

INTERNATIONAL

MARCH 2016

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AND SPECIALIZED TRANSPORT

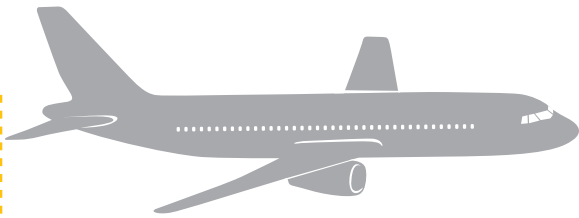
Operator
training and
certification

Wind power
in India

bauma
Show guide



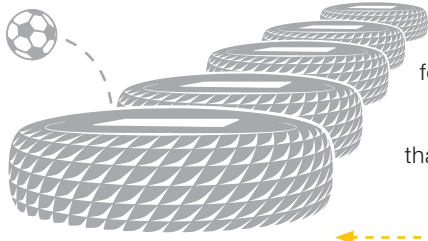
SITE REPORTS: FRANCE, GERMANY AND USA; THE KNOWLEDGE



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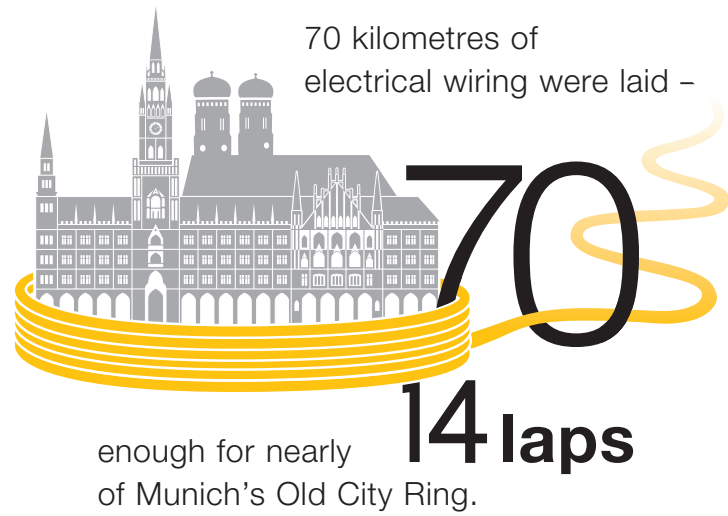


Part something GER



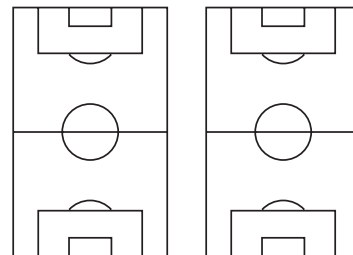
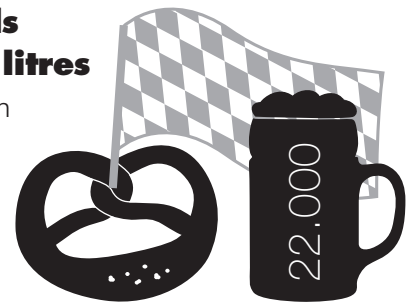
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SUBSCRIPTIONS

To subscribe to *International Cranes and Specialized Transport* or any of the magazines in the KHL portfolio: *American Cranes & Transport*; *Cranes and Project Transport*; *Turkey*; *International Construction*; *Demolition & Recycling International*; *Construction Europe*; *International Rental News*; *Access International*; *Access, Lift & Handlers*; *International Construction Turkey*, go to: www.khl.com/subscriptions or call +44 1892 784088 for details.



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STABLE AND ECO FRIENDLY

Zoomlion tower crane pioneered an active-safety control technology for large moment of inertia from jib slewing, which eliminates the risk of jib lateral instability. So as to greatly reduce environmental pollution, the high altitude de-dusting and cooling system design has been proven effective in controlling dust generation on the construction site.

bauma 2016
April 11-17, Munich

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comprehensive show guide starting on page 18. Next month's issue will have the last minute stop press news on the show for late developments.

Okay so Bauma might get a few more visitors than we do at our events but, at the Lift & Move USA last month in Houston, there were more than 700 attendees (see News on page 11). It is an astounding number that really helps highlight the issue of the skills shortage in our industry. IC publisher KHL Group co-organises the Lift & Move USA event with Specialized Carriers and Rigging Association and National Commission for the Certification of Crane Operators.

Linked closely to the above, one of our main features this month, starting on page 43, is about operator training and it looks in more detail at ways of addressing the challenge of narrowing the skills gap. The SC&RA news this month on page 87 also addresses this topic. As with Lift & Move USA, a key aim of all of this is to attract good new people to the industry, not only youngsters, and then make sure that they are properly trained to do a great job and are motivated to stick around.

More news of events this month is the announcement of the one day Cranes and Transport Middle East conference. It will be in Dubai, UAE, on 8 December 2016. See page 8 of this issue and www.khl.com/catme for more information. Some high level speakers are already signed up and interest is growing strongly in this new event.

Finally, I would like to add my welcome to Katherine Weir who is the new assistant editor at *International Cranes and Specialized Transport*. Katherine has experience of writing about trucking but is new to the crane industry. She joins just in time to attend the Bauma exhibition which, you could say, is jumping into the deep end. I hope you will give her a warm welcome.

ALEX DAHM

Editor



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EDITOR'S VIEW

KHL CRANES



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excellence
Munich, Germany 14 April, 2016

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HIGHLIGHTS

■ USA-based H&E Equipment Services reported mixed results for the fourth quarter of 2015. Revenue decreased 8.2 percent to US\$ 273.2 million compared to a year ago and net income was down 28.2 % on last year to \$ 12.0 million. Good news, however, was the 3.7 % increase to \$ 115.0 million in rental revenue and average rental rates increasing by 0.6 % compared to last year.

■ International high-pressure hydraulics company Enerpac has been awarded a contract from USA-based S.T. Cotter Turbine Services to build a Rotor Removal System. According to Enerpac the Rotor Removal System will provide S.T. Cotter with a tool to reduce the time and labour needed during the removal and installation of a generator's rotor. The hydraulically actuated system is said to improve the efficiency and safety of turbine field maintenance.

■ China-based crane rental company Ningxia Wang Thai Engineering Machinery acquired a Grove GMK6300L all terrain crane, chosen - after lengthy research of 300 tonne capacity cranes - for the versatility of its boom and the Mercedes-Benz engines specified with the crane.

Growth slows at Tadano but revenue still up

Sales at Tadano for the first nine months of the 2015 financial year to the end of December 2015 were up 3.2 % on the same period of the previous year compared with a 15.4 % increase for same period a year before that. In numbers that was JPY 149,748 million (US\$ 1,239 million), up from JPY 145,121 million (\$ 1,200 million). For the full fiscal year, from 1 April 2015 to 31 March 2016, the Japanese crane and aerial work platform manufacturer forecasts sales of

JPY 206,000 million (\$ 1,704 million), up 1 % on the figure from a year before.

The company attributed the reduced growth to a downturn in exports, lack of growth in production and capital investment. While the US economy grew and Europe showed signs of recovery, emerging markets slowed. The slowdown in China, geopolitical risks and the falling oil price all contributed to a growing sense of uncertainty, Tadano said.

While demand for cranes during the nine month period grew in Europe and the Middle East it fell in the Americas, giving a decline of 0.4 % overall outside Japan. Export sales, at 51.9 % of the total, were JPY 77,748 million (\$ 643 million). Sales in Japan were up 7.3 % to JPY 71,999 million (\$ 596 million) for mobile cranes and aerial work platforms but loader crane sales were down. Tadano forecasts that exports will come down further, to 50 % of the total.

Mammoet orders five mobile folding Spierings cranes

Dutch crane manufacturer Spierings has received an order from Mammoet for five new mobile folding tower cranes. They will receive the newest Spierings model, named the SK 597-AT4 with a 48 metre jib.

Wouter van Noort, Mammoet managing director for the Benelux, said, "The new SK 597-AT4 cranes are a welcome addition to our crane fleet. The 48 metre jib length, together with a compact vehicle length, is the perfect combination to many of our customers. The machines will be divided over plants in Assen, Geleen and Hoogvliet. During the construction crisis we've slimmed down our mobile tower crane fleet. Lately however, we're noticing an increasing demand for this type of crane. That's why we're investing in five new Spierings tower cranes."

Koos Spierings, sales engineer at Spierings for the Benelux and UK, explained, "We have noticed a strong recovery for the market of mobile tower cranes, both in the Netherlands and abroad.



Mammoet Nederland BV places order for five SK 597-AT4 mobile tower cranes from Spierings. (left to right) Wouter van Noort (Mammoet), Koos Spierings (Spierings) and Martin Tuijtel (Mammoet)

We are very pleased with the order for five new Spierings SK 597-AT4 cranes along with the delivery to Mammoet of a new SK 1265-AT6 later this year. We're proud that a prestigious company such as Mammoet has chosen Spierings cranes."

Spierings has already delivered its first eight new SK 597-AT4 machines and, over the last few months, said it has received plenty of interest for this model with more than 40 orders received.



IC and publisher KHL Group welcomes Katherine Weir as the new assistant editor for *International*

Cranes and Specialized Transport. Katherine has enjoyed a varied background in journalism, working across several titles, including *Trucking* magazine and *Fishing News*, as well as being digital editor for a selection of fitness websites. Please call Katherine on: +44 1892 786208 or contact her by e-mail: katherine.weir@khl.com

HIGHLIGHTS

■ Industrial lifting equipment manufacturer Konecranes has partnered with Ikusi, a Spanish manufacturer of remote controls, to supply three models of RC system. The range takes in two slim line handheld units; the 8000 500 and 8000 520; and the 'belly' Ikoncontrol 3 system. The co-branded product offering is said to be quick and easy to operate and also robust and flexible in terms of its operating characteristics.

■ Crane rental business Hewden in the UK has appointed three experienced directors to its management team. Former Hydrex and Speedy manager Mike Omond joins in the new role of operations director - plant; Edward Carr, previously with Kier and Select Plant, takes the operations director - cranes role; and Kevin Chambers becomes operations director - lifting solutions. Chambers is the former managing director of Interlift, the company recently acquired by Hewden. Adrian Murphy, CEO Hewden, said, "Mike, Edward and Kevin all bring a tremendous amount of expertise to Hewden."

Specialized transport company Collett & Sons met the challenge of moving wind turbines with blades nearly 60 metres long for a project in Scotland, UK. The GE 2.75-120 wind turbine stands 145 metres tall and its blades are 58.7 m long. A previous record breaking project gave Collett experience of the route from the Port of Grangemouth. Each component safely made the journey, arriving in synchronisation with the construction schedule, Collett said.



Crane safety group formed in New York City

New York City Mayor Bill de Blasio and Buildings Commissioner Rick Chandler have formed the New York City Crane Safety Technical Working Group in New York, USA. The group will review and recommend new policies for safe crane operations in the city.

The Crane Safety Working Group is part of several initiatives implemented after a crane collapsed in Lower Manhattan on 5 February 2016 (KHL.com story: <http://bit.ly/1QmyTcj>). The crane was being lowered and secured due

to heightened winds, according to press reports. One person was killed when the long boom of the crane fell to the street.

Just after the incident, the NYC Department of Buildings implemented several directives for crawler crane operation, which include new restrictions on crawler cranes, more sidewalk protection for pedestrians and improved notification for surrounding residents and businesses.

According to press reports, these new wind restrictions could negatively impact construction projects in New

York, potentially shutting down many safe crane operations.

Joel Dandrea, executive vice president of the SC&RA, sent a letter to Mayor Bill de Blasio stating, "as the leading organization representing crane and rigging companies throughout the world, we are disappointed to note that no industry professionals were appointed to your technical working group."

Dandrea asked for de Blasio to reconsider his position by adding at least one or two of these professionals to the working group.

Planning pause for Terex Konecranes merger deal

Planning of the proposed merger between Terex Corporation and Konecranes has been paused. A Terex statement said, "it would be prudent to pause the integration planning activities for the time being. This will

allow the Terex management team to devote its attention to improving the company's operating results and delivering on management's commitment to shareholders."

Terex has stated that the Terex Board of Directors recommendation of the merger still stands and filings are ongoing in pursuit of approvals from shareholders, antitrust

and the regulatory authorities that are necessary to complete the merger.

Terex and Konecranes announced the merger proposal to form Konecranes Terex last August. Since then Terex received an unsolicited offer from Chinese crane and construction equipment manufacturer Zoomlion to acquire it for US\$ 3.3 billion.

MANITEX BOOM TRUCK HAS TILTING CAB

International lifting solutions company Manitex, based in Texas, USA has added the 30112S to the TC line-up of truck mounted cranes. The TC300 incorporates a new cab capable of inclining up to 20 degrees to improve operator comfort.

The 30112S has a 30 tonne capacity and maximum main boom lifting height of 122 feet (37 metres), a maximum tip height of 167 feet (51 m) with the optional two-piece jib from 26 to 46 foot (7.9 to 14 m). Radio remote controlled outriggers allow for quick setup and operation by one person.

The new cab has 18 inch (457 mm) extended leg room and additional storage behind the operator's seat.



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INTERNATIONAL CRANES AND TRANSPORT MIDDLE EAST

The first International Cranes and Transport Middle East (CATME) conference – organised by *International Cranes and Specialized Transport* magazine and KHL Group – will be on 8 December 2016 in Dubai, UAE.

It will be a high-level, one-day conference with a focus on improving health and safety in lifting and transport operations, increasing the efficiency of fleet management practices, and enhancing the productivity of equipment on site. Presentations will highlight best practice advice and case studies from around the world.

CATME will be at the Conrad Dubai hotel, Sheikh Zayed Road, Dubai, United Arab Emirates and will have free entry for industry professionals. The conference is supported by industry associations SC&RA, LEEA and ESTA.

The Middle East remains one of the world's most active construction and infrastructure markets. Governments continue to invest heavily in transport, utilities and ports, and are making efforts to diversify their economies beyond their reliance on hydrocarbons. There will be enormous demand for lifting and specialized transport services and equipment.

A networking reception will be held the evening before the conference on 7 December 2016. The hotel is in the financial and shopping district and offers panoramic views, three dining and entertainment venues and a luxury spa and fitness centre.

■ For more information visit the CATME website: www.catmiddleeast.com

Manitowoc unveils Grove GMK4100L-1 all terrain

Grove has had a four axle, 100 tonne capacity all terrain for years, but the GMK4100L-1 is a new design that promises notable improvements as part of a new generation of Grove taxi cranes in development. It has a 60 metre boom.

The old model had two engines but the new one has one, which means more counterweight can be carried on board, allowing it to lift more. Grove claims it has the best load charts in its class when configured with full counterweight, or when set up to run within the 12 tonnes per axle load limit.

The new 100 tonner is 2.55 m wide instead of the 2.75 m of its predecessor and overall it is 0.5 m shorter. The Tier IV Final/Euromot 4 engine has a Fuel



Manitowoc launches the next generation of Grove taxi cranes with the GMK4100L-1, with notable improvements on its GMK4100L predecessor

Saver function to reduce consumption. It has the new Crane Control System (CCS), which will appear on all new Manitowoc products. The CCS includes Boom Configurator Mode where the operator inputs the weight of the load, radius and height to

be lifted to, and the system automatically configures the correct boom length.

Boosting the crane's overall reach is an 18 m telescopic swing-away jib, which can be extended with an 8 m boom extension for a total jib length of 26 m.

Triple bridge move success for ALE

International heavy lift and transport services company ALE overcame a range of challenges to complete three bridge moves in December 2015. Despite bad weather conditions and tight timescales, the UK team completed the installations on time.

The first installation took place in Wakefield, West Yorkshire on 25 December and took just three hours to install the new bridge that weighed 1,095 tonnes. ALE used 2 x 24 axle lines in a 4 file configuration incorporating integrated steel work to install the bridge.

On the same day in Gainsborough, Lincolnshire, ALE performed the first of two rail over road bridge replacements as part of Network Rail's ongoing



ALE jacking the Cleatham Road bridge in Lindsey, Lincolnshire, UK

maintenance and upgrading of their infrastructure. The removal of the existing bridge and installation of the new bridge utilised the same 12 axle lines of SPMT in a configuration of 4 file 6.

The following day, ALE performed the Cleatham Road bridge installation in Kirton in Lindsey, Lincolnshire. They

utilised 12 axle lines of SPMT in a 4 file 6 configuration to transport the new bridge weighing 100 tonnes.

Zoe Meynell, ALE project engineer, explained, "It was a fantastic team effort despite the ever changing site conditions. All of the upfront planning and meetings proved its worth with all three jobs going to plan."

A large Link-Belt 100 RT rough terrain crane is shown in a dynamic pose, with its boom extended upwards and to the left. The crane is white with red accents and is mounted on a red chassis with black outriggers. The background is a bright yellow and orange gradient with a red arrow pointing upwards on the left side. The crane's boom is labeled "Link-Belt" and "6-Section Pin & Latch Boom".

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HIGHLIGHTS

■ Crane rental company

Wiesbauer used its new Terex AC 700 all terrain crane to erect a tower crane at a work site in Kornwestheim, Germany. The Bietigheim-Bissingen-based crane service provider carried out the project on behalf of the Mörfelden-Walldorf branch office of construction company Trinac, which is building a new office building for the Wüstenrot bank in Kornwestheim. The decision to use this crane was not only based on the AC 700 crane's technical characteristics but also on logistical considerations.

■ Global offshore crane and equipment company

MacGregor, part of Cargotec, worked with UK-based Parkburn Precision Handling Systems to create a new fibre-rope crane. It is said to be simple to operate, eliminates heating and degradation problems associated with on-load fibre ropes stored on winch drums, and can accommodate non-uniformities resulting from splices in the rope. The crane was developed by combining MacGregor's offshore crane technology with the fibre-rope tensioning technology that Parkburn holds.

Palfinger revenue up 16%

Revenue at Palfinger was up 15.7 % to a new record high for the company of €1,230 million (US\$ 1,374 million) in 2015. It was up from the €1,063 million (\$ 1,188 million) of 2014 at the Austrian manufacturer of hydraulic cranes, aerial work platforms and materials handling equipment.

Earnings before interest and taxes (EBIT) was up 58 % from €66 million (\$ 74 million) to €104 million (\$ 116 million).

Herbert Ortner, Palfinger

CEO, said, "The Palfinger Group achieved these record results in a difficult and volatile environment, which shows that the consistent implementation of our corporate strategy has borne fruit and put us in an excellent competitive position. We have adjusted our product range to the requirements of each market region, and we have become more flexible in production, which we are increasingly outsourcing to the

market regions."

Sales were up in Europe, the USA, Russia and the CIS, the company said, going on to cite success in Asia from the company's co-operation with Chinese manufacturer Sany. Demand in South America was down by 35 % but market share was up, the company said. In other sectors, despite the falling oil price reducing demand in the marine business, this sector still grew by 26 %.

Sin Heng with Grove for Indonesia

Manitowoc Cranes awarded the distributorship of its all terrain Grove cranes in Indonesia to Singapore-listed Sin Heng Heavy Machinery Limited and its subsidiary PT SH Machinery Indonesia. Sin Heng already has eight Grove cranes in its rental fleet in the rapidly developing Southeast Asian nation. Raman Joshi, Manitowoc Asia Pacific VP and general manager, said, "Manitowoc sees tremendous synergy in this working partnership. Sin Heng Heavy Machinery is at a stage where it is primed for growth and we



Renny Yeo, Sin Heng; Sally Lim, Manitowoc Cranes; Tan Ah Lye, chairman of Sin Heng; Jack Lee, Manitowoc Cranes; Tan Cheng Guan, Sin Heng; Teo Yew Boon, Manitowoc Cranes; Chian Ker Jeng, Manitowoc Cranes.

are confident in the company's ability to deliver."

■ Sin Heng released its 2015 financial year figures for the year ending 30 June 2015 with revenue of S\$177.8 million - a 16.6 percent drop from the year

before. The company states that this decrease was due to lower trading revenue as a result of the weaker demand for higher capacity cranes. Equipment rental revenue remained stable compared to the previous year.

SALES RISE FOR KOBELCO CRANES

Japanese crawler crane manufacturer Kobelco Cranes saw a 7.1 % rise in its revenues in the first nine months of the 2015 fiscal year. The results for the nine months to the end of December 2015 show revenues of JPY 55.4 billion (US\$ 473 million), compared to revenues of JPY 51.7 billion (\$ 442 million) for the same period last year.

A company statement said, "Unit sales of crawler cranes were similar to the same period last year. Although domestic demand was firm, demand declined in Southeast Asia, which was largely affected by economic slowdown.

Despite rising sales, the business's ordinary income fell some 38 % to JPY 2.8 billion (\$ 23.9 million) compared to the same period last year. Kobelco said this was due to, "Higher expenses for quality maintenance and the improvement of products."

Kobelco Cranes is forecast to achieve full fiscal year sales of JPY 75 billion (\$ 645 million), an increase of some 5.5 % over last year. However, ordinary income is expected to be less than half the JPY 5.1 billion (\$ 44 million) achieved a year ago, with the company forecasting a figure of JPY 2.0 billion (\$ 17 million).

Global heavy lifting and transport company Mammoet completed the transport of three large boilers from Altamira in Mexico to the facility in Westlake, Louisiana, USA, for international integrated energy and chemical company, Sasol. The boilers were the first major pieces of equipment to be transported up the heavy haul road for Sasol's latest project. The transport journey started in December 2015 and was completed in early February 2016.



HIGHLIGHTS

■ Hitachi Sumitomo, Japan-based crane manufacturer, has launched a 350 tonne capacity lattice boom crawler crane. The SCX3500-3 is designed to occupy a minimum amount of space on site. In short tail swing radius specification, the live mast will never exceed the counter weight back radius of 6.8 metres, the manufacturer said. Easy transport and assembly were key requirements of the design and a system called QuickDraw is available for installing the crawler side frames, boom base and lower counterweight slabs. A smaller assist crane is then needed. The upper structure is split front-rear to help reduce transport weight to less than 32 tonnes. See the new crane at Bauma, Munich.

■ UK transport specialists West of Scotland Heavy Haulage has taken delivery of two Mercedes-Benz Arocs tractor units from West Commercial Bellshill and Noteboom Trailers' latest low loader, the Manoovr. The Manoovr (MPL-114-07) is the first of its kind in Scotland and has a 100 tonne capacity. It features an adjustable platform height from 780 to 920 mm, as well as unique suspension and a 70 degree steering angle. Also joining the fleet is a 155 tonne 8x4 and an 80 tonne 6x4 Mercedes-Benz Arocs to replace driver Neil Mcneil and Adam Beverage's tractor units.



More than 700 visitors boost Lift & Move USA

A remarkable 700 high school and college students and military veterans attended the second Lift & Move USA careers event, held 10 February at TNT Crane & Rigging's headquarters in Houston, Texas, USA.

The high attendance gives the fledgling careers event a massive boost. Around 140 delegates attended the first one in Chicago in 2015.

The event is organised by SC&RA, KHL Group and NCCCO and each event is hosted by one of the SC&RA member companies.

Delegates heard speakers from companies that included Mammoet, Deep South, TNT, Lifting Gear Hire (LGH), Bengal and Berard Transportation. They explained career opportunities in the US crane, rigging and specialized transportation industry.

Mike Appling, TNT CEO, said, "Lift & Move was a tremendous success from every

angle. The students were well informed about our industry, the sponsors achieved real benefit, the content was very informative and with over 750 people [including non-students] the participation was off the charts.

Antoy Bell, TNT director of human resources, said the Houston area would see US\$ 60 billion spending on construction related projects in the coming years and that there was a skills shortage in the region, with hundreds of thousands of unfilled jobs in the area.

Bell said the industry gave students the opportunity to have satisfying and lucrative careers without necessarily having to go to college.

"You know about supply and demand don't you?" Bell asked the student audience, "The demand for skilled workers is high, and the supply is low. And what happens when demand greatly outstrips supply? Yes,

that's right; wages go up."

Two further Lift & Move USA events are planned for the rest of this year. The first will be hosted by Buckner Companies in North Carolina in May, and Bragg Crane will be hosting the second programme in California in November.



A Liebherr tower crane was erected on top of the tallest building in Baden-Württemberg, the elevator test tower in Rottweil, Germany, with the aid of another Liebherr tower crane a 280 EC-H 12 Litronic. The 280, with a hook height of 265 m, will now be supported by an 85 EC-B 5 FR. tronic flat top crane erected on top of the building. Using the Micromove fine positioning mode, the 280 was able to position the crane components for the 85 even at an altitude of 225 m. The 85 was bolted to a steel structure specially made for this purpose.

Hanchang buys 1,000 tonne Liebherr

South Korean contractor Hanchang Heavy Equipment Cohas has recently taken delivery of a Liebherr LR 11000 crawler crane.

The 1,000-tonne lattice boom crane will supplement Hanchang's existing fleet of crawler cranes between the Liebherr LR 1750 and LR 11350 machines.

Hanchang now has a fleet of 14 Liebherr crawler cranes and the LR 11000 purchase will fill the gap between the 750 and 350 tonne capacity machines. The first job for the new addition to the fleet will be in the petrochemical industry.

The LR 11000 was ordered

with a full range of equipment: 108 metre main boom, 114 m luffing jib, derrick system and ballast trailer.

Liebherr's worldwide service network was one of the main reasons behind Hanchang's purchase. S T Kim, Hanchang president, said, "We can use our cranes all over the world because Liebherr is everywhere for us. Liebherr builds modern, high-performance cranes with high quality. And when we come to sell them, the value of its used cranes is higher than that of its competitors."

Hanchang operates 35 cranes with a workforce of around 50.



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Share prices on several key exchanges bounced back in February following a tough January but the crane sector as a whole got left behind. *IC* reports

Share price recovery

February saw a number of stock markets regain the ground they lost in January. The Dow, for example, was up 3.91 % between weeks 4 and 8, while in the UK the FTSE 100 achieved a 1.57 % improvement. Asian markets, however, still looked troubled by the weakness of the Chinese economy, reflected in the Nikkei 225's 7.50 % loss over the same period.

The crane manufacturing sector was caught up in a mixture of these two trends. Unfortunately, the negatives outweighed the positives, and the *IC* Share Index lost 2.25 % of its value in February.

It was largely the Japanese

manufacturers that pulled things down, with Hitachi, Kobe Steel and Tadano all seeing big falls. The most significant was Kobe Steel, which booked a JPY 39.8 billion (US\$ 340 million) one-off loss in its third quarter fiscal results against bad debts on excavator sales in China, along with a write-down on its assets in the country.

This had a big impact on the company's share price, while general concerns about the state of the Chinese economy pulled down other Japanese manufacturers.

Interestingly, Chinese crane manufacturers' shares did not seem to be hit to the

same extent. XCMG saw its share price rise in February, while the losses for the likes of Liugong, Sany and Zoomlion were smaller than those for the Japanese manufacturers.

Down in the EU

European shares were also down over the course of February. In some respects this was surprising – Palfinger for example saw a 5.33 % drop in its share price, despite reporting a record year in 2015 as part of its financial results announcement.

Konecranes was also down, and the main drop came after Terex announced it was suspending part of its integration work on the two companies' proposed merger. Terex said it remained committed to the deal, but at the same time the announcement shows it is giving serious consideration to the unsolicited cash takeover offer it received from Zoomlion in January.

The fact that Terex did not dismiss the deal out of hand – as is often the case with unsolicited bids – and that the company had already taken a month, and counting, at the time of writing, to assess it speaks volumes. As written in last month's business page, although there would be regulatory issues, the prospect of around US\$ 3.3 billion in cash from Zoomlion, compared to about US\$ 2.4 billion in shares from the Terex-Konecranes merger is persuasive.

MARCH *IC* SHARE INDEX

STOCK	CURRENCY	PRICE AT START	PRICE AT END	PRICE CHANGE	% CHANGE	PRICE 12 MTHS AGO	12 MTH % CHANGE
<i>IC</i> Share Index*		42.49	41.54	-0.95	-2.25	80.52	-48.42
Legacy <i>IC</i> Share Index**		251.12	238.34	-12.78	-5.09	349.85	-31.87
Dow Jones Industrial Average		16070	16697	628	3.91	17673	-5.52
FTSE 100		5990	6084	94	1.57	6792	-10.42
Nikkei 225		17518	16188	-1330	-7.59	17469	-7.33
Hitachi Construction Machinery	YEN	1732	1602	-130	-7.51	2461	-34.90
Konecranes	€	20.52	19.85	-0.67	-3.27	26.22	-24.29
Kobe Steel	YEN	115	88	-27	-23.48	207	-57.49
Liugong	CNY	6.39	6.33	-0.06	-0.94	10.93	-42.09
Manitowoc	US\$	14.01	15.36	1.35	9.64	19.25	-20.21
Palfinger	€	25.14	23.80	-1.34	-5.33	22.90	3.91
Sany Heavy Industry	CNY	4.81	4.98	0.17	3.53	8.60	-42.09
Tadano	YEN	1194	977	-217	-18.17	1458	-32.99
Terex	US\$	22.00	21.73	-0.27	-1.23	22.83	-4.82
XCMG	CNY	2.96	3.07	0.11	3.72	13.20	-76.74
Yongmao Holding	SGD	0.15	0.15	0.00	0.00	0.14	11.11
Zoomlion	CNY	4.34	4.22	-0.12	-2.76	6.27	-32.70

**IC* Share Index, 1 Jan 2011 = 100

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

EXCHANGE RATES – VALUE OF US\$

CURRENCY	VALUE AT START	VALUE AT END	VALUE CHANGE	% CHANGE	VALUE 12 MTHS AGO	12 MTH % CHANGE
CNY	6.578	6.539	-0.0391	-0.59	6.06	7.89
€	0.9178	0.9072	-0.0106	-1.15	0.7376	22.99
Yen	120.76	112.88	-7.88	-6.53	102.51	10.12
UK£	0.6965	0.7149	0.0184	2.64	0.6119	16.84

Period: Week 4 - 8



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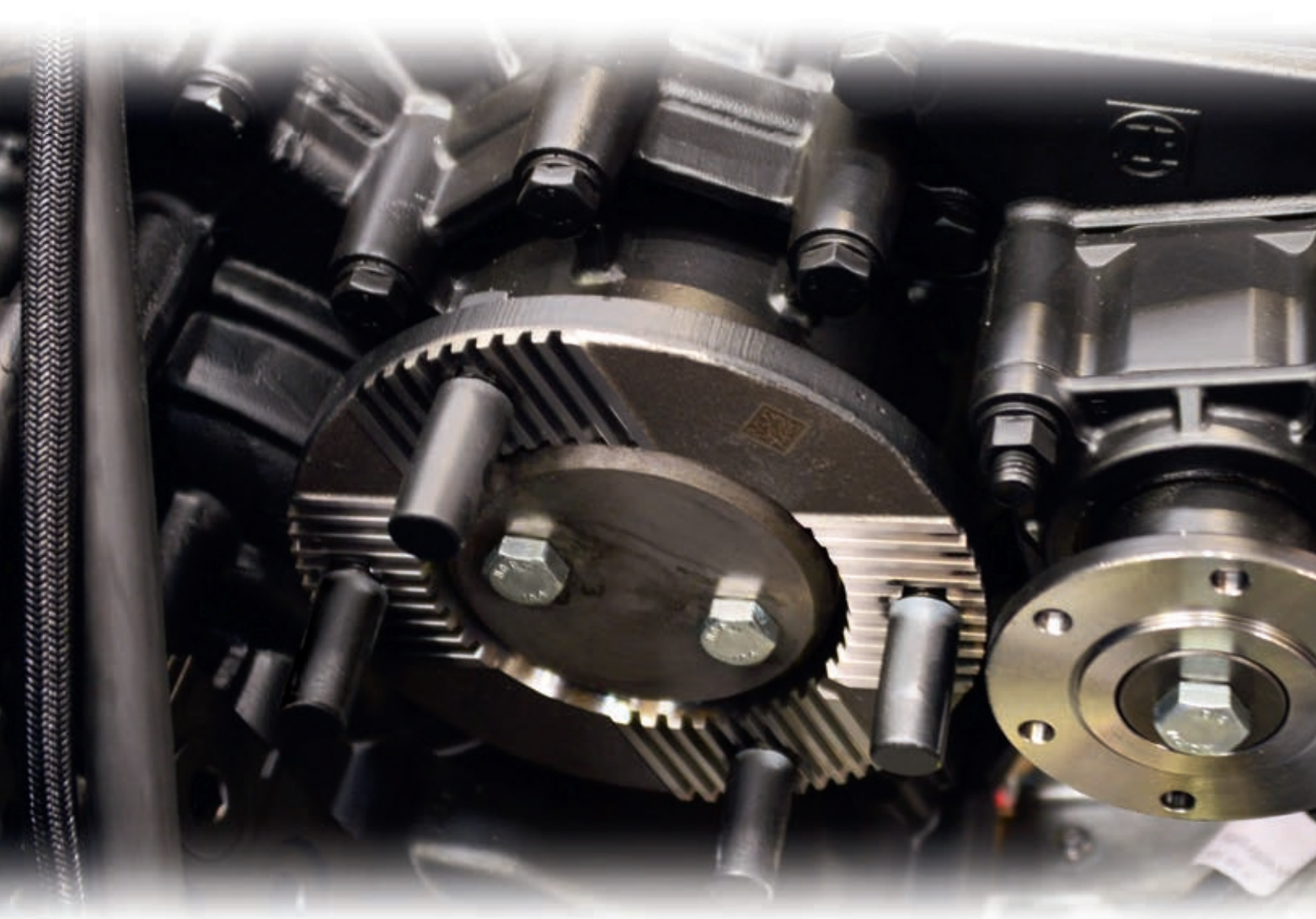


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WHEN: 11-17 April 2016

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■ More information: www.bauma.de

■ Meet the IC team and visit publisher KHL Group in hall B3, stand 400

What to see at the world's largest trade show. IC presents a comprehensive guide to what's new for users and buyers of cranes, specialized transport equipment and related services



The main event

Preparations continue for Bauma Munich 2016 - the largest trade show in the world. This mammoth exhibition for the global construction industry will be held from 11 to 17 April 2016 in Munich, Germany. It will be even bigger than the previous world record-breaking show held in 2013.

Following on from our preview last month, this month we have our full guide to what's new in the industry, separated by product type, for easier navigation.

The IC team looks forward to meeting as many readers as possible, around the show and on the KHL stand in Hall B3, stand number 400. In the meantime, use the following product news to help you plan your visit.

CRAWLER CRANES

A multi-coloured array of tool-equipped machines will be shown by Jekko. It claims to be the first manufacturer of mini cranes offering manual and hydraulic jibs.

The Euromach Sampierana track-driven SPK60 is a non-stabilised crane with a 3 tonne capacity extendable track in pick and carry mode, a 6 tonne capacity and a 28 metre boom with jib.

The Jekko MPK50 is a new 5 tonne pick and carry battery-powered mini crane. Also new is the MPK25, an evolution of the MPK20 with remote control and a 2.5 tonne capacity - the ideal crane for rental, glazed panel laying, and industrial handling and maintenance operations, said the company.

A series of six new Kobelco crawler cranes will be launched, two of which will be on show. All will have a new EU Stage IV and US EPA Tier 4 Final engine with lower emissions of oxides of nitrogen and particle emissions reduced by up to 90 percent, the Japanese manufacturer said.

The full list of new and updated lattice boom crawler cranes is as follows:

- 80 tonne capacity CKE800G-2
- 80 tonne capacity heavy-duty BME800G-2

- 90 to 100 tonne capacity CKE900G-2
- 110 tonne capacity CKE1100G-2
- 150 tonne capacity CKE1350G-2
- 250 tonne capacity CKE2500G-2.

The two cranes displayed will be the CKE900G-2, with maximum 61 m boom, and the 250 tonne CKE2500G-2. The larger model has a maximum boom and jib combination length of 61 + 61 m.

The new 500 tonne capacity Liebherr LR 1500 lattice boom crawler crane was first shown in 2015 at the company's Customer Days event in Germany. Maximum boom and luffing jib combination length is 84 + 84 metres.

For transport, the heaviest component is given as 45 tonnes to allow unrestricted movement worldwide. While the central crawler section with slew ring weighs in at 55 tonnes, a removable A-frame allows the weight to be reduced to 45 tonnes.

Track width is 7.6 m and the shoes are 1.5 m wide for lower ground pressure. The travel drives are from the 600 tonne capacity LR 1600/2 and the 350 kW Stage IV / Tier 4 Final engine is similarly-sized.

Liebherr-Werk Nenzing in Austria has developed a new 100 tonne capacity class lattice boom crawler crane. Making its

Liebherr's new 500 tonne capacity LR 1500 lattice boom crawler crane



debut at Bauma, the LR 1100 deliveries will start in the middle of the year.

In a departure from conventional design where steel plate is used the new LR 1100 has a tubular structure. It improves performance and gives the crane a different appearance, the manufacturer said. Easy transport and quick set up are features. The boom foot and crawler track frames stay on during transport. And, instead of having to be dismantled and removed, the catwalks fold down.

An option that increases capacity by around 20 % is a counterweight system that is swung backwards hydraulically. Fixed and luffing jibs are available.

Power is from a 230 kW Liebherr diesel engine built to meet Stage IV and Tier 4 Final exhaust emission standards. Engines without exhaust after treatment can be specified for markets with other regulations, the manufacturer said.

A new Maeda mini crane with articulating hydraulic boom and crawler track carrier will be shown by European distributor AB Kranlyft. A narrow aisle, operator-controlled crane like the rest of the MC range, the MK1033C has an hydraulic six-section luffing boom and jib.

The MK1033C is still narrow enough to fit through a standard doorway and weighs less than 2 tonnes. It has a capacity just below 1 tonne, a maximum working height of nearly 11.5 m and maximum working radius of almost 10 m. Each outrigger can be placed in seven horizontal positions and six outrigger length positions.

The basic model has a diesel engine and comes with a fixed crane hook on the end of the boom to reduce the distance between the top of the boom and the hook (headroom). There is an optional winch and additional options available are power from a petrol engine or a dual fuel petrol or LPG engine, or a 380-400 Volt electric motor.

Also on display will be the updated Maeda CC1485. It has an EU Stage 3b engine making it up to 40 % more fuel efficient, Kranlyft said. Features of this more compact model include a fully enclosed

What the new 100 tonne capacity Liebherr LR 1100 crawler crane will look like

air conditioned cab, minimal tail swing, two-speed winch, four-fall and two-fall hook block.

Sennebogen's latest model, the 6300, is a 300 tonne capacity duty cycle crawler crane. The Bavarian manufacturer's largest model to date is now ready for production and will be seen publicly for the first time at Bauma with the display of the first unit manufactured.

Applications for the 6300 include: dredging, mining and special underground engineering operations. For lifting work an 80 m main boom is available. To drive attachments the available hydraulic pressure is up to 350 bar and there is a 2,000 litre tank plus oversize hydraulic lines and valves, the manufacturer said.

The 125 tonne capacity Sennebogen 3300 lattice boom crawler has been upgraded with a new Tier 4 Final engine. The 186 kW Caterpillar diesel drives a multi-circuit hydraulic system. The crane's boom can be configured between 13.1 and 94 m long.

In the telescopic crawler crane category Sennebogen has the new 50 tonne capacity 653. It has a 30.4 m full power boom and pick and carry duties. Typical applications include structural engineering and bridge construction. It has a Tier 4 Final 129 kW Cummins diesel engine. The full power



Maeda has updated its CC1485 crawler crane

boom on the 653 allows infinitely variable extension and retraction over its full 30.4 m length. A fly boom on the 653 extends the maximum reach height to 43.4 m. It can operate on uneven ground to a maximum inclination of 4 degrees.

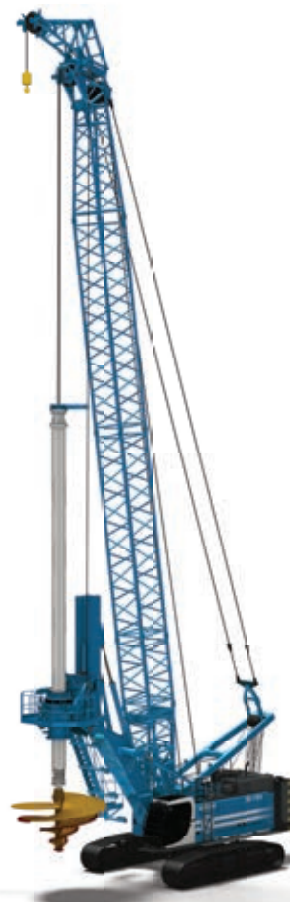
Soilmec will present two new duty cycle crawler crane models – the SC-120 HD and the SC-50 HD, which, the company said, complete the development of the new product range started at the previous Bauma in 2013.

These Soilmec models are said to combine heavy-duty performance with the ability to be easily set up in several working configurations, including diaphragm wall grab, hydraulic rotary, pile driving, dragline, clamshell and dynamic compaction. The SC crawler crane models are available in both Tier 4 and Tier 3 engine versions.

The new range-topping 300 tonne capacity Sennebogen 6300 heavy duty lattice boom crane



Soilmec's new SC-120 HD heavy duty crawler crane has a capacity of 120 tonnes



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WHEELED CRANES



More details of Liebherr's new eight axle wheeled mobile telescopic crane will be revealed at Bauma

Two new wheeled mobile telescopic hydraulic cranes will be shown by Liebherr. Brand new will be a model on an eight axle carrier with a very long telescopic boom. Its design focus was on high economy and easy set-up, the manufacturer said. Further details of the cranes were unavailable at the time of writing.

Also new is the 5-axle, 250 tonne capacity LTM 1250-5.1 wheeled mobile telescopic crane first shown in 2015 at the company's Customer Days event in Germany. It is claimed to be the most powerful five axle crane on the market and is the third model with one engine instead of two. It has a 60 metre boom. The Link-Belt HTT-86110 telescopic truck crane will debut at Bauma. Capacity is 100 tonnes (110 US tons), it has steerable rear axles with super single tyres and comes with four steering modes - independent



The distinctive Triple Boom design of Tadano's 600 tonne capacity ATF 600G-8 wheeled mobile telescopic crane



Link-Belt's new 100 tonne capacity HTT-86110 hydraulic truck crane



The 250 tonne capacity LTM 1250-5.1 wheeled mobile telescopic crane, first seen in mid-2015 at the factory in Germany

front, independent rear, combination, and diagonal.

The HTT-86110 has a 50 m main boom that outreaches truck crane competition and challenges European-built all terrain cranes in its tonnage class, Link-Belt said. The main boom tip height is 52.6 m. Also available is a 17.6 m on-board fly jib. Two additional 4.9 m lattice extensions take the maximum tip height to 79.7 m.

A 359 kilowatt Tier 3/Euro Stage IIIA Cummins engine is available on the HTT-86110. For the North American market, a 336 kW (450 hp) Cummins (clean idle certified) is also available. Both use a ZF AS-tronic automated manual transmission with 12 speeds forward and two reverse.

Three of the four all terrain cranes shown by Grove will be new models, manufacturer



Manitowoc's new Grove GMK4100L-1 has one engine instead of the two on its predecessor



New from Manitowoc is the 90 tonne capacity GRT8100 rough terrain crane

Manitowoc said. Details of one of them will remain undisclosed until the show. New is the 100 tonne capacity GMK4100L-1. The 250 tonne capacity GMK5250L was first seen in 2015 and now the first units are being delivered. Also on show will be the 400 tonne capacity GMK6400. Features include a one engine design, Megadrive hydrostatic drive system and a self-rigging, capacity-enhancing MegaWingLift.

Grove has had a four axle 100 tonne capacity all terrain for years but the GMK4100L-1 is a new design that promises notable improvements. It has a 60 metre boom. The old model had two engines but the new one has one which means more counterweight can be carried on board, allowing it to lift more. The new 100 tonner is 2.55 m wide instead of the 2.75 m of its predecessor and overall it is 0.5 m shorter.

The 90 tonne capacity Grove GRT8100 is Manitowoc's latest rough terrain crane and one of three on show. It is an update of the RT890E and is the first with the new GRT (Grove rough terrain) nomenclature.

Maximum height, to the tip of the main boom, is 49 m and with full boom extension and insert options, maximum reach is 77 m. The new lighter and stronger boom gives more capacity, Grove said, by 27 % at close radii, 13 % in the mid-range and 16 % at full radius.

Tadano will be showing its flagship ATF 600G-8 all terrain crane. It has the largest capacity (600 tonnes) in the product line and has the Triple-Boom which means no separate boom suspension system.

At the other end of the capacity scale Tadano will present the successor to its ATF 50G-3, a three-axle 50 tonne capacity all terrain and a 40 m, five-section telescopic boom.



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Three new loader cranes will be shown by Atlas Maschinen at Bauma

Two models in the rough terrain and telescopic crawler crane ranges – the GR-1450EX and GTC-800 – will also be exhibited. They will be available for the European market in 2017.

News from Terex Cranes will include a new all terrain crane on five axles, probably somewhere over 200 tonnes in capacity. The Explorer all terrain range will also receive attention with updates of the 5500 to give more capacity and the 5800, on the boom. Other ATs on show will be a 40 tonne capacity AC 40-2 and a Challenger series model. A new 80 tonne capacity rough terrain crane for the global market will also make its debut.

Loader cranes

Three new loader cranes will be shown by Atlas Maschinen. The 2.8 tonne capacity 66.3E is a 66 kN articulating crane with up to four hydraulic extensions and a reach of 11 metres.

The 152.3 is a folding crane with up to six extensions and a reach of 16.7 m. Options include additional functions for grab and rotate and stabiliser widths.

The new large construction crane from Atlas Maschinen is the 206 VE with a reach of 14.3 m. It can lift 1,160 kg when extended horizontally. At its shortest reach of 2.4 m it lifts 4,800 kg.

Fassi will introduce several cranes and a radio control. The F2150RA/RAL has a load moment rating of 136.4 tonne-metres and an hydraulic reach up to 41 metres with a jib. Its electronic and hydraulic equipment includes the FX800 control, D900 digital hydraulic distributor, RCH/RCS radio control, Automatic Dynamic Control and the XP system.

The F545RA xe-dynamic, is new in the Fassi XE series. The footprint has been increased by just 85 mm over the F485RA model. It weighs 3 % more but is 10 % stronger thanks to stabilisers that extend to give a spread of 7.8 m. The maximum load

moment is 53 tonne-metres (518 kNm), and hydraulic reach is 20.8 m.

The new F545RA is a continuous rotation crane with FX500 control system, D850 hydraulic distributor, RCH/RCS radio remote control and FSC-S or H stability control. Several versions of this crane are available with up to eight hydraulic extensions.

The new Fassi F305A and F255A are middle range cranes and the small crane market has the F65B and F70B. High strength steel has reduced weight by 9 % over the previous model. This means more residual load capacity for the base vehicle.

The new Fassi F40B can be mounted on light vehicles up to 3.5 tonnes GVW. The maximum load moment is 39 kNm and hydraulic outreach is up to 9.5 m.

Fassi is introducing a radio control, the V7, with a new 3.5 inch (89 mm) colour display, 16 bit screen with 320 x 240 pixel resolution and push buttons.

Hyva will reveal two new lines of hydraulic cranes, with telescopic booms and articulated, in 12 models. The HT130 and HT162 are 13 and 16 tonne-metre class telescopic types used for car recovery and where a compact, light and easy to operate crane is needed.

The 13 and 16 tonne-metre class HB130 and HB160 articulated models are also new. The HC131, HC143, HC153, HC161, HC171 and HC183 are 13 to 18 tonne-metre-rated units with a double linkage boom system. The HC131K and HC161K are 13 and 16 tonne-metre class short boom

articulated cranes with double linkages.

Over the next two to three years the range will be extended to span 8 to 150 tonne-metres.

Palfinger will show products from the heavy-duty PK 165.002 TEC 7 crane through to container handling systems.

The PK 165.002 TEC 7 is designed

The 53 tonne-metre Fassi F545RA xe-dynamic hydraulic loader crane



New from Hyva is 12 new hydraulic loader cranes in two series

for carrier vehicles with a maximum gross weight of 32 tonnes. It is 800 kg lighter than its predecessor – the PK 150.002 – and there is a personal fall protection mode for people working at height.

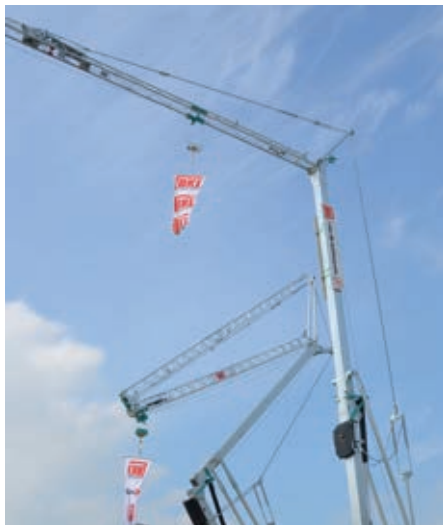
The PK 16.001, PK 16.001-K and PK 18.001 EH are replaced by the new Solid range. The boom system can be overstretched with a single “elbow lever”, known as the Single Link Plus. Solid models are offered in three configurations. The PK 17.001 SLD 1 is the non-CE entry level model without overload protection. The PK 17.001 SLD 3 has Paltronic 50 and is available in CE and non-CE versions. The top Solid version is the PK 19.001 SLD 5 with the addition of E-HPLS, radio remote control and a load-sensing control valve.

Also new is the Solid compact series. The Single Link Plus means the PK 5.001 SLD 3, the PK 7.001 K SLD 3 and the PK 7.501 SLD 5 offer better movement geometry than previous models. With the PK 7.501K SLD 5 an HPLS crane is offered in the 7 m range for the first time.



Palfinger's new PK 165.002 TEC 7 hydraulic loader crane is a heavy duty model

TOWER CRANES



The CM 280 and CM 82S4 are part of a new generation of quick assembly cranes from BKL

BKL Baukran Logistik will present a new generation of quick assembly cranes from BKL System Cattaneo, in the 28 and 33 m categories. CM 280 and CM 82S4 bottom slewing cranes incorporate steerable high speed axles for better manoeuvrability.

The CM 280, claimed to be one of the highest performance cranes in the 28 m category, lifts 2.5 tonnes to 12.1 m. The CM 82S4 lifts 4 tonnes. It has a maximum hook height of 21 m and lifts a 1 tonne load at jib end. The machine has a space requirement of just 5.1 by 5.1 m and, like all BKL models, has a frequency-controlled 4-stage lifting mechanism.

BKL's high-speed axle, meanwhile, is now also available in steerable variants. It will be presented at Bauma along with the CM 271 mobile 27 metre self erecting crane but is also available for the stationary cranes in BKL System Cattaneo as a semi-trailer version. The 80 km/h axle is self-steering during road use and, during shunting operations, can be electro-hydraulically steered via the crane's remote control unit.

BKL Baukran Logistik will exhibit with top-slewing crane partner Linden Comansa of Spain on a joint stand.

FM Gru will show three new tower cranes. First is the 1140 RBI self erecting crane with a 40 metre jib, a capacity at jib end of 1,100 kg and a maximum capacity of 3,000 kg (on two falls of rope) and of 5,000 kg (four ropes). This crane can also work with a folded jib with the following characteristics – 29.6 m jib with a capacity of 1,700 kg and 14 m jib with a capacity of 3,000 kg. Power consumption is minimised thanks to 8.8 and 11 kW winches controlled by inverter and PLCs.

The second FM Gru crane on display



FM Gru 1260FTC is a flat top tower crane with 60 metre boom and maximum 8 tonne capacity

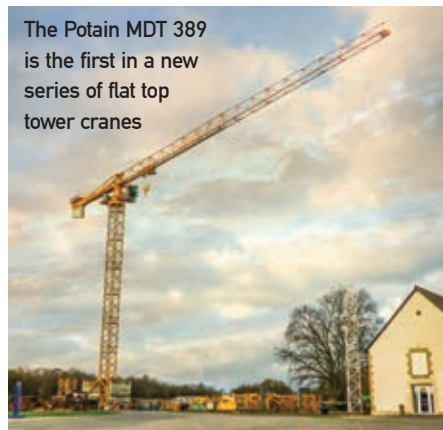
will be the 930 RBI-FA, a self erecting crane approved for road towing, that has a 30 m hydraulic boom, a capacity at jib end of 900 kg and a maximum capacity of 2,400 kg (on two falls of rope).

This crane can also work with a folded jib with the following different characteristics – 26 m jib with a capacity of 1,100 kg, 13.3 m jib with a capacity of 2,400 kg. The crane can work with the jib luffed from 0 to 25 degrees.

It also has PLC controlled inverter drives for the winches to give low energy consumption and easy to manage operation in all work situations, the company said.

Finally, the third FM Gru machine on show is the 1260 FTC, a top slewing flat top tower crane with a 60 m boom. Capacity at jib end is 1,350 kg and the maximum is 8,000 kg, on four falls of rope. This type of crane is designed with a jib composed of modules of 11.40 m, which reduce the mounting time. Maximum tower height with the 4.5 x 4.5 m base, as shown at Bauma, is 55.9 m.

A new series of hydraulic fast erecting tower cranes will be shown by Liebherr. The L1 series will be the company's smallest bottom-slewing tower cranes. In some ways, including the name, the new L1 recalls the first crane made by company founder Hans Liebherr in 1949. Features



The Potain MDT 389 is the first in a new series of flat top tower cranes



The L1 fast erecting tower crane is the first in a new series from Liebherr

include improved ergonomics, good access for erection and maintenance work and a modern, attractive design, the company said. L1 will replace the existing H series of cranes.

First in the series is the 2.5 tonne capacity L1-24, available with a maximum radius of either 25 or 27 metres. Capacity at the end of the jib will be 950 or 800 kg. Hook height is 19 or 19.2 m with the jib horizontal. A 20 degree inclination will increase this height to 25.7 and 26.5 m where capacity is given as 900 and 750 kg.

The slewing radius is 1.9 m and a flexible support base allows the crane's footprint to be reduced to less than 4 m. For control there is the Micromove fine positioning mode, oscillation damping and an operating range limiting system. Versions are available with a standard concrete ballast or a full steel ballast which can be carried on the crane, meaning no additional transport or erection cost.

New and on show in Manitowoc's Potain range of tower cranes will be the MDT 389, first from a new line suitable for cramped multi-crane job sites. It is one of three towers on show at Bauma, alongside



Manitowoc's Potain MDT 219 flat top tower crane will be at the show



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The 24 tonne capacity Wolff 275 B is new from Wolffkran in Germany

the MDT 219 and the MR 418 luffer.

The MDT 389 is the largest in a new range of flat tops which also includes the MDT 249, MDT 259, MDT 269 and MDT 319. All have the new Crane Control System (CCS) and are designed for fast erection and dismantling and to be easy to transport. The MDT 389 is available in a 12 or 16 tonne version, both with a jib up to 75 m. Capacity at the end of that maximum jib is 3.4 tonnes on the 12 tonne version and 3.3 tonnes on the 16 tonner.

On the MDT 389 the slewing section, cabin mast section and the cab can be moved together as one load. The counter jib can be folded and the winch platform can be sized to occupy less space, Manitowoc said.

Like the MDT 389, the MDT 219 is also top of its range. Versions are one with an 8 tonne capacity and one with 10 tonnes. All are evolutions of previous MDT City series cranes with jibs from 55 to 65 m and hoisting capacities from 6 to 10 tonnes.

The luffing jib type Potain MR 418 tower crane lifts 24 tonnes and has a jib of up to 60 m. Standard fitment is the 110 kW electric hoisting winch type 150 LVF 120 with a rope capacity of 552 m and 210 m/min maximum line speed. An option is the 200 kW type 270 LVF 120 hoisting winch, which can carry 826 m of rope and it has a 254 m/min maximum line speed.

On show from the Terex tower crane range built in Italy will be a 16 tonne capacity CTT 332-16 flat top. A couple of years ago the prototype of this 332 tonne-metre crane was first shown.

Wolffkran will show its biggest flat top crane ever and the best of 30 years of innovation in luffing technology with a new luffing crane. It will also show the US version of its bestselling luffing crane. The Wolff 7534 is the biggest and most powerful flat top crane in the range.

The German manufacturer's second newcomer is the Wolff 275 B with a capacity of 24 tonnes, a 700 m hook path and a maximum hoisting speed of up to 222 m/min.

The two new additions are accompanied by the established Wolff 8033 saddle jib crane in XXL 450 tonne-metre class.

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29

SPECIALIZED TRANSPORT

A display by Faymonville will include a CombiMax trailer with 10 axles, an extension beam and a low-bed. Following the modular system logic, 20 vehicle combinations can be put together with the exhibited model.

Also on show will be a MegaMax low-bed trailer with the independent wheel suspension, Twin Axle II, which allows a payload of 12 tonnes per axle in Germany. The MultiMax semi-loader can be hydraulically widened continuously on both sides via remote control to fit the machine width of the load volume (up to a maximum of 3.2 metres). Capable of having between three and nine axles, this semi-trailer has 19.5 inch tyres that give this forced- or friction-steered semi-low loader a higher ground clearance. A 'light' variant of the MultiMax is said to be ideal for transporting lifting equipment and work platforms.

Joining these developments is an axle unit of the DualMax originally developed for the American market. The model exhibited at Bauma will illustrate the lift



Goldhofer stand at Bauma 2013

and shift principle, according to which the DualMax's rail width can be increased, even while loaded.

A self-propelled modular transporter (SPMT) will also be on display. Faymonville's version is claimed to have the strongest drive axle on the market and intuitive operator guidance. A semi-low loader of the subsidiary brand Max Trailer will complete the Faymonville offering.

German manufacturer Goldhofer is not revealing much detail of its Bauma launches, other than that a highlight will be "a kind of auxiliary drive for self propelled heavy duty modules," said Stefan Fuchs, Goldhofer CEO.

The display will include a 500 tonne capacity Faktor 5 high girder bridge for a customer in Mexico. It will be configured with a PST/SL-E self propelled module and hydrostatic drive. It is the eighth unit built.

From its trailers and semi-trailers ranges, Goldhofer will show a 3-axle low bed trailer from the Expert series, a 4-axle low-loader semi-trailer and a 10-axle combination from the STZ-P low-loader semi-trailer series with pendular axles. Also on show will be an FTV 300 blade transporter for wind turbine rotor blades, a 12-axle combination with various modules

from the THP/SL family, and a self-propelled module from the PST/ES-E series with hydraulic track width adjustment.

The Scheuerle, Nicolas and Kamag brands of specialized transport equipment will appear together on the Tii Group stand. One of several new products will be what is claimed as the world's strongest PowerBooster. The company introduced and has been offering these additional power units for years. Now there is a second generation and visitors will be shown a Scheuerle-Kamag K25 H 06 PB with 1,000 hp power pack.

Developments in the self propelled modular transporter (SPMT) category will focus on cost efficiency, versatility, emission-free operation and safety, Tii said. One of the many exhibits will be the Scheuerle InterCombi SPE transporter. There will be a Power Pack Unit type Z390 / EU 4 as the drive unit for the hydrostatically driven and electronically steered InterCombi SPE that can be electronically coupled with "classic" SPMT. The modular Scheuerle-Kamag K25 H has an additional hydrostatic drive.

For road transport Tii Group promises a completely new development that will be announced on 13 April at the show. For



Loading a Scheuerle-Nicolas EuroFlex trailer



b

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BAUMA SHOW GUIDE

transport of loads under 100 tonnes there is the Scheuerle-Nicolas Euro Flex and the Euro Light drop deck trailer, available with a range of options and combinations.

The Scheuerle-Nicolas Euro Compact trailer on display has gained almost one extra metre of loading length for the same combination length. It is a 2+2+5 combination with excavator deck that has a further 2-axle bogie in a 2+5 combination.

On display will be a K25 H PowerBooster and Scheuerle adapter for wind turbine rotor blades. In tight situations the rotor blade adapter helps avoid trees, buildings or other obstructions.



A Tractomas heavy duty truck features in the Guinness Book of Records as the world's most powerful tractor

Depending on the type of blade, they can be raised up to an angle of 70 degrees. An integrated swivel drive allows the blade to be rotated along its own axis to minimise



Scheuerle and Mammoet have developed the 1,000 hp Trailer Power Assist (TPA) system

the wind resistance.

Also on show is an 8x8 Nicolas Tractomas heavy duty tractor which will help draw the crowds. It is more than 10 m long and is 3.5 m wide and 4.6 m tall.

German trailer manufacturer Zandt Cargo will show its AT and TAT tandem trailers for construction and heavy transport logistics. Load securement is a focus on the exhibited AT 400 with foldable lashing eyelets allowing optimisation of chain angles and greater capacity of the lashings. An axle load weighing function on AT trailers helps meet legislative challenges with an electronic braking system and load display. It has a flashing LED light to indicate when load limits are exceeded. On show will be an AT-P 400 with wheel recesses to minimise loaded height.



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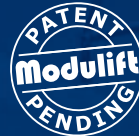
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OTHER LIFTING EQUIPMENT AND COMPONENTS

A series of updates and enhancements characterise manufacturer of remote controls Autec's offering at this year's Bauma. A new sun-readable colour display of 4.3 inch enhances the Italian manufacturer's FJR and FJM models. Features include 256 colours, 480 x 272-pixel resolution, six programmable soft-keys and a wide viewing angle up to 130 degrees. The transmitter's case accommodates a 2,800 mAh LPM04 lithium battery.

LK Neo is the latest model in Autec's AIR Series and it is aimed at a wide range of industrial applications. Among its main features are: a Stop function built to comply with the EN ISO 13849-1 standard, dual-band technology (434 and 915 MHz), removable battery, and external or internal removable memory ID. Transmitters in the series are available with 6, 8, 10 or 12 buttons and there are two other versions with a 1.8 inch colour display. Other options include, a two or three-position switch, potentiometer, infra red sensor, zero-gravity sensor and vibrational feedback.

Crosby is showing a range of lifting points called Crosby Slide-Loc, an alternative to standard eye bolts. Central to the new design is its locking mechanism that slides to lock the bolt for faster installation, then slides back to make ready for lifting without the need for tools.

Also new is the Crosby Easy-Loc V2 shackle bolt securement system, said to be an industry first that eliminates the need for a nut and cotter pin in critical lift applications. It is claimed to be up to 90 % faster than the conventional nut and cotter pin design.

Crosby's new wide grip shackle bolt

The LK Neo transmitter is new from Autec



Crosby's EasyLoc V2 shackle bolt securement system is new and on show

handle designed to make the installation and removal of pins more efficient will also be shown.

The S423T Super Terminator is said to significantly increase the termination efficiency over existing wedge sockets for high performance, high strength, compacted strand, rotation resistant wire rope. The design is to guarantee a minimum efficiency rating of 80 % of the rope's catalogue breaking strength, the company said.

Crosby will also show its Platinum Line of chains and fittings and the Metric range of blocks and sheaves for wheeled mobile and crawler cranes.

Cummins will present its next generation of ultra-clean engines designed to meet European Union Stage V emissions regulations starting in 2019 for materials handling, construction and mining equipment.

Across an output range of 55 to 300

kilowatts (74 to 400 horsepower), these engines will, said Cummins, go beyond meeting Stage V near-zero emissions regulations to bring an increase in power and torque of up to 10 %.

The Stage V engines will be supplied as an integrated system with the Single Module exhaust after-treatment. It is designed to be up to 50 % smaller and 30 % lighter than the existing Stage IV and Tier 4 Final after-treatment systems.

Cummins heavy-duty engine duo, the QSG12 powering equipment up to 382 kW (512 hp) and the QSX15 with a 503 kW (675 hp) top rating, are ready to meet Stage V regulations by retaining the diesel particulate filter and selective catalytic reduction (DPF-SCR) after-treatment system used for Stage IV and Tier 4 Final applications.

Hydraulic lifting and jacking equipment manufacturer Enerpac will have live demonstrations of the SL400 hydraulic gantry at Bauma. With its three-stage lifting cylinders, the SL 400 lifts up to 408 tonnes (4,000 kN) and has many new features, including a wireless control system and integrated self-propelled drive.

Also on show will be Enerpac's entry for a Bauma Innovation Award, the autonomous SyncHoist System. It comprises four independent, self-contained PLC-controlled hydraulic lifting cylinders, and it allows one crane to do the work of two cranes. Visitors will also be able to see an Enerpac jack-up system that typically includes four jack up units positioned under each corner of a load. A four-unit setup has a lifting capacity of 2,000 tonnes (500 tonnes per unit).

Bauma visitors will be treated to the world premiere of water-cooled, three-cylinder versions of H engines from Hatz, >



The Cummins single module after treatment component for Stage V emissions regulations



Enerpac SHAS SyncHoist

introduced in January 2014. The German engine manufacturer will also present solutions for the proposed European exhaust emission standard Stage V to be introduced in 2019.

The turbo charger and intercooler in the H family of engines from Hatz help give a maximum torque of 185 Nm (at 1,600 to 2,000 min⁻¹) and a maximum power of 42 kilowatts.

The Hatz 3H50TI does not need any exhaust after treatment and reaches the standards EU Stage IIIA and EPA Tier 4 interim in the power range 19 to 37 kW. The 3H50TIC, meanwhile, is designed for the US market, Canada and some Asian countries, in particular. To comply with the exhaust emission standards EPA Tier 4 final (19 to 56 kW) and EU stage IIIB (37 to 56 kW), a combination of external exhaust gas recirculation (EGR) and diesel oxidation catalyst (DOC) is said to guarantee the necessary reduction of exhaust emissions.

A high-strength synthetic fibre rope for crane operation will be shown jointly by Liebherr and Austrian rope manufacturer Teufelberger. In comparison to steel ropes, the newly developed rope is lighter and more durable, Liebherr said. Its lighter weight (as much as 80 % less than steel) allows the crane to lift more load. A lighter hook block can also be used and the ropes don't need lubrication.

Another advantage is easier reeving that can be done by hand instead of needing winches so set up and dismantling is easier and quicker. Service life should be much longer than steel rope because of



The production line for Hatz H series diesel engines

greater wear resistance. It also allows more bending cycles, meaning there will be fewer rope changes.

New from Manitowoc is its standardised Crane Control System (CCS). It is a common operating interface being introduced on all new rough terrains, plus crawlers, all terrains, boom trucks and tower cranes. CCS is designed for operators to more quickly set up their cranes and get to work. Its Eco mode feature helps improve fuel efficiency and decrease wear and tear on the powertrain and hydraulic systems.

EMOS is a new compact camera from Orlaco designed for use with all types of monitors and it can be connected to an existing network. It is designed for harsh environments and is shock and vibration-resistant. The system is fully waterproof to IP68 and IP69K.

Also new from Orlaco is the FAMOS vehicle vision camera. It replaces the AMOS camera and has fewer components, new mouldings, coated lens and a moulded polymer body.

Orlaco's CornerEye digital camera



Left: Liebherr and Teufelberger have jointly developed a synthetic fibre hoist rope for cranes that is being tested. Above: Scania R 730 LA



Orlaco Corner Eye camera offers a 270 degree field of view



Resistance to moisture and vibration are features of the Orlaco FAMOS camera

monitor system is designed to offer a view of blind spots around trucks. With an HD monitor and a robust camera, CornerEye is designed to satisfy the criteria of vision classes V and VI. It has a wide angle lens that delivers a 270 degrees field of vision.

Scania will be showing Stage V-ready engines in the 202 to 566 kW output range. The 9, 13 and 16 litre diesels use selective catalytic reduction (SCR) and diesel particulate filter (DPF) exhaust after-treatment.

Although Stage V emission standards will not be in force until 2019, having engines ready now will help manufacturers of cranes and other equipment who need time to design new or redesign existing machines to meet new standards. In addition, the new range of engines is based on the same platform as earlier ones, minimising the investment required in re-engineering.

As well as its industrial engines, Scania will show five of its trucks, including this R 730 LA10x4*6, a five axle heavy haulage tractor that can handle a gross train weight of 150 tonnes. It has a 730 hp Euro 6 engine with 12+2-speed range-splitter gearbox with overdrive.

A special highlight on rope manufacturer Teufelberger's stand will be soLITE, the new high-strength fibre rope for cranes.

Also making their debut are the Evolution TK27 and Evolution P9 steel wire ropes. Evolution TK27 is a new rotation-resistant long lay rope for mobile, crawler and tower cranes. Evolution P9 is a steel wire boom hoist rope made for crawler cranes.

See next month's stop press article for all the last minute news on Bauma.

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Taking safety to new heights

Installation and replacement of equipment in elevated positions is difficult to achieve, even in the best conditions. CHRISTOPHER COX, president at Engineered Rigging, explains how the company's new patent-pending Pipe Modular Lift System (PMLS) was used at a power plant in the windy Midwestern USA

When faced with wind and rain, accessing elevated worksites and safely supplying them with materials becomes extremely difficult. The Pipe Modular Lift System (PMLS) was created to solve this problem, making it safer, easier and faster to lift massive loads up and into raised equipment hatches.

Rather than relying on a hook to carry heavy loads, the PMLS uses a platform to mechanically raise loads to elevated locations. This approach protects personnel and equipment by eliminating the hazards of suspended loads. It is more efficient than using a crane, Cox says



Christopher Cox

Christopher Cox has been president of USA-based heavy lift, transport and engineering company Engineered Rigging since May 2014 and vice president of PSC since 1999. He is a professional structural engineer in multiple US states.

Battling wind

Unlike cranes, which must halt lifting when winds reach 20 miles per hour (32 km/h), the PMLS operates in 50 mph (80 km/h) winds and withstands 120 mph (195 km/h) winds. This stability benefited a power plant in the windy Midwest of the USA and helped the utility keep a large project on schedule, despite numerous windy days.

The utility was replacing 48 cooling coils and any slip in the schedule meant substantial lost revenue. Complicating matters, all equipment had to be lifted 50 feet (15 metres) to the building's only access point.

After erecting the PMLS, which took five days, Engineered Rigging used its self propelled modular transporter (SPMT) to move the cooling coils, knuckle boom cranes and components, onto the PMLS platform. This approach cut manpower needs in half - saving money and improving safety by exposing fewer personnel to lifting hazards.

Instead of using a crane, crews loaded heavy supplies from the ground onto the SPMT. "We drove the SPMT onto the PMLS platform and hit the 'Up' button. When the platform stopped, we drove the trailer across the elevated deck and into the plant," explained Bogdan Gaita, Engineered Rigging vice president. "We eliminated below the hook lifting until we were in the building."

For eight weeks the 50-person crew provided 24-hour coverage, performing all outside and inside rigging and handling without any lost time. Historically, the utility would lose two to four days due to weather so keeping on schedule saved the





The PMLS is designed to quickly and safely lift big loads to elevated locations

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utility significant potential lost revenue.

The configurable PMLS can have 400, 800 or 1,200 tonne lifting capacity and a square, rectangular or round footprint tailored to site conditions. Height can be increased in 10 foot (3 m) increments (standard columns) or customised, achieving vertical travel distance exceeding 50 feet (15 m). With a lift

speed of 20 inches (500 mm) per minute, the PMLS is twice as fast as strand jack systems, Cox says.

“Every job is different. The PMLS variable lifting capacity handles even the heaviest loads,” said Gaita. “Its flexible footprint accommodates crowded work sites, while its configurable height efficiently reaches elevated locations.”

PSC crews drove the loaded SPMT from the PMLS platform and into the equipment hatch



PMLS SPECIFICATIONS

LIFT SPEED:

20 inches per minute (500 mm/min)

LIFTING CAPACITIES:

400, 800 and 1,200 tonnes

VERTICAL TRAVEL DISTANCE:

up to and exceeding 50 feet (15 metres)

LAYOUTS:

square, rectangular and round

SIDE LOADING:

5 percent

SHIPPING:

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ASSEMBLY:

five shifts or fewer

WIND LOAD:

50 mph (80 km/h) – operating. 120 mph

(195 km/h) – high winds

POWER FAILSAFE:

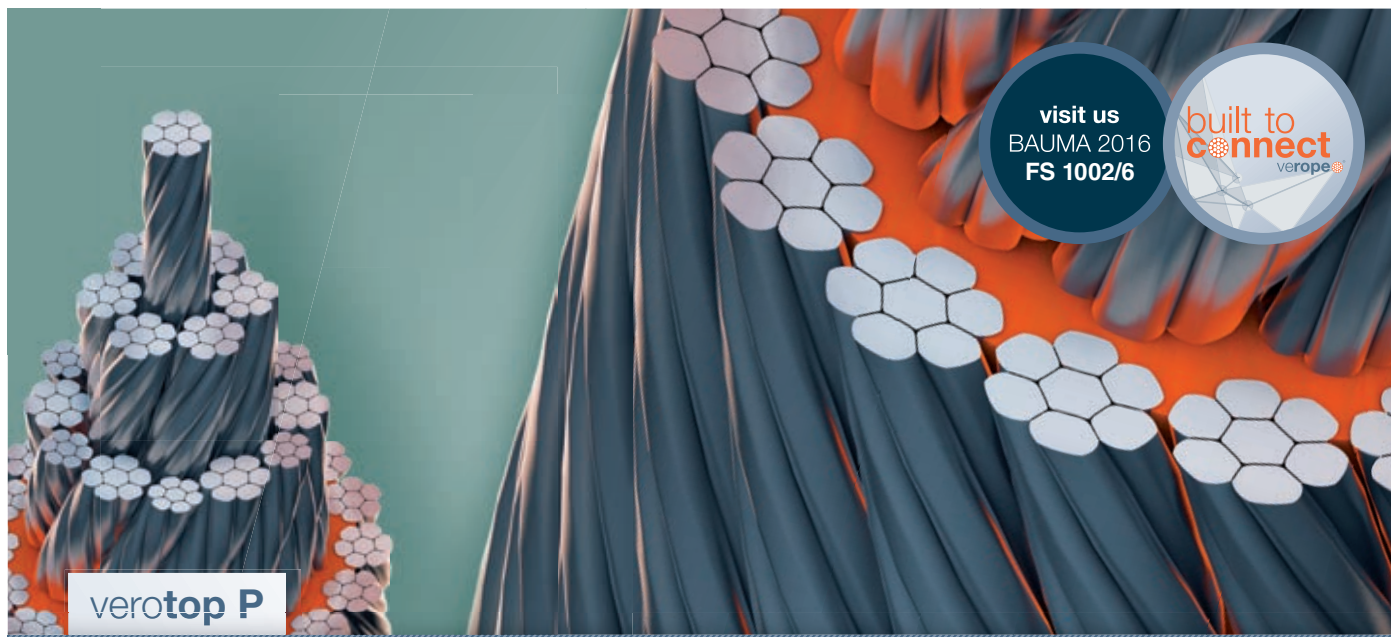
load remains in place until power is restored

Safe and synchronised

Using a platform rather than a hook delivers significant benefits. There are no cable drums or strands to fail, or hydraulics to leak. The self-locking PMLS provides synchronised lifting and positive engagement at all times.

Computerised controls keep the platform moving at a constant speed and set vertical travel distance. Redundant safety limits prevent the PMLS from travelling beyond the set distance. If the power fails, the load remains in place on the secured platform.

Getting the PMLS to the work site is simple and the assembly quick. It ships in 12 trailers, versus the 25 to 30 needed for high-capacity cranes, Cox says. It assembles in five shifts, or fewer, compared to three to four weeks for comparable systems.



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Managing crane operators and rigging crews carries specific challenges to be addressed



Asset management

Smart companies are putting training at the heart of their recruitment and retention strategies.

PHIL BISHOP reports

Crane operating companies are businesses, like any other, and are liable to voice some well-known phrases. “Our employees are our biggest assets,” you might often hear them say. Most of them really do mean it.

For many, however, a professional management system for recruitment, training and retention is an alien concept. Even the best crane operating companies sometimes struggle with managing their human resources, as witnessed by recent industrial action at the leading UK rental firm Ainscough Crane Hire. The truth is that managing crane operators and rigging crews carries very specific challenges.

Crane crews are delegated enormous responsibility for running very expensive equipment. They are often well remunerated but they earn every penny of it, often working anti-social hours in anti-social locations and under anti-social conditions. It takes a certain kind of person to be good at this work and,

while they may often be great team players on site, they also often have a certain independence of spirit.

For the best of them, operating cranes is not just a job, or even a career – it is a profession. They have formal training and recognised qualifications.

The challenge of managing this cadre lies in getting the right people (recruitment), ensuring they can do the job well (training), and keeping them happy enough that they will stay with the company (retention).

In many parts of the world, there are concerns about where the next generation of crane operators will come from. Andrew Claypole runs Liebherr Great Britain’s training school. As far as the UK is concerned, he says, this is a major issue. “There is going to be a massive shortage,” he says. “There is no one coming in because it’s not perceived as an attractive job, despite the pay.”

Crane rental companies are not

bringing young people in because “they all want the finished article”, Claypole says.

Generation X (Box)

Young people wanting to be footballers or pop stars rather than mechanics or plumbers is not a new phenomenon but, as more and more people go to university, even realistic aspirations tend towards management roles rather than site operations. It had been hoped that the X-Box generation might regard crane operating as just another great game and would be queuing up to get their hands on the joysticks.

There are all kinds of schemes and initiatives – from structured training and qualifications to propaganda campaigns to win hearts and minds – to encourage young people to consider technical careers in engineering and construction.

In both the UK and the USA there is a big push on apprenticeships of all kinds and the promotion of vocational education (known in the USA as CTE – career and technical education).

“American education has finally woken up to the need to improve the status of math and science in schools,” says Elliot Apatov, who has been teaching bridge-building and crane-building to school

students in Portland, Oregon, since 1995. "STEM is the new buzzword," he says. STEM stands for science, technology, engineering, and mathematics.

Promotional campaigns in the UK include Go Construct, to promote the construction industry as a career choice, and an awards scheme for apprentice mechanics in the industry called 'Stars of the Future'. There is also a new apprenticeship scheme being developed for 'construction lifting technicians', with work here being led by construction company Laing O'Rourke.

In Germany there will be a substantial programme of events aimed at schoolchildren at the forthcoming Bauma exhibition. More than 12,000 children from 230 schools have registered to attend the Think Big! Events, which will promote career opportunities in the construction machinery industry.

In the USA the Specialized Carriers & Rigging Association (SC&RA), in conjunction with the National Commission for the Certification of Crane Operators (NCCCO) and assisted by KHL, has a programme of careers fairs under the banner Lift and Move USA. The events were set up after SC&RA members aired concerns about the difficulty in attracting young or new people to the industry.

The most recent event, in February, was held at TNT Crane & Rigging's headquarters in Houston, Texas. The 700 attendees heard speakers from a list of companies that included Mammoet, Deep South, TNT, Lifting Gear Hire (LGH), Bengal Industries and Berard Transportation. They explained the career opportunities in the US crane, rigging and specialized transportation industry. TNT human resources director Antoy Bell



One of two 750 tonne capacity Liebherr LTM 1750-9.1 wheeled mobile telescopic cranes added to the Ainscough fleet

HR AT AINSCOUGH

Interview with AMANDA HESKETH, resourcing and retention manager, Ainscough Crane Hire

HOW DIFFICULT IS IT TO FIND AND KEEP GOOD PEOPLE?

Hesketh: It can be a challenge but it really depends on the job role we're recruiting for. Having a reasonably settled workforce means we require around 40 to 50 new operatives annually. This includes replacements for retiring staff, career changers and additional roles demanded by company growth. Demand does outstrip supply at times but we work hard to mitigate that with systems to track both the development of existing staff and capturing data from speculative applications. The success of our recruitment activity depends on the detail and accuracy of our knowledge and we aim to have the best knowledge in the sector.

WHERE DO YOU GET NEW PEOPLE?

We have a talent pool system, which we manage on a constant basis. It consists of a series of different external streams that feed into a central database of personnel each with different levels of experience and competence.

During recruitment phases, this becomes our first port of call and enables us to identify new recruits quickly and efficiently. Technology is helping and is continuing to drive changes in our recruitment activity.

We are also engaged with the Construction Industry Training Board in developing a trailblazing apprenticeship scheme for operators. We work with them to engage with secondary school pupils highlighting the options available to them when they leave education. Through this we aim to bring more people into the sector.

WHAT TRAINING PROGRAMMES DO YOU OFFER?

In-house training focuses on safety, leadership qualities and maintaining mechanical knowledge of the fleet as it develops.

We go above and beyond the minimum requirements... We ensure there is ongoing training and development of operators. We do this through various means including work shadow opportunities and clear development pathways to allow operators to assume the role of an appointed person. This moves an operator into a more strategic, planning role.

All of the regulatory training is outsourced but we recruit at all levels, meaning operators don't always come to us with a [licence to operate]. We'll fund operators training and provide ongoing support up to and beyond their achieving the necessary competency levels

Contractually, we require staff whose training we have funded, to remain with the company for 12 months unless they opt to self-fund their training.

WHAT SORT OF TRAINING DOES AINSCOUGH FIND PARTICULARLY EFFECTIVE? DO YOU USE SIMULATORS, FOR EXAMPLE?

We don't use simulators, no. There's no specific objection to their use but we source a considerable volume of training through Ainscough Training Services Ltd [no longer under the same ownership as Ainscough Crane Hire], which has a Liebherr crane that it uses for training. The opportunity to let trainees literally get to grips with the real thing is enormously valuable to us.

DO YOU DO ANYTHING ABOVE AND BEYOND THE INDUSTRY STANDARD IN THE FIELD OF TRAINING FOR YOUR EMPLOYEES?

We have an agreement with Ainscough Training Ltd that everybody who completes their training can take part in a 'guaranteed interview scheme'. The vast majority of people take us up on the opportunity, which enables us to maintain visibility of some of the new entries to the sector.

We also have a mandatory four-day training regime for all new recruits. It is a mixture of classroom and 'hands on' training covering safety and maintenance among other things. It also provides good company acclimatisation for new recruits.

Following on from that, we establish a work shadowing programme, which is about sharing knowledge between experienced staff and new recruits.

ONCE QUALIFIED, WHAT ONGOING NEEDS ASSESSMENT AND TRAINING IS PROVIDED?

We have instigated an ongoing monitoring programme, which ensures that best practice is shared between staff at all levels of experience. This is designed with staff progression at its heart, establishing a clear progression for new crane operators to grow their careers. Many have gone beyond the crane operator to achieve 'appointed person' accreditation and become part of the planning team.

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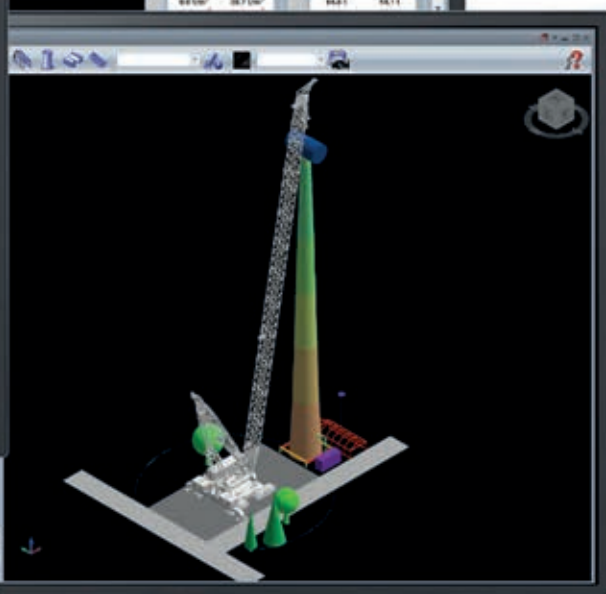
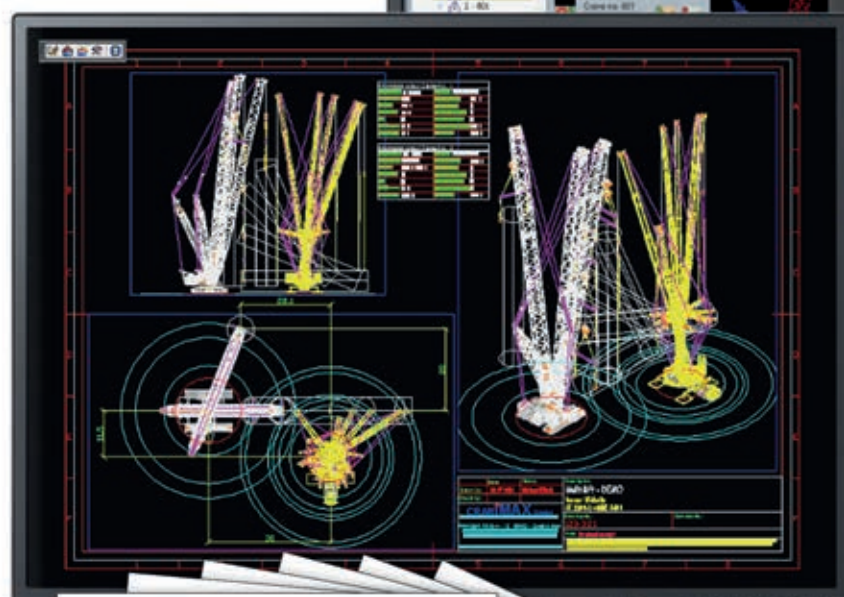
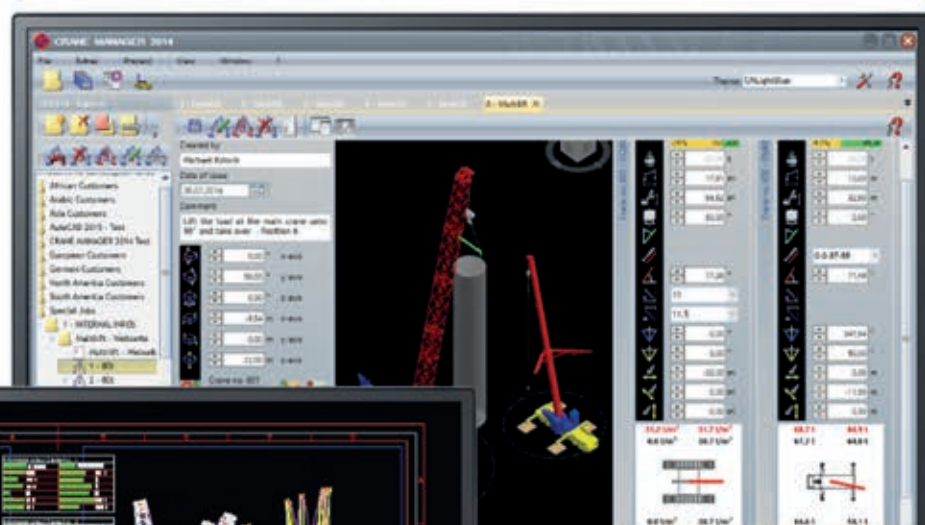


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explained how high demand for skilled workers coupled with low supply was driving wages up.

Buckner Companies is hosting the next event, in South Carolina, in May. Then it will be the turn of Bragg Crane in California in November.

Training forces

Significantly, it was not just high school and college students in the audience at TNT's event – there were also young ex-military personnel exploring civilian opportunities. On both sides of the Atlantic, it seems, the armed forces continues to provide a substantial recruitment pool both for cranes and rigging, specifically, and construction in general. Liebherr GB training manager Andrew Claypole used to be a soldier and he estimates that somewhere between 30 and 40 percent of the UK crane industry is ex-military. Soldiers have initiative, work hard and "can get out of bed in the morning", he says.

Labour shortages are a corollary of the economic cycle, of course, and not everywhere finds it hard to recruit. In Australia, for example, although business is picking up, it seems there are currently plenty of experienced people from mining

and oil & gas projects in Western Australia and Queensland who are looking for work. "We have just advertised for the position of dogman/rigger and I have been surprised at the high number of good quality applications we received," reports John Gillespie, owner and managing director of Gillespies Cranes, one of Australia's biggest mobile crane rental companies. He needs experienced operators for his bigger cranes, he says, but adds, "We do try and employ at least one young person (19 to 22 years old) and train them up, commencing their career on low capacity pick & carry articulated cranes (Frannas)."

Finding new people is the just the first step. Next they have to be trained. And then they have to be managed in such a way that they choose to stay with the company and help it prosper. In many countries around the world crane operators are required to be not just trained for the job but also certified or licensed – as proof of competence.

Smart companies go further than the bare minimum of what the rules and regulations demand, however, and use training as a management tool. Both Ainscough Crane Hire in the UK (see sidebar) and Sarens, the Belgium-based international heavy lift and transportation

specialist, have staff development programmes designed to bring on their future managers.

At Gillespies, formal training is outsourced to specialist providers but there is also continuous on-the-job training and assessment. "Training is progressive," says John Gillespie. "Each employee is monitored. Some are happy to stay on small capacity cranes while others want to progress on to the larger capacity cranes. So future training needs depend on the individual."

Full circle

It is not just the crane operators who have to be trained. In the UK there are cards (licences) for slingers/signallers, lift supervisors and appointed person, which is the role that, according to legislation, carries ultimate responsibility for the lift. In the USA too, the NCCCO may soon have to start thinking about a rebrand. Chief executive Graham Brent explains, "The type of certification programmes we are now developing at NCCCO have evolved from operators to signalling to inspectors, completing the circle of the whole lifting team."

Some of the most interesting initiatives in managing the competence of crane

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OPERATOR TRAINING AND CERTIFICATION

operators are in Singapore, where the government's Ministry of Manpower (MOM) is pushing for higher standards to reduce the incidence of accidents and near misses. In 2014 MOM officials visited 80 construction sites in a safety review targeted at unsafe lifting practices and crane operations. They found 194 crane-related safety contraventions.

Subsequently, there are now three initiatives in Singapore relating to operators: earlier health checks, a tightening of mini crane rules and an operators' database. At present, registered crane operators aged 60 and above are required to undergo health checks every two years. From 1 April 2016, crane operators in Singapore will have to have biennial health checks from the age of 50. "The earlier health checks will improve the employability of crane operators by enabling crane operators to identify early signs of ill health so that we can manage the conditions early. This also helps to prevent future health risks and crane operators can remain in the profession longer," said Sam Tan, MOM minister of state, during a crane safety symposium in October 2015.

Second, it is raising the requirements for training in the use of mini cranes in Singapore. Cranes below five tonnes capacity have previously had certain exemptions. Crane operators who hold a valid mobile or crawler crane licence can continue to operate mini cranes. Those without will have to attend an approved training course.

Thirdly, the Singapore Crane Association, with government support, is setting up a database of crane operators to



At any one time international heavy lift and transport specialist Sarens is sponsoring around 20 or 30 students at universities around the world

track their experience and safety record. This database, called iReCORDS, is expected to help employers find the crane operator with the experience and training to operate their particular crane. Sam Tan explained, "This registry can also pave the way for a continual training programme to ensure that crane operators are adequately trained and continue to maintain a good safety record. Crane operators will also be able to tap on this platform to showcase their work experience and relevant skills and safety records to potential employers. This will help to increase the employability of crane operators in the long term."

While the training of blue collar employees and those working on site is generally set out in legislation or industry standards, white collar training and development is much more dependent

on each company's own attitudes and resources. Sarens, for example, one of the world's largest international heavy lift and transport companies, has at any given time approximately 20 or 30 students that it sponsors in universities around the world. Typically, about 60 % of these go on to have a career with Sarens, says Machteld Leybaert, group human resources director.

At group level there are corporate sales training programmes and management training – three or four employees are currently studying for an MBA. The aim is to develop the future leaders of the company, Leybaert says.

Technical learning

The next step will be to take this from white collar to blue collar, Leybaert says, providing centralised technical training.

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Quality in Control.

There is no group-level programme for training site workers and operators, since this is carried out locally to meet local rules and regulations. However, an overall group apprenticeship scheme is in development now.

UK-based international heavy lift and transport specialist ALE has already developed in-house Standard Schemes of Training (SSOTs). It introduced them five years ago after identifying a need for formal operator development where no off-the-shelf courses exist. ALE has 10 vocational training schemes, covering its fleet of specialized equipment, from SPMTs and gantries, to jacks and the AL.SK350 crane. It is compulsory for all its equipment operators to enrol on a scheme, which gives them the opportunity to progress through different belt levels from yellow to brown and potentially all the way to black. The schemes are constantly revised. This year ALE plans to introduce new SSOTs to cover additional equipment and sectors, including marine.

"SSOTs run across the whole ALE group and, as far as we know, this type of training scheme is completely unique in our industry," explains ALE global training specialist Kay Sproule. "What

is great about the SSOTs is that they are specific to us and our people. They have skills that cannot be learnt in a classroom environment – we find that people learn best by 'doing.' The training is designed to help prevent incidents, injuries or damage and maintain global consistency and quality. More and more our clients want to see traceability and evidence of the training our teams undertake, and SSOTs deliver this."

Managing a global workforce and keeping it happy is a particular challenge. Sarens, for example, has approximately, 4,700 employees around the world, of whom two-thirds work in the field, from Chernobyl to Angola to Korea to Brazil.

In the family

Training and communication are central to the plan to develop the company's recruitment and retention strategy. "We are a family company and still want to be one big family so it's important that they feel like they are part of it," says Machteld Leybaert. To this end, Sarens also has a new group communications strategy to keep its remote workers feeling connected to the company.

This initiative is led by group

communications manager Kleopatra Kyrimi. Employees around the world are receiving company tablet computers so that head office can communicate with them – "instil in them the blue blood of Sarens". These tablets are not just for receiving company news; they might also be used as training tools, with employees being able to access the company's virtual learning programmes.

It is a similar story at Mammoet, where the safety, health, environment and quality programme is underpinned by training and development programmes, meetings, campaigns and safety booklets. It has dozens of safety officers working to ensure that all Mammoet employees operate as one team, maintaining consistent standards, wherever they are from and wherever they are working.

The company says, "Mammoet devotes much time and energy to the promotion of our one way of working throughout the organisation. We do this through our general policy statement, continuous training and development of all employees, clear work instructions, strict safety procedures and company-wide campaigns on safety, health, environment and quality."

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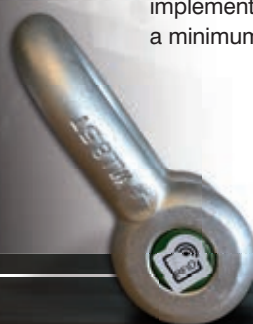


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In the future, there is reason to hope that companies that operate internationally, like ALE, Mammoet and Sarens, will find it easier to centralise their operator training as well as

management training, should they wish to. After all, the cranes are pretty much the same around the world and so are the competencies required to operate them. The only reason why one

In Singapore three recent initiatives relating to operators are earlier health checks, a tightening of mini crane rules and an operators' database

country or state's operating licence is not recognised in another region is lack of trust – and the protection of vested interest among training organisations. The professional qualifications of architects, rocket scientists and brain surgeons are recognised around the world. They are free to practice all over.

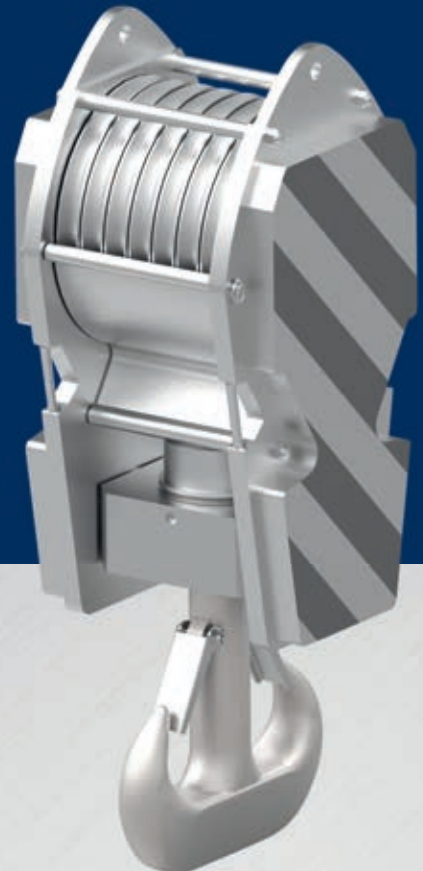
Motorists are allowed to drive on the roads of foreign countries with a home-country driving licence. Crane operators cannot. The day will surely come when the qualifications of crane operators are given the same respect and credit. The NCCCO has broken down inter-state boundaries in the USA. ESTA, the European crane association, is developing a European Crane Operators' Licence (ECOL), drawing on NCCCO experience.

The big hurdle will be getting the various national authorities to recognise and approve the new ECOL licence. Canada and Ireland have recently struck a mutual recognition agreement for their crane operators which is a first step in showing that it can be done. ■

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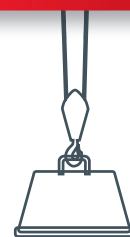
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Sarens scores in Lyon

An ambitious \$274 million football stadium that will play host to major national and international events has been constructed in a suburb of Lyon, France, with the help of heavy lift and transport specialist Sarens and crane manufacturer Terex. *IC* reports

The impressive 59,500-seat Parc Olympique Lyonnais replaces the former football stadium, Stade de Gerland, used by French football club Olympique Lyonnais. The area surrounding the stadium serves as a leisure centre and public space, bringing together shops, restaurants, hotels and a football museum.

The first major national event hosted at the new stadium – a series of matches for major European soccer championship Euro 2016 – is scheduled for June 2016, so construction activities were at a fever pitch to complete the stadium by the January 2016 deadline. With the major structural work and seating areas complete, work turned to installation of the steel structure that supports the enclosure roof.

The Sarens Group was brought in, quite literally, to carry the load. The Belgian company supplied a 650 tonne capacity Terex Superlift 3800 lattice boom crawler crane. Sam Voeten, Sarens project manager, explains, “We chose the crane for its versatility. For this project, we needed high capacity at a short radius as well as high lifting capabilities when working at an extended radius without reconfiguring the boom.”

Crews prepared the crane for the more than 800-kilometre trip from Cherbourg, northern France, to the stadium. Within a week 46 trucks had transported the

crane. “We needed a total of 540 tonnes of counterweight for the structure, central ballast and superlift tray to perform all lifts,” explains Voeten.

Guntram Jakobs, Terex Cranes product marketing manager, says, “No component is over 3 metres wide, so the Superlift 3800 is built with transport in mind. It can be easily transported to any market around the world, and features like nesting boom segments and interchangeable counterweight slabs reduce the number of truckloads and lower transportation costs.”

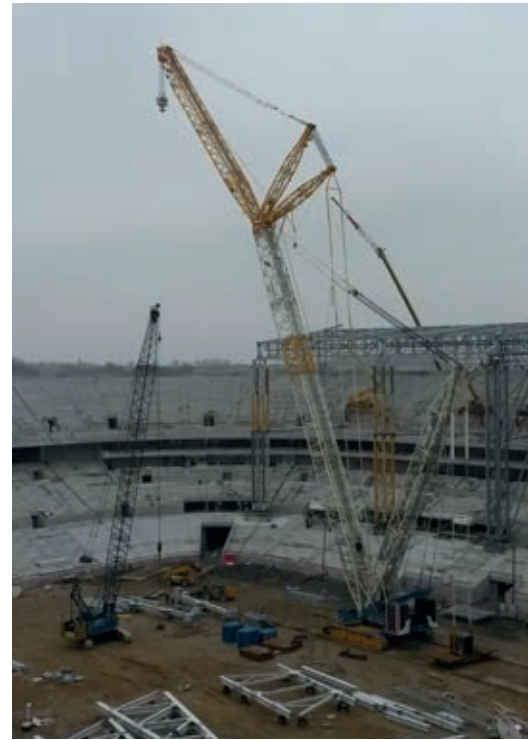
A compact design also helped out at the stadium, says Voeten, “The access tunnels for truck deliveries were only 5 m high by 4 m wide, so the narrow transport dimensions of the Superlift 3800 helped us to get components inside the stadium for rigging.”

On site a crew of five assembled the crane and superlift structure within four days. Configuration for the project required 60 m of main boom with a 42 m fly jib and 36 m of superlift mast.

The Terex fall protection system contributes to safety when rigging the boom sections. It includes a vest harness with a shock absorber and is designed to allow secure, tethered walking and working on the main boom.

On the roof

The Parc Olympique Lyonnais design



boasts an enclosed roof so games can be played in any weather. Sarens' crews were charged with placing preassembled segments of the steel structure supporting the roof. The smaller exterior flanges were about one third of this size, weighing 50 tonnes each.

The roof supports were placed around the entire circumference of the stadium and there was limited room for the crane to do its work. “Management of the free space inside the stadium was a challenge,” says Voeten. “Terex helped us by studying the specific parking conditions for this project and corresponding maximum permissible wind speeds at the various working radii.”

The 3800's structure carried 165 tonnes of counterweight, 50 tonnes of central ballast and 325 tonnes on the variable position superlift tray, which offered working ranges from 11 to 19 m.

The crane hoisted and placed the 150 tonne inner structure segments. Working at a radius of 43 m, the structure was hoisted to its drop-off height of 45 m.

With limited space for positioning the crane, crews worked up to a radius of 81 m – nearly the entire length of the football field – to position the smaller 50 tonne assemblies. These exterior sections were also positioned at 45 m height for final assembly. The stadium was completed in time to be inaugurated in early January 2016.





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The number of attendees at the 2016 SC&RA Annual Conference is forecast to top 750. MIKE CHALMERS gives a preview of what they can expect from this April event

ABOUT THE SC&RA ANNUAL CONFERENCE

26-30 April 2016

Hilton Orlando Bonnet Creek
Orlando, Florida, USA
www.scranet.org

AIRPORT

The Hilton Orlando Bonnet Creek is 18 miles (29 km), about half an hour, from Orlando International Airport (MCO).

The 2016 SC&RA Annual Conference will host more than 750 of the crane and specialized transportation industry's top managers and leaders from around the world, from 26 to 30 April at the Hilton Bonnet Creek hotel in Orlando, Florida, USA.

Known for bringing together business owners to discuss important industry issues that affect attendees locally and globally, the SC&RA Annual Conference continues to grow in attendance and prominence. According to Dave Wood, president of crane repair company Wheco, it's partly the ability to connect with peers that fuels the gathering's continued growth.

"It's an opportunity to network and meet

The annual President's Reception is a social and networking event that brings together old and new friends and colleagues

Annual spectacular

up with old friends and business partners that you may only see once a year," Wood said. "It's also a chance to meet new people, and even share with your spouse what you do – the community you work within."

Wood went on to discuss the importance of being involved in different aspects of the conference. "It's an opportunity to participate in the shaping of the industry and the SC&RA through participation on the many committees," he said. "We take away something from each activity during the week, whether it be a speaker, a meeting, the exhibit floor or one of the social events. As a whole, you get out of the week what you put into it."

Renowned speakers

This year's Annual Conference has renowned speakers and industry experts

who are sure to entertain and inform. The opening session will be Walter Bond, a former NBA (basketball) player and veteran presenter. Bond will deliver a presentation called No One Can Stop You but You.

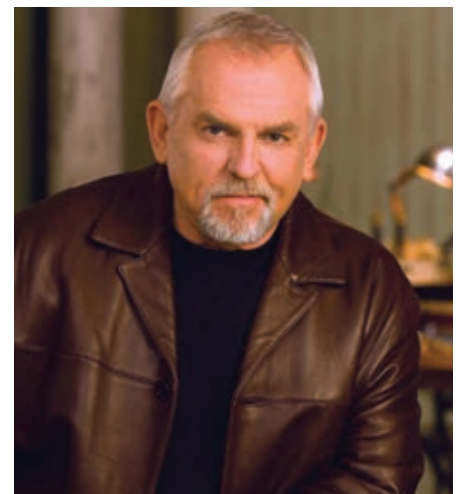
Using a perspective gained from eight years playing professional basketball, Bond will ask attendees to imagine how much more productive their companies would be if everyone took responsibility for their mistakes and continued to improve through team effort.

Bill Tierney, Imperial Crane Services vice president and COO, anticipates gaining valuable takeaways from Bond's presentation, as well as others. "In addition to the networking and social functions everyone enjoys at the Annual Conference, I firmly believe we all leave the week with one or two points from the various speakers >



Dave Wood, Wheco president, said he takes away something from each activity during the week, whether it be from speakers, meetings, exhibits or social events

Walter Bond, a former NBA (basketball) player, will discuss productivity, taking responsibility for your mistakes and improvement through a unified team effort



Better known as Cliff Clavin on the Cheers TV show, John Ratzenberger will present Made in America, a session highlighting his passion for American industry



More than 70 companies will be exhibiting their products and services at the Annual Conference Products Fair

that we attempt to utilise in our day-to-day operations,” he said. “It helps contribute to our overall success. It’s a constant learning opportunity.”

Thursday attendees will also recognise and enjoy the afternoon speaker. John Ratzenberger, otherwise known as Cliff Clavin, from the long-running NBC television sitcom *Cheers*, will present *Made in America*, a session that highlights his passion for American industry, and the need for more trained, skilled labour throughout the nation.

Ratzenberger has more recently produced and starred in 97 episodes of the Travel Channel series by the same name. His expertise was partly gleaned from a life before acting – where he lived overseas for ten years, worked as a carpenter, an archer and as a deckhand on a fishing boat.

Before “Cliff” takes the stage on Thursday, however, Curt Steinhorst will present *Thriving in the Age of Distraction* at the annual Link-Belt breakfast.

Steinhorst will recognise that for the first time in history, “we live in a world without any barriers to connection or communication – and it has fundamentally altered the way people work, engage, communicate and relate to one another.” He’ll ask the looming question everyone grapples with in the modern business era: “How do I engage and interact with



Curt Steinhorst who will present *Thriving in the Age of Distraction*, about how to engage and interact with emerging technology without getting exploited

emerging technology without letting it exploit me?”

Tim Gard will take the stage on Friday morning at the Trail King Breakfast with his session: *Stress Programs that Change the Game*. Gard will build on the idea that life is a game, business is a game, everything is a game – with winners, losers and spectators. But the game comes with stress. He’ll share some “...secrets on how to best manage our stress while we go about playing the many games that surround us.”

JOY ‘geek out’

For many, the high point of the Annual Conference is the SC&RA Job of the Year (JOY) presentations on Friday afternoon and Saturday. These presentations are basically a crane and transport “geek out,” where the industry’s finest present the year’s most incredible and awe-inspiring jobs.

THE SOCIAL SIDE

TUESDAY 26 APRIL

- Tennis Tournament
- Golf Tournament & Awards Reception

WEDNESDAY 27 APRIL

- NCCCO 5K Fun Run/Walk
- President’s Reception

THURSDAY 28 APRIL

- SC&R Foundation “Shake, Rattle & Roll Gala” (Attire: 1950s poodle skirts, white shirts and jeans)

FRIDAY 29 APRIL

- Acoustic Alchemy Guitar Reception

SATURDAY 30 APRIL

- Closing Night Awards & Recognition Reception & Dinner

Dave Wood counts the JOY presentations as one of his favourite parts of the conference. “My wife, Karen, and I are both always amazed at the ingenuity that goes into these projects,” he said.

Wood won’t be alone in his excitement. With an added category – Over US\$2 million – the Rigging Job of the Year is sure to showcase some truly formidable projects. Not to be outdone, each category – \$750,000 to \$2 million, \$150,000 to \$750,000 and \$150,000 – will surely get the crowd buzzing. Then the Hauling Job of the Year winners will keep them abuzz.

In addition to a balanced schedule of events and presentations, attendees of the 2016 SC&RA Annual Conference will get the extra benefit of learning, relaxing and networking at a beautiful hotel that offers a wide range of things to do. Ultimately, a week of sun, fun and opportunity will come to an elaborate end on Saturday night, 30 April, with the Closing Night Awards & Recognition Reception & Dinner. This black-tie affair showcases the industry’s most notable achievements throughout the previous year. It includes the presentation of the Jobs of the Year award winners.

To register and for more information see: www.scranet.org

COMMITTEE MEETINGS

SC&RA annual committee meetings are on Wednesday and Thursday 27 and 28 April. Wednesday’s schedule contains the bulk of these meetings, from 07.15 to 14.00. The only exception is an Insurance and Risk Management Committee meeting at 15.15. Thursday morning starts early with the Association Nominating Committee meeting from 07.30 to 07.45. The Crane & Rigging Group Committee and the Transportation Group Governing Committee meeting will be on Thursday from 09.30 to 11.00. The full schedule is at: www.scranet.org



The Foundation Gala is a dinner and dance that has raised more than US\$500,000 for the SC&R Foundation over the years and includes dinner, casino tables, dancing and more



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Powering upwards

Changes in requirements for lifting and transportation work to erect and maintain wind turbines in India for upcoming wind power projects is creating demand for newer cranes and transport solutions in the country. PARTHA PRATIM BASISTHA reports

Demand for new cranes has remained subdued in India since 2007 due to low activity in core and industrial infrastructure sectors. Thanks to Greenfield wind power projects, however, crane manufacturers and rental agencies are witnessing an upsurge in demand for medium and higher capacity cranes, along with the firming up of rental rates in India.

India plans to add 60,000 megawatts (MW) of wind power capacity by 2022 from the present level of 23,000 MW. Major wind power equipment manufacturers, including Inox Wind, Gamesa, Vestas, Enercon and Suzlon, are implementing a large number of projects across central, western and southern India, driving demand of crawler and wheeled cranes.

Gamesa now has a 250 and 300 MW wind power order from Orange Renewable and Greenko for installation in southern, central and north India. Inox Wind Limited has been awarded orders for 100 MW and 50 MW wind power projects by Ostro Energy and Gujarat Mineral Development Corporation in central and western India.

The demand for new cranes is to erect taller towers with hub heights between 90 and 120 metres. Tower diameters are from 3.8 to 5.4 m, and the heavier nacelles are between 72.3 and 106 tonnes. To get more wind - for producing more power - turbine manufacturers have been increasing hub heights during the last seven to eight years, first from 30 to 50 m, then to 72, 80, 90, 100, 108 and, more recently, 120 m. With an increase in height, power generating



A Sarens crawler crane positioning a wind turbine for the Inox Wind project

capacity of the mills has gone up from 250 kW to 2.5 MW.

New heights

Gamesa is planning to increase hub heights to 135 m in the next five years. Vestas will be putting up two 40 MW projects in Karnataka and Gujarat, and one of 80 MW in Tamil Nadu, with a hub height of 110 m, by June 2016. The company plans to execute a total of 400 MW from projects in 2016.

To work at greater heights, western

India heavy lift company Amrik Singh & Sons has ordered a 600 tonne capacity Sany SCC 6000 WE crawler crane. According to Deepak Garg, Sany India CEO, "We have manufactured the crane following extensive consultation with turbine manufacturers in India and major Indian crane rental firms on present hub heights of 120 m and nacelle loads between 75 and 80 tonnes. The major attributes of the crane is its compactness and ease of assembly and disassembly for faster turnaround time on windmill sites." Based >

WIND POWER: INDIA

on the growing demand from wind turbine projects, Sany India expects to sell several more cranes this year.

Another heavy lifting crane rental firm in western India, Shethia Erectors (specializing in wind power projects) has ordered six new Liebherr LR 1600/2 crawler cranes. The 600 tonners will be deployed to the Gamesa projects across Maharashtra, Gujarat and Madhya Pradesh in western and central India, and to Tamil Nadu in south India, to erect 2 MW wind turbines. The cranes will be working with a 138 m main boom and 12 m fixed jib to lift nacelles between 90 and 120 tonnes at a hub height of 120 m.

Mitesh Shethia, proprietor of Shethia Erectors, said, "The decision to acquire the LR 1600/2 is because the booms can be reconfigured based on future tower hub heights between 135 and 150 m."

Steel Carriers India, another major crane rental firm, has ordered a brand new Terex AC 700 SSL all terrain crane. According to Sunil Makkad, Steel Carriers director, "We will be taking delivery of the crane in a few months' time. The 700 tonne crane with 60 m main boom and 96 m luffing jib, will be deployed primarily for short term wind power maintenance jobs. The fully loaded crane will also be



Liebherr LR 1600 lattice boom crawler crane working for Suzlon at the Naliya site erecting wind turbines with hybrid lattice and closed section towers with 120 metre hub height

used for upcoming refinery maintenance and expansion projects in Gujarat." Steel Carriers has 100, 350 and 500 tonne capacity Terex all terrain cranes working on blade repair jobs for wind power installations in Gujarat and Maharashtra. Sensing the growing business

opportunities in wind power projects, Mumbai-based heavy lift firm, Barkat Hiring Co took delivery of a new 300 tonne capacity Grove GMK6300L all terrain crane in October 2015. Preet Bedi, partner at Barkat, said, "With growing requirements for cranes at short notice from turbine manufacturers, we have ordered another GMK6300L." The order was expected to be received at the end of 2015 with plans for both of the fully loaded cranes to be deployed primarily for lifting and removal of blades with an 80 m main boom, lifting 12 tonnes at a 14 m working radius. Barkat recently completed a major maintenance project for Vestas's wind farms with its 600 tonne capacity AC 650, all terrain crane in Gujarat. The job involved the bringing down and erecting of blades weighing 11.5 tonnes at hub height of 109 m.

Lift plan

The selection of cranes by wind turbine makers in India is based on their individual lifting plans. Safety factors and site conditions are major considerations behind working out the lifting plan and selecting the crane types.

According to Bipin Lunavia, Enercon chief technical officer, "We undertake three >



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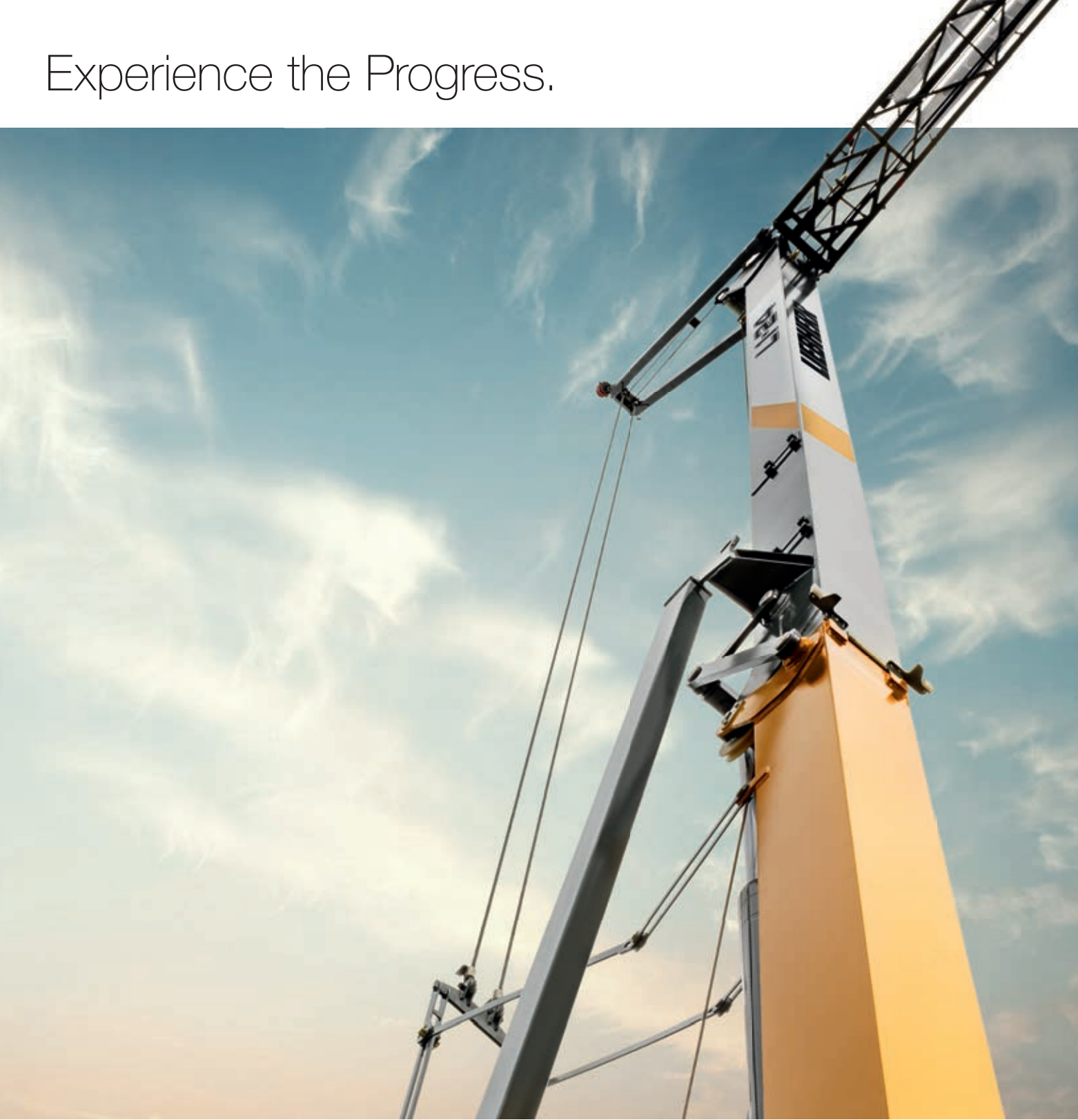
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Goldhofer extendable trailer used by Namakkal Transport Co for transporting individual wind turbine blades



heavy lifts with crawler cranes for lifting the 45 to 70 tonne nacelles, the generators, and the hub and blades at our hub heights of 56 and 75 m. The nose cone, to be fitted at the front of the blades, is lifted separately to avoid damage.”

Muthukrishnan Bagavathi, manager of site support and cranes procurement at Vestas, said, “Our previous lifting plan was the individual lifting of nacelles weighing 50 tonnes. This was followed by single lifting of the rotor hub with blades. The present practice is to lift the nacelle, followed by the lifting of rotor hubs and blades separately. This is to ensure safety with the towers becoming taller.”

Wheeled cranes are usually used for erection of towers, preferably followed by crawler cranes for the heavier sections. However, this may vary based on the project cost and job duration. Crawler cranes are preferred by turbine manufacturers because of their higher lifting capacity at longer radius and their ability to move short distances with load. The ability of the crane to work in a constricted space, in contrast to wheeled cranes with outriggers spread, also makes them the preferred choice.

Transport solutions

The use of extendable trailers between 42 and 55 m long is relatively new in India for moving blades between 24.5, 36 and 45 m. These were moved in locally made, conventional tractor trailers six years ago. With the increasing presence of foreign turbine manufacturers in India, setting standards for safe transportation of the sensitive blade sections means that transporters have been acquiring extendable trailers in sizeable numbers. Affordability, however, has been an issue to procure foreign made extendable and hydraulic modular trailers.

New Delhi-based conventional tractor trailer manufacturer, Vishkarma Machine Tools (VMT) has been making 45 to 52 m

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WIND POWER: INDIA

A 300 tonne capacity Manitowoc Grove GMK6300L, newly acquired by Barkat Hiring Co for wind turbine maintenance



extendable trailers and hydraulic modular trailers at its plant in Haryana in north India. Gurvinder Singh, VMT Industries managing director, explained, "So far we have supplied 52 extendable trailers to transporters across the country for moving blades. The competitively priced trailers are made of special alloys, which reduce the load, enabling the prime mover to provide lesser tractive effort, thereby reducing fuel costs."

Singh added, "To provide original, cost-competitive solutions for windmill parts

transporters, we manufactured a prototype and eventually carried out modifications based on customer feedback in the hydraulic axle modular trailers, featuring stability for safe cargo movement both through uniform and uneven roads."

VMT makes hydraulic modular trailers from 2 to 6 axle lines with the gross weight of the trailers ranging from 36 to 108 tonnes and with payloads of 28 to 84 tonnes. The company is the major supplier to prominent Indian wind power transporters, including south India-based

Namakkal Transport Carriers, Kamakshi Transport Co and Rameshwar Transport in Gujarat.

Based on requirements for safe transportation of blades and other wind turbine parts, Industrie Cometto India has entered into an engineering partnership with Chennai-based Sneritc Engineering. Ramesh Balan, head of business promotion at Cometto, India, said, "Sneritc will be designing and making jigs and fixtures as per requirements to the transport of single or twin blades on the extendable trailers. It will also render complete support services to transporters." Cometto India said it sold fifteen extendable trailers in recent months to wind turbine transporters.

Uneven and otherwise poor road conditions and little space available for turning on sites is a major issue encountered by transport companies. According to Balan, "Owing to the constraints, there have been recent enquiries for adapter-based solutions for transporting tower sections and blades."

With commissioning of wind power projects going up in India, there will also be growing requirements of newer value-based erection and transportation solutions backed by adequate product and services support.



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Just how diverse the product portfolio of the TII Group actually is can be clearly seen in the broad range of innovations which will be featured at bauma 2016. The world's strongest PowerBooster model, unprecedented self-propelled modular vehicles, the lightweight

series for transport on public roads, special vehicles for the mining sector, brand new developments in road transportation and equipment for landscape management will be on display on the generously-sized exhibition space in the open-air area.

„At bauma 2016, we have placed our innovative solutions centre stage“, said Bernd Schwengsbier, President TII Sales. „For our customers, we are much more than just a manufacturer. We are partners, consultants, trend barometer and a guarantee for the economic success of tomorrow rolled into one. This can only be carried out by one single group that places its synergies and experience completely in the service of their customers“, added Schwengsbier.



The very first glance shows that the super truck by NICOLAS is no ordinary tractor. At bauma 2016, an 8x8 model can be marvelled at as it's put through its paces.



The SCHEUERLE-NICOLAS EuroCompact on display at bauma 2016 is a robust all-rounder produced using a lightweight construction for the transportation of construction machinery and stands out due to a particularly good payload/tare weight ratio.

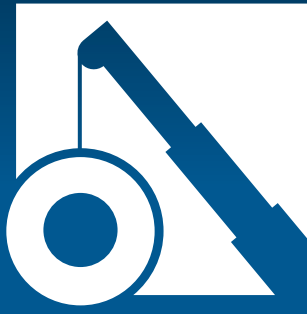


With the SCHEUERLE-NICOLAS EuroFlex, the TII Group is showcasing a lightweight and cost-effective vehicle for the transport of loads under 100 tons on public roads which covers numerous payload and fields of application through a large number of variants.



The solutions for the US market being presented at bauma 2016 build on the successes of the models that are already available on the American market. They simplify approval procedures for empty runs, combine the requirements for the transportation of oversized loads as well as point loads on an individual vehicle, thus allowing the operator to carry out an unprecedented wide range of transport assignments with just one modular vehicle. Such a range of possibilities are only offered by vehicles from the TII Group.

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WHERE: Green Park Hotel, Istanbul, Turkey

WHEN: 3 November 2016

WEB: www.khl.com/catt

Speaker confirmed

Andreas Geier

Head of sales, cranes – Middle & Near East, North Africa & Benelux, Sennebogen Maschinenfabrik

TOPIC: Duty cycle crane: multiple foundation applications in infrastructure projects

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ALE adds 14,400 tonnes of SPMT capacity

Specialized transport and heavy lifting specialist ALE has added 240 lines of a new type of self propelled modular transporter (SPMT) from manufacturer Scheuerle in Germany.

Capacity is 60 tonnes per axle line and they run on 15 inch (380 mm) wheels and tyres. The order will add 14,400 tonnes of capacity to the ALE fleet. Engines in the power packs are to EU 4 / EPA Tier 4 Final exhaust emission standards.

Ronald Hoefmans, ALE technical director, said, "By investing in the latest generation of trailers it positions us at the forefront of the industry, pushing the boundaries for the world's highest SPMT capacity and solving the challenges for our clients."

Bernd Schwengsbier, TII Sales (Scheuerle, Nicolas, Kamag) president, said, "70 percent of all transports over 3,000 tonnes and 90 percent of all



transports over 5,000 tonnes worldwide are done with vehicles manufactured by us."

ALE plans to base the new trailers mainly in the UK and the Netherlands. ■

Taiwan to Japan with BigLift

BigLift Shipping's Happy Buccaneer was used to transport a 1,200 tonne, 45 metre high continuous ship unloader (CSU) from Kaohsiung in Taiwan to Haramachi, Japan, for installation at the Haramachi thermal electric power station.

The CSU is a replacement for the thermal electric power station that was severely damaged in the Tsunami in March 2011.

The project was executed in close co-operation with the engineering department of Japanese client IHI Transport Machinery Co. The CSU was loaded and discharged using the ship's two 700 tonne heavy lift mast cranes (1,400 tonnes in tandem), using two 24 m BigLift lifting beams in the lifting arrangement.

Particular challenges in this project were the high deck loads, the lifting height and required outreach of ship's cranes necessary for the installation of the CSU.

Due to the construction of the CSU, very large forces were expected on the supports of the bucket wheel boom and the ballast arm. Therefore, a detailed load spreading plan was made to lead the forces into Happy Buccaneer's high-strength upper deck.

During the voyage, the acceleration forces on the CSU were constantly monitored, using the OCTOPUS on-board system, which delivers real time vessel monitoring and supports the vessel's route planning, speed optimisation, heading and fuel consumption.

The vessel sailed from Kaohsiung on 12 January and arrived at Haramachi on 17 January where the vessel was challenged by a closed port due to bad weather so the ship and the CSU had to ride out the storm at sea. Eventually, Happy Buccaneer berthed on 20 January and had the CSU installed by the 22nd. ■

KAARLAID GROWS WITH FAYMONVILLE

Forty-nine Faymonville trailers are currently in action at Estonian transport company Kaarlaid and the 50th will arrive soon.

Among the Faymonville trailer types that Kaarlaid has in its fleet are f.ex; multiple MultiMax semi-trailers, MegaMax low bed trailers and TeleMax flatbed semi-trailers. Kaarlaid also uses a multifunctional VarioMax, a light weight MultiMax Plus semi-trailer or a PrefaMax to transport concrete precast elements.

Kaarlaid is a leading supplier of heavy and special transport services in the Baltic region and Scandinavia. It transports goods up to 100 tonnes that can also be up to 60 m long and 14 m high.





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SPECIALIZED TRANSPORT NEWS

Cleaner fuel for Mammoet

Mammoet, the world's largest provider of engineered heavy lifting and transport services, said it will be the first company in the industry to use cleaner-burning Shell gas-to-liquids (GTL) fuel to power its cranes and trucks in the Netherlands.

The move is expected to reduce emissions and improve local air quality as well as lowering noise levels compared with conventional diesel. Mammoet operates 200 cranes and 50 trucks in the Netherlands.

Sander Splinter, Mammoet Europe managing director, said, "Many of our clients are conscious of the need for environmental improvement and we think that choosing Shell GTL fuel will help us to make a contribution by giving them a competitive edge."

Marjan van Loon, Shell Netherlands president director, added, "The roll-out of

Shell GTL fuel underscores our ambition to be the most competitive and innovative energy company. We are proud it will now also be used in the heavy lifting sector and contribute to Mammoet's plans to reduce emissions. As the market develops, we will continue to invest in GTL infrastructure for customers demanding a fuel that can help reduce local emissions in conventional diesel vehicles."

Shell GTL is a liquid fuel made from natural gas that can be used in existing diesel engines without modification. Its characteristics are broadly similar to diesel produced from crude oil but it contains lower levels of aromatics, poly-aromatics, olefins, sulphur and nitrogen than conventional diesel. Shell claims reduced local emissions by 24 % for particulate matter and 15 % for nitrogen oxide in comparison with diesel.



AARDVARK GOES FOR A RENAULT

Exeter, UK-based heavy haulage specialist Aardvark Hire has taken delivery of the UK's first Renault Trucks Range C520.26 6 x 4 tractor running at 80 tonnes under Special Types Category 2.

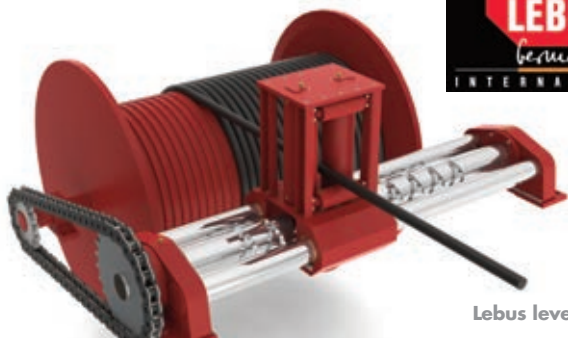
The Range C has a reinforced chassis and fifth wheel as well as a Voith retarder, uprated braking system and light bars and lamps supplied by Kelsa.

Complete with Aardvark's yellow and grey livery, the Range C is an additional vehicle for its four-strong fleet. It is the third Renault truck in Aardvark's fleet and follows Renault Lander 6 x 4 and Range T tractor units. The new Range C moves heavy plant machinery including large excavators and dump trucks from main dealers to construction sites throughout the UK.

Andy Lowe, Aardvark director, said, "Business is booming and we needed an additional vehicle to cope with the extra demand," adding, "We needed a seriously tough vehicle and the Range C hasn't let us down. We are often delivering to open fields which are muddy and wet. Where other manufacturer's vehicles would get stuck, the new Range C doesn't and we can literally send it anywhere. The traction is incredible."



Aardvark Hire in the UK has taken delivery of the country's first Renault Trucks Range C520.26 6 x 4 tractor unit at 80 tonne Special Types Category 2



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SEARCH



London safety lead with M-B Econic

The City of London Corporation in the UK has underlined its commitment to improving safety for cyclists and pedestrians in the famous Square Mile, by acquiring a purpose-designed truck from Mercedes-Benz.

The 8 x 4 Econic wears the colours of the authority's Bow-based fleet contractor J B Riney, which was the first operator to place an order for the new tipper-grab. It was supplied by Dealer S & B Commercial.

The Econic cab has a deep, panoramic windscreen and a fully-glazed kerbside door. This, coupled with a much lower seating position compared to a conventional construction truck, improves visibility. It allows the driver to better see, and even make direct eye contact with those on bicycles and motorbikes, or on foot, at potentially hazardous junctions. Safety is further enhanced by a full complement of cameras, the manufacturer said.

An Econic 3235 ENA model, the truck has a single front steer axle, a double-drive

bogie and a rear-steer axle. This gives it a tight turning circle, and makes it more manoeuvrable than a standard 32 tonne construction eight-wheeler, M-B said.

The Econic is powered by a 260 kilowatt, 7.7 litre six-cylinder engine driving through a six-speed Allison automatic gearbox. It has a Charlton steel tipping body and Palfinger Epsilon M135L remote-controlled articulating loader crane with clamshell.



HEAVY ROTOR FOR TEAMLIFTING IN SAUDI

Teamlifting, a member of the Cargo Equipment Experts CEE network, replaced a 50 tonne GT 11 generator rotor at the Qurayyah power plant in Saudi Arabia.

A 3 metre high structure was built to compensate for the 4.5 m height of the rotor axis above ground. Sliding beams were arranged on top of the structure for a distance of 20 m and specially prepared trolleys were used over these beams to pull out the rotor.

After removal, the rotor was transported by hydraulic low loader trailer to the ISCOA (Siemens) workshop more than 80 kilometres away for repair. It was then taken back to the power plant and reinstalled, using the same jacking and skidding system.

Cargo Equipment Experts CEE is a global network of equipment owners, including haulers, crane operators, tug and barge operators, stevedores and export packers, port operators, rail operators, riggers and skidders, surveyors, air cargo handling equipment owners and supporting industry, serving the heavy and oversized cargo industry.



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Time saved in turbine delivery

Mammoet found a way to save time in the transport of a 400 tonne Siemens gas turbine generator from Algiers port to the Cap Djinet power plant project site in Algeria. The transport, over a total distance of 70 kilometres, took seven hours.

The challenge for international heavy

transport and lifting specialist Mammoet was to find a transport solution for the heavy cargo. There were concerns about how to bring the generator to the site because of poor infrastructure along the route; in the wake of a large earthquake in 2003, the condition and weight

bearing capacity of the bridges was uncertain. This meant that the Algerian government prohibited the transport of cargo for the Cap Djinet power plant by road.

Mammoet came up with a solution that involved transporting the generator partly by

sea. It was moved on and off the barge on 24 axle lines of self propelled modular transporter (SPMT), avoiding double handling at the port and on site. This reduced the handling risks and meant a safer and quicker transport. During the sea

Mammoet completing the load-in of a 400 tonne gas turbine generator at Cap Djinet JTT site in north Africa



Transport was on 24 axle lines of self propelled modular transporter (SPMT)

transport, 400 tonnes of stools and beams were used to secure the cargo.

Algeria plans to expand its power generation capacity from the current level of 11 gigawatts to around 26 GW by 2022. Fourteen power plants are planned with eight currently being built. These are combined cycle plants, each with a capacity between 1,200 and 1,600 megawatts. Since 2014 Mammoet has been involved in the heavy lifting and heavy transport operations for four of these power plant construction projects.

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Down on the water

German lifting specialist Thömen chose a 750 tonne capacity barge-mounted Liebherr mobile crane for its project to dismantle the last construction crane on the Philharmonic Hall waterside construction site in Hamburg. ALEX DAHM reports

Construction is approaching completion on the Elbe Philharmonic Hall, a new concert hall in the Port of Hamburg, Germany. Tower cranes have been on site since building work began in 2007. Local crane and heavy haulage contractor Thömen used a 750 tonne capacity Liebherr LTM 1750-9.1 wheeled mobile telescopic hydraulic crane to dismantle the last of the four large top slewing tower cranes that were on site for years.

A challenge with this particular tower crane, erected on the south west façade, was that it had to be dismantled from the river. In 2007 Thömen erected it using a 500 tonne capacity LTM 1500-8.1 mounted on a floating pontoon in the tidal river.

Jörg Marahrens, Thömen project

Almost finished: A Thömen LTM 1750-9.1 working to remove the last construction crane from the Elbe Philharmonic Hall in the Port of Hamburg, with an impressive hook height of 127 metres



manager, was charged with the job of removal. A larger crane on a fixed jack-up platform was needed because the height of the tower crane, tied in to the building, was around 120 metres. It had been climbed down as far as possible, until the boom could just still be slewed over the edge of the building. In addition, a larger crane could remove several tower sections at a time, speeding up the job.

The 750 tonner on nine axle carrier is Thömen's most powerful crane. It was erected and prepared for the job at Burchardkai, in the west of the Port of Hamburg, on a jack-up platform that was 75 m long.

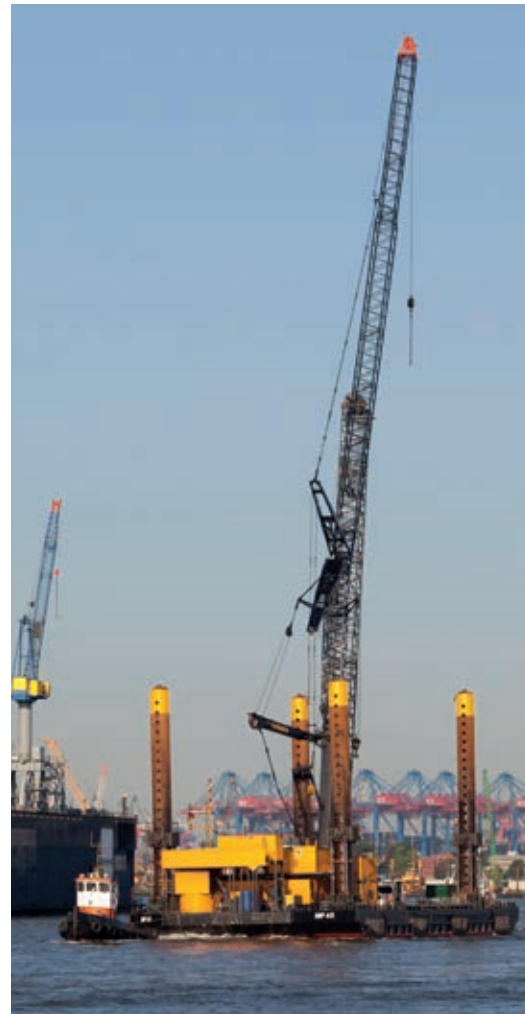
The crane was rigged with 114 tonnes of ballast, 19 m telescopic boom extension and a 66 m luffing jib for the required hook height of 127 m. Space was restricted on the barge by the jack up legs, a crawler crane and other equipment on deck. Erection of the luffing jib was completed with the help of a Liebherr LHM 320 mobile harbour crane on the quay.

Two tugs towed the platform with the crane upstream through the Port of Hamburg, taking an hour to travel around ten kilometres, passing the old Elbe Tunnel, the St Pauli Piers and the dry docks of the extensive Blohm+Voss shipyard.

Immediately in front of the Elbe Philharmonic Hall, the jack-up platform pushed its legs into the river bed to raise the platform to the water level of the high tide. This meant that the crane work could be completed without any hindrance from the tides or the bow waves from passing shipping.

The two crane drivers, Jens Kohlmorgen and Ralf Ramm, had to exercise great caution and work very precisely when dismantling the construction crane, which was just three metres away from the glass façade of the concert hall.

After removing the ballast blocks



A rare view: The jack-up platform travelled about ten kilometres through the port of Hamburg

and the boom, however, the wind speed increased, which meant that the work had to be stopped for several days. Problems with undoing the crane bolts after seven years caused an unforeseen delay in the removal of the crane and meant that the initial timeframe with ideal weather conditions, which should normally have sufficed for the work, had to be extended significantly.

Thömen has three Liebherr LTM 1750-9.1 wheeled mobile telescopic cranes, stationed at depots in Leipzig and Potsdam and at the headquarters in Hamburg. "These cranes are mainly used for erecting wind farms," explains Marc Bernschneider, a member of the external sales team at Thömen. "Our first one went straight from Ehingen to wind power work and was then in use without a break for nine months until its first service. The crane is simply unbeatable for erecting wind turbines." ■

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Load on the lake

Following on from last month's article on load outs, this month MARCO VAN DAAL explains how to perform a load out onto a free floating barge without tidal conditions

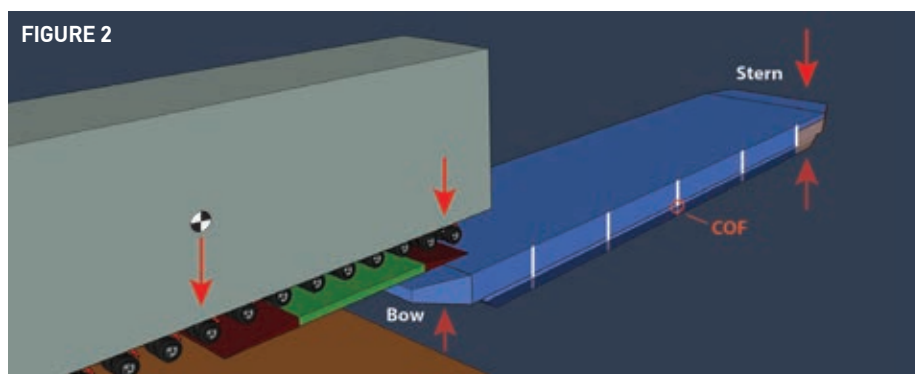
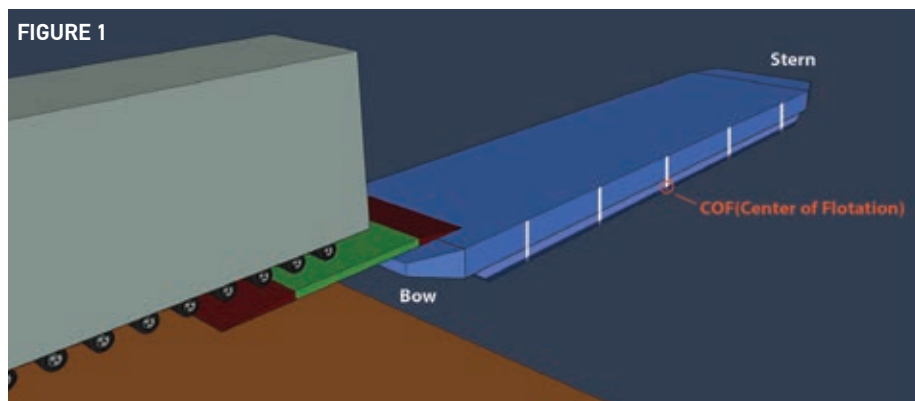
Last month we covered the load out onto a barge in an area where tidal conditions apply. Such a load out is subject to two constraints:

- load out is subject to (low) tide and is to be completed within six hours
- the rising tide provides buoyancy and reduces ballasting requirements.

So what happens in an area where tides are absent, such as on a river or lake?

How is a load out performed under these conditions as there is no tide to provide the needed buoyancy. Let's review this step by step. If there is no tide, then the load out is not subject to any tidal movement. This means that the load out can be performed at any time of the day or night. Secondly, if there is no tide, then there is no reason to complete the load out within six hours as there is no falling tide after that length of time. The above are two positive aspects of performing a load out in a non-tidal area.

How do we deal with the lack of increased buoyancy from a rising tide? As with a load out in a tidal area, the first activity is to pre-ballast the barge so it lines



up horizontally with the quay. See Figure 1. To keep the barge horizontally lined up with the quay we must maintain the draft at the same level as it was during its pre-ballast condition.

When the first axles roll onto the bow of the barge the draft at the bow increases. To ensure that the draft remains equal, and does not increase, weight has to be removed from the barge as the axles roll onto it. This can only be achieved by pumping out water from the bow that was pumped into the barge for pre-ballasting. For every tonne of weight that rolls onto the barge, a tonne of water has to be pumped out to keep the barge horizontally lined up with the quay. See Figure 2.

This is an interesting phenomenon as it means that the barge should hold quite a bit of water in pre-ballasted condition. Indeed, the barge should hold at least an amount of water that is equal to the weight of the cargo that is rolled onto it. Ideally, this should be a bit more as ballast tanks cannot be emptied completely. A 5 percent residual volume is a fair assumption. If there is less water in the ballast tanks than the weight of the cargo that is rolled onto the barge, you will eventually run out of water in the ballast tanks and you will not be able to complete the load out as the barge draft will increase and horizontal alignment of the

barge with the quay is disturbed. This can have very serious negative effects on the load out performance.

No way out

One note needs to be made here. When in a situation where the barge ballast tanks are empty and the cargo has not yet completely rolled onto the barge, there is a way to recover from this situation. As there is no tide, it is relatively easy to roll the cargo off the barge again while filling the ballast tanks again. There are no time constraints from a tidal point of view.

As far as the hydrostatic behaviour of the barge goes, this is quite a bit easier than compared to a load out with tidal conditions as we are now dealing with only one draft. Consequently we are dealing with only one fixed centre of flotation (COF) instead of a varying COF due to varying drafts.

During the execution of a load out it is next to impossible to keep the draft at a fixed value. A load out is a dynamic process that is performed in a dynamic environment (waves, other water traffic and so on). These constant motions have an effect on the transporters; they reduce the effective usable stroke of each axle. That is why it is important to keep the barge and the quay horizontally lined up at near zero

ABOUT THE AUTHOR



Marco van Daal has been in the heavy lift and transport industry since 1993. He started at Mammoet Transport from the Netherlands and later with Fagioli PSC from Italy, both leading companies in the industry. His 20-year plus experience extends to five continents and more than 55 countries. It resulted in a book *The Art of Heavy Transport*, available at: www.khl-infostore.com/books Van Daal has a real passion for sharing knowledge and experience and holds training seminars around the world.

THE KNOWLEDGE

trim. The transition between the barge and quay can consist of a ramp or a steel plate. Typical ramp height is 300 mm (12 inches) and this thickness results in a reduction of the effective transporter stroke. In case of a steel plate, where the typical thickness is 1.0 to 1.5 inch (25 to 37 mm) obviously has much less impact on the transporter stroke. The drawback of using steel plates is a much smaller degree of allowable barge movement in the vertical direction.

Plan for the unexpected

It is imperative that a load-out is prepared and engineered to an extent that prevents and avoids unexpected situations, for example, running out of ballast water, as mentioned above. In practice, however, a load out is not an exact science. When performing a load out onto a reasonable size barge it is not practical to aim for a draft within 10 mm or about half an inch. The dynamics of the surrounding environment simply prohibits this. Therefore, in case of using a steel ramp as the transition between the quay and the barge, the ramp is used as an indicator. As mentioned before, the barge is pre-ballasted so that it is lined up horizontally with the quay. In reality the barge is often ballasted to a few inches above the quay.

When the ramps are positioned they show an air gap between the underside of the ramp and the quay. This air gap is used as an indication of how much the cargo can be rolled onto the barge as the air gap will decrease during this motion. When the air gap has been decreased to virtually nothing it is time to let the ballast operation increase this air gap again while the transport does not move forward. With sufficient experience the rolling on to the

barge and maintaining a certain air gap can be a simultaneous task.

Figure 3 shows that the cargo has passed the centre of flotation (COF). In this figure it is shown that the bow still holds sufficient water for de-ballasting if there would be a deviation from the expected situation. At the same time we can see that the stern has started with de-ballasting as the cargo has passed the COF, which causes the stern to increase in draft if de-ballasting would not commence.

When the cargo has reached its final location and, assuming that the centre of gravity (COG) is lined up with the longitudinal and transverse centrelines of the barge and, assuming that the barge shape on the bow and stern is identical, the amount of ballast water in the stern and bow tanks would be identical as well.

At this point it could be stated that the load out has been successfully completed. The operation, however, has not yet been completed as the transporters still have to be removed from underneath the cargo back onto the quay. This may be seen as a minor detail but it is not always the case.

Let's assume that the cargo has been rolled onto the barge via a 300 mm (12 inch) steel ramp using self propelled modular transporter (SPMT) with a minimum deck height of 1,200 mm (48

inches) and a maximum deck height of 1,800 mm (72 inches). The cargo has been set onto sea fastening stillages of 1.65 m (66 inches). There is $1.65 - 1.2 = 450$ mm (18 inches) of space left between the transporter deck and the underside of the cargo. The transporter, therefore, has this 450 mm of vertical manoeuvring space. There is also 300 mm (12 inches) of ramp height that the transporter needs to negotiate. This needs to be deducted from the available transporter suspension stroke. There is only $450 \text{ mm} - 300 \text{ mm} = 150$ mm (6 inches) of stroke available to manoeuvre the transporter from underneath the cargo back onto the quay.

As you can see, even during this part of the operation it is important that the barge is vertically lined up with the quay to be able to retrieve the transporter combination. It may even be required to ballast the barge to achieve this. See more in Figure 4.

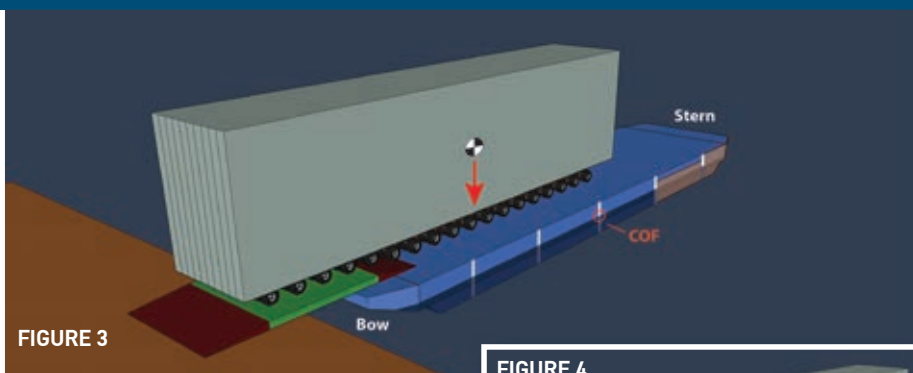


FIGURE 3

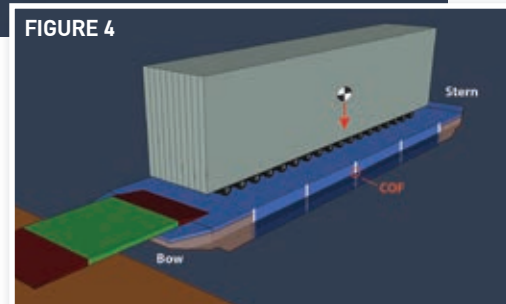


FIGURE 4






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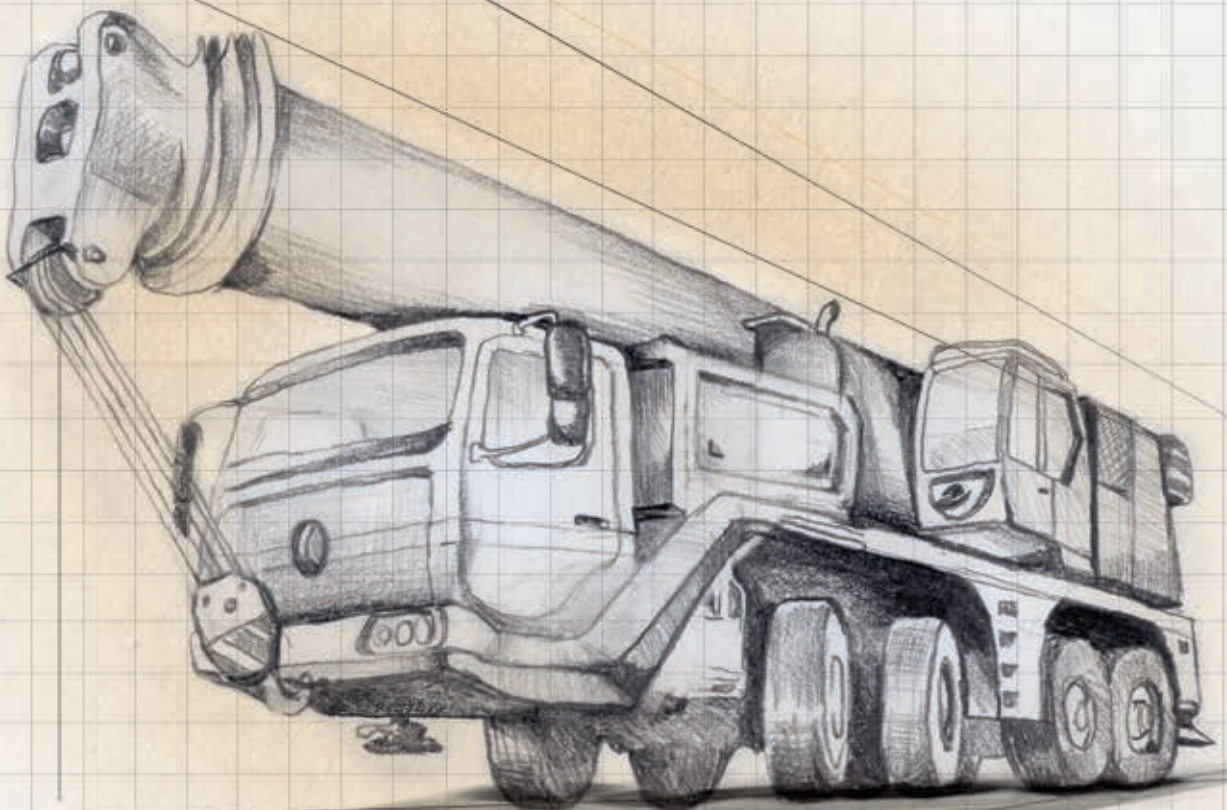


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COMMENT

Joel M Dandrea

Productive pace



The perception of many industrial companies is that they're sluggish – that they're slow to react, much less adapt, to changing trends. And it might have something to do with the top-down, linear process that channels projects through stage gates where senior management can keep an eye on every step along the way.

Sure it's a comfortable way to do things for managers but it's also a bit cumbersome in the modern marketplace – where slow bureaucratic processes tend to stifle creativity and prove slow to adapt to change.

Al Kent, a business writer for *strategy + business*, says there's a better way, and that when industrial companies need to make changes in product cost or design more rapidly than traditional methods will allow, they can take a page from the fast-moving world of software design and adopt, what is called, a sprint-and-scrum approach.

"This iterative process relies on short cycles involving rapid design evolution and revision," Kent said. "The sprint is a period of concentrated effort, such as engineering or coding a module, by individuals or small teams. At the end of each sprint, stakeholders from the key functions come together for the scrum, where they review progress and clarify the goals for the next sprint. The intense nature helps to bring the organisation together toward a common goal, and avoids the tedium that can set in with a long stage-gate process."

As Kent also pointed out in *s+b*, it is easy for leaders of industrial companies to worry that this approach won't suit their complex needs. A review of recent history, however, shows that sprint-and-scrum predates the software industry, and has been used time and again to develop many of the most complicated designs in human history.

"Take the Supermarine Spitfire, which was the main Royal Air Force fighter aircraft during World War II," he noted. "At the

outset of the war the British realised that to be successful in the Atlantic theatre the aircraft would need significant improvements. Between 1936 and 1945 it changed engines, its loaded weight doubled and its maximum speed increased by ninety miles per hour. The rapid evolution of the plane was possible only because of its iterative design and testing approach."

A similar approach emerged in the USA with the *Saturn V* rocket programme in 1961 – with the seemingly impossible goal of putting a man on the moon by the end of the decade. To meet the timeline, the rocket's three stages and instrument unit were developed in parallel by four companies, each of which further compressed schedules by using parallel testing and development. *Saturn V* rockets were ready for use as part of the Apollo lunar missions just eight years later.

"People may argue that the speed of such efforts was possible only because of enormous budgets and the sense of urgency imparted by war or bold presidential decree," added Kent. "And it's a valid point, but a closer look reveals that the decision to iterate these projects quickly and decisively – essentially, to sprint and scrum – was what largely enabled their success."

Probably the biggest concern with the sprint-and-scrum approach for most industrial companies is that it simply takes them too deep into unfamiliar waters. Some of the early benefits, however, might be cause for re-consideration: it reveals risks early on; it minimises project management overhead; and, most importantly, it energises staff by showcasing achievements and fostering open communication.

As the competitive pressure in the modern era of innovation and industry continues to mount, industrial companies would be wise to entertain production processes that break from convention and begin to move away from the traditional top-down models. They might find that they're a good bit quicker on their feet than they realised. ■



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Crane operator certification is shown in government studies to work and, in the USA, it is already at an advanced stage of implementation. MIKE CHALMERS reports

Certification talks are now international

L eading construction groups in the USA and around the world are waiting for OSHA (Occupational Safety and Health Administration) to correct and reissue long-awaited crane operator certification requirements in the United States. The next deadline is November 2017 and the notion that talk of global harmonisation on this issue is also primed for renewal might yet be premature. That doesn't mean, however, that there isn't common ground to be found on international standards that allow for a safer, more productive worldwide construction industry.

A waiting game along such lines tends to supplement the ever-looming conversation surrounding international harmonisation of crane operator certification. Beth O'Quinn, SC&RA vice president, sees the impending OSHA decision as an opportunity for the international audience to upgrade its own discussion on the topic. "We've been working on this issue here in the states for over twenty years," she said. "With the OSHA decision approaching soon, now is a great time to reflect on how certification has evolved over the years, both here and abroad, and consider the many benefits to safety and productivity that could be realised by the implementation of a more harmonised approach to global crane operator certification."

Graham Brent, National Commission for the Certification of Crane Operators (NCCCO) CEO, recognises that, since the USA put a spotlight on the issue, there has been a tendency for other countries to develop their own programmes. "On one level, it's disappointing that some countries haven't chosen to recognise the work that's already been done here in the US," he noted. "But as far as the context of 'putting a human in a machine,' once you operate that machine, it should be a



Crane certification works: One Cal-OSHA study in California, USA, showed an 80 % reduction in crane-related fatalities after the introduction of certification

fairly painless step in establishing types of certification – with only slight nuances changing from country to country to accommodate differences in standards and working environments and so forth."

Certification saves

Robert Weiss, president at Cranes, Inc. in New York, USA, and chairman of SC&RA's Crane & Rigging Group, also sits on the International Crane Stakeholder Assembly (ICSA) – a joint alliance of crane manufacturers and users around the world. He believes the foundation for crane operator certification anywhere in the world should focus on the numbers.

"The data we've been provided by the U.S. government could not be clearer – crane operator certification saves lives, plain and simple. One study in particular, conducted by Cal-OSHA in California, revealed an eighty percent decrease in crane-related fatalities after the implementation of certification."

Well versed in Canadian crane operator distinction, Fraser Cocks, British Columbia Association of Crane

Safety (BCACS) executive director, sees this international conversation as an opportunity for countries to get to know one another to establish a productive road forward that advocates for the benefit of both sides. "Everyone is unique, and you have to get to know why that is before you can address the issues," Cocks emphasised. "The world is changing, probably faster than most people realise, and you need to be paying attention and be prepared to address how you want to manage these changes if you're going to move forward."

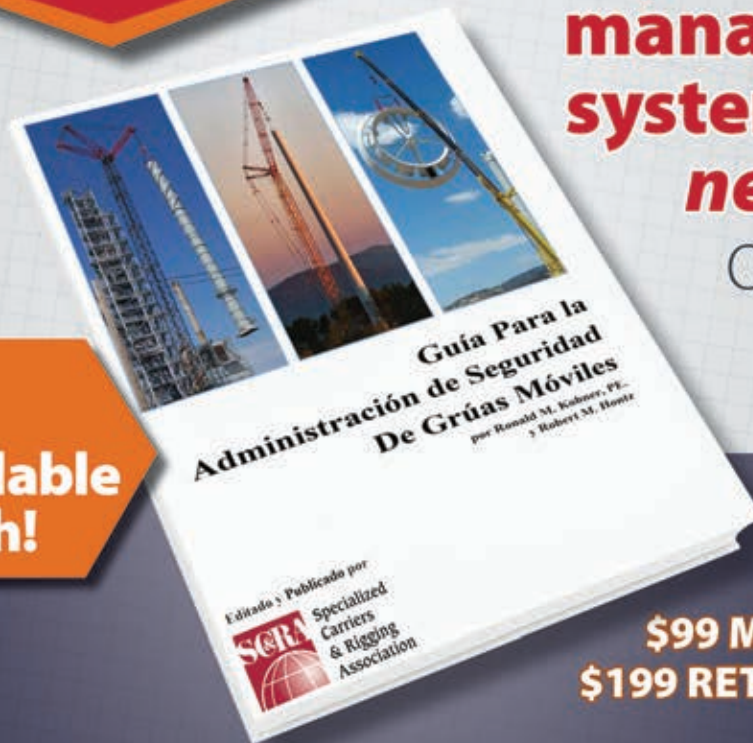
BCACS is looking to work with interests in the UK, Norway, Mexico and throughout Europe. Cocks knows that the model and the process will be different every time. "If we want safe, competent, professional operators, we must focus on what that looks like. What evidence do we need to justify and document the fact that we have two things that are equivalent to each other? The positive is that there's always something to be learned from others. If we come together, and work together, we're all better for it." ■

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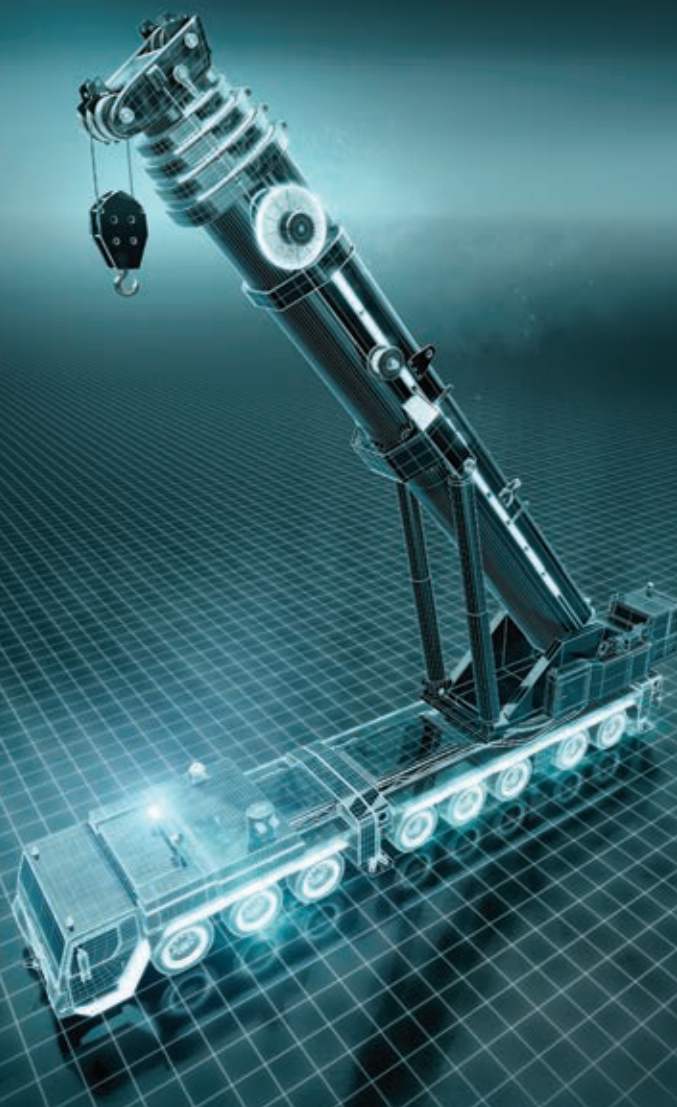
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A round up of news from the European Association of Abnormal Road Transport and Mobile Cranes

NEW ESTA SUPPORTERS

Two more companies have signed up to become ESTA supporters as the organisation continues its push to expand.

They are France-based international heavy transport company Catex and global heavy lifting and transport company Sarens which is headquartered in Belgium.

Rules were changed last year to allow individual companies to become official supporters and be directly involved in ESTA's work. Becoming an ESTA supporter is now open to all operating companies active in crane rental or abnormal road transport – as long as they are members of their relevant national association which is itself an ESTA member.

ESTA hopes that the move will enable the European association to tap directly into the expertise of individual companies – and at the same time raise much-needed funds to enable it to expand its work on best practice and harmonising standards in Europe.

Supporters have the right to attend ESTA's popular twice-yearly crane or transport section meetings; access to ESTA's published technical information; the right to use the ESTA logo; and a free seat at the annual ESTA Users' Night and Awards.

For further information see: www.estaeurope.eu

European crane operator licence plans move on



Haydn Steele at CPA

Plans to create a European Crane Operator Licence (ECOL) are on schedule and making progress following a meeting of the working group at Mammoet in the Netherlands,

ESTA has financial support from the European Erasmus+ programme that backs education, training and lifelong learning with the aim of boosting economic competitiveness.

The meeting focused on the scheme's learning outcomes – what the operator needs to know – and devised the first draft of the training plan, a framework which sets out delivery of those outcomes.

The plan will deal with issues that include, who the licence is for, the education level required, the required qualifications of the trainers, and course content and structure. ESTA's national association members and leading companies are helping to ensure that ECOL standards are at least as high as existing national schemes.

"There is a huge amount of work still to do, but we are making very good progress," said Haydn Steele, safety and training manager at UK ESTA member, the Construction Plant-hire Association, and one of the project's experts.

It will supplement existing national qualifications, likely set at a higher qualification level than exists in most member states – so countering the fear among some in the industry that ECOL could become a "lowest common denominator" qualification.

Moving ahead

Next will be the ECOL Foundation to oversee the running of the whole project. It will supervise and monitor the system of education, examination and maintenance. ESTA will draw on experience of similar initiatives in the USA and Australia, from the National Commission for the Certification of Crane Operators (NCCCO) and the Crane Industry Council of Australia (CICA).

Steele said, "There are many hurdles to overcome, and operators with a future European licence will still need to be aware of local rules and regulations. But the advantages of having everybody trained to the same benchmark are great and will significantly raise skills levels."

ECOL is being overseen by a special ESTA working group comprising representatives from eight countries but the move has been welcomed by the overwhelming majority of all ESTA's 18 member countries. Supporters believe that it will lead to higher standards, improve site safety and boost employment opportunities for qualified operators, making it easier for them to find work outside their country. They also think it will reduce training and education costs and help make the European crane industry more competitive in global markets.

Ton Klijn, ESTA secretary, however, warned that, "ECOL will only be a real success if organisations, governments, labour unions, and industry associations all recognise and acknowledge it."

SPMT BEST PRACTICE GUIDE LAUNCH

The much-anticipated ESTA best practice guide for the use of self propelled modular transporter (SPMT) will be launched at ESTA's spring meeting during April's Bauma exhibition in Munich, Germany.

The guide is one of the biggest and most complex pieces of work ESTA has ever undertaken. There are no formal regulations anywhere in the world on the use of SPMT and the guide has been put together to create a 'base line starting point'.

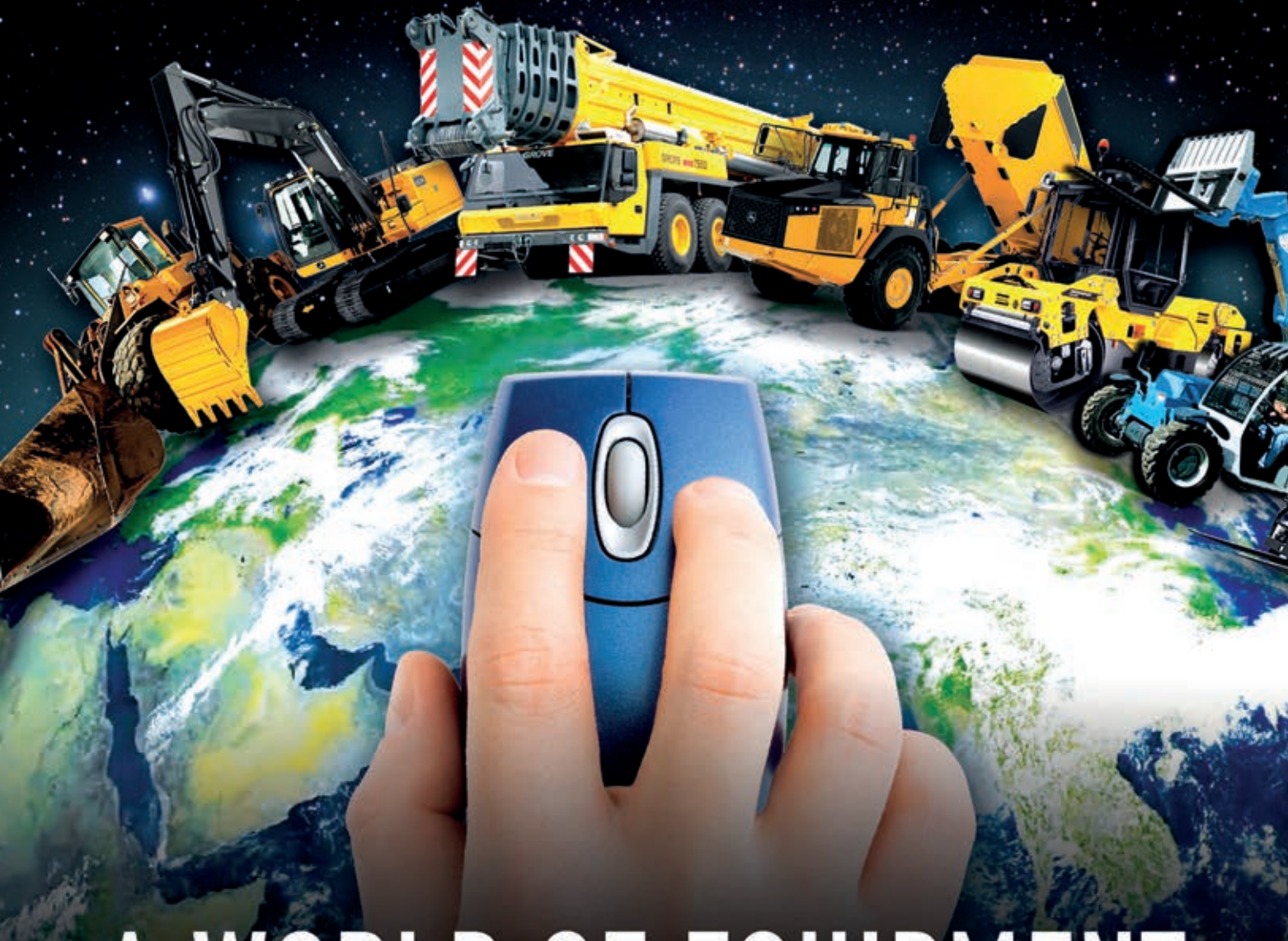
They will help address the problem of trailers tipping over, which has happened even where the existing operating rules and stability calculations have been precisely followed.

David Collett, ESTA president, said, "Clients understandably asked what the industry was going to do about the problem. We created a working group that included representatives from several of our leading members, plus manufacturers and clients.

"This is a very important issue. When an accident happens the fall-out can be monstrous. Of course, there is the issue of personal safety, and that is terrible. But on top of that, a whole project can be threatened and the consequential losses can be huge."

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LGH ADDS
HEADACHE BALLS

Lifting Gear Hire (LGH) in the USA has added overhaul balls to its inventory. These are heavy metal balls that are used to provide ballast on the hook end of a crane hoist rope. Overhaul balls, also called headache balls, supply the downhaul weight that is needed to counter bearing friction and winch-to-boom line weight.

Split overhaul balls are made in cast iron and consist of two halves that clamp over the line each side and are secured with bolts.

Overhaul balls are available for rental from LGH's warehouses. They are manufactured by Crosby in two diameters – 7.12 and 9.19 inches (180 and 230 mm) or in weights of 50 and 100 pounds (22.7 and 45.4 kg), respectively.

They're also offered by Gunnebo Johnson, available in 9.5 and 11.25 inches (240 and 285 mm) in diameter or in weights of 89 and 154 pounds (40 and 70 kg), respectively.

■ For more information see: www.lgh-usa.com

Load cells on sea rescue service

The Royal National Lifeboat Institution (RNLI) in the UK has a Straightpoint load cell to weigh and test boats and other components critical to the ongoing work of the charity that saves lives at sea.

A 5 tonne capacity Wirelink Plus load cell with Handheld Plus digital display was delivered to the RNLI Inshore Lifeboat Centre (ILC). The load cell and display are used for two purposes – to weigh critical components, assemblies and complete boats; and to provide data from destructive and non-destructive load testing of critical components and assemblies as part of ongoing research and development.

John Urry, technical support manager at the RNLI ILC, explained, "The load cell



The RNLI sea rescue service in the UK uses Straightpoint load cell while lifting D class, Atlantic 85 and other lifeboats

and display contributes to good health and safety practice by allowing operation from a safe working distance – outside the lift area, and clear of any equipment such as cranes, davits, tractors and trailers."

Manufactured from aerospace-grade aluminium, the non-indicating load cells are designed to be lightweight and easy to handle.

■ For more information see: www.straightpoint.com

Camera monitor system goes wireless

Connecting a rear view camera system to a large vehicle or machine can be a lengthy and costly process because of the amount of cable to install and the risk of it being damaged. UK-based Brigade Electronics' DW-1001 digital wireless camera system is designed to eliminate excess cabling,



The DW-1001 digital wireless system transmitter and receiver from Brigade Electronics

saving up to two hours on fitment time and removing the need for an additional retractable coiled cable.

Digital wireless technology gives almost instantaneous pictures (camera to monitor in less than 200 milliseconds) and is not affected by electrical interference from other vehicle or machine equipment. The camera image is sent to the monitor via a transmitter and receiver and, once paired, the wireless link is secure.

The DW-1001 digital wireless system also features

what is said to be an easy re-pairing function, allowing the receiver to be linked to a different transmitter making interchanging trailers possible and hassle-free.

Dale Luckhurst, regional marketing manager of Brigade Electronics, said, "This product takes reversing safety on semi vehicles a step forward. Eliminating the need for additional cables makes interchanging trailers a simple and quick process."

■ For more information see: www.brigade-electronics.com



Orlaco pushes boundaries with CornerEye camera

The CornerEye digital camera monitor system from Orlaco is designed to offer a view of blind spots around trucks.

With an HD monitor and a robust camera, CornerEye is said to cover a field of vision that more than satisfies the criteria of vision classes V and VI. The system has a wide angle lens that combines with the latest technologies to deliver a field of vision of 270 degrees. This, said Orlaco, makes every truck builder eligible for exemption from the pavement and front view mirror requirement, in accordance with mirror directive R46.

Among the claimed results of using the system are improved safety of the driver and other road users, less damage and fewer accidents.

The camera is waterproof to IP69K standard and also shock and vibration-resistant.

The system is designed for trucks and heavy machinery and boasts a design that conforms to strict automotive requirements. It is produced in

accordance with the approved quality standards ISO/TS 16949:2009 and ISO 9001:2008 and in line with CE marking standards. It is also approved under the R10 criteria.

■ For more information see: www.oralco.com



Orlaco CornerEye mounted on a vehicle cabin

YALE CORDAGE FORTIS² SLING

USA-based synthetic rope company Yale Cordage has added a new heavy-lift multipart sling named Fortis² to its growing line of industrial lifting and handling products.

Built using Yale's Unitrex XS Max Wear cable, and with a recent U.S. patent, the Fortis² sling has the tensile strength and stiffness of steel wire at one-fifth of the weight, the manufacturer said. These vastly improved specifications are revolutionising the way work gets done in shipyards, rail yards and other industrial settings where objects weighing in the hundreds of tons routinely need to be lifted and moved, the company said.

And, because the slings are much lighter than their wire counterparts, they are naturally easier to rig.

■ For more information see: www.yalecordage.com

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Danfoss launches JS1 joystick platform

The heavy-duty JS1-H family of joysticks from Danfoss is said to be easily integrated into the existing workflow of original equipment manufacturers (OEMs).

"Danfoss has drawn on its years of experience both engineering components and working with OEMs to engineer systems to develop the JS1-H family and the entire JS1 joystick platform," said Rüdiger Hüttmann, product manager at Danfoss Power Solutions. "We are excited to offer our customers – small, medium and large-size OEMs alike – a new level of machine control."

JS1-H joysticks offers a solution designed for use in heavy-duty mobile machinery

Danfoss has announced the launch of its new JS1 platform of joysticks, led by the release of the heavy-duty JS1-H family

such as wheel loaders, dozers, dumpers, trenchers and haulers in the construction market, as well as pavers, graders, rollers and milling machines in road-building.

To provide customisable solutions for OEMs and Danfoss distributors, the JS1-H joystick family gives customers the ability to select from a standard portfolio comprising

three base options as follows: single axis with spring return; friction hold; and dual axis with spring return. Five ergonomically designed grip options are available. In addition, push buttons, rollers and other controls on each can be custom-positioned.

All of JS1-H grip options are compatible with all base

options, making upgrading as simple as swapping in a new component. There will also be six standard electrical interfaces.

OEMs and distributors can select from the JS1-H standard portfolio so machine manufacturers can reduce the cost of stocking joysticks, and support faster and more flexible fulfillment times.

■ For more information see: powersolutions.danfoss.com











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www.khl.com/esta

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(Associated Wire Rope Fabricators)
17 – 20 April 2016
New Orleans, USA
www.awrf.org

SC&RA ANNUAL CONFERENCE

26 – 30 April 2016
Orlando, Florida, USA
www.scranet.org

THE COMMERCIAL VEHICLE SHOW 2016

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NEC, Birmingham, UK
www.cvshow.com

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www.cemat.de

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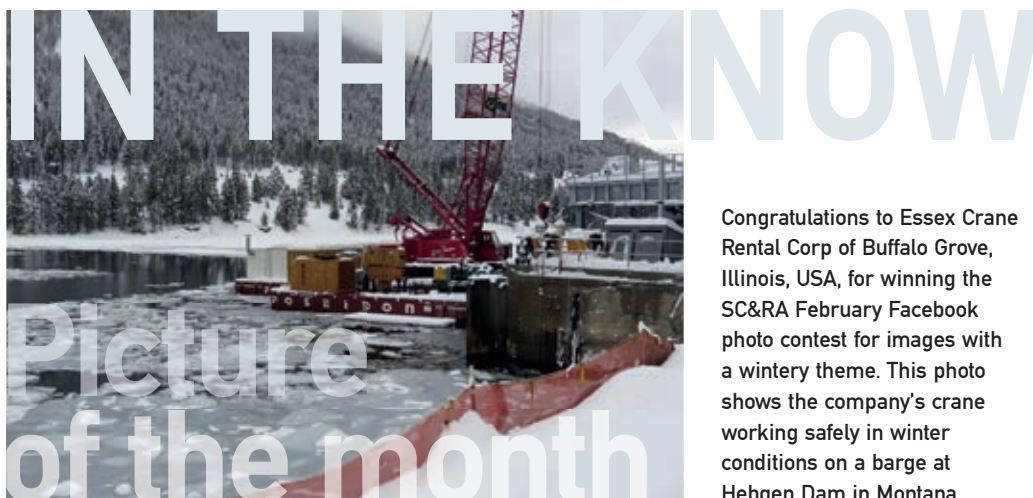
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Congratulations to Essex Crane Rental Corp of Buffalo Grove, Illinois, USA, for winning the SC&RA February Facebook photo contest for images with a wintery theme. This photo shows the company's crane working safely in winter conditions on a barge at Hebgen Dam in Montana.

PEOPLE NEWS



■ **Dillon Force Measurement**, a UK-based supplier of force measurement devices and part of the Fortune 200 ITW group, has announced two new appointments.

■ **MARK BROOMFIELD** is promoted to sales manager of Dillon from his previous role as international business development manager at parent company Avery Weigh-Tronix.

■ **JULIJA LEITANE** joins as business development manager. She has experience across the IT, oil and gas, hospitality and pharmaceutical sectors, along with a track-record of key account management, operational sales and business development. She joins Dillon from her role in sales management at Accura Supply.

■ **ANDRÉ MEIJER** has stepped down from his position as



CEO at Huisman, the global lifting, drilling and subsea solutions business.

The company said it would appoint internally and adjust the management structure accordingly, if required.

Joop Roodenburg will remain involved in the day-to-day management of the company and continue in his role as chief technology officer.

On behalf of the Huisman Board, Roodenburg said, "I regret to see us go separate ways after working together for nearly half a year. I thank André for his contribution."

■ **ALAN JOHNSON** has been made UK sales director at Danish loader crane manufacturer HMF's operation in the UK.



For the last seven years he was technical director at the Association of Lorry Loader Manufacturers & Importers (ALLMI), the UK association for the industry. Before that Johnson also worked at HMF in the UK.

In his new job he has full profit and loss responsibility for all aspects of the loader crane sales division and "is tasked with driving HMF's next phase of sales development and targeted growth in its UK operations."

■ The UK-based Construction Equipment Association (CEA) has appointed **PAUL LYONS** as market information manager. Lyons spent 37 years working in

OBITUARY

■ **JIM MACAULEY**

The UK heavy transport industry recently lost a leading figure when Ernest James (Jim) Macauley died following a time in hospital. Macauley built Cadzow Heavy Haulage Ltd into one of the most recognisable heavy haulage companies in the UK.



Always an innovator, he was the first to operate not only the first Ginaf/DAF 95 eight wheeled tractor units but also the first ERF eight wheeled tractors and then the first Mercedes Benz Titan tractor units in the UK.

He leaves behind his widow Marion and daughters Margaret, Evelyn and Elizabeth.

the UK steel industry, starting with British Steel and, latterly, with Tata Steel.

Commenting on his new role Lyons said, "My job will be to use my analytical skills



to gather market information – demand levels and forecasts – and to provide that information to members in an easy, readily-available format."

■ 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 and katherine.weir@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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LR 1350/1 (2005)



LTM 1250-6.1 (2006)



LTM 1350-6.1 (2014)



LTM 1050-3.1 (2012)



LG 1550 (2002)



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Liebherr LTM 1100-2, 2002

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Terex Demag AC 80-2, 2006

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Grove GMK 4075, 2004

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Terex Demag AC 60, 2006

60 t



Tadano Faun ATF 60-4, 2002

40 t



Liebherr LTM 1040, 1991

35 t



2 x Terex Demag AC 35, 2006

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25 t, Terex Demag AC 25, 2000
50 t, Grove GMK 3050, 2001
55 t, Terex AC 55, 2004
40 t Terex Demag AC 40, 1999
90 t, Liebherr LTM 1090, 1992
180 t, Sennebogen 5500, 2002

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ALL TERRAIN-CRANES

Make / Type	y. o. m.	Drive	Boom / Fly Jib
20 t Gottwald AMK 31-21	1984	4x4x4	20,50m
30 t Grove GMK 2035 E	2008	4x4x4	29,00m + 15,00m
25 t Demag AC 25	1998	4x4x4	25,00m + 13,00m
30 t Terex-Demag AC 30 City	2006	4x4x4	25,00m + 13,00m + 1,20m
35 t Liebherr LTM 1030-2.1	2005	4x4x4	30,00m + 15,00m
35 t Liebherr LTM 1030-2.1	2006	4x4x4	30,00m + 15,00m
45 t Faun ATF 45-3	2006	6x6x6	34,00m + 15,20m
45 t Faun ATF 45-3	2006	6x6x6	34,00m + 15,20m
50 t Terex Demag AC 50-1	2005	6x6x6	40,00m + 17,60m
50 t Terex Demag AC 50-1	2006	6x6x6	40,00m + 17,60m
50 t Terex Demag AC 50-1	2006	6x6x6	40,00m + 17,60m
50 t Terex Demag AC 50-1	2006	6x6x6	40,00m + 17,60m
50 t Tadano Faun ATF 50G-3	2012	6x6x6	40,00m + 16,00m
60 t Faun ATF 60-3	2003	6x6x6	40,20m
60 t Faun ATF 60-3	2006	6x6x6	40,20m + 16,00m
80 t Faun ATF 80-4	2003	8x8x8	48,50m + 2,00m + runner
80 t Faun ATF 80-4	2005	8x8x8	48,50m + 16,00m + 2,50m
90 t Liebherr LTM 1090-2	2001	8x8x8	52,00m + 19,00m
100 t Grove GMK 5100	2005	10x6x10	51,00m + 18,00m + 2,50m + runner
130 t Grove GMK 5130-1	2005	10x8x10	60,00m + 18,00m
160 t Tadano Faun ATF 160G-5	2009	10x8x8	60,00m + 37,00m
200 t Terex-Demag AC 200-1	2005	10x8x8	68,00m + 33,00m + 1,50m
220 t Liebherr LTM 1220-5.1	2005	10x8x8	60,00m + 22,00m

LATTICE BOOM TRUCK CRANE

115 t Link-Belt HC 238	1982	10x6x6	48,00m/18,00m
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CRAWLER LATTICE BOOM CRANE

180 t Link-Belt LS 248 H	1997		59,90m/48,70m
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HARBOUR MOBILE CRANES

40 t Sennebogen 640 M	2000	4x2x2	22,00m
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YARD CRANES

12 t Demag V 72	1977	4x2x2	13,10m
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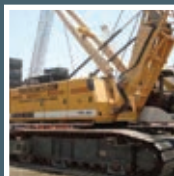
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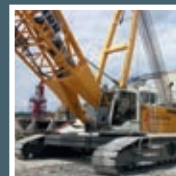
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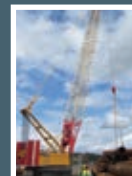
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Capacity	Manufacturer	Type	Year	Drive/Steering	Boom/jib (m)	Delivery
500 t	Liebherr	LTM 1500	1999	16 x 8 x 12	50/84/63/91	direct
220 t	Liebherr	LTM 1220-5.1	2005	10 x 8 x 8	60 / 22	direct
200 t	Liebherr	LTM 1200-5.1	2009	10 x 8 x 10	72 / 22	direct
200 t	Demag	AC 200-1	2005	10 x 8 x 8	68 / 33+1,5	direct
160 t	Faun	ATF 160 G-5	2009	10 x 8 x 8	60 / 37	direct
160 t	Liebherr	LTM 1160/2	1997	10 x 8 x 10	60 / 36	direct
130 t	Grove	GMK 5130-1	2005	10 x 8 x 10	60 / 18	direct
120 t	Luna	AT 120/47	1994	10 x 8 x 8	47 / 21	direct
100 t	Grove	GMK 5100	2005	10 x 6 x 10	51/18,2,5/run.	direct
100 t	Grove	AT 1100	1990	10 x 8 x 8	40 / 17,7	direct
80 t	Faun	ATF 80-4	2005	8 x 8 x 8	48,5/16/11,6/run	direct
80 t	Faun	ATF 80-4	2003	8 x 8 x 8	48,5 / 2+run.	direct
60 t	Faun	ATF 60-3	2006	6 x 6 x 6	40,2 / 16	direct
60 t	Faun	ATF 60-3	2003	6 x 6 x 6	40,2 / 16	direct
60 t	Faun	ATF 60-4	2002	8 x 6 x 8	40 / 16	direct
55 t	Grove	GMK 3055	2005	6 x 6 x 6	43 / 15+runner	direct
50 t	Tadano Faun	ATF 50 G-3	2012	6 x 6 x 6	40 / 16	direct
50 t	Terex-Demag	AC 50-1 (3x)	2006	6 x 6 x 6	40 / 17,6	direct
50 t	Terex-Demag	AC 50-1	2005	6 x 6 x 6	40 / 17,6	direct
45 t	Faun	ATF 45-3 (2x)	2006	6 x 6 x 6	34 / 15,2	direct
40 t	Demag	AC 40-1	1999	6 x 6 x 6	31,2	direct
35 t	Liebherr	LTM 1030/2	2006	4 x 4 x 4	30 / 14	direct
35 t	Liebherr	LTM 1030/2	2005	4 x 4 x 4	30 / 14	direct
30 t	Luna	AT 30/27	1989	4 x 4 x 4	27 / 7	direct
30 t	Luna	AT 30/27	1989	4 x 4 x 4	27	direct
25 t	Demag	AC 25 City	1998	4 x 4 x 4	25 / 13	direct

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180 t	Demag	TC 650	1982	10 x 6 x 6	28	direct
130 t	Liebherr	LG 1130	1976	12 x 8 x 8	63 / 35	direct
125 t	Luna	GC 125	1986	10 x 6 x 6	56	direct
115 t	Linkbelt	HC 238	1981	10 x 6 x 4	42 / 19	direct

CRAWLER CRANES

180 t	LINK-BELT	LS 248 H	1997	crawler	58 / 48	direct
120 t	Liebherr	HS 882 HD (2x)	1995	crawler	32	direct ex Dubai

MOBILE HARBOUR CRANES

40 t	Sennebogen	640 M	2000	4 x 2 x 2	22 m / -	direct
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35 t GROVE GMK 2035, year 2003
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45 t TADANO FAUN ATF 45-3, year 2002
34,0 + 15,0 m, Mercedes engine, 6x6x6

50 t GROVE GMK 3050, year 2002
38,1 m + 15 m, Mercedes engine, 6x6x6,

70 t TADANO FAUN ATF 70G-4, year 2011
44 m + 1,5 heavy duty jib, 8x6x8, 15 t cw

220 t TADANO FAUN ATF 220G-5, year 2012
68 m + 19,2, 2x Mercedes engine, 10x8x10, 71 t cw

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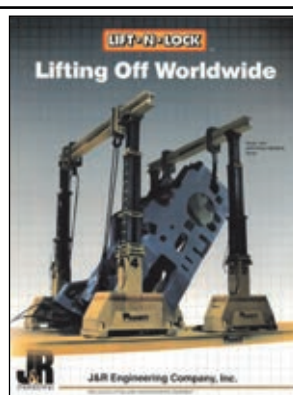
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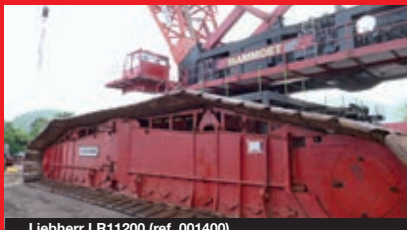
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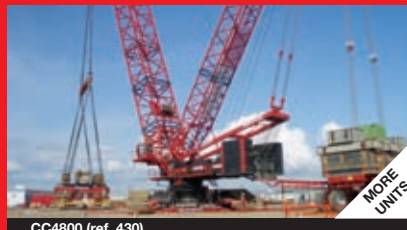
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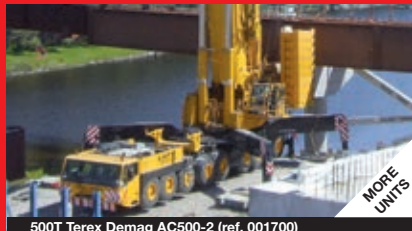


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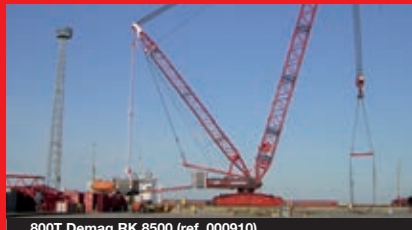
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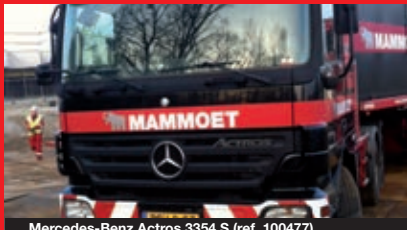
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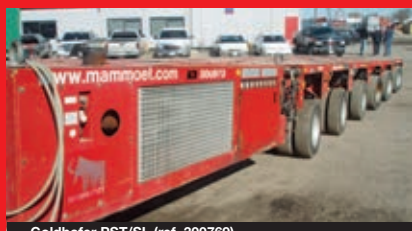


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AC 700 SSL (2010)



LTM 1300-6.2 (2014)



Liebherr LTM 1150-6.1 (2009)



Liebherr LTM 1130-5.1 (2010)



Terex-Demag AC 100 (2004)



Faun ATF 65G-4 (2007)

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Scheuerle Inter Combi (1999)



Scheuerle SPMT (2013)



Gantry SBL 1100 (2014)



Nicolas MHD-MHG1 (2015)

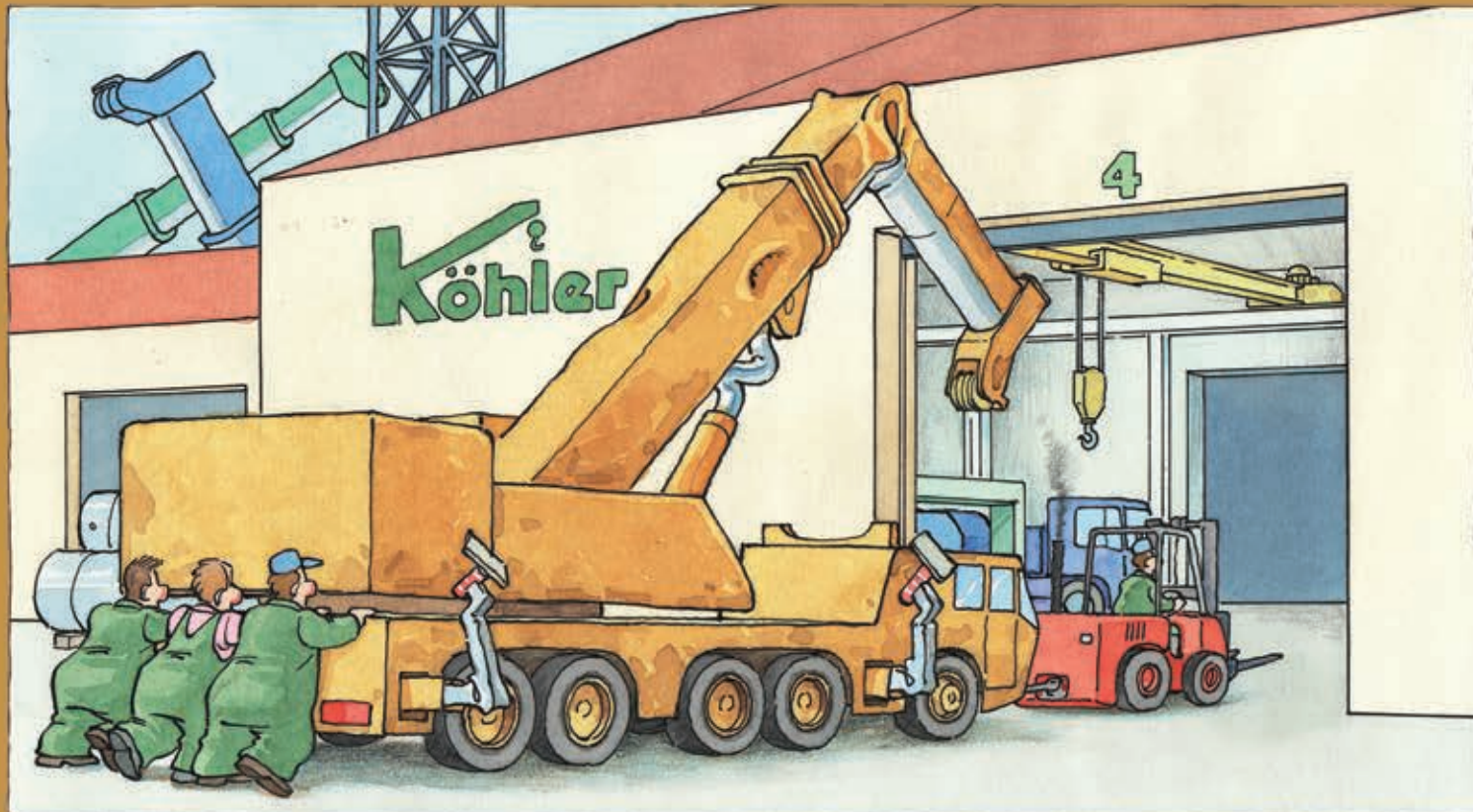


Nicolas MDE-DM split (2014)



Semi 2+6 superflex (2014)

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