSU took place at the end of 2013, with commercial operations beginning in February 2014.

The decision of Zhujiang Power Plant to choose TKF as supplier for all of their important ship unloaders has been made with the confidences in the TKF's advanced technology, capability of execution of large scale projects and first-class technical service, as one of the decision makers said, the choice went in favour to TKF after accurate comparisons of several competitors on the evidence of:

- worldwide and extensive experience in the development of coal ship unloader technology;
- excellent performance of CSU already built;
- high availability and long service lifetime without intensive repairs;
- reliable technical services during construction, commissioning and operation period; and
- good relationship with Chinese partners for manufacturing and erection

With this contract, TKRT, one of the world's leading designers and manufacturers of CSU's, has once again contributed to the development of China's coal ports and power plants among with other equipment of more than 60 machines for car dumpers, ship unloaders, shiploaders, stacker-reclaimers, etc.

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New Siwertell mobile unloader serves Kuwaiti construction industry

Siwertell, part of Cargotec, has announced the successful delivery, commissioning and recent entry into operations of a new mobile Siwertell unloader for Kuwait-based Acico Construction Co. It was ordered in June to help meet the region's growing cement demands and is now operational in Kuwait's second largest port, Shuaiba, located south of Kuwait City.

The trailer-based, diesel-powered Siwertell 5 000 S road mobile unloader is fitted with dust filters and a double bellows system for uninterrupted operations. It was built in Sweden and is now unloading cement at a rated capacity of 300tph (tonnes per hour).

The Siwertell road-mobile unloader was originally developed for handling cement, although it can comfortably handle a wide variety of dry bulk materials, explains Jörgen Ojeda, Director, Mobile Unloaders, Siwertell. "Siwertell is considered to be one the leading manufacturers of mobile unloading systems, offering the highest standards of reliability and sustainability, along with the lowest environmental impact possible for cement operations.

"Previously, Acico has enjoyed very positive experiences operating Siwertell mobile unloaders belonging to third parties. This was an important factor in helping the company to conclude that it would like to own and operate its own unit," he adds.

"Siwertell's reputation for delivering reliable systems often makes it the preferred choice. They understand that, in the long run, a low priced system could prove to be more expensive as a result of longer downtime, high maintenance costs and a substantial need for spare parts to keep the system up and running."

ACICO Construction, part of ACICO Industries Company, was founded in 1990 and has experienced sustained and steady growth, says the company. In 2012, it won the Arabian Business Magazine award for 'Green Building Company of the Year', highlighting the company's aim for good environmental credentials.

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 alumina, biomass, cement, coal, fertilizers, grain and sulphur. Siwertell's product portfolio includes ship unloaders, mobile ship unloaders, ship loaders, conveying systems and complete bulk terminal solutions, all of which are designed to ensure environmentally-friendly and efficient cargo operations.




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Crane to PCSU:

Part 1

Cranes are widely used in bulk handling, and for many products are the best way to unload vessels. This is not the case, however, when unloading grain.

Despite having several cranes that could be used for unloading, Minmetal in Constanta, Romania, ordered a Multiport M400 400tph (tonnes per hour) barge unloader from NEUERO. This pneumatic CSU (PCSU) uses considerably more power, but the higher power consumption is compensated for by the higher efficiency of the PCSU.

The equivalent crane offering unloading capacities of 400tph has 30% average capacity and the PCSU 60%. The spillage caused by grabs not only causes a product quality loss, but also requires lot of cleaning of the site, to say nothing of dust emissions.

Minmetal's grab crane.

Crane to PCSU:
Part 2

The company Senalia in France is replacing fixed crane with a pneumatic ship unloader. It is doing so despite knowing about the extra power costs, because of the relative inefficiency of grab unloaders when compared with pneumatic CSUs. The new generation of PCSUs is greatly improved, and offers low dust emissions, extremely quiet operation, no spillage, and efficiency in all phases, especially clean-up.

The Marine Harvester PCSU.

Conclusion

The grab is an ideal system for difficult products that cannot be handled with a PCSU. For grain, the efficiency, easy and safe operation, highest environmental protection all make the PCSU the first choice. New developments in PCSUs make them attractive for new installations and to upgrade existing ones with the newest environmental protection standards.

PCSU for fishmeal and other products

NEUERO supplied a new PCSU for Marine Harvester in Norway. The equipment was chosen instead of a crane or other mechanical solutions like chain and screw. Capacities of 500m³/h and requirements were fulfilled. The equipment has a rotary feeder that introduces into the nozzle therefore used for no free flowing materials.

Global client oriented, flexible and cost effective

NEUERO uses state-of-the-art technology to ensure the success of all its projects.

The company has its own 6,550m² manufacturing facility plus a new logistical area which was added at the beginning of 2013 in Melle, Germany. Equipped with its own machining shop, painting shop and laboratory, NEUERO is in a position to provide continuous engineering solutions to its customers.

NEUERO has worldwide experiences and references.

Using expert know how for upgrades, retrofits or complete new installations, NEUERO's goal is always the same — solving tasks effectively, on budget and on time.

The result is quality solution engineering that respects and protects the environmental, health and safety (HSE) requirements of its customers' companies and their communities.

NEUERO is an ISO 9001 certified company and received the OHSAS 18001 certification in 2013.

NEUERO works with well-known sub-suppliers like SEW, Atlas Copco, Danfoss, Rothe Erde and others.

NEUERO specializes in the pneumatic and mechanical unloading of vessels with unloading capacities from 20tph (tonnes per hour) to 1,200tph and mechanical ship loaders for different commodities with capacities up to 3,000tph.

Latest developments include direct drives for its turbo fans. Furthermore, it is continually working to reduce the power consumption of its pneumatic conveying systems with the support of its frequency converter technology, by increasing the efficiency of pneumatic conveying systems and the optimization of the material flow in the conveying line.

Besides projects within the food divisions, NEUERO is also active in the non-food i.e. pneumatic unloaders for alumina and petcoke and ship loaders for minerals and fertilizers.

Marine Harvester's PCSU in operation.

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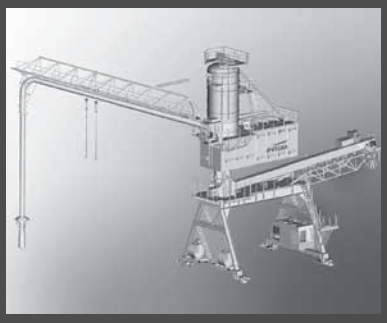

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Road-mobile Siwertell unloader evaluated as best solution for Gambian operator

In September last year Siwertell, part of Cargotec, received and delivered an order for a road mobile unloader for Jah Multi Industrial Ltd, based in Banjul, Gambia. Following its delivery from Sweden, the unit was commissioned and taken into commercial operation at Banjul in November.

The trailer-based, diesel-powered, Siwertell 10 000 S road-mobile unloader with double bellows system and dust filter will be used to unload cement at a rate of 300tph (tonnes per hour).

"Our customer investigated the market very carefully and came to the conclusion that a mechanical unloading system would best suit its needs," says Jörgen Ojeda, Director, Mobile unloaders, Siwertell.

"After evaluating the different products available from a number of manufactures, Jah Multi concluded that a Siwertell unit would provide the best solution. This decision was based on a number of references and an appreciation of our long and extensive experience in the mobile unloader market."

Siwertell is experiencing strong, sustained demand for its road mobile unloaders, particularly for handling cement. "The cement market is quite volatile and demand may arise in areas which, due to lack of infrastructure and functioning logistics, can pose serious obstacles," explains Ojeda. "In such areas our mobile unloaders are usually the first to 'hit the ground running' because they require almost no infrastructure to start up a cement import operation."

Originally developed for cement, Siwertell's range of totally-enclosed road mobile unloaders offers clean, reliable, efficient unloading operations for cement and many other dry bulk commodities.

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Martin Slider Cradles

reducing belt spillage and wear

Martin Engineering, a global provider of bulk material handling technology, has introduced two conveyor system components designed to mitigate expensive spillage and belt wear issues at material transfer points. The EVO® Slider Cradle and the Martin® Slider Cradle both support the belt and prevent spillage due to belt edge sag. Located under the skirt board in the chute box after the impact cradle, the units utilize 'double-life' slider bars, which offer a superior seal with low friction. The result is a flat and stable belt surface throughout the settling zone, reducing fugitive material and extending belt health.

"Transfer points can be prone to spillage as the conveyed material lands on the receiving conveyor," explained Daniel Marshall, product engineer at the USA business unit. "Once the belt leaves the impact cradle, it can sag while the material is still settling. This compromises the skirt seal, allowing dust and fines to escape, while creating pinch points where material can get caught and gouge the belt."

Marshall said that belt health is a big concern for operators, as edge wear and sagging contribute to misalignment and belt damage, which can also become a potential workplace safety hazard. "Cradles and impact beds are the foundation of our material handling strategy," he continued. "Not only are they on the bottom and everything is built on them, but they offer the flat surface to seal against, which is critical in preventing spillage and dust."

The Martin Engineering slider cradles are designed for conveyor systems with speeds up to 700fpm (3.5m/sec) and belts lengths of more than 50 feet (15.2m). Typically 48 inches (1,220mm) long, the units are also available in custom sizes for special applications.

The belt glides over low-friction 62 durometer (shore D) UHMW polyethylene sidebars featuring the company's unique 'box' design and low drive-power consumption. They display minimal heat buildup during operation and can handle service temperatures of –20° to 140°F (–29° to 60°C). The shape allows operators to turn the bars over for a second service life without disassembly of cradle components.

The bars are available in UHMW plastic or stainless steel. "Stainless steel would be suitable for extremely high speeds, or when the conveyed material produces a chemical reaction with UHMW materials," Marshall added. "The UHMW plastic delivers all the advantages of a firm foundation, without the added power consumption of steel components."

Centre rollers help reduce friction and energy consumption, suggested for applications where capacity is over 450tph (tonnes per hour). The idlers are optional on single bar Martin Slider Cradle designs; they are standard on all other units.

The EVO Slider Cradle is attached to its frame on a sliding track, with edge support bars and centre support rollers that slide into position, making it quicker and easier to install and maintain. Manufactured to accommodate belt width sizes of 36 inches (915mm) for single bar models and 42–60 inches (1,066–1,524mm) for double bar designs, operators simply pull the cradle away from the frame to perform maintenance on

idlers and sidebars. It can be ordered to suit any CEMA standard trough angle.

The Martin Slider Cradle features adjustable sidebars to fit any CEMA standard troughing angle, eliminating pinch points where material gets entrapped. The unit is available in sizes ranging from 18–72 inches (457–1,829 mm). Easily serviced with hand tools, a single worker can adjust and replace components quickly during scheduled downtime.

"Our customers who have chosen to install slider cradles tell us that they notice a considerable reduction in fugitive material around transfer points," Marshall concluded. "They have seen less spillage and spent less labor time for cleanup around moving conveyor equipment, helping to reduce the chance of workplace injuries."

Founded in 1944, Martin Engineering is a major force in making bulk materials handling cleaner, safer and more productive. The company supplies flow aids and conveyor products around the world for a wide variety of bulk material applications, including coal, cement/clinker, rock/aggregate, biomass, grain, pharmaceuticals, food and other materials. The firm is headquartered in Neponset, IL, offering manufacturing, sales and service from factory-owned business units in Brazil, China, France, Germany, Indonesia, Mexico, South Africa, Turkey, India and the UK, and under exclusive licence with ESS Australia. DCi

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Bemerkungen:	12 Tonnen Hilfswinde

Design

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Products:	Alumina
Dimensions:	28 m Boom
Type:	on Rails
Ship size:	Handymax
Remarks:	12 ton Auxiliary Winch

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