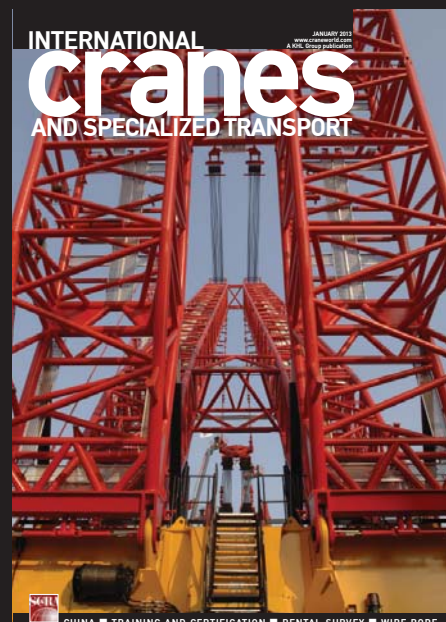


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BUSINESS DEVELOPMENT

DIRECTOR
Peter Watkinson



COMMENT



Another new year and, we hope, a new round of opportunities. Looking ahead, there will be much emphasis on government stimulus packages having a positive and increasing effect to improve business. Let's hope they work.

Already highlighted this year, however, is preventable incidents. For many crane users it will be worth learning more about wind turbine erection and the dangers of wind effects on loads – which are, by and large, designed to catch the wind. Another area is to reduce straightforward overloads. News reports as this issue went to press suggested that a crane in New York collapsed because it was overloaded with around twice its rated capacity.

It ought to be needless to say that it is unacceptable for this to happen anywhere in the world, let alone in such a high profile city. If it continues then it will be no surprise to see imposition of a potentially unpopular system that means restrictions and expense. Come on people, let's get it together before someone from outside starts imposing.

Emphasis on safety, among other things, is growing in China, the world's largest crane market. Return on investment is also becoming more important, with higher product quality, longer service life and better service backup. As Eric Etchart, Manitowoc president, said in China late last year, "Selling the first crane is easy but selling the second one depends on how you supported the first." For more on the Chinese crane market see page 15.

Of particular interest is the fact that, while copying remains rife, there are strong signs of innovation from Chinese manufacturers. Many things can be learned from others but, by definition, innovation is new ideas or, at least, a new combination of existing ones. Watch out as it rapidly develops and gathers momentum in China. As elsewhere in many areas of modern life, speed is of the essence, in terms of quick response times for maintenance and other customer requirements, including time to market with new products that offer the best solutions for customer needs.

ALEX DAHM

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CRANE PORTFOLIO

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ON THE COVER



The Sany SCC86000A lattice boom crawler crane took the lead on capacity at the 2012 Bauma China show in November. See page 15 for more on the latest from China.

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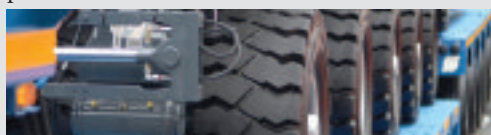
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The Europeans have been working on crane design and lift safety standards EN 13000 since 2004 and the subject was readdressed at the November 2012 meeting of the International Crane Stakeholders Assembly (ICSA) held in Shanghai, China. *Dave Sturtevant* reports

HIGHLIGHTS

■ Lunda Construction of Black River Falls in the USA has been fined and cited for violating safety standards after a fatal crane accident. The accident happened on 5 July 2012 along Highway 41's Lake Butte des Morts Bridge in Oshkosh and resulted in the death of 35-year-old truck driver Joseph Bidler of Green Bay. The crane's operator was also seriously injured. Lunda Construction was fined by the Occupational Safety and Health Administration for another five violations, totalling US\$105,000. Choice Construction of Menominee Falls was also cited for four violations. OSHA has placed Lunda Construction in its Severe Violator Enforcement Program.

■ Crane manufacturer Manitowoc has opened a new contact centre in Sydney to better support customers in Australasia. The centre is staffed by Manitowoc engineers and trained technicians who provide on-site support and training, dispatch parts and provide technical assistance, the company said. The centre will be supported by offices in Brisbane, Melbourne and other international Crane Care support centres. The service is free and will offer customer support for Manitowoc dealers and customers 24/7, the company said.

■ Eight crawler cranes from the Liebherr plant in Nenzing have been acquired by crane rental company Ejar Cranes & Equipment in the United Arab Emirates. The company now owns an additional two LR 1300, six LR 1280 and two LTM 1130-5.1 mobile cranes. A large order for mainly all terrain cranes has also been placed for delivery in 2013, the company said. The cranes will be used primarily in the energy sector, such as oil and gas production, as well as petrochemicals and infrastructure development.

TNT acquires Southway Crane & Rigging

US crane rental company TNT Crane & Rigging has acquired the Southway Crane & Rigging Companies, headquartered in Macon, Georgia, sister magazine *American Cranes & Transport* learned exclusively. Southway is a full-service mobile crane provider with eight branches serving the Southeastern USA, including Georgia, South Carolina, Northern Florida and Tennessee.

With the addition of Southway, TNT has expanded its geographic operations from mainly Texas, Louisiana and Oklahoma to a crane and rigging company with operations from West Texas to the Atlantic seaboard, the company said. TNT now owns approximately 380 cranes and offers full service capabilities using its portfolio of truck mounted, all terrain, rough terrain, crawler, mobile

gantries and rigging solutions, in lifting capacities from three tons up to 1,330 tons.

The company said that it has further diversified its client base with the acquisition of Southway and the presence in the power, pulp and paper, telecom and mining sectors. TNT is a strong player in such sectors as refining, petrochemical, oil and gas, wind maintenance and general commercial construction.

"We are extremely excited to bring together two of the best crane companies in the business," said Michael Appling, TNT president and CEO. "This combination puts us in a stronger and more competitive position from numerous perspectives. We will achieve greater industry and geographic diversification which greatly mitigates our overall business and concentration

risk. Our combined fleets and capabilities, strong customer relationships and deep operational experience provide an excellent runway for strategic growth through maximising utilisation, penetrating new contiguous markets and taking advantage of pull through customer relationships in new geographies."

Appling said that both TNT and Southway work hard to be industry leaders in safety and operational excellence and this combination will strengthen their reputation and market position.

"We welcome the Southway employees into the TNT family and we enthusiastically look forward to building and growing a great company together," he said.

For a longer version of this story please visit IC at: www.khl.com

New generation offshore

The increasing demand for high performance cranes with a heavy lift capacity in the offshore industry has been met by the introduction of the Spacelift MC 35000 DLS.

The Spacelift MC 35000 DLS, developed by Zwagerman International, has a mobile marine crane with a 1,500 tonne lifting capacity. Mounted on a pedestal foundation with a self-supporting foot frame, the heavy lift crane can be positioned on the deck of a barge or vessel.

The dynamic load system (DLS) dynamically enhances the load capacity of the crane. Four cylinders on the back of the crane are placed with bogies on an 18 metre diameter ring. The cylinders pull when a load is lifted and push when the crane is stationary to

balance the counterweight. The capacity of the DLS is 1,000 tonnes and the counterweight is 450 tonnes. Together with the base structure of the crane this generates enough lifting moment for heavy lifts up to 1,500 tonnes.

With the universal base and the heavy duty double boom of 63 to 75 m, the maximum load moment of the crane can reach up to 21,000 tonne-metres, or 1,080 tonnes at a working radius of 20.5 metres. The 1,500 tonne main hoist is ideal for the installation of offshore wind foundations, de-commissioning or salvage of shipwrecks, the company said. The double boom can easily be changed to a 97 m or even 124 m long single boom.

The Spacelift MC 35000 DLS is installed on the



The Spacelift MC 35000 DLS is a mobile marine crane with a 1,500 tonne lifting capacity

Conquest MB I, a vessel owned by Conquest Offshore, and is the first heavy lift offshore crane in the world built to this design, the company claimed.

IC WELCOMES NEW ASSISTANT EDITOR

International Cranes and Specialized Transport magazine welcomed Laura Hatton as assistant editor at the start of the New Year. After studying English at university and then gaining several years experience as a reporter, Laura is now looking forward to writing about cranes and specialized transport, a subject she is passionate about. In her spare time Laura spends many weekends learning about car mechanics and working on various car projects. Laura is also interested in aviation and military subjects.



Ainscough sold

Bradley Hall Holdings Ltd, parent company of Ainscough Crane Hire in the UK, has been sold for an undisclosed sum. The new joint owners of the UK's largest crane rental company are Goldman Sachs and TPG.

Ainscough's current owner is investment group Cavendish Square Partners LP, a Lloyds and Collier Capital joint venture company. Lloyds has been the largest debt provider to the group and is understood to have agreed the sale of a larger portfolio of companies, one of which is the crane rental company.

Neil Partridge, Ainscough managing director, told *IC*, "This will be good for Ainscough. Goldman Sachs and TPG are extremely resourceful and they will encourage our strategic thinking to further develop Ainscough and grow the business."

The country's largest mobile crane rental company is ranked 28th in the 2012 *International Cranes and Specialized Transport* magazine *IC50* listing of the world's largest crane-owning companies. As a national operation it has more than 450 wheeled mobile cranes and five crawlers operating from 28 depots.

Revenue for the company's full financial year to the end of May 2011 was £97.5 million and, for the year to the end of May 2012 it was virtually the same at £96.5 million. Partridge forecasts a rise for 2013.

Looking ahead, "It should be business as usual," Partridge continued, "We have been extremely busy almost since the start of our current financial year in June. For the last couple of months utilisation has been around 85% and we see a 93% maximum as a real possibility."

The trading entities of Bradley Hall Holdings Ltd are Ainscough Crane Hire, Ainscough Heavy Cranes Division, James Jack Lifting Services and Ainscough Wind Energy Services.

For more on this story see www.khl.com

SANY LAUNCHES 550 TON CRAWLER CRANE

Crane manufacturer Sany America has launched a 550 US ton capacity crawler crane.

According to the manufacturer, the SCC8500 is ideally suited for construction of wind energy towers, fossil fuel plants, nuclear facilities, petrochemical installations and infrastructure projects.

The aim was to produce a machine to fill a niche between existing machine sizes. "The 400-ton-class (363 tonne) machines are too small to handle bigger nacelles in wind construction, and the 600-ton (544 tonne) cranes require a back mast and luffing jib to make these lifts. The SCC8500 is the perfect solution," said John Lanning, global director of research and development for Sany crawler cranes.

The SCC8500 offers attachments and options, including fixed jib, luffing jib and the Sany UltraLift package. UltraLift includes a second counterweight tray with hanging brackets and 36 upper side blocks for 868,621 pounds (394,000 kg) of counterweight.

The SCC8500 has 10 configurations for main boom, fixed jib and luffing jib. Maximum main boom length is 354.3 feet (108 metres) on the basic machine and 393.7 feet (121.1 m) with the UltraLift configuration. The fixed jib has a maximum length of 137.8 feet (42 m) in both basic machine and UltraLift. The maximum luffing jib length is 236.2 feet (72 m) for the basic machine and 275.6 feet (84 m) in the UltraLift configuration. The crane is powered by a 600 hp (447.4 kW) Cummins diesel engine.

Omega Morgan bridge move to save millions

As part of a replacement project in the USA, moving, rigging and transport specialist Omega Morgan will slide a road bridge crossing a river in what it claims as one of longest bridge moves attempted.

The Sellwood Bridge, at 1,972 feet long, 75 feet high and, 28 feet wide (600 x 23 x 8.5 metres), is one of the state of Oregon's busiest bridges, carrying some 30,000 vehicles a day. On 19 January 2013 a Pacific Northwest-based Omega Morgan crew will slide the entire 87 year old structure, in one piece and on a radius, into a new position over the Willamette River. It will then become a temporary route from 24 January while a new US\$307.5 million bridge is built in the original location.

"We are really pleased to be involved in this highly

important, complex and exciting project," said John McCalla, Omega Morgan CEO and president. It is complicated by the fact that this will not be a straight-across move. The east end will be moved by 33 feet (10 m) while the west end will be moved 66 feet (30 m). The new bridge will open in 2016.

Omega Morgan and general contractor Slayden/Sundt Joint Venture have used this detour bridge method on other projects. "Omega Morgan has moved bridges weighing upwards of eight million pounds (3,629 tonnes), but this one does offer some additional challenges," McCalla said.

Ralph DiCaprio, Omega Morgan chief engineer, said the company welcomes the challenge. "This is why we like what we do. There's something

different on every project."

Devising a strategy to move the bridge in one piece helped Omega Morgan win the contract after showing that it will save time, money and duplication of effort, the company said. Other proposals suggested expensive and redundant structural features and extensive staging. DiCaprio created a plan to slide the aging Sellwood Bridge on skid gear to the north of the



existing bridge and then mount it on new piers that have been built in the river. This will then become the "shoofly" or detour, while construction begins on the new bridge.

HIGHLIGHTS

■ US crane manufacturer Link-Belt re-organised operations at the turn of the year to combine its Service Parts and Transportation/Distribution/PDC Warehouse business groups. The two groups have been combined into one organisation named Service Parts and Logistics. The new group will manage all of the day-to-day parts activities along with Link-Belt whole goods and parts logistics efforts. Paul Campbell will lead this new organisation as manager of Service Parts and Logistics. The new Service Parts and Logistics group will be part of the Marketing, Sales and Customer Support organisation, headed by Bill Stramer, vice president.

■ Taylor Crane & Rigging (TCR) in the USA has acquired all the remaining equipment of Reliance Crane & Rigging (RC), based in Phoenix, Arizona. Around 3,000 tonnes of equipment and rigging gear has been obtained after RC company owner, Cecil Pelts, decided to retire. Two Manitowoc crawler transporters, 24 lines of Scheuerle hydraulic modular transport trailers, several rail trucks and rail cars, seven hoists from 200 to 1,100 tonnes capacity plus engineering documents are just some examples of the equipment acquired.

■ The 1,000th Liebherr Mobile Harbour Crane, an LPS 550, has been delivered and erected at Montoir Bulk Terminal (MBT). The LPS 550 has a capacity of 75 tonnes in grab operation. It is based on the LHM 550, and includes a tailor-made portal, a conveyor belt and Liebherr's Cycloptic with Teach-In extension, which calculates possible sway and automatically initiates dynamic counterbalancing movements. The LPS 550 also has a Pactoric hybrid drive system, which reduces emissions.

Manitowoc on largest power station

Six Manitowoc crawler cranes, three Potain tower cranes and one Grove GTK1100 mobile telescoping crane have been sent to work on what will be the largest dry-cooled coal power plant in the world.

The Medupi Power Station in South Africa's northernmost province of Limpopo will have six boilers each powering an 800 MW turbine. Its combined output is 4,800 MW. The first cranes began work on the project in 2008, with the last cranes arriving in late 2012. The project is scheduled to finish in 2015.

On site, one 756 tonne capacity Manitowoc 21000 and five 400 tonne capacity Manitowoc 16000s are being used to lift steel beams and steel assemblies, while two smaller Potain tower cranes, a 6 tonne capacity MDT 98 and an 8 tonne capacity MDT 178, lift structural steel elements for the bag filters.

The larger MD 1100 special application crane is erecting the air-cooled condenser's structure, plus the fans and fan rings on it. Vanguard's 95 tonne capacity Grove GTK1100 is placing the components weighing up to 15 tonnes for two of the boilers. The load placement height is about 100 m and on the ground the

crane's footprint is just 18 x 18 m. The Potain MDT cranes are also taking up only a small area on the job, each sitting on a 4.6 x 4.6 m base.

The six crawler cranes were provided by Mammoet, whilst the GTK1100 was provided by Vanguard and the tower cranes were from Kentz and SA French. The project is run under principal contractor Hitachi.

By completion the Medupi Power Station will be the fourth largest power plant in the world. It is expected to cost around ZAR120 billion (US\$16 billion).



Work begins at the Medupi Power Station in South Africa

NICOLAS GIRDER DECK TO NORWAY

Norwegian transport company Statnett Transport AS has taken delivery of a new 350 tonne side girder deck.

The deck, designed by French vehicle manufacturer Nicolas, has a low dead weight and a length that ranges from 57 metres to more than 80 m. Each component can transport goods up to 15 m long, with widths of 4.3 m. The deck has hydraulic widening assistance of 2.30 m to 4.30 m and a total lift of 1.68 m.

The Statnett side girder deck is combined with a Nicolas MDEL-R. The deck can be coupled with 2 x 10 axle lines, 2 x 12 axle lines and 2 x 14 axle lines. Central beams include one set of 12.7 m long beams and another one of 15.5 m.

Safety factors include hydraulic tilting rails and moving floors (which are mounted on the top decks), cameras, noise protection and further hydraulic tools. In addition, there are no high pressure hydraulic circuits inside the cabin.

The first convoy featuring the 350 tonne side girder deck in combination with the Nicolas MDEL-R is planned to take place in October 2013.

2,400 tonne quayside crane for Huisman

Huisman China has completed the installation of a 2,400 tonne capacity quayside crane at its Zhangzhou (Fujian) fabrication yard at Xiamen port.

The quayside crane has two main lifting configurations: heavy lift, capable of lifting 2,400 t at 30 metres outreach (maximum lifting height of 100 m) and an extended reach configuration, capable of placing a 200 t load at 90 m

outreach (maximum lifting height of 140 m). The crane can travel along the 380 m long quayside and can travel this distance with a load of 2,400 t in its hooks.

The crane, named the Skyhook, has been specially designed and fabricated for Huisman China's Zhangzhou yard, which has direct deepwater access to the Taiwan Strait.



The Skyhook has been designed and fabricated for Huisman China's Zhangzhou yard

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HIGHLIGHT

■ Crane service provider Felbermayr helped replace four whey tanks at Sachsenmilch's Leppersdorf facility in Dresden, Germany, using a Terex AC 1000 all terrain crane. Challenges faced at the facility, which is also known as the Milky Way plant, included a lack of space and a steep slope. The Felbermayr team set up the AC 1000 with a boom length of 29.2 m by extending telescopic segments two and three while leaving segments one and four completely retracted. The team then installed a 60 m luffing fly to attain the required reach and 208 tonnes of counterweight was added. With the help of an 80 tonne capacity Terex AC 80-2 all terrain 24 tonne tank was placed into position.

Record for XCMG's 4,000 tonne class crawler

A world record has been set by a 4,000 tonne class crawler crane after it successfully completed multiple 4,500 tonne overload tests, manufacturer XCMG said.

The record was achieved on 29 November 2012 with XCMG's 4,000 tonne crawler crane after it lifted 4,500 tonnes of test blocks with its 60 metre main boom. The blocks were elevated for 20 minutes before they were put in their designated place, the company said.

The XGC88000 had already lifted 2,500 tonnes of load test blocks with its 96 m main boom on 6 November 2012.

Speaking about the record,



Sun Li, director of XCMG Construction Machinery Crawler Crane Research Institute, said, "What is 4,500 tonnes equivalent to? Suppose that the weight of a loaded

truck is 10 tonnes, hoisting 4,500 tonnes means elevating 450 loaded trucks. The superb hoisting capability is attributed to the advanced structure and layout of the crane."



Dockwise sets 30,000 tonne record

Heavy lift shipping company Dockwise has completed a record-breaking installation of a fully integrated SHWE platform for the offshore oil and gas industry.

The mega topside, Block A-1 SHP Topside, weighs nearly 30,000 tonnes and was installed using a float-over

method. Dockwise installed the topside by operating a barge.

The main tow arrived in the SHWE field, in the Bay of Bengal, on 8 December 2012 after travelling from Hyundai Heavy Industries' (HHI) fabrication yard in Ulsan, Republic of Korea.

Alex Rodenburg, senior

project manager, said, "The successful SHWE topside installation and jacket launch mark a significant milestone for Dockwise. This further validates Dockwise's evolution into an offshore contracting partner for the transport and installation of oil and gas platforms."

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2012 in review

The last 12 months have been particularly challenging for the world's stock markets. After a near implosion of the Euro Zone at the end of 2011, markets seemed to steady themselves in the early part of 2012 and a reasonable rally seemed to be in the offing.

By May, however, the markets were heading back down, driven by fresh fears over sovereign debt issues in Europe. Although the immediate threat of the European single currency collapsing had dissipated by this point, it was also clear that countries such as Greece and Spain would require more bail-outs and perhaps more debt write-offs, leading to years and years of weak growth and austerity.

Bouncing back

This deflated Europe – the region's economy barely grew last year – and also impacted on business confidence and trade around the world, depressing growth in emerging economies. On top of this came the continued slowdown in the Chinese economy, as the transition of power to a new group of leaders in November focused attention on politics rather than growth.

But a rally in the final weeks of the year helped ensure that most stock markets around the world finished 2012 with some net gains. The Dow was up 5.54%, the FTSE 100 6.10% and the Nikkei 23.89% as it bounced back from the impacts of the earthquake and tsunami in 2011.

It was a mixed picture as far as crane manufacturers were concerned. By and large there was a split between European, US and Japanese companies, who saw good growth, and the Chinese, whose share prices fell.

The European, Japanese

and US combined share price performance is measured by the Legacy IC Share Index, and this was up 25.71% over the course of 2012. Leading lights included Konecranes and Terex with 80% or greater gains. The only faller out of this group was Kobe Steel, parent company of Kobelco Cranes.

Looking at the IC Share Index, however, which incorporates Chinese manufacturers, the picture was of just 8.13% growth, due to significant falls for Liugong, Sany, XCMG and, to a lesser extent, Yongmao. The only Chinese manufacturer to see its share price rise last year was Zoomlion, with a 26.34% gain.

Outlook

What happens to share prices in 2013 is likely to depend on the key factors that were in play last year. If the European economy can limp towards growth and politicians can make progress with the basket case countries, there should be encouragement for investors. Similarly, China's new leadership will be under pressure to increase its economic growth.

In the USA, meanwhile, having averted the potential disaster of the fiscal cliff on 1 January, politicians on both sides of the House need to agree on a plan to reduce the deficit and stimulate faster growth and job creation. ■

Last year was a difficult one for the stock markets but, after a rollercoaster ride, there were net gains in the share prices of many of the world's crane manufacturers.
CHRIS SLEIGHT
reports

2012 IC SHARE INDEX

STOCK	CURRENCY	PRICE AT START	PRICE AT END	CHANGE	% CHANGE
IC Share Index*		60.94	65.90	4.95	8.13
Legacy IC Share Index**		239.33	300.86	61.53	25.71
Dow Jones Industrial Average		12416	13104	688.44	5.54
FTSE 100		5647	5991	344.50	6.10
Nikkei 225		8390	10395	2004.83	23.89
Hitachi Construction Machinery	YEN	1279	1792	513	40.11
Konecranes	€	14.52	26.59	12.07	83.13
Kobe Steel	YEN	119	109	-10	-8.40
Liugong	CNY	11.24	10.01	-1.23	-10.94
Manitowoc	US\$	9.91	15.68	5.77	58.22
Palfinger	€	12.76	16.60	3.85	30.15
Sany Heavy Industry	CNY	12.05	10.59	-1.46	-12.12
Tadano	YEN	486	721	235	48.35
Terex	US\$	15.14	28.11	12.97	85.67
XCMG	CNY	13.43	11.53	-1.90	-14.15
Yongmao Holding	SGD	0.10	0.08	-0.02	-21.57
Zoomlion	CNY	7.29	9.21	1.92	26.34

Share Index, 1 Jan 2011 = 100

**Legacy IC Share Index, end April 2002 (week 17) = 100

EXCHANGE RATES – US\$

CURRENCY	VALUE AT START	VALUE AT END	CHANGE	% CHANGE
CNY	6.31079	6.233731	-0.0771	-1.22
€	0.6443	0.6123	-0.0320	-4.96
Yen	76.89	87.11	10.21	13.28
UK£	0.7793	0.7544	-0.0249	-3.20

Period: Week 1 - 52, 2012

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Star of the show in terms of capacity was Sany's 3,600 tonne SCC36000A crawler crane with double lattice boom and four crawler tracks. Its maximum load moment rating is 86,000 tonne-metres. It must be the largest crane ever shown at an exhibition

Launch platform

While there has been a huge fall in crane sales, new product development has continued at an astonishing rate and China – the world's largest crane market – still has relatively strong GDP growth at around 7%. ALEX DAHM reports

At the recent Bauma China construction equipment exhibition in Shanghai, one could be forgiven for thinking that the economy must be booming. Such was the extent of the new products on display, despite an overall fall of around 50% in crane sales in the home market. Domestic manufacturers have continued to develop and build an astonishing range of new products, many of which are claimed as firsts and records.

A fall of 45% in the number of new wheeled mobile cranes sold in China over the first six months of 2012 was largely due to the suspension of railway construction

projects, according to an Off Highway Research report. It shows sales of fewer than 13,000 new wheeled mobile and crawler cranes in China – close to half the total sold in the previous six months to the end of 2011. The fall follows a continuous annual increase from 2006 to 2010, with a slight fall in 2011, where the annual total was still close to 35,000 units. More than 90% of them were truck cranes, the report said.

"Large volumes of new machines lie idle because of the suspension of many railway projects, and buying confidence has been impacted by falling rental rates," the report explains, going on to say that the fall in rental rates is as high as 30%.

During the last Bauma China exhibition, in 2010, the Chinese equipment market was at the height of its boom, even though the rest of the world was in recession. The Chinese government's stimulus spending boom was in full swing. More construction equipment was sold in China that year than the rest of the world put together. Since then dramatic change has seen the end of stimulus spending.

Measures to calm inflation and prevent the build up of a real estate bubble have hit the industry hard. To get things moving again, interest rates have come down and stimulus packages are back. Plans have been announced for a US\$ 127 billion investment in metro railway systems in 25



Zoomlion's 2,000 tonne capacity all terrain crane

Chinese cities. It should also help when the new government is settled in. Things are also changing in other ways in China's crane market. Growing emphasis on safety, return on investment and now innovation are all positive developments.

The 2012 Bauma China show in November saw a 16% increase over the last show in visitor numbers to 180,000. There was a 46% rise in exhibitors to 2,718, and the amount of space occupied was up 30% to 300,000 square metres. A 3,600 tonne capacity crawler, 2,000 tonne capacity all terrain and an 800 tonne capacity lattice truck crane were just some of the highlights at the Bauma China exhibition. The show, in Shanghai 27 to 30 November, boasted an amazing collection of new cranes from Chinese and other manufacturers.

New 400 tonne-metre XCMG knuckle boom is the largest in China





XCMG's 200 tonne capacity rough terrain crane, the RT200E, with 62 m boom

Products

Taking the lead on capacity at the show was the Sany SCC86000A lattice boom crawler crane. The maximum load moment rating of the double boom design crane on four crawler tracks is 86,000 tonne-metres. This crane has done some work and a target application is nuclear power station construction. Even larger than the Sany crane, although not shown at Bauma, is the 4,000 tonne class XGC88000 crawler from XCMG, undergoing testing at the time of writing. It has two crawler tracks like a conventional crawler crane. For more on this giant, see News, page 7.

Another record-breaking crane at the Bauma show was the 2,000 tonne capacity QAY2000 (ZACB01) all terrain type crane from Zoomlion on a 12 axle carrier. Designed for erecting 3 MW wind turbines, Zoomlion said it sets three world firsts: lifting capacity, boom length and driving capability under load. Maximum lifting height, main boom only, is given as 106 m. The main carrier engine is 480 kW and there is an extra, 190 kW, drive unit as part of a detachable 3 axle section of the carrier. Its drive/steer configuration is 24 x 14 x 24. A 315 kW unit powers the crane.

Also on show at Bauma China for wind turbine erection was Zoomlion's new ZAL16020B43W with vertical lattice type mast and luffing lattice jib. Maximum load moment is given as 3,000 tonne-metres. It sits on an eight axle all terrain type carrier designed for quick transit and setup, even with unmade roads, the manufacturer said.

XCMG said its 5,000 tonne-metre XCA5000 is an all terrain crane aimed at erecting 3.6 MW wind turbines. It has a 105 m telescopic boom in eight sections and its nine axle carrier has a 480 kW engine. Also in the wind industry, for erection of 3MW and larger turbines, the manufacturer said, is the new XCL800. It is an 800 tonne capacity lattice boom truck crane on an eight axle carrier. It can travel



Sany SSC1020 wind power truck crane

onsite between lifts with base boom, mast and counterweight support on board, the manufacturer says.

A novel design solution for wind turbine erection on show at Bauma China from Sany was the SSC1020, described as a wind power truck crane. It has an all terrain crane type upper works with a three section, 37 m telescopic boom, atop a telescopic vertical mast, a bit like Grove's GTK. Major differences are that the Sany is bottom slewing and it has an eight axle truck crane type carrier as opposed to a multi-axle trailer type. Its chart shows a capacity of 100 tonnes to 12 m radius on the base boom section at 15 m long. At the other end, with the boom fully extended, capacity is shown as 19.4 tonnes at 34 m radius. Load moment is given as 1,300 tonne-metres and maximum lifting height 100 m. All up weight is close to 174 tonnes, with 23,340 kg on each of the first four axles and 20,095 kg on each of the rear four.

Staying with wind turbine erection, Sany's new 600 tonne capacity SAC6000 all terrain has a 90 m boom and can erect 2 MW turbines - lifting 80 tonnes to 80 m working height. Another new Sany all terrain is the 350 tonne capacity SAC3500 with 70 m main boom.

More records

A first at the Bauma China show was the

CICS SUCCESS

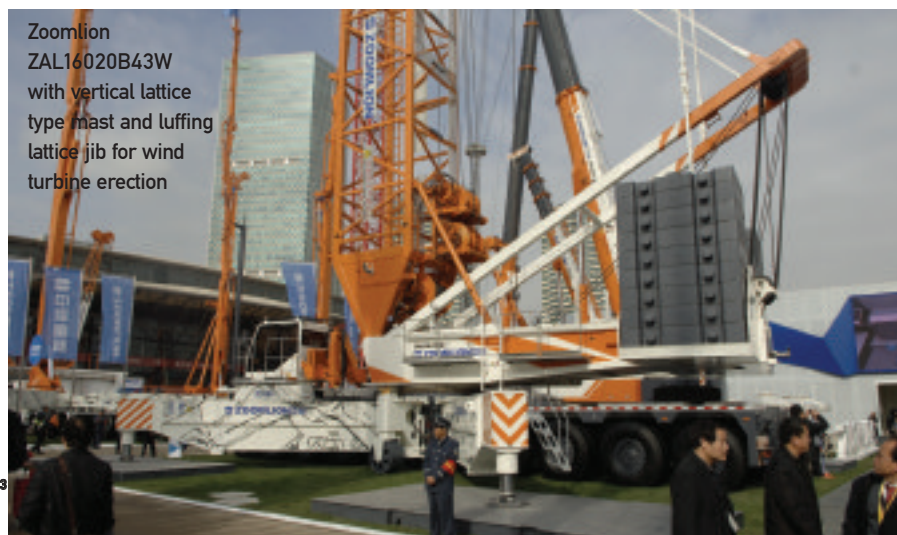
The 2012 China International Crane Summit on 26 November had more delegates than the last event. CICS was launched in 2010 as an independent forum for all stakeholders in the crane industry worldwide, said James King, managing director of KHL, organiser of the event, in his opening remarks.

In his opening remarks, Su Zimeng, secretary general of the China Construction Machinery Association, outlined key issues in China's crane sector. One of these was the negative impact of the harsh economic environment in the last 12 months. As an example he cited a 38% year-on-year drop in crawler crane sales in China over the last year.

The event's first speaker and event chairman was Ted Plafker, Beijing correspondent, *The Economist*. Plafker gave his take on where China stands "in its own always interesting situation and in the world."

Other speakers at the one day event include Ken Lousberg, Terex China president, Gao Song managing director of China Nuclear Huaxing Tat Hong Machinery Construction Co, and VP of Tat Hong in China, and Bryan Cronie, regional SHE-Q and training director, Mammoet.

Video recordings of the presentations at the CICS and at other KHL events are available for download at www.khl.com



Zoomlion ZAL16020B43W with vertical lattice type mast and luffing lattice jib for wind turbine erection



The XCA5000 telescopic and XCL800 lattice boom (pictured behind) cranes from XCMG are aimed at wind turbine erection and maintenance applications

200 tonne capacity RT200E rough terrain from XCMG. Its oval profile six section boom extends to 62 metres. It follows a conventional two axle RT design format but offers advanced features, the manufacturer says. Electronic control on the hydraulics decreases fuel consumption by 15% in crane operation, XCMG says. And a torque converter with lockout gives a 20% fuel saving during high speed travel.

Another RT on show at Bauma China was the new 100 tonne capacity Zoomlion RT100. It has a 43 m boom and joins the RT35, RT55, and RT75 models in the Chinese manufacturer's range, which is distributed worldwide by Global.

Also on wheels and a first at the Bauma show were 220 tonne capacity truck cranes, the largest of their type available, from Zoomlion and XCMG. Zoomlion's QY220V is on a six axle carrier with 12 x 6 x 8 drive/steer configuration. Its maximum load moment, on the main boom only, is given as 735 tonne-metres. The boom is 67 metres and adding up to 36 m of jib gives a maximum hook height of 104 m. In the carrier is a 390 kW engine while a 199 kW unit powers the crane in the upper works. XCMG's XCT220 is also on a six axle carrier. Its 68 m seven section boom has an oval profile and there is an hydraulically adjustable jib.

Down the truck crane capacity scale is the CLG TC500, a new 50 tonne capacity model from Liugong. It has a 43.5 m U-profile telescopic boom and is rated at 182 tonne-metres. Power is from a Cummins ISLe340 30 engine to China III emission regulations.

Another new truck crane is the 36 tonne capacity Toplift 036G, built in Luzhou by Terex China. It has a 38 m five-section telescopic boom and a 51 m maximum tip height is achieved with a 14 m jib swingaway jib with 1- and 30-degree offsets.

"The Toplift 036G follows the two award winning models introduced last

year. They are true Terex cranes that share more common features and styling details than ever before," said Ken Lousberg, Terex China president.

Claiming another record was XCMG for its 400 tonne-metre truck mounted knuckle boom crane, as the largest in China. The 80 tonne capacity SQZ4000A was shown at Bauma China mounted towards the rear of a five axle flat bed truck. A target application is heavy industrial equipment installation. Maximum hydraulic outreach is 11.08 m where capacity is shown as 30 tonnes.

Another new crane on wheels was Fuwa's FRC 25-2, a 25 tonne capacity rough terrain type crane with application in restricted city job sites and in industry. Maximum hook height, on the main boom, is just over 26 m, while a lattice jib extension adds around 10 m. Its two axle four wheel drive carrier has a 177 kW engine, multi-mode steering and pick and carry duties.

On tracks

Big news from Chinese manufacturer Fuwa at Bauma China was its complete new range of lattice boom crawlers. Smallest in the seven model range is the 55 tonne capacity FWX55, while the largest will be the 285 tonne capacity FWX285. The FWX55 is a standard lift crane with a 210 tonne-metre load moment rating. It is the strongest machine in its class according to the manufacturer. The 225 tonne capacity FWX225 was the largest on show. For full details on this range, see IC October 2012, page 16.

A new crawler from Terex is the 55 tonne capacity Powerlift 1000 aimed at



lifting contractors in China, Russia and India. "Built in our Jinan, China facility, the crane offers the most compact design in its class for fast and efficient transport without sacrificing lift or reach capabilities.

Tower cranes

XCMG's first foray into the tower crane market shown at Bauma China was the XGTL1600-100. Not one to do things by halves, XCMG's offering is a 100 tonne capacity diesel hydraulic luffing jib model rated at 1,600 tonne-metres. It is aimed at high rise construction above 200 m and can achieve an under hook height of 700 m, the manufacturer says. Maximum working radius is 76 m.

Another 100 tonne capacity luffer is the Yongmao STL1800C. Rated at 1,800 tonne-metres, it lifts its 100 tonnes out to a radius of 24.5 m and maximum jib length is 70 m.



New Fuwa cranes include the FRC 25-2 and a seven-model range of crawlers to 285 tonne capacity

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Sporting fever

Four Linden Comansa tower cranes help renovate the Jornalista Mário Filho stadium in Rio de Janeiro, Brazil, in time for the FIFA World Cup 2014 and the 2016 Olympic Games. IC report



The four Linden Comansa 21 LC 400 flat top towers on the Maracanã stadium in Brazil

Four 21 LC 400 tower cranes from Spanish manufacturer Linden Comansa are helping to renovate a world famous sports stadium in Brazil. The Jornalista Mário Filho stadium in Rio de Janeiro, which is more commonly known as the Maracanã, was built for the FIFA 1950 World Cup. It is now being prepared to host yet another FIFA World Cup, this time in 2014, and the opening and closing ceremonies of the 2016 Olympic Games.

The renovation project of the stadium belongs to Empresa de Obras Públicas do

The flat top and modular design principle came into play in the arrangement of the tower cranes due to their proximity to each other

Estado do Rio de Janeiro (EMOP) and Secretary of Works. It is being carried out by Consórcio Maracanã Rio 2014.

Clever assembly

To help with the transformation, construction companies Odebrecht Infraestrutura and Andrade Gutierrez are relying on four 21 LC 400 tower cranes from Spanish manufacturer Linden Comansa to help with some of the most important sections of the build. The cranes are been rented from Roll-Lift Latin America, a company that provides a wide range of services for projects where cargo handling and heavy transport are needed.

The 21 LC 400 tower cranes have a

capacity of 18 tonnes and have been erected paying particular attention to the height difference between them. The lowest crane is assembled at a freestanding height of 36.3 m and the highest is at 52.8 m. This arrangement was chosen to help save costs during the erection and disassembly of the cranes. It was made possible by Linden Comansa's modular system and flat top design, the company says. As an extra feature, each crane has been assembled so it has a jib length of 70 m, allowing every crane to reach the entire jobsite.

No light task

Until now the cranes' key role has been mounting the metal structures of the tiers of seating. According to the current specifications, the new Maracanã stadium will have the capacity for almost 79,000 spectators, so this is no light task.

Once this section of project has been completed, the four 21 LC 400 tower cranes will be assigned to help assemble the steel cables of the ceiling, which will cover 96% of all seats.

The project is scheduled to be finished by February 2013, four months before hosting its first competition, the FIFA Confederations Cup.





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HIGHLIGHT

V. Alexander helped transport two heat exchangers from Berlin in Germany to Nizhnekamsk, Tartastan. Each piece weighed 150 tonnes and was accompanied by cased accessories. In-house surveyors from V. Alexander inspected and monitored the cargo, which was transported by a combination of barge, ferry and rail. The final destination was Taneco, a gas company of Tartastan, in Nizhnekamsk, around 2,000 kilometres east of Moscow.

Guangzhou Sunshine on oversized load

Guangzhou Sunshine International Logistics Co. Ltd has delivered 48 pieces of oversized cargo for CNPC.

Each piece of cargo was more than 7 metres in its smallest dimension. The biggest single piece was 28.45 x 8.2 x 8.5 m and weighed 150 tonnes. The cargo was transported from a factory on Qinzhou to Qinzhou port, before it was loaded onto a barge and shipped to Hainan.

Challenges for Guangzhou Sunshine International Logistics, a member of the Worldwide Project Consortium (WWPC) network in China, included 5 km of city roads and numerous obstacles, including high-voltage lines and communication cables, which ranged from 5 to 9 m in height.

At one stage, power and communication lines in the city were cut off to provide a safe environment for the transport.



Guangzhou Sunshine International Logistics delivers the oversized cargo for CNPC



Allcargo on Indian power plants

Allcargo Logistics has moved seven heavy lift transformers and accessories from a Mumbai port to Madhya Pradesh, after receiving a contract from Hyundai Heavy Industries, Korea.

The transformers, which each weigh 177 tonnes and measure 7.5 x 5.7 x 4.8 metres, are for the 765 kVA Bina Power station in Madhya Pradesh. They were loaded onto 12 hydraulic axles, resulting in a convoy length of 28.5 m. Total load of all transformers combined, including accessories, was 3,872 tonnes.

After a route survey was conducted to assess risks, the transformers were shipped in two lots, with the first delivered within 30 days after leaving the port. The second was planned



One of the seven transformers from Hyundai in transit in India

to be delivered within 25 days of leaving the port.

Allcargo Logistics, a member to the Cargo Equipment Experts (CEE) network in India, was assigned to handle customs clearance, port handling and inland transportation of all seven transformers and accessories.



A tunnel boring machine has been delivered to Moscow for the city's Metro expansion by Albacor Shipping. A total of 1,800 cubic metres, including a heavy lift of 98 tonnes and 6.3 x 6.3 x 4.4 metres, was shipped from the US port of Coyemans to Russia's Saint Petersburg and continued by truck to Moscow. The delivery of the machine was arranged by Albacor Shipping USA in Houston, and Albacor Shipping Russia. The cargo was loaded at the port of Coyemans, USA, onto Atlantic roll-on roll-off carrier vessel Atlantic Dream, before sailing to Russia.

Nurminen takes metal bull

A giant sculpture of a bull made from scrap car parts has been transported to the UK from Finland by Nurminen Logistics. The sculpture, named the Shy Black, was created by Finnish sculptress Miina Äkkijyrkkä.

Nurminen Logistics, a member of the Cargo Equipment Experts (CEE) network, carried the unique cargo from Finland to England on a special Nurminen transport trailer. The unusual item began its adventure in Helsinki, where it was driven to a port before being shipped to England. From the destination port, the Nurminen trailer and the Shy Black continued their

journey on the road before arriving at Barnards Farm Sculpture Park in Essex.

Nurminen Logistics has experience transporting museum buildings, museum pieces and other related oversized items.



The Shy Black, by Finnish sculptress Miina Äkkijyrkkä

The annual *IC* crane rental survey aims to provide a clear and comprehensive picture of what's been happening in the global market over the last 12 months. It also offers insight into what may happen next in the crane rental market. *IC* reports

Down but

In last year's *IC* crane rental survey, the recession continued to play a major role in the way that rental rates were mapped out around the world. Inconsistency was a massive theme, with areas such as Turkey and Saudi Arabia experiencing peaks in rental rates, while areas in Europe struggled under the weight of the global downturn.

This year the results appear to have 'levelled out' and the current feedback

suggests that, for the time being at least, many companies will experience a period where much of their rental rates and fleet sizes will simply stay the same throughout 2013 – down but stable.

The past 12 months, however, have not been the easiest of times for crane companies around the world. A couple of typical comments from respondents comment on how difficult things are, "prices were very bad for companies in the

Netherlands", and "a flat economy in North America resulted in many crane companies folding".

A similar experience was felt by most crane companies throughout Europe, with rental rates staying the same for 50 to 100 tonne capacity mobile cranes alongside percentage decreases in the rental market for 100 tonne-metre and 300 tonne-metre tower cranes. Similar survey results applied for 150 tonne capacity crawler cranes.

The results for utilisation rates across Europe painted a similar picture, with a decrease of around 20% in all crane usage. Spain, however, was the worst hit, as one respondent explains, "The situation is dramatic for the Spanish tower crane manufacturers and rental companies. A lot of companies have lain off up to 90% of their staff and rental rates are crazy."

These dire conditions aren't confined to Europe, though, as a respondent from South America explains, "The current state of the crane rental market is going up and down quickly" and in more than one area there was a general feeling from respondents that "the crane rental business was decreasing".

Despite the negative feedback regarding rental rates and utilisation rates, the survey results did reveal that over the last twelve months there were some rental companies around the world that experienced a 1 to 10% rise in the use of their cranes. From 50 tonne capacity crawler cranes to 300 tonne-metre tower cranes, many companies in the Middle East continued to report and reap the benefits of increased usage and rental rates. In South Asia and throughout areas in Asia Pacific there was also a general increase in rental rates for 70 tonne capacity crawler cranes, 100 tonne-metre and 300 tonne-metre tower cranes.

FORECAST FOR CHANGE IN RENTAL RATES

CHANGES OVER THE NEXT 12 MONTHS (%)

100 T CAPACITY MOBILE CRANES:

	increase	same	decrease	n/a
Middle East	100	0	0	0
Australasia	0	52	48	0
Europe/Turkey/CIS	0	88	12	0
Central/South America	0	67	0	33
North America	42	43	0	15

150 T CAPACITY CRAWLER CRANE:

	increase	same	decrease	n/a
Middle East	0	100	0	0
Australasia	0	53	0	47
Europe/Turkey/CIS	20	19	0	61
Central/South America	0	52	0	48
North America	0	26	0	74

300 TONNE-METRE TOWER CRANE:

	increase	same	decrease	n/a
Middle East	0	0	0	100
Australasia	0	53	0	47
Europe/Turkey/CIS	0	52	0	48
Central/South America	0	34	0	66
North America	0	26	0	74

stabilising

Better overall

Considering the previous year's dips and dives in rental rates and usage, the forecast for 2013 generally looks promising for the crane rental industry as a whole.

With the Olympic Games planned to be held in Brazil in 2016, it is no surprise that rental companies in South America are forecasting crane usage to increase throughout most regions. Elsewhere, 50 tonne and 100 tonne capacity mobile cranes are expected to experience the biggest increase in utilisation rates across all regions, with the Middle East expecting to see the greatest rise. Areas in North America are also hoping to see an increase in rental rates for these particular cranes. Elsewhere, however, rental rates are expected to stay the same. Even still, as the "crane market continues to slow down" in places such as Europe, Turkey and even areas in Asia Pacific, rental companies are forecasting a slight dip in rates. In the Philippines, however, "crane rental rates are good" and in Malaysia "rental is stable. Demand is higher in the oil and gas industries"

FORECAST FOR CHANGES IN UTILISATION

CHANGES OVER THE NEXT 12 MONTHS (%)

50 T CAPACITY MOBILE CRANE:

	>10 % rise	1-10 % rise	same	1-10 % fall	> 10 % fall	n/a
Middle East	0	100	0	0	0	0
Australasia	25	0	75	0	0	0
Europe/Turkey/CIS	0	0	71	29	0	0
Central/South America	0	32	35	0	0	33
North America	14	29	57	0	0	0

70 T CAPACITY CRAWLER CRANE:

	>10 % rise	1-10 % rise	same	1-10 % fall	> 10 % fall	n/a
Middle East	0	0	0	0	0	100
Australasia	48	0	52	0	0	0
Europe/Turkey/CIS	0	0	35	32	0	33
Central/South America	0	100	0	0	0	0
North America	0	0	0	0	0	1

300 TONNE-METRE TOWER CRANE

	>10 % rise	1-10 % rise	same	1-10 % fall	> 10 % fall	n/a
Middle East	0	0	0	0	0	100
Australasia	0	0	100	0	0	0
Europe/Turkey/CIS	0	0	42	19	0	39
Central/South America	0	65	0	0	0	35
North America	0	26	0	0	0	74

2013 INVESTMENT PLANS FOR FLEETS AROUND THE WORLD COMPARED TO 2012:

Last year investment plans for fleet upgrades and expansion for 50 tonne capacity crawler cranes was at a stalemate, with only a third of companies around the world intending to either renew or expand their fleets; the rest stayed the same. This year however, fleet expansions in areas of the Middle East, Australasia and across America are expected for 50 tonne capacity wheeled mobile cranes. The remaining regions plan to remain with what they've got and more than half of the companies from Europe that took part in our survey are planning to reduce their fleets in 2013.

For 150 tonne crawler cranes, 2012 saw that globally nearly a quarter of companies who took part in the survey had no plans to increase or renew their fleets, and many planned to stay the same. This year however, companies in Australasia have plans to expand their fleets, while the remaining regions of the world plan to stay the same. Fortunately no one seems to be planning to reduce their fleets of 150 tonne crawler cranes in 2013.

Smoothing out

Regarding the stagnant conditions that much of Europe has experienced in the last 12 months fleets of 50 tonne, 100 tonne and 150 tonne capacity mobile crawler cranes are expected to either stay the same or be reduced. This also applies to 100 tonne-metre tower cranes. One respondent explains the reasons behind this as, "Since building activities are decreasing, the demand for mobile cranes is less than former years. Expectations are that the building market will stabilise but not grow (much) in the next two years". For Spain, growth isn't forecast for another "four to

five years” but, as another respondent says, “There is hope that this will change as soon as possible.”

For the rest of the world, investment plans over the next twelve months look promising, especially in the Middle East, where plans of fleet expansion of 50 tonne and 100 tonne capacity mobile cranes are expected. In Asia Pacific fleets with 50 tonne capacity wheeled mobile cranes and 150 tonners have planned investments. After the subsequent rise in utilisation rates, fleets with 100 tonne-metre tower cranes in South Asia are also expecting an investment.

The general feeling, however, is that

UTILISATION RATES FOR 50 T MOBILE CRANES

Last year utilisation rates for 50 tonne capacity wheeled mobile cranes in the Middle east were up by more than 10% compared to previous years. This year the usage of 50 tonne capacity wheeled mobile cranes is up 1 to 10%. The same is for 100 tonne capacity mobile cranes. According to last year’s results, the utilisation rates for 50 tonne capacity wheeled mobile cranes in Europe were spread evenly, with around 18% of partakers saying that they had experienced more than a 10% increase; another quarter of respondents said the situation had stayed the same.

This year, according to the feedback received, almost a third of respondents from Europe have noticed a fall from 1 to 10% in utilisation rates but, fortunately, 15% of respondents said the situation had remained about the same and will continue to do so at a steady pace in the next 12 months.

FORECAST FOR INVESTMENT PLANS

CHANGES OVER THE NEXT 12 MONTHS (%)

50 T CAPACITY MOBILE CRANE

	expand fleet	renew only	no change	reduce fleet	n/a
Middle East	100	0	0	0	0
Australasia	35	0	65	0	0
Europe/Turkey/CIS	0	0	43	57	0
Central/South America	34	0	66	0	0
North America	25	37	38	0	0

150 T CAPACITY CRAWLER CRANE

	expand fleet	renew only	no change	reduce fleet	n/a
Middle East	0	0	0	0	0
Australasia	48	0	0	0	52
Europe/Turkey/CIS	0	0	35	0	65
Central/South America	0	0	49	0	51
North America	0	0	0	0	100

100 TONNE-METRE TOWER CRANE

	expand fleet	renew only	no change	reduce fleet	n/a
Middle East	0	0	0	0	100
Asia Pacific	0	0	0	0	100
South Asia	100	0	0	0	0
Australia/New Zealand	0	0	0	0	100
Europe/Turkey/CIS	0	0	0	49	51
Central/South America	0	0	0	34	66
North America	0	0	0	0	100

most rental companies around the world will simply be staying put with what they’ve got until conditions change and the only real plans for equipment fleet renewal so far are in the USA.

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Train of thought

Road transport firms need well-trained drivers to run their fleets. As TIM MAUGHAN finds, training and licence processes differ greatly, in different parts of the world

Trucks offer supreme cargo-carrying capabilities and are crucial for an operator to generate profit. These cash-generating vehicles weigh some 25 times that of a family saloon and, for operators in the heavier plant and low-loader business, a truck, trailer and loader combination on the road could easily be 40 times the weight of each car on the road around it.

With the increased weight and size come extra layers of laws and regulations: getting the right driver training, and the right driving licence, is vital.

EP Training Services is a UK-based truck driver training company. Sean Pargeter, sales director, takes us through the European truck driver classifications. Say, for example, you run a transport firm in the EU. You have a staff member, with a car licence, who wants to drive a truck. "Under the old rules, anyone who passed their car test before 1 January, 1997, also acquired the C1 – the category classed as up to 7.5 tonnes," says Pargeter. "They got that under grandfather rights. Anybody who passed their driving test after 1 January 1997 is limited to 3.5 tonnes. So, if you are now moving from a car to the LGV (large goods vehicle) sector, the logical step is to take the C1, the 7.5 tonne category.

"But, in the UK, you can leapfrog the C1, and go straight on to the Category C, which is for the rigid-type vehicle where the cab and the load bed are permanently fixed."

Here, the category includes trucks over 7.5 tonnes GVW (gross vehicle weight), but



Sean Pargeter, sales director at UK-based truck driver training company EP Training Services

not more than 32 tonnes. After that, we enter the domain of the true "heavies", the Category C+E, in the EU. This is the world of articulated trucks, with their enormous carrying capability. Paper, automotive components, heavy plant, and tanks – all can be transported by Category C+E licence holders.

More steps

Pargeter points out that "stage testing" applies here. Before candidates can take the C+E practical test, they must have already passed the Category C practical test. As years have gone by, there is a lot more to gaining the C+E, than simply passing the practical stage. "There is a bit of a process involved now," explains Pargeter. "It's not just a case of getting your provisional licence, and doing a driving test. You have to do a medical first, to confirm that you are physically fit. Then, you apply for the appropriate provisional entitlement.



When your licence comes back, you have a number of theory tests that you have to get through, and the practical test.

"If someone (looking to secure the C+E licence) came to us today, it would probably take between six and eight weeks to complete everything. That would be from scratch, from a car licence."

At EP, says Pargeter, 80% of candidates pass the C+E test first time. The cost, for each, is in the region of UK£2,500 (US\$ 4,000). "It is a fair old investment," he remarks. Crucially, though, he points out, after gaining the coveted C+E licence, there are no restrictions on truck GVW, in the UK and the rest of the EU. With the licence in their possession, drivers can operate in the STGO (Special Types General Order) specialized truck sector. Truck drivers in the EU must also take the Driver Certificate of Professional Competence (CPC).

Pargeter says: "This came into force on 10 September 2009. Drivers who (before that date) already had a licence to drive goods vehicles over 3.5 tonnes are subject to periodic driver CPC training, which equates to 35 hours every five years.

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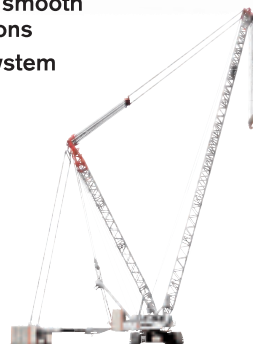
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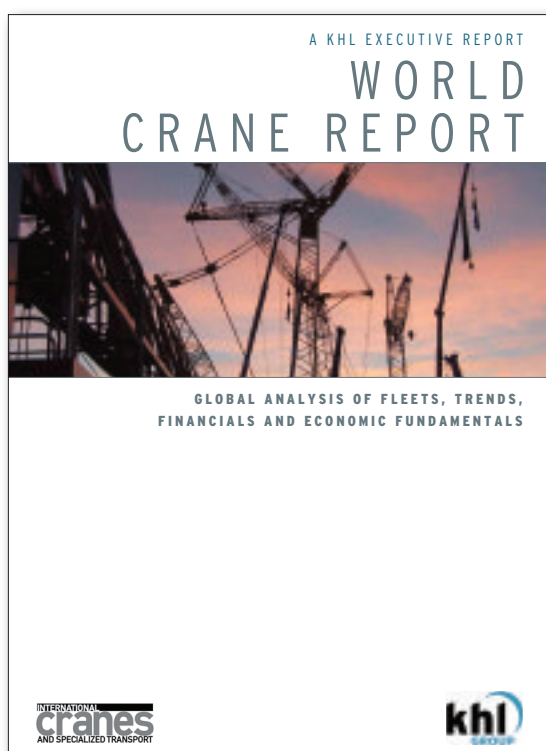


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2009) who do not have the C1 (7.5 tonnes) must do the initial Driver CPC which, in essence, is one extra theory test and one extra practical test. Once they have acquired the initial qualification, then

TRUCK DRIVER TRAINING IN JAPAN

Ex-United States Navy radar operator Mike Cash drives a Mitsubishi Fuso for Kubota Unju Soka, a road transport operator based in the city of Kiryu, north of Tokyo. Originally hailing from Tennessee, Cash left the navy in the mid 1980s and settled in Japan. Today he hauls containers from Tokyo and Yokohama, dropping them across the country's Kanto region.

He says that, perhaps surprisingly, getting a truck licence in Japan is easy. Gaining the licence to drive a car is rigorous but, with that out of the way, truck qualifications present little of a challenge. Surely it would be a formidable obstacle, tackling the theoretical test in Japanese? "There is no written test for trucks in Japan," he says. What about a thorough practical test? "Not really," he laughs. "They overdo it with the car licences (which require written tests); they do car licences like they are handing out instruments qualifications for a Boeing 747.

"But then, conversely, when you go and get a truck licence, it is like they are handing out candy at Halloween. 'We don't need to be so strict, because we have done that during the car part.'"

In Japan there is the Zhuugata licence – over 5 tonnes, but under 11 tonnes. Above that is the Ogata, but this is restricted to rigid trucks. Operators hoping to serve the specialized market, and run flatbeds and low loaders, must employ drivers with what is known as the Kenin licence. "The system, while ostensibly teaching driving skills, is in fact nothing more than teaching the skills to pass the test. Little to nothing of a practical nature is taught, which is especially true in the case of trucks," Cash says.

they will be subject to periodic driver CPC training – 35 hours every five years."

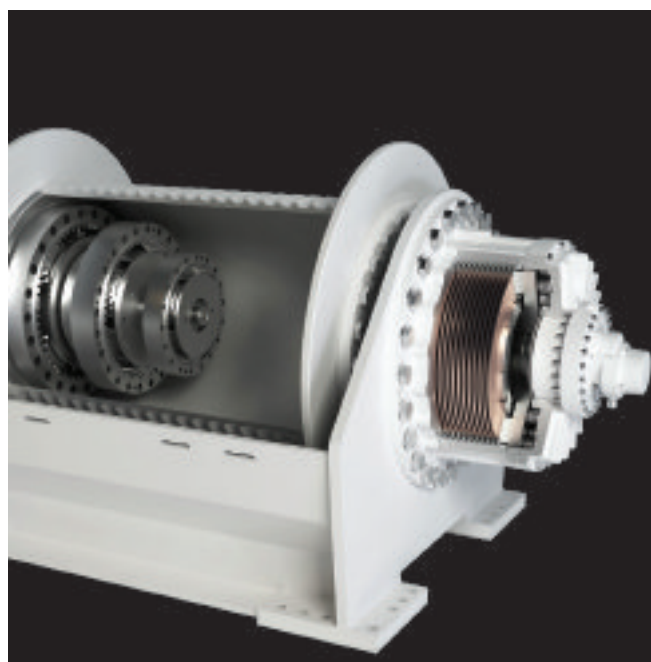
Solid implementation of training procedures is necessary, too. Pargeter warns that, if it is found that a driver does not have the correct "licence entitlement", in the event of an accident, an insurer could render a policy useless.

EP employs 11 full-time trainers. Pargeter explains that, in the UK, there is no compulsory training for the instructors themselves. Existing C+E licence holders are free to teach customers to drive a truck, after some time spent behind the wheel. But there is a voluntary qualification, which proves trainers have

the credentials. EP also runs a course for this, in addition to its normal driver training programmes.

"The most common one (in the UK) is the DSA (Driving Standards Agency) LGV Instructors Register, and that is a certificate which lasts for four years. It confirms that you have both passed a practical truck driving test and, also, that you have passed the test in instructor ability.

"The knowledge imparted is only as good as the instructor providing the course. Training with a reputable, established training provider will pay dividends, and help ensure the driver acquires the right skills and knowledge." ■



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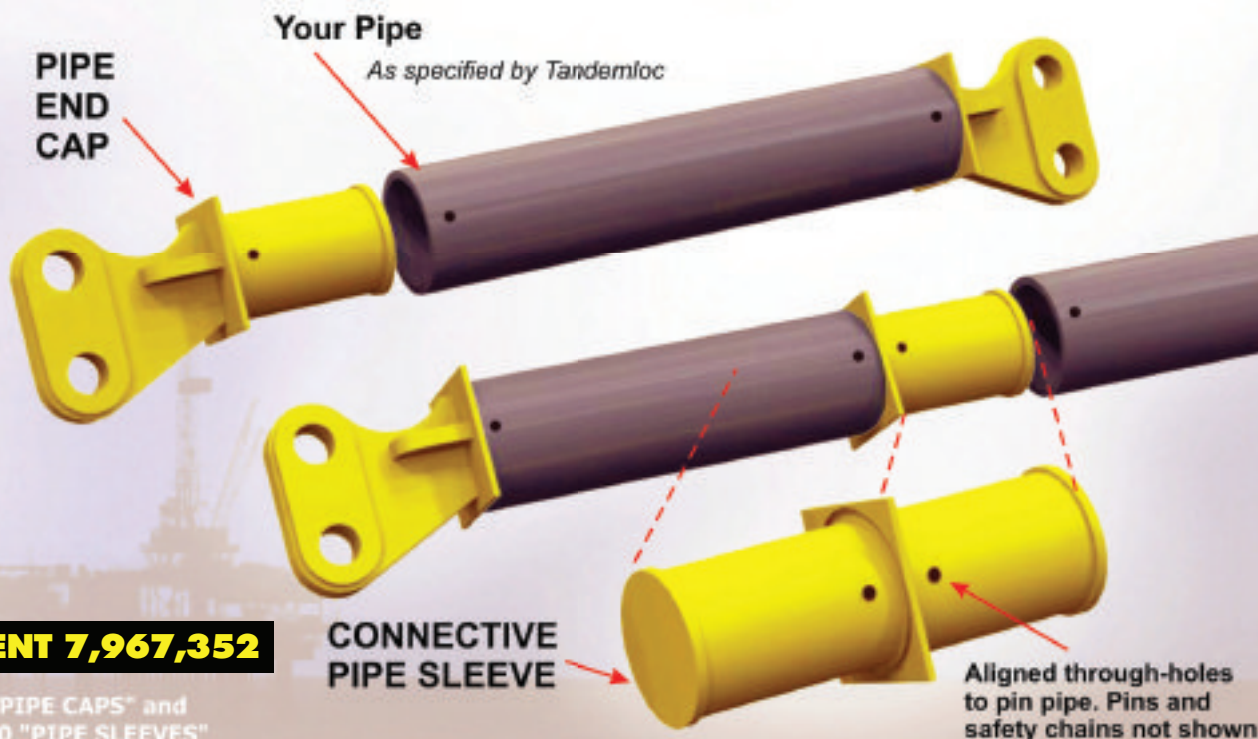
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Do certifying bodies ignore the intent of C-DAC or just blindly follow OSHA's own understanding of the way cranes work, and jeopardise safety?

Certification issues

There has been much discussion about the new rule governing the way cranes are operated in the USA and, in particular, the effect it might have on how crane operators are certified. GRAHAM BRENT, executive director of the National Commission for the Certification of Crane Operators (NCCCO), which has been in the forefront of discussions with the industry and regulators, outlines the issues

Development of the most important crane rule in the United States in a generation has been well documented. At the invitation of the federal Occupational Safety and Health Administration (OSHA), 23 representatives of the industries that use cranes, plus manufacturers and insurers, met almost monthly over a year beginning in 2003. They were tasked with overhauling the regulations that govern the way cranes are used in the USA. This Cranes and Derricks Advisory Committee (C-DAC), is generally considered to have done an outstanding job in fulfilling its task, delivering its final revision to OSHA in 2004. In October 2010, after a tortuous route through legal and budgetary review, public hearings and industry comment, an amended document emerged as a final OSHA rule.

Given that at least preliminary versions of the rule had been publicly available for several years why, one might ask, has there been such a fuss recently about some of its implications, particularly those that affect crane operator certification? One answer is in concern expressed by industry whether the OSHA administration is respecting the intent of the C-DAC industry experts that wrote the original document on which the requirements are based. Take, for example, the issue of the requirement to certify operators "by capacity and type." This provision was included in the document delivered to OSHA by the C-DAC committee. In the final rule, however, OSHA added two more references to certifying by capacity and it gained a prominence and an interpretation that C-DAC never intended it to have. The industry missed the regulatory and legal impact of these OSHA additions when the

final rule was published in October 2010. It is now struggling to make its concerns understood by OSHA's Directorate of Construction.

Jeopardising safety

The central issue for certifying bodies like NCCCO is, do they ignore the intent of the C-DAC committee who were asked by OSHA to write the rule, or do they just blindly follow OSHA's own understanding of the way cranes work, and jeopardise safety? For NCCCO the matter is pretty clear: CCO certification has always taken crane type into account and always will. Capacity is a different issue. In theory, NCCCO could test by capacity; in fact, for many years CCO certification had two capacity "bands" in the telescopic boom certification, with the threshold at 17.5 US ton (15.9 tonnes). This was based on the fact that, at the time this programme was developed, cranes above this capacity generally had swing cab controls. It is the distinction between swing and fixed cab controls that the crane experts wanted to make, based on their determination that fixed cab cranes required different operating skills. It has always been about control type, not capacity and so, to avoid confusion, NCCCO changed the capacity-based classification several years ago to one based on a fixed or swing distinction.

The question has been asked, "If it's technically possible to test by capacity as well as by type, why don't all certification bodies do that?" The answer is simple: The industry – as represented by manufacturers, insurance companies and, most importantly, crane users – has made it clear that this is not what C-DAC intended, that it is not what they

want and, that testing in this manner could make crane operations less safe. Certifying bodies need to understand that they are service organisations, and are in no position to dictate to the industry what they should have in the way of certification. Until this matter is resolved with OSHA – which incidentally recognises it does not have the crane expertise the industry does – NCCCO, for its part, does not intend to make any changes to CCO certification programmes.

Certification and qualification

A potentially far bigger issue than the requirement to certify by crane capacity and type is OSHA's contention that "certification" is directly equivalent to "qualification". The new rule states that an employee who is certified is "deemed qualified". Apparently, OSHA believes that the only thing an employer has to do to meet the crane operator qualification requirements of the new rule is to have his operators certified. This notion is entirely OSHA's creation. This was never the intent of C-DAC and, in the words of one former member, rather than updating a 40-year old rule "this could have the effect of setting us back 40 years" by introducing a process that is actually less safe than current practice.

In addition, OSHA does not just say in the rule that certification on a particular type and capacity of equipment means an operator is qualified for a particular type and capacity of equipment, it states he (or she) is qualified to operate a particular piece of equipment. This appears to remove any responsibility by the employer to "check out" an operator on the actual crane he is planning to designate him to operate.

The problem is that certification has never been regarded by the certification bodies in this manner. NCCCO has always said that certification is a component of qualification, not qualification in and of itself – a "tool in the toolbox" of qualification. The variety and complexity of cranes prohibits, as a practical matter, a crane operator being certified on every type, size, and make of crane with all of its available attachments, in all of its possible configurations, in all the construction environments it might work. That is why certification is akin to a driver's licence where the basics of operation have been tested at an introductory level and upon which, over time, a card-holder builds experience with different equipment and applications. In this way a sound safety record is established. To rely on certification alone effectively undermines C-DAC's attempts to make the workplace



It is crucial that every crane operator holding a current card will still have a valid certification when compliance begins in a little over 18 months

safer through more prescriptive operator qualifications.

Disenfranchised

Another concern being expressed by industry is the possible disenfranchisement of existing certificants. OSHA has stated that anyone not certified to the new rule on 11 November 2014 will not be considered certified. This would include two groups: (i) those who were certified prior to the rule being published in August 2010 and who still have some time left on their re-certification; and (ii) anyone who has been certified during the four-year period whose certification has been impacted by interpretations issued by OSHA. This would also be unfair to employers who took steps to have their operators certified before it was required.

As one owner of a medium size crane rental company put it, "Why would OSHA penalise us for trying to be safer? I thought that's what OSHA was set up to do, promoting safety not discouraging it." OSHA's position on this issue is hard to understand given that all the certifications issued during this time came from certification bodies that OSHA had officially recognised, a recognition that employers and operators reasonably relied upon.

A simple solution to this issue is available to OSHA: accept the process of recertification and let it do what it is designed to do: test a certificant on any changes to the prevailing rules and standards as his or her certification comes around for renewal on its regular five-year cycle. Hopefully, the American National Standards Institute (ANSI) and the National Commission for Certifying Agencies (NCCA) on which

OSHA relies to provide the required accreditation of certification bodies, will be able to convince OSHA that this is how professional certification is designed to function. Mass retesting of certificants every time a rule is changed or a procedure is amended would not work in any profession and it is counterproductive. Contrary to what OSHA personnel have stated on several occasions, recertification is not the same as grandfathering (where existing operators would never have to test) nor is it "kicking the can down the road" as recertification has also been characterised by the agency. It is a time-proven and psychometrically sound method of progressively bringing all certificants up to the same standards by a "date certain."

One thing, however, is not in doubt: It is neither in OSHA's best interests, nor those of the certifying bodies, that any crane operators are disenfranchised at 10 November 2014 when the operator certification provisions come into effect. More importantly, it is not in the interests of the industry for – and by – this rule was written. For its part, NCCCO will stand resolutely behind the 130,000 accredited certifications it has issued over the last 17 years, as well as the hundreds it continues to issue every month.

No matter what the outcome, it is critical that every crane operator holding a current certification card – including the 30,000 that have already chosen to recertify – will still have a valid certification when compliance begins to be enforced in a little over 18 months. As Thom Sickelsteel, NCCCO president, commented recently, "We have come too far, and all devoted too much time, energy and expertise, for anything less to be acceptable."

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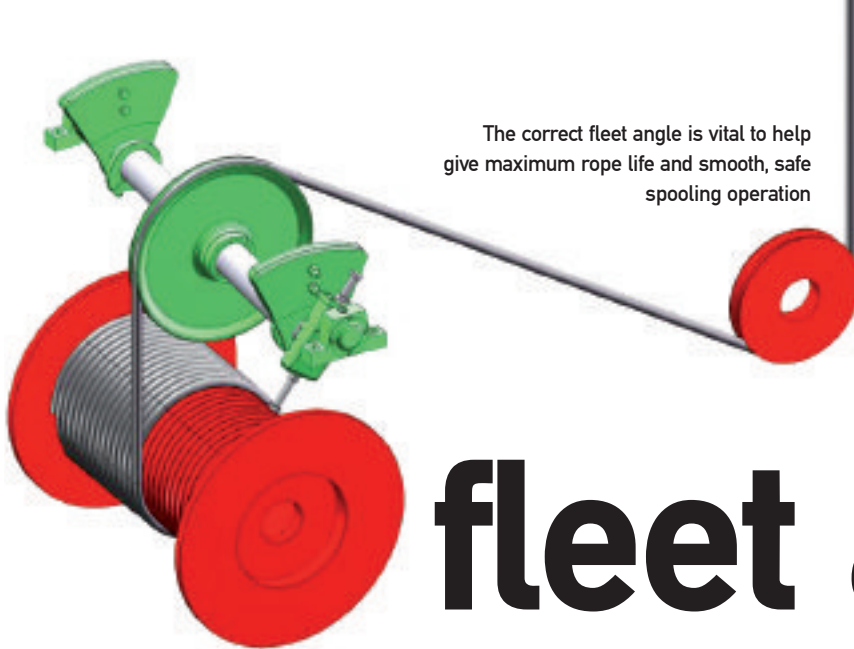
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The background of the Verotop advertisement is a composite image. It features a blue sky with a large, stylized blue wire rope structure on the right. In the center, a red excavator is shown working on a snowy mountain slope. The bottom left corner has a white hexagonal pattern overlay.

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The correct fleet angle is vital to help give maximum rope life and smooth, safe spooling operation

Fixing fleet angles

You may know the importance of fleet angles, but do you know the best ways to correct them?

CRIS SEIDENATHER, managing director of Lebus International Engineers, explains how

When spooling wire rope onto a drum, it is necessary for the rope to come onto the drum at a very slight angle, just enough to encourage each wrap to sit tidily next to the previous wrap, and for each layer to ride cleanly onto the layer beneath.

In fact, apart from the design of the drum itself, this angle – the fleet angle – is the most significant factor in the behaviour of a spooling system.

Put simply, optimum fleet angle means maximum rope life and smooth, safe spooling operations.

The fleet angle is defined as the largest angle of the rope between the first sheave and the drum flange, relative to the centre line of the drum. With all types of drum, the rope is subject to a fleet angle which directly influences its behaviour and impacts on its service life. If the fleet angle is too big, the wire will tend to pull away from the flange as the layer changes. It will want to spool towards the centre and so leave gaps. Gaps mean ragged spooling, which means (at best) excessive rope wear, or (at worst) snagging, catastrophic system failure and physical danger to all those around.

If the fleet angle is too small, the rope may not pull away from the flange soon enough. It will pile up on the flange for, perhaps, two or three wraps and then bang down with considerable force, damaging the rope and the equipment. Again, catastrophic failure and personal injury is a real threat.

The angle

Ideally, the fleet angle should be between 0.25 and 1.25 degrees. This is not an absolute rule of physics; it depends on the rope construction. Nor has it been

calculated mathematically. Rather, it has been learned from years of experience. While some wire rope experts may cite slightly different numbers, this is the range that Lebus recommends, and we believe we have at least as much experience as anyone when it comes to multi-layer spooling since inventing the original Lebus counterbalanced spooling system in the 1950s.

The fleet angle can be varied by moving the first sheave closer to or further away from the drum. If the sheave is too close to the drum, the fleet angle will be greater than 1.25 degrees; if it is too far away, the fleet angle will be less than 0.25 degrees.

In general the distance between sheave and drum should be at least 20 times the width of the drum. Ideally a ratio of 23:1 works very well, we have found. Thus, the larger the drum, the further away the sheave needs to be to keep the fleet angle between 0.25 and 1.25 degrees.

It is not always possible, however, to achieve the optimum fleet angle. For example, there are massive winching systems at the top of mountain cable car systems, often housed in compact machinery sheds. There is often no space to rig a sheave the requisite distance from the drum.

For just such cases two additional spooling devices are available. One is a fleet angle compensator, which is driven automatically by the rope tension. The other is a level winder that is mechanically driven. Both offer a solution to guide the cable along the drum between flanges, but each has its advantages and disadvantages.


Fleet angle compensator

The fleet angle compensator (FAC) is driven by the movement of the wire rope

as it goes through the crossover sections of the drum. As the rope winds or unwinds, the FAC shaft slowly oscillates, allowing its sheave to slide back and forth across the shaft to maintain an optimum fleet angle and guide the rope smoothly onto the drum.

Certain operating conditions are necessary for the Lebus fleet angle compensator to function properly. The rope must go from the drum over the compensator sheave with a minimum contact angle of 60 degrees to a fixed point such as a fairlead or fixed sheave. To avoid excessive angles of the rope on the sheaves, the minimum distance between the fairlead (fixed sheave) and the compensator sheave must be at least six times the drum width. If spooling in multiple layers, the drum must have Lebus-style parallel grooving. For a single layer, helical (screw thread) grooving will also work. As always, there must be sufficient tension on the cable during the spooling operation. We recommend that minimum tension should be 1-2% of the wire rope's breaking load.

There are three primary advantages



The principle of the fleet angle compensator shown in a cable car application



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WIRE ROPE

of the Lebus fleet angle compensator. First, there is no mechanical connection between the drum and the compensator. Second, installation is easy and quick. And third, it is completely automatic and, after initial adjustments when the rope is first spooled onto the drum, only a minimum of maintenance is necessary.

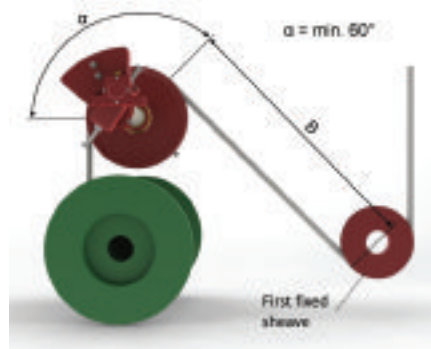
A level winder

Level winders can be quite sophisticated, hydraulically or electrically driven and computer controlled. But mechanical level winders also work perfectly well and have much less to go wrong. In our experience, it is generally best to keep things simple and so Lebus usually recommends the mechanical solution.

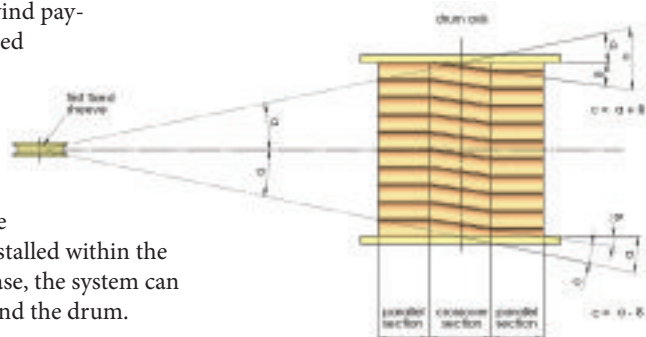
A mechanical level winder comprises a main shaft (the lead screw) with helical screw grooving along which the rope feeder travels. The rope feeder housing includes two vertical roller bars and one horizontal roller or, alternatively, a wire rope sheave. The lateral movement of the housing is generated by a chain drive sprocket ratio between drum and lead screw, as shown in the image. The automatic level winder fitted is designed and engineered to be compatible with the grooving on the drum. Perfect, controlled spooling is guaranteed regardless of the number of layers and slight changes in wire rope size.

The level winder unit – also sometimes called level wind pay-on gear – must be installed in front of the drum in line with the first fixed sheave when using the vertical rollers to guide the wire rope.

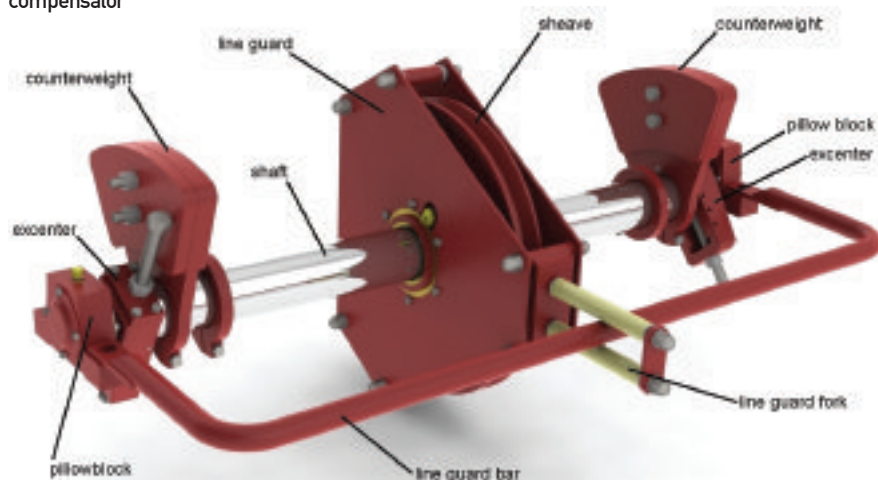
Alternatively, a sheave can be integrated and installed within the housing frame. In this case, the system can be set up anywhere around the drum.



Explanation of the fleet angle of wire rope winding onto or off a winch drum



Component parts of a fleet angle compensator



A "two dollar" solution is a kicker plate on the flange of the winch drum

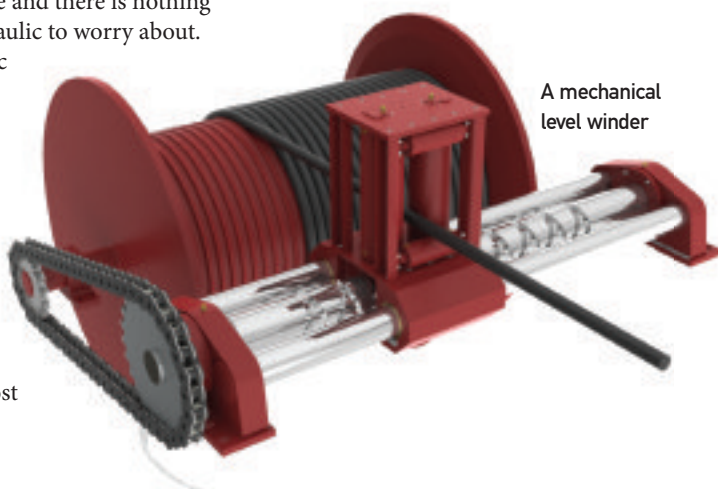


The level winder is engineered to be compatible with the parallel grooving on the drum. It is adjusted for the specific rope diameter, and the gear ratio is fixed (using a standard sprocket-chain connection) to match the ratio between coils of wire on the drum to the pitches on the lead screw. The result is perfect and controlled spooling, regardless of the number of layers or slight changes in wire rope size.

As before, certain operating conditions are required for the level winder to function properly. The rope must go from the drum through the vertical rollers or the level-wind sheave to a fixed point such as a fairlead or fixed sheave. To avoid excessive angles of the rope on the sheaves, the minimum distance to the fairlead or fixed sheave must be at least seven times the drum width. There must be a minimum tension of 1 to 2% of the wire rope's breaking load when spooling more than one layer.

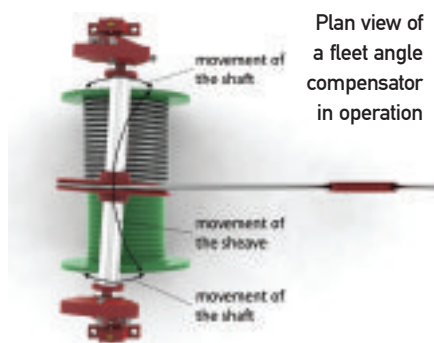
The advantages of level winders are that they keep the rope spooling properly even if there is slack in the line. As with the fleet angle compensator, once it is set up no more adjustment is necessary and very little maintenance is required. In case of damage to a mechanical level winder, parts are easy to replace and there is nothing electrical or hydraulic to worry about.

Oceanographic installations that spool rope up to 46 layers have demonstrated that level winders give synchronised and totally controlled spooling in the very harshest, most



A mechanical level winder

WIRE ROPE



Plan view of a fleet angle compensator in operation

testing conditions.

The disadvantages of level winders is that they do require a little more space than fleet angle compensators and they are sensitive to high axial forces and shock loads.

The \$2 solution

If the fleet angle is just a bit too small, there is a really rather simple solution. A flat iron plate, which we call a kicker plate, is welded or bolted onto a specific point on the flange of the winch drum. This kicker costs no more than two dollars. Since the Lebus parallel grooving pattern on the drum controls the movement and spacing of the wire rope between the flanges, and from layer to layer, it is easy to identify the location on the drum circumference where the rope must return (kick back) from the flange to regain the proper position to assure proper spooling for each repeated layer.

This is where the kicker is placed. Once installed near the centre line of the groove crossover sections, the rope is given a kick after each complete wrap to take its proper position on the patterned drum.

A final option for adjusting the fleet angle, if it is not possible to move the fixed sheave, is simply to reduce the width between the flanges. The parallel grooving of the drum will continue to act effectively to provide smooth multi-layer spooling with a narrower drum, even if – as is likely – the number of layers on the drum needs to increase as a consequence of narrowing the width. ■

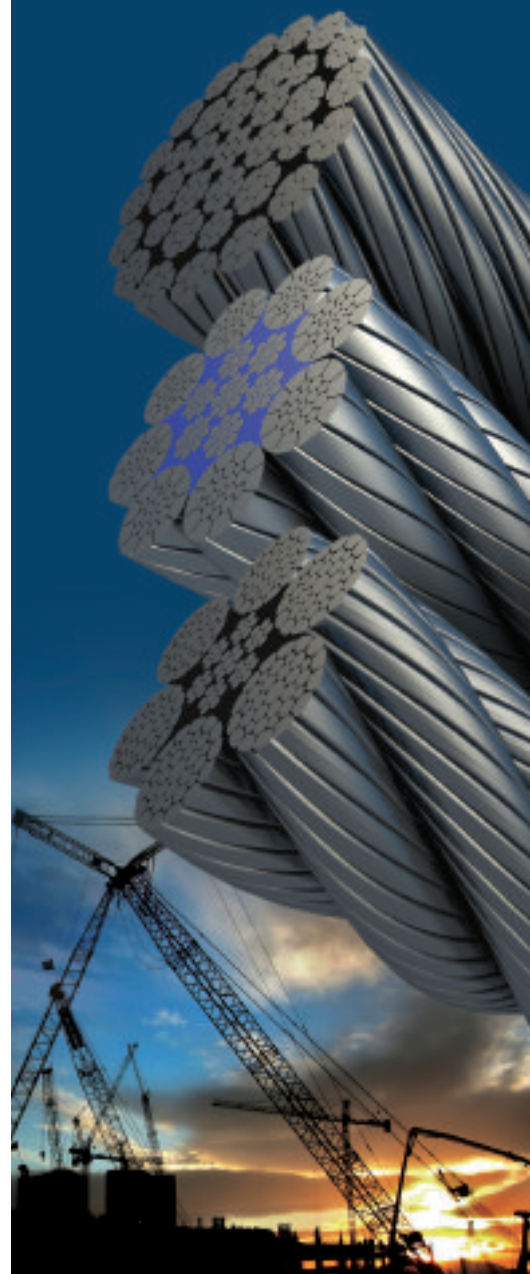
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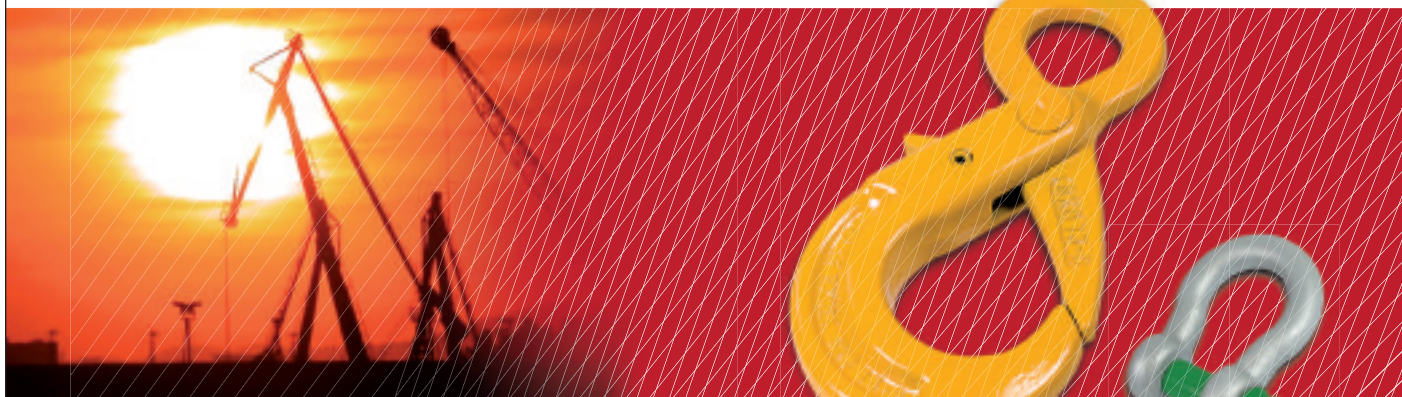
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Indian return

The second BC India construction equipment show runs from 5 to 8

February 2013 at the Bandra Kurla Complex in Mumbai.

This year, with more exhibitors and visitors, the show promises to be bigger and better than before. *IC* reports

BC India is the international trade fair for Construction Machinery, Building Material Machines, Mining Machines and Construction Vehicles. Organisers are Messe München International, which also organises the Bauma construction exhibition in Munich, Germany, the Association of Equipment Manufacturers (organiser of ConExpo-Con/Agg in the USA) and BC Expo India Pvt. Ltd. BC India is becoming more established in the construction calendar.

In 2011 the official figures for the show were impressive, with 24,823 visitors from 71 countries attending (92 per cent of who were decision makers) and 508 companies from 36 countries exhibiting new products and services. This year the figures have surpassed those of the first show, with nearly 700 exhibitors from around the world already confirmed and visitor attendance forecast to reach around 40,000.

Such is the increase in numbers, the size of the event has almost doubled, from 88,000 square metres in 2011 to 150,000 square metres for 2013. Thomas Löffler, chief executive officer of BC Expo India, explained, "Many companies have booked

more space than at the first event. That shows the high regard BC India already enjoys among exhibitors."

Among the crane exhibitors will be Manitowoc, which will showcase its Potain MC 205 B tower crane, one of several crane models built at the company's factory in Pune. The crane has a 10 tonne capacity and can lift 2.4 tonnes at its maximum outreach of 60 metres.

In the right direction

In addition to the range of cranes on display, Manitowoc will also run live daily training courses through Manitowoc Crane Care. In 2011 the courses were in demand and sold out. This year, with classes including training on tower crane maintenance and operation, Manitowoc is expecting similar success.

Raman Joshi, managing director of Manitowoc Cranes India, said the timing of the show was good for manufacturers and visitors, "India continues to move in the right direction, but this year has been a little slower," he says. "But we're optimistic for 2013. We're still expecting new infrastructure and energy projects to

VISITOR INFO

WHAT: Bauma ConExpo India

WHERE: Bandra Kurla Complex, Mumbai, India

WHEN: 5 to 8 February 2013

OPENING TIMES:

Tuesday to Thursday: 10 a.m. to 6 p.m.

Friday: 10 a.m. to 4 p.m.

FURTHER INFORMATION: www.bcindia.com

come on-line and to build these ambitious new developments contractors will need to use the latest lifting technology."

Alongside a number of new exhibitors at the event, for example, Hyundai, Mitsubishi Heavy Industries, Ashok Leyland, CIFA and Shantui, BC India 2013 will also feature first-time pavilions from Northern Ireland and Japan. China, France, Great Britain, Italy, Russia, South Korea and Spain will all organise joint presentations from their countries for the second time.

The construction sector is forecast to grow by an average of 10.5% a year for the next decade and more than US\$ 1.3 trillion will be invested in infrastructure in that time. Volume in the construction industry will surpass US\$ 6.5 billion by 2014, helping to ensure the popularity of BC India, the organisers say.

Exhibitor product categories include 'All Around Construction Sites', 'Mining, Extraction and Processing of Raw Materials', 'Production of Building Materials' and 'Component and Service Supplies'. Major crane manufacturers exhibiting include Kobelco, Liebherr, Manitowoc, Palfinger, Tadano and Terex. Chinese manufacturers are well represented by Fushun Cranes and Equipment, Liugong, Sany, XCMG, and Zoomlion. On the transport side, exhibitors include Cometto, Goldhofer, Kamag, Nicolas and Scheuerle.

In addition to major crane and transport equipment manufacturers exhibiting at the show are India's two largest crane rental companies, Sanghvi Movers and ABG Cranes, the latter also building lattice boom crawler cranes. Other local manufacturers include Action Construction Equipment and Tractors India Limited (TIL).



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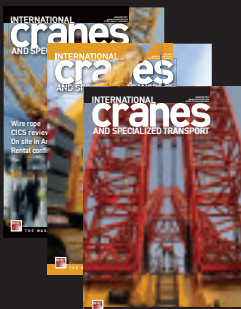
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COMMENT

Joel M Dandrea

Free trade?



A recent article in the *Wall Street Journal* was entitled: *In the World of Big Stuff, The U.S. Still Rules*. The article indicated that the USA had a trade deficit of US\$ 509.7 billion in manufacturing in the first nine months of 2012 due primarily to “lost” industries such as consumer electronics to the Chinese and clothing to Mexico Central America and Asia.

In manufacturing industries of large equipment such as aircraft, industrial engines, excavators, cranes, railway and mining equipment, the USA exports far more than it imports. The *Journal* attributes the US ability to maintain a positive trade balance in these industries to the fact that many of the products are derived from military applications with extensive research and development in engines and metallurgy.

Another key factor that has helped the USA maintain leadership in heavy equipment manufacturing was the time-consuming and high cost of reverse engineering these products. It is a long accepted practice in the USA and supported by the courts that allows a company to buy a product, reverse engineer it and bring a cheaper and/or enhanced copy of the product to market. The main restrictions are that the second manufacturer may not use the originator's trademarks or name to sell knock-offs as originals – thus creating confusion in the market. The exception to this rule is if the invention or process was unique and eligible for patent protection.

A paper funded by the U.S. National Science Foundation, *The Law & Economics of Reverse Engineering*, points out, “From an economic standpoint, a right to reverse engineer is typically sound because the innovator is nevertheless protected in two ways: by the lead-time it enjoys (by being first to market) and by the costliness of reverse engineering. However, when a particular method of reverse engineering makes it so cheap, easy and rapid to make competing products that innovators will find it difficult to recoup their research and development expenses, it may be economically sound to regulate this means of reverse engineering.”

Most economists feel that for the United States to thrive economically it must retain some significant positions in world trade in high-end manufacturing, particularly those that require

technology and innovation. The USA has had a difficult time competing in industries with low barriers to entry.

We have also learned that a protectionist approach to trade is counterproductive for the USA and the world. The USA has free trade agreements (FTAs) with 17 countries. According to the U.S. Chamber of Commerce, 17.7 million US jobs depend on these “free” trade partners and, of this total, 5.4 million jobs are supported by the increase in commerce generated by the agreements.

We see the importance of these free trade agreements and believe that the USA would do well to expand them. We have credibility on this issue because, as an example, SC&RA has helped lead the fight with The U.S. Customs and Border Protection Agency to eliminate unfair and unjustified import tariffs on self propelled modular transporters (SPMTs).

Free trade must also be fair trade. Any country's innovative technology development must have the opportunity to recoup its research and development investments. However, new reverse engineering product breakthroughs, for example, combining laser scanner technology with computer-aided design, engineering and manufacturing software allow precise measurements of a crane or truck, to quickly manufacture replicas of all its components.

Imitation can be competitively crushing and jeopardise the credibility and brand of the company producing knock-offs. Businesses copying large, complex and innovative cranes within a year of the original release date change the industry dynamics in a negative way. The innovator or first to market company is at a disadvantage and subject to serious unfair competitive pressure.

SC&RA believes the US government should continue to pursue free trade expansion. The combination of scanning and CAD, CAM, CAE software cannot be regulated to “put the genie put back in the bottle.” However, in light of the reduced time and cost to create reverse engineered, duplicate, high-end, manufactured products and the high R&D costs incurred by innovators, we believe some creative licensing approaches may be necessary to protect sub-patentable designs for a finite period. The ability to increase and improve international free trade may depend on it. ■



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DAVE STURTEVANT reports on EN 13000 and the first meeting of the International Cranes Stakeholders Assembly (ICSA)

Agree to disagree

The Europeans have been working on crane design and lift safety standards EN 13000 since 2004 and the subject was readdressed at the November 2012 meeting of the International Crane Stakeholders Assembly (ICSA) held in Shanghai, China.

The inaugural meeting of the ICSA was attended by the Association of Equipment Manufacturers (AEM) with representatives from the USA and China, China National Machinery Quality Supervision Testing Center, The European Association of Abnormal Road Transport and Mobile Cranes (ESTA), the European Federation of Materials Handling (Fédération Européenne de la Manutention, or FEM) and Specialized Carriers & Rigging Association based in the USA. The meeting was hosted and chaired by the Crane Industry Council of Australia (CICA), and the China Construction Machinery Association (CCMA).

The European product standard for mobile cranes EN 13000:2010 is being amended. The amendment was approved on 26 April 2012 during a working session in Frankfurt and was submitted at a plenary meeting of CEN (the European Committee of Standardization) in London on 3 May 2012. As a result the standard is expected to go into effect in the second half of 2013. The Europeans had been hopeful that they could change the minds of US representatives and persuade the Chinese to consider adopting the European Standards.

As an overarching principal, manufacturers, crane purchasers and users would prefer that major standards for manufacturing cranes could be adopted worldwide as it makes design, production, inventory control and assembly, easier and less expensive; reduces prices marginally; and makes international resale easier and more practical.

In the final analysis, after years of discussion, debate, research, surveys and meetings the US and Europeans had to agree to disagree. The US Standard allows for an emergency key to be



available in the cab and easily accessible to the operator to provide increased load capacity if needed without reduction of speed. American crane users, purchasers and the Occupational Safety and Health Administration believe this allows crane operators greater flexibility in an emergency, thus offering a better opportunity to “save” a bad situation when a crane or load is destabilised.

Safety options at arms' length

The new EN 13000 standard, on the other hand, eliminates the standard override key in the cab in favour of a set-up button, which would give the operator the ability to use a 10% increase in capacity to get out of a deadlock situation – but with all speeds reduced to 15%. In case of an emergency, a key would be provided outside the cab, which would allow as much load capacity as the machinery can offer but, again, would limit an operator's ability to make movements at full speed. Instead, the European model contemplates

full speed only for moment-decreasing movements in an emergency. It is the American contention that such a system ignores the fact that in an emergency, an operator may be required to perform counter-intuitive movements in order to save the crane or, more importantly, save lives. For instance, if the ground gives way under the rear of a crane and the machine starts going over backwards, an operator would want the ability to boom down as fast as possible, even though this is a moment-increasing movement.

Impetus for the new EN 13000 came from European health and safety organisations, which believed that the standard override key, offering full speed in an overload situation, gave too much leeway for an operator to “misuse” the emergency power in non-emergency situations. Advocates of the new standard argue that a limited function emergency key out of the operator's reach, coupled with a monitoring device that records all overrides (all of which is required by EN

13000) will limit the easy use of emergency power and will make users less likely to have equipment failure or lose control of the load. The downside is that when an emergency does occur, European operators will find themselves with fewer options immediately available at "arms' length."

Both sides argue that their approach will result in fewer accidents. For right now both sides are right because there is no baseline for comparison. There is no question that when these two competing standards are fully implemented, studies will begin on the frequency of accidents, the severity of accidents, the number of close calls, and how the operators and equipment responded to avoid accidents. In five to ten years we will have our answers and, perhaps, then we can implement standards that everyone can agree on.

Avoiding an emergency

Interestingly, a survey of crane users conducted by ESTA (the European Association of Abnormal Road Transport and Mobile Cranes) revealed that a majority of those polled asked for an emergency switch, within reach of the operator, allowing full speed on all crane



movements in case of an emergency, with a number of operators actually reporting that they had a "near miss" situation or had "lost control" of their crane due to lack of such an emergency switch.

Other issues being considered by the ICSA are wind turbine installation and

transportation safety, stability limits in capacity charts in mobile cranes and the use and design of data loggers and event recorders on cranes. The next ICSA meeting will be during the 15 to 21 April 2013 Bauma exhibition in Munich, Germany. ■



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LCM LOAD CELLS



LCM Systems now offers intermediate capacities of its RILL and SILL Link load cells.

The link load cells fall in line with the ratings of industry standard shackle sizes and ratings. The series has also been extended to include load ratings from 1 to 500 tonnes.

Features of the self indicating link load cell include an integral display, where the applied weight or force can be shown and a built-in alarm to alert the operator when an applied level is met. The RILL link load cells also use 2.4 Ghz frequency band radio.

The SILL and RILL are both manufactured from high tensile aluminium and the shackle holes are steel bushed to ensure that they are rugged and hardwearing. Both product ranges are easy to install, the company said.

Stronger joystick from Penny and Giles

Penny and Giles has introduced the JC8000, a new heavy-duty electronic joystick controller. Its main feature is increased strength, which has been achieved by increasing the body material around the area that supports the operating lever. Other areas that have been changed are the operating lever's diameter and the lever's pivot geometry. These alterations have enabled the joystick to handle increased torque and improve the lever's bending and applied load resistance.

Other features include an under-panel depth of 70 mm, single or dual axis controls and a range of eight handle and grip options. The JC8000 can also withstand a 380 Nm overload on the X and Y axes and 2,000

The new heavy-duty electronic joystick controller



N on the vertical; it can also operate in temperatures from -40 to +70 °C.

Commenting for Penny & Giles, Kevin Rayment, vice president of Curtiss-Wright avionics and industrial group, said, "The JC8000

is designed to survive in environments that are more physically demanding than the performance limitations of competitors' heavy-duty joystick controllers, and even our own JC1500 and JC6000 controllers."

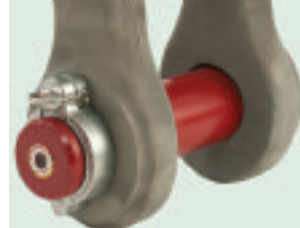
DANA DEBUTS DRIVETRAIN SOLUTIONS

Dana has launched its new Spicer Rui Ma brand for a new class of transmissions and axles made in China. Initial Spicer Rui Ma solutions included the Spicer TZL16 RM power shift transmission, the T08 RM transmission and other heavy-duty vocational applications. Dana will gradually introduce additional Spicer Rui Ma transmissions and axles for the construction, mining, and materials handling industries.

"Over our 20 years of collaborations with Chinese OEMs, Dana has developed a deep understanding of the unique demands of this market," said George Constand, Dana's chief technology and quality officer. "The introduction of the Spicer Rui Ma series of drive train solutions is a significant advancement in our commitment to supporting all market segments, manufacturers, and end users in the region."

The Spicer Rui Ma brand is marketed in China as "Spicer," and is developed and produced at Dana's manufacturing facility in Wuxi, Jiangsu Province, China for the Chinese off-highway market.

EASY-LOC BOLT



A new easy-lock bolt system has been introduced by the Crosby Group.

The Crosby Easy-Loc Bolt Securement System uses a split collar assembly, removing the need for a threaded bolt, nut and cotter pin. This provides up to a 70% weight reduction, the company said.

The new bolt securement system eliminates the loss of the cotter pin. The hinged split collar retention bolt is permanently affixed for easy access and to prevent loss.

The Crosby Easy-Loc will be standard on 125 through 300 tonne Crosby G-2160 wide body shackles and G-2140 alloy shackles.

Holmatro develops double-acting lock nut cylinder

Holmatro has delivered two double-acting lock nut cylinders for the Polish mining sector, each with a capacity of 400 tonnes.

In the mining sector double-acting lock nut cylinders are rarely supplied because the build-in height of these cylinders is too high. After studying the possibilities of constructing this type



of cylinder with a lower build-in height, Holmatro devised a new concept, where the cylinder is not fitted with a stop ring, but with an intelligent return plunger. It results in a lower build-in height

that makes the double-acting lock nut cylinder a suitable tool for levelling, climbing, synchronised lifting and lowering applications.



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Picture of the month

On a visit to a customer near Vicenza in north east Italy, Paul Brown took some photographs of a very old P&H 218-TC (Harnischfeger) crane built under licence by Rheinstahl Union Brückenbau AG in Dortmund, Germany, in 1965. It has the serial number 4541 and was sold through the P&H distributor at that time Sobrino SpA to the company SACAIM Venezia. It was last used in 1998 and the owner said he was going to try and put it into working order when he has enough time and money.

PEOPLE NEWS

■ RAMACHANDRA

DESAI has left Sanghvi Movers in India and set up his own company in the crane industry. Former executive director (operation and marketing), RS Desai was at Sanghvi Movers for 25 years, since the inception of the company in 1987. Desai is now an independent crane industry consultant with his company Star Equipments & Consultancy based in Pune. "I would like to take this opportunity to thank all those who have been associated with me during the last 25 years," Desai told *IC*. "I enjoyed working for Sanghvi Movers and the crane industry as a whole and I will continue to help the industry and the people with my past 25 years of experience in the field."



Anna is the outstanding choice to lead the company because of her excellent track record in helping transform and grow our international presence." Stewart said, "I am very proud to have been asked to lead Laing O'Rourke. I understand the obligations and have committed to the shareholders to turn our highly compelling vision for the future into reality."

■ Uwe Wenzel, director at Mammoet Deutschland, has announced that he will step down from his position. At the time of writing, no reason for his decision was announced. Sander Splinter, director of Mammoet Europe, has taken responsibility until a replacement is found.

■ SIMON PYKETT

from load handling specialist Penny Hydraulics has won the Young Design Engineer of the Year at the British Engineering Excellence Awards 2012. Pykett impressed the judges by designing and managing projects and installations for the nuclear industry. These included specialist equipment for handling fuel element debris and other waste materials during decommissioning of nuclear power stations. "We're excited and pleased that Simon has received this national recognition," said Richard Short, Penny Hydraulics sales director.



■ Laing O'Rourke has appointed **ANNA STEWART** as group chief executive officer. This appointment will be effective from April 2013, following a period of transition of responsibilities. Ray O'Rourke, Laing O'Rourke executive chairman and chief executive, said, "In selecting Anna as the next chief executive we will achieve the seamless continuity of strategic approach we were seeking."



■ The Port of Liverpool in the UK has been named Port Authority of the Year at the global Containerisation International Awards. The port was recognised for its progressive approach, its ambitious development plans, its dedicated customer offering and efficient and supply chains. **GARY HODGSON**, Port of Liverpool managing director, said, "We are delighted to receive this award. It is a recognition of all the hard work put in by the port's employees over the last few years." **STEPHEN CARR**, head of business development, said, "This award is a great platform for us to build into the future with the development of the Liverpool2 [the port's new deep-water container terminal]."

■ Send picture of the month entries and all other back page-related information to *International Cranes and Specialized Transport*, KHL Group, Southfields, Southview Road, Wadhurst, East Sussex TN5 6TP, UK or by e-mail to alex.dahm@khl.com. Picture caption entries should include: the month and year taken, the place, type of crane, owner and project, plus any other relevant information.

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“A big thank you to KHL for organising another great conference. It was a wonderful opportunity to explore the growing Latin American market and meet some key players in the industry. We learnt a lot and will definitely be signing up for next year.”

Sarah Spivey, Modulift -
said about the 2012 conference



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2 ORGANIZATION TYPE

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 ca. 102.000 KM, ca. 10.500 working
 hours

Grove GMK 4100
 Lifting capacity 100 t, 52 m boom,
 Counterweight 26,1 t, Hookblock 40 t
 (3-sheaves), Telma brake, year 2010,
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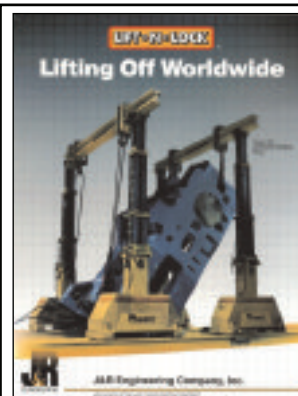

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40 t Demag AC 40	2000	6x4x6	31,20m + 13,00m
40 t Faun ATF 40G-2	2007	4x4x4	35,20m
45 t Faun ATF 45-3	2005	6x6x6	34,00m + 15,20m
45 t Faun ATF 45-3	2006	6x6x6	34,00m + 15,20m
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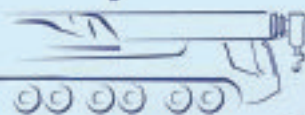
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