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EDITOR'S VIEW

Soon after arriving at the Bauma China construction equipment exhibition in Shanghai at the end of last month I was struck by strong differences from the previous show two years before. While it was even busier than the previous event and customers were buying new equipment, there was, among other things, a less frenetic atmosphere and a more subdued feeling about the place.

Most different was the smaller number of new cranes and a distinct shift in the product mix on show. Having said that, despite the Chinese market downturn of the last two years and the demands placed on crane manufacturers' engineering and product development resources by new engine emissions regulations, manufacturers have still managed to continue with product development programmes, albeit less prolifically.

Unlike the last show in 2012, this year there was no 3,600 tonne capacity crawler crane or 2,000 tonne capacity all terrain crane. It wasn't just large capacity models either – there were fewer new crawler cranes and all terrains this year. A noticeable increase, however, was seen in the number of tower cranes, including large, higher capacity models.

In terms of surprises, few, if any potential crane buyers would have expected to see an all terrain crane with a set of crawler tracks grafted on to it. This "dual purpose" machine is built by leading Chinese manufacturer XCMG. Another, also from XCMG, was a 300 tonne capacity trailer mounted crane. The all terrain crane type upper works with seven section 71 metre boom was mounted on a five axle trailer pulled by a conventional tractor unit.

Aside from the above and a couple of others, it could be said that overall the more sober atmosphere reflected the market. Sadly that also means less innovation and fewer spectacular new designs. It was more about simpler solutions than simply the biggest or what might be possible (if not necessarily entirely feasible). Look out for a report on the new cranes at the 2014 Bauma China exhibition in the January 2015 issue of *IC*.

On behalf of the entire team here I would like to give you our best wishes for the festive season and the New Year.

ALEX DAHM
Editor

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IN THIS ISSUE

ON THE COVER

An ALE AL. SK190 super heavy lifter at work in Rio De Janeiro, Brazil. For the full story on heavy lifting see page 15.

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HIGHLIGHTS

■ Custom heavy haul trailer manufacturer Talbert Manufacturing, based in Rensselaer, Indiana, USA, has acquired Ferree Trailers, in North Carolina, USA. Ferree Trailers is a manufacturer of detachable, fixed, folding gooseneck trailers and specialty trailers. Talbert has a 60,000 square foot facility in Liberty, North Carolina and a distribution centre on the East Coast. Andy Tanner, Talbert president, said, "The acquisition of Ferree Trailers provides us with a wider product offering to serve our customer needs and a large, state-of-the-art manufacturing facility with quality people that offers tremendous opportunity." Greg Smith, vice president of sales and marketing, said.

■ EPCOR Utilities, based in Edmonton, Canada, has been using its new National Crane NBT16 to help carry out work at electrical sites in Canada. Work includes lifting current transformers, capacitance voltage transformers, lightning arrestors, capacitors, aluminium buses and transformer components. The 16 US ton (14.5 tonne) capacity crane has an 18 metre, three-section full power boom. It is fitted with remote control with dual-side docking stations and 'out and down' outriggers.

Double digit rise in Q3 for Palfinger

For the first three quarters of 2014 Palfinger has reported an 11 % increase in sales over the same period in 2013. The new record sales figure for Austria-based loader crane, aerial work platform and materials handling equipment manufacturer was €795 million (US$ 983 million) for the nine month period.

"We are satisfied with the development of revenue", commented Herbert Ortner, Palfinger Group CEO, "but in the third quarter the decrease in economic power in some regions was already reflected in our earnings. Nevertheless, in spite of all turbulences, we will continue with our long-term growth strategy, focusing on Russia, China and North America, as well as on the marine sector."

Most of the growth came from Europe, unlike in earlier recent quarters, but the current order volume "suggests a slowdown in growth over the course of the rest of the financial year, particularly in Europe in the loader cranes business unit," the company said.

Palfinger forecasts "a substantial increase in revenue in the current financial year, in which case revenue would exceed the €1 billion threshold for the first time in the company's history."

Terex expands Explorer AT range

A 130 tonne capacity class all terrain model has joined the Terex Cranes Explorer series of all terrains.

The Explorer 5500 has a 60 metre boom and three extensions are available, (11, 21, and 33 m) and all can be offset. Maximum system length is 86.5 m and the maximum load moment is 395 tonne-metres. The boom can be telescoped under a maximum load of 24.5 tonnes. Outrigger spread can be set at 2.54, 4.7 and 7 m. Its five axle carrier is 12.1 m long, overall length is 14.3 m and it is 2.75 m wide. To meet different road regulations there are variable axle loads and axle pair intervals. In addition, the boom can be demounted and the crane can travel with a dolly.

To reduce running costs all components for the Explorer 5500 can be transported on one standard support vehicle. Like the rest of the Explorer range the 5500 is powered by one engine. This further reduces operating costs as only one engine needs to be maintained instead of two, the manufacturer said.

The Terex Cranes Explorer 5500

TOP NUMBERS AT BAUMA CHINA

Visitor numbers for this year's Bauma China exhibition were up 8 % from 180,000 at the previous event to 191,000 people.

The construction equipment show was held from 25 to 28 November at the Shanghai New International Expo Centre (SNIEC). It was the seventh time the show has been held, following its launch in 2002. According to organiser Messe München, the 191,000 visitors came from 149 countries, and the number of international visitors was up 12 %. This year's show had 3,104 exhibitors from 41 countries, compared to 2,718 exhibitors from 38 countries in 2012. Some 2,097 exhibitor companies were from China. The remaining 1,007 were from overseas.

Product launches at the event included a 100 tonne flat top tower crane and a 64 tonne capacity luffing jib tower crane from tower crane manufacturer Yongmao. New from Sany was the 200 tonne capacity STC2200 truck crane with a 68 m main boom and 36 m luffing jib. The 600 tonne capacity SAC6000 all terrain crane and the 135 tonne capacity SCC1350E crawler were also on display. Look out for full coverage of the event in the January 2015 issue of *IC*.

The next Bauma China takes place, again at the SNIEC, from 22 to 25 November 2016.

HIGHLIGHT

■ Crane rental and service provider Marks Crane & Rigging, based in Odessa, Texas, USA, has acquired Neff Crane and Rigging in Lubbock, Texas. Marks Crane & Rigging provides crane rental and crane service, rigging services, lift plans and engineered lifts to West Texas and South eastern New Mexico. Neff Crane and Rigging has been providing cranes hoisting and rigging services since 1969.

■ H&E Equipment Services has opened a new EnCore crane remanufacturing facility to service Manitowoc cranes in Belle Chasse, Louisiana, USA. The facility is on the Intercoastal Waterway near the Mississippi River. It has two primary facilities, including a 40,000 square foot crane remanufacturing centre and a 15,000 square foot centre designed to for carrying out structural repair. The centre has six large service bays, each with a 10 tonne capacity overhead crane. The repair centre has two overhead cranes, five structural alignment welding tables, fixtures and special tooling for crane boom and component repair, a spokesperson said.

Tadano sales up 13% in first half of 2014

For the first half of the 2014 financial year Japanese crane manufacturer Tadano reported an increase in sales of 13.1 % to JPY 98,121 million (US$ 841 million) at the end of the second quarter, up from JPY 86,754 million ($ 743 million) in the same period of the 2013 financial year.

Sales were up across all Tadano product lines and groups – mobile cranes (including all terrains, truck cranes and rough terrains), truck loader cranes, aerial work platforms and other related equipment. By revenue mobile crane sales were up 14.1 %, truck loader cranes 16.6 %, aerial work platforms 14 % and other equipment (boom mounting and demounting systems) 6.2 %.

By geography, increases were also posted everywhere except for the Asia and Oceania and other areas regions. Tadano claimed a global market share of the wheeled mobile crane market of 26.9 % in 2013. Its 2014 first half year share increased from JPY 57,534 billion ($493 million) in 2013 to JPY 65,638 million ($562 million). Revenue and profit was the highest ever recorded for the period, the manufacturer said. Tadano forecasts new highs for sales and profit. It expects an 8.9 % rise in net sales to JPY 198 billion ($1.696 billion) and net income up 14.5 % to JPY 16,500 million ($ 141 million).

Billion Euro project for Crane House

Dutch crane specialist, Crane House, has put five Manitowoc crawler cranes to work on a €1 billion (US$ 1.2 billion) liquefied natural gas (LNG) terminal in Dunkirk, France.

The project is being delivered by a consortium led by contractor Vinci. The facility will have the capacity to hold 13 billion cubic metres of gas, a spokesperson said. It will have three LNG storage tanks and will be connected to French and Belgian gas transmission networks.

To help with the construction, two Manitowoc 16000s, two Manitowoc 2250s and a Manitowoc 15000 crawler are working on site. During the initial stages of the project, one Manitowoc 16000 and a 2250 were used to install underwater foundations and build a barge. During the second stage of construction, a second 16000 was brought on site, followed by another 2250 and a 15000. Recent work for the cranes has included constructing a terminal jetty.

Julian Agostini, Crane House business development director, said, "Working on such an expansion project asks a lot of these cranes, plus the seafront location means they are battered by strong winds and challenging weather."

The project is due to be completed at the end of 2015.

Recent work for the crawler cranes in Dunkirk has included constructing a terminal jetty

Heavy lift and transportation service provider ALE completed the transportation and installation of a 650 tonne column in Darwin, Australia. To install the 650 tonne carbon dioxide absorber column, ALE used a 1,350 tonne capacity Liebherr LR 11350 crawler crane. The heavy lift crane was also used to install 400 tonne car dumper cells at another project in Cape Lambert, Western Australia. Filippo Anello, ALE projects and technical director in Darwin, said, "With limited space for the positioning and manoeuvring of the crane on a live gas plant, the lift and transport planning were carefully engineered to complete the operation safely. We completed the installation in three days. Just like the car dumper installation job in Cape Lambert, by using our specialist equipment and offering a bespoke and safe turnkey solution, we provided the tools and engineering expertise to complete the job within the timeframes and constraints of the clients."

HIGHLIGHTS

■ Potain dealer and rental company Ibergruas, headquartered in Madrid, Spain, has been authorised to offer Manitowoc's tower crane lines to Mexico. The two companies began their partnership in Spain three decades ago and are now extending their venture to Latin America. "We're proud to offer the best products and services to our customers in Mexico," said Ramón Arroyo Ortega, general director at Ibergruas in Mexico.

■ Gammon Construction has put two 16 tonne capacity Liebherr 380 EC-B 16 Litronic flat-top tower cranes to work on the Midfield Concourse project at Hong Kong International Airport. The HK$6.2 billion (US$800 million) contract was awarded by the Airport Authority Hong Kong. The project includes a new passenger concourse, a taxiway and an extension of the South Runway Road. The cranes were delivered to Gammon by Shriro Machinery, Liebherr's distributor for Hong Kong. William Tang, Shriro sales manager, said, "The cranes are being used mainly for lifting steel structural frame elements and beams. The loads will weigh up to 12 tonnes or more." Gammon's contract is scheduled for completion in September 2015.

H&H Crane Service is latest acquisition for NCSG

H&H Crane Service in Montana, USA, has been acquired by the US subsidiary of Canada-based NCSG Crane & Heavy Haul Corporation.

Tom Harant founded the H&H Crane Service parent company in Great Falls, Montana, in 1987. Harant has taken an ownership interest in NCSG, and will work to grow the crane and heavy haul business in the Great Falls region. "I will continue to run the business and NCSG / H&H Crane will continue to provide our long term customers with fully operated and maintained crane and lifting services and we will enhance these services with additional equipment from NCSG's crane and heavy haul operations," said Harant.

"H&H has a proud 27 year history of providing fully operated and maintained crane and lifting solutions to its many customers in the Great Falls region and we are thrilled to be partnering with Tom Harant and the rest of the H&H team going forward," said Ted Redmond, NCSG president.

"We will continue to provide crane services to the Great Falls market and plan to grow our crane and heavy haul fleet in this market to meet the needs of current customers and the proposed projects in the region."

Montana is experiencing substantial economic growth and is the location of a number of proposed wind farms, proposed refinery expansions, and home to the western portion of the Bakken oil shale, NCSG said.

Record Malaysian lift for Mammoet

Global heavy lift and transport service provider Mammoet has lifted a 1,210 tonne absorber in Malaysia.

The DEEP AGR absorber was lifted for Nippon Express. It forms part of a Petronas petrochemical plant, which is under construction in Sarawak, Malaysia. It will be used to purify gas.

The absorber measures 55 metres and, according to a spokesperson, is the heaviest machinery to be lifted in Malaysia. The top section was lifted using a specialized gantry system, while the other end of the absorber was lifted into position using an auxiliary crane. A small working area was used to erect the gantry crane. To overcome potential problems, the system was assembled in modules at different parts of the yard.

It took 24 days to assemble the gantry system, and the lift took five hours to complete.

OPTARA PROJECT BEGINS

Specialized heavy lift and transport service provider ALE and Belgium-based Aertssen has begun transporting modules at the port of Antwerp, Belgium. The task is part of Total's €1 billion (US$ 1.2 billion) OPTARA project at Total's refining and petrochemical complex in Antwerp, Belgium. The cargo weighs 1,050 tonnes and is 24 metres long, 11 m wide and 23 m tall. It will be the largest cargo to be transported through the Port of Antwerp, a spokesperson said.

"The first modules started transportation from the manufacturing yard in Tarragona, Spain, onto a heavy lift ship to Belgium in October," a company spokesperson said.

On arrival in Antwerp, ALE and Aertssen will use 80 axle lines of self propelled modular transporters (SPMT) to transport the modules. Yannick Sel, ALE projects sales manager, said, "Transporting the Port's heaviest load is an historic moment. Preparations have been made for this over the last months and we are looking forward to receiving the module in due course."

Westmor Industries, a subsidiary of Superior Industries in the USA, has taken delivery of a new Shuttlelift SL 50II rubber tyred mobile gantry crane. The new SL 50II is the company's first Shuttlelift. It has been put to work at the company's tank division in Morris, Minnesota. It was purchased as an alternative to hiring out a crane. Jason Cook, Westmor production manager, said that the return on investment was six months. The new SL 50II is capable of travelling over inclined or uneven surfaces and is fitted with a wireless remote control, block adjustment, a cold start package and emergency stop switches. Work and drive lights have also been fitted.

The new Shuttlelift SL50II at Westmor

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Sennebogen announces 120 tonne tele crawler

German crane manufacturer Sennebogen has launched a new 120 tonne capacity telescopic boom crawler crane, the Sennebogen 6113.

The 6113 is the largest telescopic crawler crane manufactured by Sennebogen. It has a 40 metre, four section full power telescopic boom, which can be extended to 70 m when combined with a fly jib and lattice boom extension.

"Thanks to multi-cylinder technology, this maintenance free system enables continuous telescoping and is always friction-locked," the manufacturer said. "With the 6113, the boom can work variably and quickly at any length."

The 6113 is capable of moving with a load and can work on inclines up to 4 degrees, the manufacturer said. It has 8 m heavy duty track frames and 900 mm wide tracks. In addition, the undercarriage can be telescoped out to a track width of 5.4 m, the manufacturer added. Other features include an elevating work platform with a load-bearing capacity of up to 1 tonne. Power comes from a Tier 4 Final 168 kW Deutz engine. It also has an eco mode function.

For operator comfort, the 6113 is fitted with a Maxcab cabin, which has a sliding door and can be inclined by 20 %. LED headlights and cameras are also fitted. The 6113 is a self-assembly crane.

The new 120 tonne capacity Sennebogen model 6113 telescopic crawler

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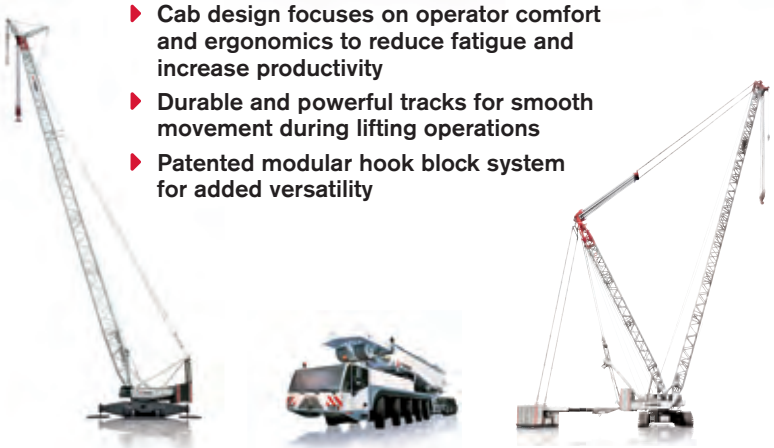

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A rise in the stock markets

Share prices rebounded in November despite (or perhaps because of) some bad news on Japan's economy. CHRIS SLEIGHT reports

Official figures released in November said that the Japanese economy contracted in the third quarter of the calendar year. Following on from a similar drop in GDP in the second quarter of the year, this means Japan is in recession, but despite this the country's stock market continued to climb.

One of the reasons for the recession is an increase in sales tax which was introduced earlier in the year, and which has pulled-down spending. The decline in GDP means the further tax increase planned for next year might be delayed, and this piece of positive news is one reason that stock markets rose.

It seems that the reason recession is good news in Japan is that it comes with the expectation that there will be a policy response to stimulate growth, and eyes are on the Bank of Japan to see if it is going to step-up its programme of quantitative easing. So despite the official confirmation of a recession, the Nikkei 225 was up 7.17 % between weeks 44 and 48, the best gain of any of the broad stock market indicators. In contrast the Dow was up 3.68 % and the FTSE 100 increased 2.32 %.

For once, there were robust gains for crane manufacturing companies. As one might expect, the Japanese companies on the *IC* Index saw some useful gains in line with the Nikkei's growth, although at just 4.03 %, Tadano's rise was disappointing. It was the Chinese manufacturers, however, that saw the strongest gains, with XCMG leading the way with its 21.09 % increase between weeks 44 and 48. The only company on the *IC* Share Index to see its share price fall over the four-week period was Yongmao.

These broad gains saw the Index rise 7.21 % over the course of the month. This surge helped to lift the *IC* Share Index over the longer term. It was some 18.29 % higher at the end of week 48 than it was a year previously, which was a better performance than any of the mainstream stock market indicators.

It is proving to be a very volatile index, however, having been as low as 58 points in late October, before this latest sharp and spectacular rebound.

Such sharp moves tend to suggest speculative activities in the sector, rather than a concerted rally. ■

NOVEMBER *IC* SHARE INDEX

STOCK	CURRENCY	PRICE AT START	PRICE AT END	PRICE CHANGE	% CHANGE	PRICE 12 MTHS AGO	12 MTH % CHANGE
IC* Share Index		**59.88**	**64.20**	**4.32**	**7.21**	**54.27**	**18.29**
Legacy *IC* Share Index**		335.29	345.31	10.02	2.99	363.60	-5.03
Dow Jones Industrial Average		17195	17828	633	3.68	16097	10.75
FTSE 100		6516	6668	151	2.32	6654	0.20
Nikkei 225		16414	17590	1176	7.17	15662	12.31
Hitachi Construction Machinery	YEN	2235	2557	322	14.41	2192	16.65
Konecranes	€	22.19	22.31	0.12	0.54	25.80	-13.53
Kobe Steel	YEN	175	191	16	9.14	176	8.52
Liugong	CNY	7.26	8.55	1.29	17.77	6.77	26.29
Manitowoc	US$	19.85	20.14	0.29	1.46	20.50	-1.76
Palfinger	€	18.10	19.00	0.90	4.97	28.02	-32.20
Sany Heavy Industry	CNY	5.98	6.71	0.73	12.21	7.17	-6.42
Tadano	YEN	1637	1703	66	4.03	1363	24.94
Terex	US$	27.38	28.70	1.32	4.82	36.20	-20.72
XCMG	CNY	8.63	10.45	1.82	21.09	7.98	30.95
Yongmao Holding	SGD	0.16	0.14	-0.02	-12.90	0.23	-41.30
Zoomlion	CNY	4.87	5.25	0.38	7.80	5.73	-8.38

**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	6.112	6.1499	0.0379	0.62	6.10	0.88
€	0.7959	0.8042	0.0084	1.05	0.7348	9.44
Yen	111.24	118.75	7.51	6.75	102.15	16.25
UK£	0.6251	0.6396	0.0145	2.32	0.6120	4.52

Period: Week 44 to 48

Lifting your dreams

www.tadano.com www.tadanofaun.de www.tadanoamerica.com www.mantiscranes.com

All Company in the USA using a 1,000 US ton (907 tonne) capcity Manitowoc 21000 crawler crane in Wheatfield, Indiana, at a coal-fired electricity generating station

Extra factors

Space constraints, site safety and ground conditions are having an impact on the heavy lift sector. LAURA HATTON investigates

Heavy lifting is a common feature in the industrial sector where the working environment can be hazardous, especially at petrochemical and power plant construction and modernisation sites. As a result a great deal of preparation is needed to carry out a heavy lift in a safe and effective manner.

To complicate matters, throughout the industrial sector factories are being expanded, and for crane companies, this means working in smaller spaces when carrying out heavy lifts. Rick Mikut, All Erection & Crane Rental Corp Family of Companies crawler crane manager, explains, "In the industrial sector, plants are adding on instead of building new. So now we're working in a tighter space, needing a longer reach. We're on a job now with only a few feet of clearance, and this is becoming increasingly common."

The decreasing available space on these sites is also affecting transportation, assembly and disassembly. In Japan, for example, most construction sites and roads are narrow. In addition, weight limit, height and width is strictly controlled, a spokesperson from Uchimiya explains.

Pre-planning

To overcome potential problems in these areas, companies are carrying out more pre-planning than ever before.

"Pre-planning is something that is required with these jobs," Mikut says. "This could include anything and everything from air rights to ground bearing pressures, safety procedures to new OSHA laws and regulations. Every piece is tailored to fit the customer's project."

The logistics of carrying out a heavy lift can be also complicated, as Guillaume Gagnon, Guay Cranes vice president, points out, "The first thing is to evaluate that you have truck and trailer access to the crane pad and enough space to assemble the crane. Every move needs to be well planned, especially if you have a superlift on the crane. In addition, the assist crane will need to be able to control the counterweight on the tray on every lift. The crane pad must have the good compaction to avoid any surprises during lifting." >

Guay replacing a steam surface condenser for a client in Montreal, Canada. The old condenser weighed 185.6 tonnes and was lifted using a Manitowoc 999 crawler. It was configured with 35 metres of main boom, 35 m of luffing jib and 200 tonnes of superlift counterweight. It lifted the condenser at a radius of 24 metres

Terex CC 8800-1 configured with a Twin kit

Two Liebherr LHM 600 mobile harbour cranes and two Liebherr LG 1750 lattice boom mobile cranes lifting a new Liebherr RL-K 7500 subsea crane in a single lift in Rostock, Germany. The lift took around 90 minutes. During the lift 100 bolts on the slewing ring were loosened. The RL-K 7500 was shipped to Daewoo Shipbuilding & Marine Engineering (DSME) in Asia. A Liebherr RL-K 4200 knuckle boom crane will be also be delivered to DSME

Extra capacity

Components are also getting bigger, and this, combined with smaller working areas, is prompting crane manufacturers to meet customer demands of short working radii and high capacity. Crane manufacturer Liebherr, for example, offers a wide range of boom systems for its heavy lift cranes, including the Power Boom, which allows cranes to be used for super-heavy lifts over existing buildings, the manufacturer says.

The Power Boom system is available on the 1,000 tonne capacity Liebherr LR 11000. The crawler has a track width of 9.2 m and when transported it has a width of 3.5 m and a height of 3.2 m. For extra ease of transportation, individual components can be reduced to 45 tonnes. Liebherr's highest capacity heavy lift crane is the 3,000 tonne LR 13000.

From Liebherr-Werk Nenzing, for the offshore sector, is a new 250 tonne ship crane. "Liebherr just recently presented its latest innovation, a new 250 tonne ship crane at this year's SMM," a spokesperson from Liebherr-Werk Nenzing says. "It has been specially developed and designed to meet the market requirements in the heavy lift and multi-purpose sectors. The crane is based on the existing design of the CBB series wire luffing cranes."

Also from Liebherr is the RL-K 7500 subsea crane, which can be installed on board drill ships and heavy lift vessels. The knuckle boom of the RL-K 7500 is designed for use in hazardous areas. In addition, it can have an Arctic temperature package, allowing for operation at temperatures down to minus 40 degrees Celsius.

New earlier in 2014 from Terex was the Boom Booster kit for the CC 8800-1 crawler crane. The kit increases the crane's capacity by up to 80 %, Guntram Jakobs, Terex crawler crane product marketing manager, says. (See *IC* November 2014, page 21, the April 2014 issue page 13 and page 7 of the January 2014 issue of *IC* for more details). The CC 8800-1 can also be converted into a Twin with the addition of the Twin kit.

From Chinese crane manufacturer Zoomlion is the QAY800 all terrain crane. It has a maximum rated capacity of 800 tonnes and an optimised boom configuration system, the manufacturer claims. "The crane is very suitable for the erection of a wind power system as it has excellent micro-positioning performance and can be assembled and dismantled quickly," the manufacturer adds.

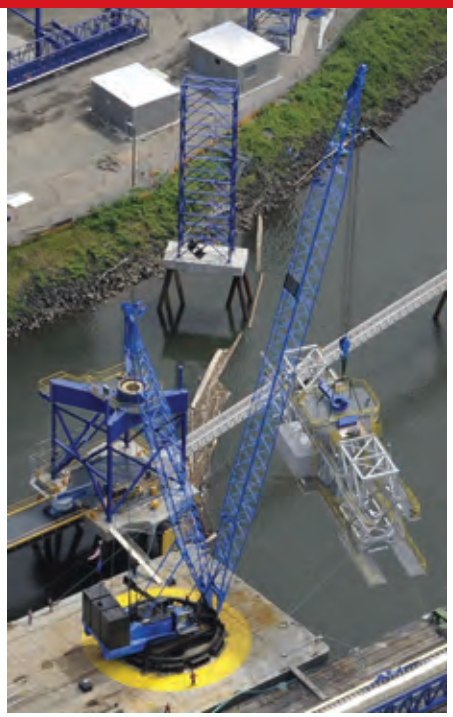
The latest heavy lift equipment from crane and service provider ALE is the Mega Jack 800. Designed for industries including civil, mining, power generation and offshore, the system is made up of 800 tonne capacity jacking towers and can be combined with a starter beam to create a 1,600 to 2,400 tonne capacity per jacking point. The system has computer-based controls to automate programming and operate the cassette feed-in system. Ronald Hoefmans, ALE group technical director, says, "The jacking cassettes plus starter beam and end cassette can be bolted together to take up to a massive 25 % uplift per corner. This gives the unbraced system an enormous horizontal load capacity."

The Mega Jack 800 forms part of ALE's Innovation Series, which includes the AL.SK190 crane, the Mega Jack and the Hydro Deck.

The ALE Mega Jack 800 being used to load-out, transport and install the 1,570 tonne Loenerslootse Bridge over the Amsterdam-Rijn canal in Nigtevecht. The system was also used to remove the old Loenerslootse Bridge which weighed 1,630 tonnes

End user requests

Customers working in the heavy lift market are requesting that lifting equipment needs to be quick and easy to assemble in a small area. "This is to avoid obstruction on the construction site," Guillaume Gagnon explains. To meet these demands, Guay has two 660 US ton (600 tonne) capacity Terex Demag CC 2800s with wide track and narrow track kit, superlift and luffing jib,



A Lampson Millennium 4100 Ring crane with lattice boom working in support of a conveyor system on the West Coast of the USA

a Manitowoc 16000 with a wheeled Maxer and a Liebherr LTM 11200-9.1 for short term heavy lift jobs. "The LTM 11200-9.1 is 13 by 13 metres, so it is really useful when we need a heavy crane and we have no space to assemble a lattice boom," Gagnon says.

USA-based crane and transport service provider Lampson International offers the Lampson Millennium 4100 and the Lampson Transi-Lift LTL-3000. "The Lampson Transi-Lift has independent track driven crawler transporters which allows the crane to make a lift, while at the same time carrying and setting the load," Kate Lampson, Lampson International says. "It has a smaller foot print than other mega cranes, giving it the ability to fit into tighter spaces. It also has the ability to provide much longer reach capabilities due to its capacity at radius.

The Millennium has no free fall capabilities and can be fitted with Manitowoc Ring and Tower attachments."

To meet customer demands, All Companies offer the Manitowoc MLC300 and the Liebherr LTM 1750-9.1 all terrain crane. "When making a lift with the MLC300 the centre of gravity is automatically balanced by the variable position counterweight (VPC) system, which transfers the counterweight from back to front, depending on the boom extension," Rick Mikut says. "In addition, the need for car body counterweights is eliminated, meaning reduced loads to the jobsite and less matting to distribute the weight across a broader footprint. This is suitable for barge applications."

The latest heavy lift equipment in Japanese crane service provider Uchimiya's fleet is a Demag CC 6800. "The CC 6800 is our highest capacity crane and has excellent lifting capacities throughout all working ranges, especially with luffing fly jib," a spokesperson from Uchimiya says. "Its maximum load moment rating is 14,000 tonne-metres, which is over our previous model's capacity."

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Record-breaking transport

Turkish heavy haulage specialist Botros-Yigit-Nata (BYN) has transported a 247 tonne refinery boiler from Iskenderun to a refinery in Erbil, Iraq.

The boiler was shipped from Jebel Ali, United Arab Emirates to the Turkish port of Iskenderun.

On arrival at the port, BYN loaded the boiler onto two Goldhofer 10-axle THP/SL heavy duty modules and transported it 1,150 km by road to Erbil.

The boiler was 62 metres long and 3.5 m in diameter. The total length of the transport vehicle was almost 70 m and it had a load height of 5.25 m.

It was the largest transport to be made to Iraq via Turkey in a single operation, a company spokesperson said.

The journey took 20 days to complete. Aydin Fatah, BYN general manager, said, "Everything went smoothly. We spent six months planning the project and performing a detailed inspection of the roads, down to the very last bend.

"Once we had the permits for the journey, it was simply a question of the reliability of our Goldhofer modules. And they did not let us down once."

Stefan Fuchs, Goldhofer CEO, said, "It's gratifying to see customers place their trust in our technology for the really challenging missions and break new ground in the process. We provide the ideal basis for handling landmark projects."

Total length of the transport was almost 70 metres

TRANSFORMER TRANSPORT FOR TRADELOSSA

Transport service provider Tradelossa, based in Mexico, helped with the transportation of four transformers from Oaxaca to an electrical substation in the Riviera Maya, Mexico.

The transformers were delivered to the Port of Salina in Cruz, in the state of Oaxaca, in the south of the country. The transformers weighed 109 tonnes each and was 5.27 metres long, 4.4 m wide and stood 4.5 m high.

To transport the them to the substation in the Riviera Maya, the state of Quintana Roo, Tradelossa loaded them onto Goldhofer trailers. A 6 axle plus extension and 6-axle Goldhofer configuration and a goose neck were used for the transportation, a spokesperson said. The accessories for the transformers were also transported.

Once on site the transformers were also unloaded from the trailers.

Hitachi trucks travel to Africa

Specialist transport company Van der Vlist helped transport five Hitachi dump trucks from the Netherlands to Africa.

The Hitachi EH1100-3 dump trucks were originally shipped to the Netherlands from Canada in 2012. On arrival, the wheels were dismantled and the trucks were moved to Moerdijk.

After two years in storage, the trucks were collected from the port of Moerdijk and transported to the Katanga in the Democratic Republic of Congo. The trucks were 9.45 metres long, 4.98 m wide and stood 6.62 m tall.

Before transport, Van der Vlist's technical services team renewed the dump trucks' batteries, oil and coolant. A lubrication system was also installed, a company spokesperson added.

Once ready for transport, the machines were transported to Moerdijk, where they were loaded onto the *Jacob-Evert* using the roll-on roll-off berth at the port. The trucks were shipped to Antwerp on the *Jacob-Evert* pontoon, before being shipped to Africa.

On arrival in Africa, the machines were transported to Katanga, where they will be used to work in a copper mine, a spokesperson added.

The five Hitachi EH1100-3 dump trucks

NEW MERCEDES ACTROS FOR MEGATRANZ

Specialized transport service provider Megatranz, based in Brazil, has taken delivery of a new Mercedes-Benz Actros 4160 SLT 8x8 extra-heavy duty truck tractor unit.

The truck has a gross combined capacity of 500 tonnes and has been adapted to suit Brazilian roads. It has two radiators for the cooling system and also an oil radiator. Power is from a 16 litre V8 Mercedes-Benz OM 502 LA diesel engine. It has been fitted with a Voith VIAB turbo clutch and a 16-speed Mercedes PowerShift G 280 gearbox.

Mercedes-Benz Actros 4160 SLT 8x8

Gilson Mansur, Mercedes-Benz trucks sales and marketing director in Brazil, said, "Power is meaningless if its transmission to the ground is not possible. And only a truck like Actros SLT assures enough traction to face steep slopes, even under adverse conditions."

The truck will be used for transporting large infrastructure components.

A case study

In his regular feature, MARCO VAN DAAL presents a case study on pull force

To find out if a prime mover is suitable for a particular project some basic calculations need to be performed. These are rather difficult if you are not familiar with them; however, you only have to make these calculations once in the life time of the prime mover.

Given is the following engine info:

- Mack prime mover (engine type E7-400), see Figure 1 for the actual transport
- Energy output = 318 kW (426 HP)
- RPM at energy output = 1,800 per min
- Max torque = 1,560 N*m 1,149 lb*ft
- RPM at max torque = 1,200 per min
- Max RPM = 2,100 per min
- Min RPM = 475 per min

As this prime mover is used for pulling a load, what we are interested in is the torque as this determines if the prime mover (in the appropriate gear) is strong enough to get the transporter rolling. In this case the maximum torque is 1,560 N*m (1,149 lb*ft) and this is delivered (to the drive shaft and eventually to the tyres) at 1,200 revolutions per minute (RPM). This does not mean that the prime mover should increase RPM to 1,200 per min to get rolling. It means that the RPM should be gradually increased until the combination starts moving, usually at a lower than max RPM. If the combination does not move at 1,200 RPM, however, there is no need or use to further increase the RPM as the maximum torque has already been reached, the prime mover is too weak to pull this load.

The maximum speed is achieved at 1,800 per min but that becomes only important once the prime mover is already rolling and speed becomes more important than torque.

The first five gears (total 18 gears) of this truck's main gearbox have gear ratios of:

- 1st gear = 16.42
- 2nd gear = 8.78
- 3rd gear = 6.28
- 4th gear = 4.52
- 5th gear = 3.22

The higher the gear ratio, the more pulling power (torque) the truck can deliver. This truck can generate 500 % more torque in 1st gear than in 5th gear, it is really designed to get a heavy load moving.

In addition, this truck is equipped with a secondary gearbox, also called an auxiliary gearbox or transfer case. This is a gearbox installed in line with the main gearbox that multiplies engine output before it is delivered to the drive axles and tyres.

The gear ratios of the transfer case are:

- 1st gear = 2.37
- 2nd gear = 1.24
- 3rd gear = 1.00
- 4th gear = 0.81

The first two gears of this transfer case enhance the truck's power; the 3rd gear (with ratio 1.00) adds nothing to the original gearbox ratios and makes the truck perform as if the transfer case was not present. The 4th gear would actually hurt the truck in pulling performance but enhances it in speed; this gear would only be used once the truck is already moving at considerable speed.

The last gear is found in the differential, it has a ratio of 8.27. All gears together are assumed to have a 90 % efficiency, 10 % is lost in internal friction and generation of heat that is transferred to the oil in the various gear boxes.

The truck has 12.00R24 tyres; these have a radius of 24 inches (609.6 mm)

- total axles = 3
- drive axles = 2
- truck weight = 10 ton (equally divided between front and rear axles)
- counterweight = 35 ton (on drive axles only)

How much pulling force can this truck generate when using 1st main gear and first auxiliary gear?

F1 total = max torque * main gear ratio * aux gear ratio * diff gear ratio * gear eff / tyre radius / gravitation
= 1,560 * 16.42 * 2.37 * 8.27 * 0.9 / (609.6/1000) / (9.81*1000)
= 75.56 mTon
F1 axle = 37.78 mTon per drive axle (83,216 LBS)

This is the maximum tractive force that the engine can supply to the tyres of the drive axles.

This force, however, can only be transferred to the road surface (and move the truck forward) if there is sufficient down force, in the form of counterweights, on the drive axles.

If there is not enough counterweight on the drive axles, there will not be enough traction between the tyres and the road surface and the tyres will just slip or spin under the torque. The maximum traction or rim pull can be calculated as follows:

Rim pull = (drive axle weight + counter weight) * static friction

The static friction is an empirical number that is dependent upon the road surface. Dry asphalt without any foreign contamination, such as sand or water, has a static friction between a minimum of 0.6 and a maximum of about 0.8 with rubber tyres.

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.com/books/the-art-of-heavy-transport/

Van Daal has a real passion for sharing knowledge and experience – the primary reason for the seminars he holds around the world.

Figure 1

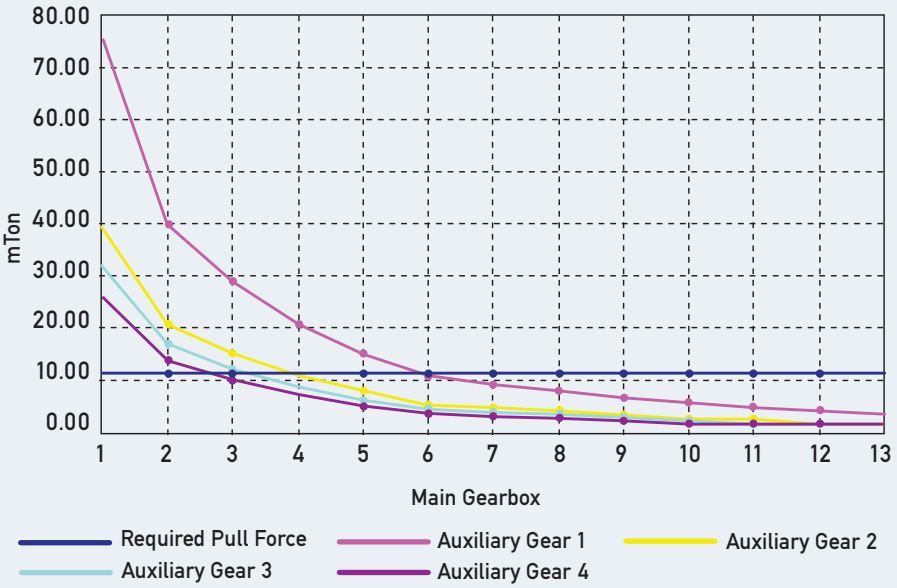
Rim pull min = (5 + 35) * 0.6 = 24 m ton
or (Frp axle) 12 m ton per drive axle
(26,432 LBS)
Rim pull max = (5 + 35) * 0.8 = 32 m ton
or (Frp axle) 16 m ton per drive axle
(35,242 LBS)

As you can see, the rim pull is about half of the tractive effort. This means that at 1,200 RPM (the RPM that generates maximum torque) the tyres will spin. There are three possible solutions for this (in best practical order):

1: try to move the transport combination at a lower RPM and therefore lower rim pull
2: shift to a higher gear with a lower gear ratio
3: add counterweight to increase the rim pull

Using second auxiliary gear, with a 1.24 gear ratio, results in a total tractive effort of 39.5 m ton or 19.76 m ton per drive axle (43,538 LBS). Theoretically this is still too much but this is easily controlled by RPM. See Figure 2 for a graphical representation of these numbers.

Maximum Tractive Force (F1 total) vs. Required Pull Force (Freq) FIGURE 3



Now we know that this prime mover in its current configuration is best used in 2nd auxiliary gear as the "drive away" gear.

Last test that still needs to be performed is if the rim pull is sufficient to start moving the transport combination.

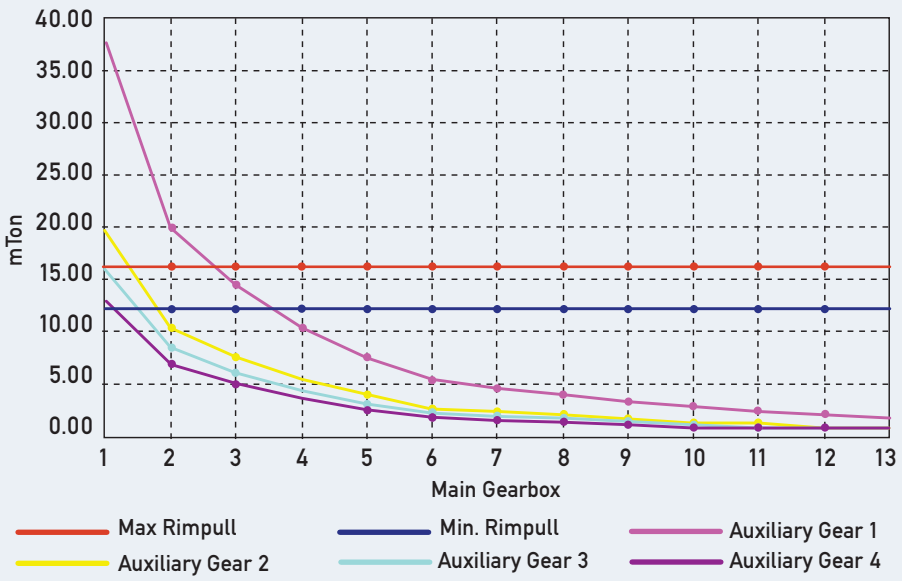
Let's assume that this truck is pulling a 12 axle hydraulic transporter (weight 40 ton) with a 200 ton load on it. The road is assumed to be level.

GVW = truck weight + transporter weight + load weight
= 10 + 35 + 40 + 200 = 285 mTon (627,753 LBS)

With a rolling resistance of 4 % or 0.04 the required rim pull (Freq) is 285 ton * 0.04 = 11.4 mTon (25,110 LBS).

This turns out to be more than enough to start this transport combination moving. See Figure 3.

Maximum Tractive Force (F1 axle) vs. Rimull (Frp axle.) FIGURE 2



Engine speed

There are many design factors that play a role in this but generally engines with a longer stroke produce more torque than speed and engines with a shorter stroke produce more speed than torque. In a short stroke engine the piston travels a much shorter distance and can therefore achieve much higher RPM. High RPM are synonymous with high speed, but less torque. Even though it is officially limited to 15,000 RPM, a Formula 1 racing car engine can easily achieve 19,000 RPM with its extremely short stroke. They are made for speed and don't have much torque.

Your family car normally runs at 4,000 to 6,000 RPM and is generally designed as a happy medium vehicle (there are exceptions). It produces sufficient torque to still accelerate (which requires torque) with five passengers in it and reach decent speeds while travelling on the highways.

Trucks and prime movers have long stroke engines. Because the pistons travel a longer distance, the RPM is much lower. These engines are built for torque (pulling power) and are made to "carry" a load. The example truck had a maximum RPM of 2,100 revolutions per minute.

Here is an analogy with the world of sport. Let's take a sprinter and a body builder; the sprinter has a lean body and can run 100 metres in 10 seconds flat. If you give him a 20 LBS backpack his performance (speed) will drop drastically. He is built for speed.

The body builder, however, runs the 100 metres in a much slower time as his body is not as lean; he has a lot of muscle tissue. The 20 LBS backpack will not affect his performance much; he is used to lifting and carrying weights. He is built for torque. ■

Figure 1

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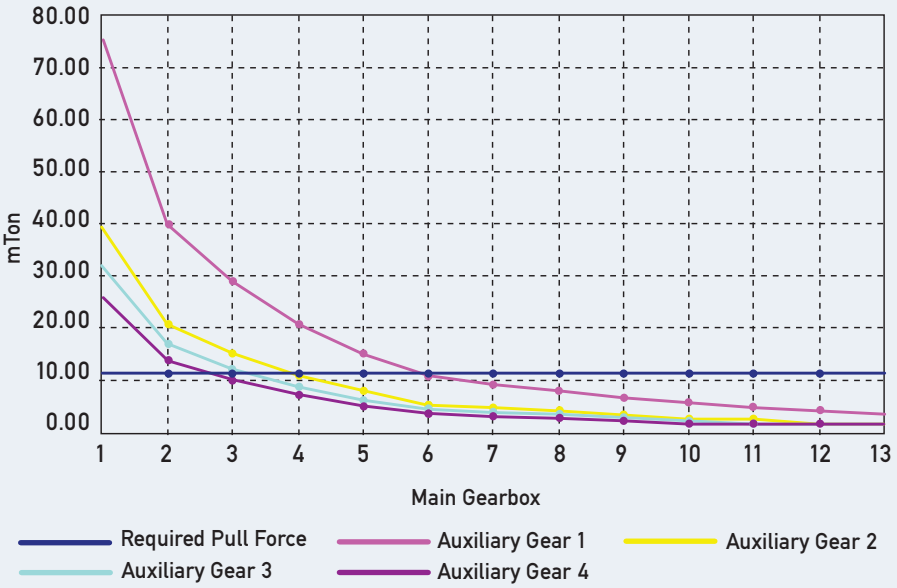

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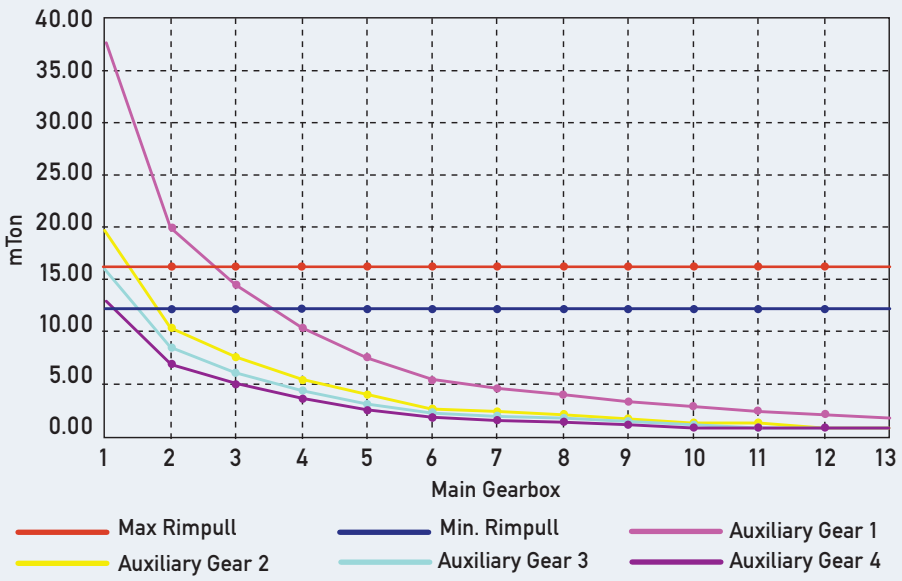

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There are many design factors that play a role in this but generally engines with a longer stroke produce more torque than speed and engines with a shorter stroke produce more speed than torque. In a short stroke engine the piston travels a much shorter distance and can therefore achieve much higher RPM. High RPM are synonymous with high speed, but less torque. Even though it is officially limited to 15,000 RPM, a Formula 1 racing car engine can easily achieve 19,000 RPM with its extremely short stroke. They are made for speed and don't have much torque.

Your family car normally runs at 4,000 to 6,000 RPM and is generally designed as a happy medium vehicle (there are exceptions). It produces sufficient torque to still accelerate (which requires torque) with five passengers in it and reach decent speeds while travelling on the highways.

Trucks and prime movers have long stroke engines. Because the pistons travel a longer distance, the RPM is much lower. These engines are built for torque (pulling power) and are made to "carry" a load. The example truck had a maximum RPM of 2,100 revolutions per minute.

Here is an analogy with the world of sport. Let's take a sprinter and a body builder; the sprinter has a lean body and can run 100 metres in 10 seconds flat. If you give him a 20 LBS backpack his performance (speed) will drop drastically. He is built for speed.

The body builder, however, runs the 100 metres in a much slower time as his body is not as lean; he has a lot of muscle tissue. The 20 LBS backpack will not affect his performance much; he is used to lifting and carrying weights. He is built for torque. ■

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Signature bridge

The development of a cable stayed bridge in India's capital Delhi is underway. PARTHA PRATIM BASISTHA reports from the site

A Gottwald lattice boom truck crane, owned by Gammon, being used to install bridge sections

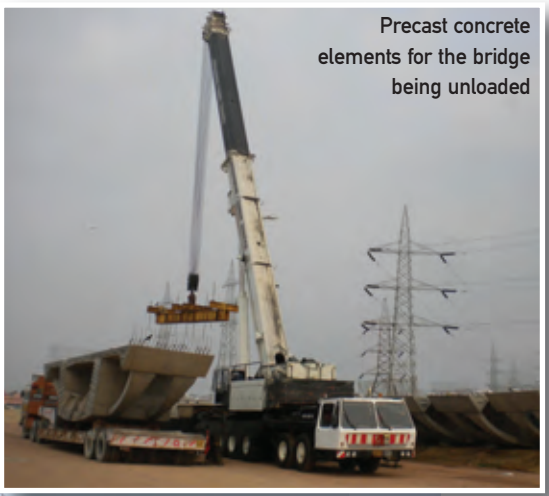
The construction of a major cable stayed bridge is underway to ease burgeoning interstate vehicular traffic movement between India's capital city of Delhi and the surrounding North Indian states of Punjab, Uttar Pradesh, Haryana and Himachal Pradesh.

Named Signature Bridge, its design aesthetics make it a landmark tourist icon. It will improve road connectivity between North and East of Delhi over India's historical Yamuna river.

The bridge involves setting up flyovers, loops and ramps comprising a 1.8 km eastern and 4.2 km western approaches. It will be connected to the main 675 metre long, asymmetrical cable stayed bridge with dual carriageway of 14 m each (4 + 4 lanes) with 1.2 m central verge and maintenance walkways.

The other components include 251 m of long span and bow-shaped steel pylons about 154 m tall with cable stays on one side and back stays on the other side.

Indian construction major Gammon is the contractor for the approaches. Work for the main bridge is by joint venture of Gammon India, Cidade Brazil and Tensacciai of Italy. The client for the project is Delhi Tourism Development Corporation (DTTDC).

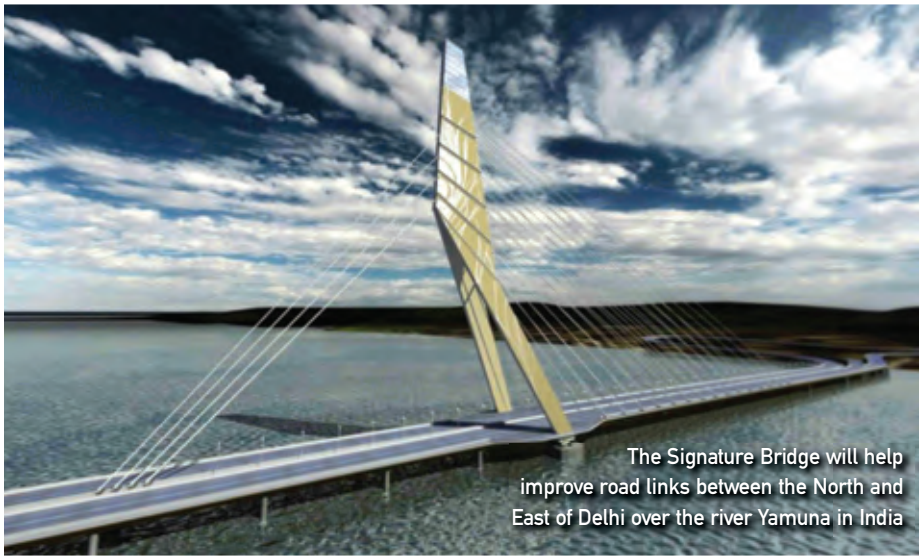

Precast concrete elements for the bridge being unloaded

The project involves setting up flyovers, loops and ramps

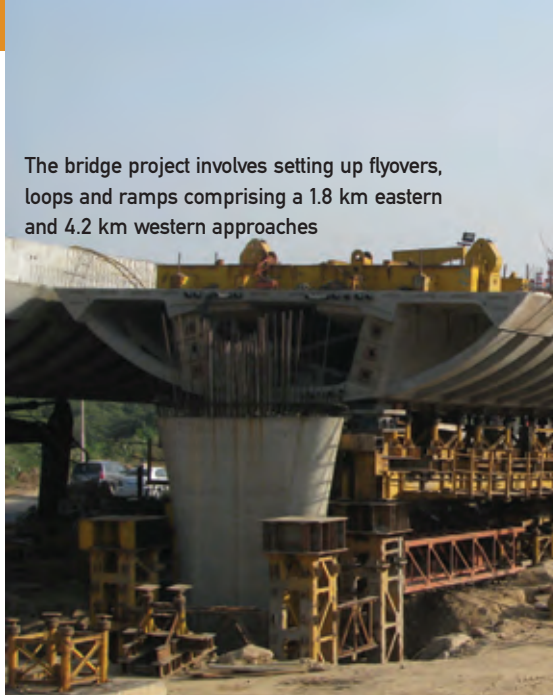
Lifting and erection is the most vital construction component of the project. Shubhendu Bose, Gammon India deputy general manager, projects, says, "There have been the major determinants behind selection of cranes for the project. This includes, lifting and erection of varied loads of the precast concrete sections for the approaches, erection of heavy loads of the pylon and its base sections at long radius, paucity of space for setting up the alignment of the intersections connecting the approaches from both the ends of the bridge and uneven terrain of the Yamuna river bank."

A 350 tonne capacity 4-axle Gottwald AK 380 truck mounted lattice boom crane is being used for erecting precast concrete sections between 68 and 100.5 tonnes with boom configured between 25 and 45 m for setting up the approaches. The crane is using its four outriggers spread across 3 m for the job on a section of the site that has been compacted to stabilise it.

A 1973 100 tonne Gottwald AK 150 truck mounted lattice boom crane is also erecting precast concrete sections between 60 and 70 tonnes with the boom configured between 25 and 34 m long. It is also working to erect and dismantle temporary precast trestle columns for supporting the precast sections. The crane is also helping



The Signature Bridge will help improve road links between the North and East of Delhi over the river Yamuna in India



The bridge project involves setting up flyovers, loops and ramps comprising a 1.8 km eastern and 4.2 km western approaches

to assemble the steel trestles weighing between 25 and 30 tonnes at the fabrication yard. The AK150 had earlier worked at Delhi Metro's second phase project. A 25 tonne truck mounted, three section PPM Poclain truck crane is also helping towards erection of temporary trestles to support sections of the deck of the main bridge.

Vital roles

Gantry cranes are vital in the project. A 100 tonne and a 20 tonne rail mounted gantry crane from Indian manufacturer Anupam Industries are working at the approaches for lifting precast concrete sections. An order for another new rail mounted gantry crane with 40 m span and 60 tonne lifting capacity has been placed by Gammon with Indian industrial crane manufacturer Electromech Industries. The crane will used to lift 30 tonne precast concrete sections for the approaches connecting the main bridge on the river which cannot be accessed by the heavy crawler crane.

Another rail mounted gantry crane, also from Anupam Industries, with 100 tonnes capacity and 2 tonne capacity hook is working on the casting and then lifting of concrete slabs between 7 and 32 tonnes with depth of 3.5 m, 7.64 m length and 4.08 m width. The crane also worked at Delhi Metro's second phase on similar jobs.

A 25 tonne capacity Kobelco RK 250 rough terrain crane is employed at one of the uneven sections of the site with its three section boom for assembling sections of the precast girder launchers weighing from 4.5 to 7 tonnes. The crane is also being used for the erection of gantry cranes, scaffolding frames and formwork for setting up piers of the approaches.

Sizeable numbers of Indian-made Escorts 14 tonne capacity Hydra series pick and carry cranes are helping to transport site utilities, trestle and scaffolding sections between various locations at the sites.

Dilbagh Singh, left, operator of the Sarens India Terex lattice boom crawler crane on site with author Partha Pratim Basistha

Lowering of shuttering sections for pile caps is one of the major jobs of the cranes on site. All the light and medium capacity cranes working on the project are owned by contractor Gammon.

The star attraction

Among the cranes working, the star attraction is a 1,250 tonne capacity 2004 Terex Demag CC 8800 lattice boom crawler crane. Gammon India has hired the crane for a year from heavy lift specialist Sarens, for the erection of the main cable stayed bridge. Prior to working on the Signature Bridge project, the crane worked for erection of heat exchangers, columns and strippers at India's state energy major, Gas Authority of India Limited's plant expansion at Bijapur in South India. It was also used by Jindal Steel and Power for the erection of a 572 tonne retinol column for a captive coal gasification plant at Angul in the Eastern Indian mineral rich state of Odisha.

Its modular design allowed the crane to be transported to the site from South India in 50 open truck trailers in fifty sections. The transportation was mainly carried out at night. Once on site, the crane was assembled with the help of a 350 tonne capacity Gottwald mobile and a 75 tonne capacity Tata ALC duty cycle crane.

Setup challenge

Setting up the crane on the bank of the river with extreme sandy soil and an uneven surface posed challenges. It was overcome by preparing the soil to have the desired ground bearing capacity for the maximum lift. P K Mishra, manager of operations at Sarens Heavy Lift India, said, "The ground bearing capacity was 30 tonnes per square metre. As a precaution towards heavy flooding caused by the Yamuna River during monsoon, we have placed the crane one metre above

CHALLENGES IN TRANSPORTING THE PYLON BASE

The pylon base of the bridge weighing 425 tonnes was fabricated at Jiangsu Province near Shanghai in China. The base was transported from Shanghai to Kandla port in the Western Indian state of Gujarat. It was then transported from Kandla to Wazirabad in Delhi to the bridge site covering a distance of 1,640 km by road. The base was transported on modular trailers with 12 axles and 168 wheels with each axle having independent hydraulic arrangement. Transportation of the shipment was done mainly at night. A separate bypass had to be set en route beside bridges, roads and toll plazas for facilitating movement of the over dimensional cargo. Other initiatives included the strengthening of numerous railway crossings on the way. The transportation was carried out by Indian ODC transporter, Resham Singh & Company.

the bank."

Preparation of the site for the cranes is a major challenge for the project, as the location has an extensive sloping rock profile, requiring modifications. In addition, the area comes under high seismic zone-4.

During its stay, the crane will mainly be used to erect the pylon structure, which weighs 6,500 tonnes, and a deck which weighs 7,500 tonnes. The heaviest component is the pylon base, which weighs 425 tonnes and measures 11.3 x 6.3 x 4.3 m.

The crane is being used to erect sections of the cross tie of the pylon, which weigh 350 tonnes. For the lifts the crane has been configured with a 48 m boom and a working radius of 23 m. In addition, it has 220 tonnes of counterweight and 180 tonnes of super lift counterweight. The crane has 108 m main boom and 78 m luffing jib arrangement.

For erection of the 154 m steel tower, including the tower head of the cable stayed bridge, the crane will work with boom configurations of 108 and 78 m at 50 m radius. The steel tower has a total of 55 blocks weighing between 120 and 180 tonnes. The base of the pylon weighs 425 tonnes. The cranes 600 tonne super lift counterweight will be used during the erection of the 425 tonne block body. Dilbag Singh, crane operator, adds, "The configuration may vary depending on the actual requirement of the client during execution stage."

To reduce the working height, certain sections of the pylon base are being joined with cross beam plates weighing 1 tonne. A 75 tonne capacity ALC Tata 955 duty cycle crane is helping to lift the cross beam plates. The crane is also being used to lift and place hydraulic jacks between 700 and 800 kg for supporting the temporary shuttering for the pylon blocks.

Duty cycle cranes are being used extensively at the project owing to the large scale foundation requirements. A 75 tonne capacity 280 Telcon friction crane can be seen working for the well foundation of the project's P23 column. The column will be taking the main pressure of 6,600 tonnes of tensile load of the cable stressed pylon. The crane is helping prepare the well by levelling the uneven surface. It will also be used to assist in lowering shuttering materials of 5 tonnes below 50 feet (15 m) with 15 m basic boom. Lowering of shuttering materials is also being carried out by another fully reconditioned 18 tonne Tata crawler crane. At least eight TFC duty cycle cranes are working at the main bridge site.

To ensure that the cranes at the project work safely and deliver high uptime, third party inspections have been carried out on them.

Skilled operators with between 10 and 15 years of experience have also been appointed. The project is expected to be completed by end of December. ■

Rail mounted gantry cranes in 100 and 20 tonne capacities from Indian manufacturer Anupam Industries lifting precast concrete sections

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More remote and taller

The trends for taller turbines and remote locations in the wind energy market pose a challenge for the crane industry. LAURA HATTON investigates

Guay installing Enercon E-92 wind turbines at the St Damasse wind farm in Canada. The 2.3 MW turbines have 97 metre towers. The heaviest lift was the generator, which weighed 66 tonnes

Wind turbines are now reaching a height of 150 metres with 3 MW hubs. The trend for larger wind turbines is seen in a number of markets across Europe, including Germany, Scandinavia and the UK.

In China, the story is similar, as a spokesperson from Chinese crane manufacturer Zoomlion explains, "Wind farms are being built in remote areas and the generators are becoming larger. As a result, the requirements for the dimension of lifting equipment are higher.

Uchimya at work on the Arita project in Wakayama, Japan

"Nowadays, 2 to 3 MW or even larger wind generators are being installed and 500 to 800 tonne capacity cranes are becoming mainstream."

To accommodate the latest demands generated by the wind power industry, Zoomlion offers the QAY800 wheeled mobile crane. It can have a wind plant jib, making it capable of installing 2 to 2.5 MW wind generators, the manufacturer says. In addition, it has fast assembly performance, and a strong and stable lifting capacity, the manufacturer adds.

Also from Zoomlion is the QUY350 crawler crane. "The model has extendable and retractable crawler carriers, which satisfies the needs of driving on narrow roads at wind power farms," the manufacturer says. For ease of transportation, Zoomlion's QUY550W crawler crane has a superstructure and undercarriage that are separated to make transportation a lot easier, the manufacturer explains.

The latest model from manufacturer Terex Cranes is the Superlift 3800. The crawler can erect turbines with a hub height up to 150 metres and its boom can be erected without an assist crane.

"All crawler models, from the 400 tonne CC 2400-1 to the 3,200 tonne CC 8800-1 Twin use the same counterweight slabs," Guntram Jakobs, Terex product marketing manager for crawler cranes, says. "This allows better inventory management and, for companies with several depots, saves transportation costs. In addition, all components have been engineered for optimum transport in all markets on the globe. Every component is less than 40 tonnes and less than 3 metres in width and height."

Also from Terex is the CC 8800-1 with Boom Booster kit. Jakobs says, "The kit can >

be disassembled into multiple sections and transported in 40 foot open-top containers, making it fast and cost-effective to ship. It is available both with new cranes and as a retrofit for existing models."

New from Manitowoc is the MLC650 lattice boom crawler aimed at carrying out repair and maintenance work on the latest generation of wind turbines. The design incorporates the Variable Position Counterweight (VPC) system.

Road conditions

One major concern for the crane industry is that wind farms are being built in increasingly remote locations where access roads are either non-existent or in poor condition.

For areas where road conditions on the site are unsuitable for a crawler crane, end users are looking at alternative crane types.

Canadian crane service provider Guay, for example, uses wheeled mobile telescopic cranes when crawlers are not suitable for the job. Guillaume Gagnon, Guay vice president, says, "We have a Liebherr LTM 11200-9.1 that we used to erect Enercon E92 wind turbines on a 100 metre tower. The road to site was only six metres wide so we were not able to use a crawler crane. We also needed to go on public roads. In addition, we couldn't use crane pads at this site to assemble a lattice boom on the ground.

"As a result the LTM 11200-9.1 with its telescopic boom was the right crane for the job. If we don't need to go on public roads between the turbines we use a Demag CC 2800 with a narrow track.

"On projects with large roads we use a Manitowoc 16000 with BRS and WA options. The BRS and WA upgrades are really useful because without them we would need to use a bigger crawler, which means higher cost."

In Japan, the most popular crane types for installing wind turbines are crawlers and all terrain cranes.

Popular models include the 650 tonne capacity Kobelco 7650 crawler crane and the 550 tonne capacity Tadano AR-5500M all terrain crane. A spokesperson from end user company Uchimiya says, "Both models have a high capacity and are useful for difficult wind turbine installations."

Another option for turbine installation is a tower crane. From Liebherr's tower crane division, Liebherr-Werk Biberach, are the 630 EC-H 70 Litronic and 1000 EC-B 125 Litronic models.

Designed for the installation of wind turbines, the 1000 EC-B lifts 125 tonnes and can work in high wind speeds. "Only when the wind reaches speeds in excess of 120 km/h does the jib of the 630 EC-H have to be released to turn freely," the manufacturer explains. The models are also fitted with the Liebherr Micromove system

TOWER INSTALLATION

A Liebherr 1000 EC-B 125 Litronic has been used to erect an Enercon E-101 wind turbine with a hub height of 135 metres in Wardenburg in Oldenburg, Germany.

The lifting capacity of the new crane is 125 tonnes in the six-line version or 100 tonnes in the four-line version. It can reach heights of 149 metres with a single guy on the tower of the wind turbine and can operate in free-standing mode up to a lifting height of 108 m, the manufacturer says.

Both the crane and the wind turbine can be erected on a comparatively small area. For ease of transport the jib parts can be transported inside the tower elements. It has an adjustable undercarriage with a support base measuring 18 x 18 m. "The support struts can be adjusted on this special undercarriage from the 45 degrees position by 5 or 10 degrees," a spokesperson from Liebherr-Werk Biberach explains. "The support base is then 20.4 x 15.2 m, allowing the crane to be moved closer to the object when there is little space available."

For the job near Oldenburg, the 1000 EC-B 125 was erected on the 1000 HC tower system.

"Initially the crane was erected using a mobile Liebherr LR 1200 crawler crane to a basic hook height of 38 m," a spokesperson said. "After this the crane climbed itself to a free-standing hook height of 108 m. In the second stage the crane was guyed to a level of 87 m using the wind turbine tower. It then climbed in stages of 5.8 m to a hook height of 149 m for installing the nacelle and the rotor blades."

Ludger Janssen, managing director of Energieanlagenmontage at Enercon, says, "We are very satisfied with the first job completed by the new crane. The 1000 EC-B 125 met all our expectations with its première. It means that we now have another piece of special equipment which will make it easier for us to erect wind turbines in constricted locations."

A Liebherr heavy lift offshore crane CAL 45000-1200 Litronic installs AREVA Wind rotor blades in the North Sea wind park Global Tech I

A Grove GMK6400 all-terrain crane assists with wind farm maintenance in Curacao

for positioning the tower elements.

"Wind turbines in low wind areas are, as a rule, not erected in large wind farm arrangements but in wooded areas or locations difficult to access," a spokesperson from Liebherr-Werk Biberach explains. "This is where the major advantages of tower cranes can be put to best possible use. Often roads will not need any special strengthening and vehicles will not need any special approvals. In addition, a comparatively small surface area is needed for the assembly of the tower crane."

Main concerns

Another concern for turbine installation is moving between turbines once on site. Klaus Kroeppel, Manitowoc vice president of sales, central and Eastern Europe, says, "Cranes are often required to move around the job site to work on several turbines and, therefore, they must be easily transported in terms of weight, dimensions and number of loads. The space and speed needed to assemble and disassemble the crane on the jobsite is a major consideration that can save a great deal of time and money on a project.

"If the erection time of tower cranes can be reduced, they may become an alternative solution for remote jobsite locations, as well as for taller wind turbines," Kroeppel says.

Guntram Jakobs from Terex adds, "Erection sites are often characterised by unpaved surfaces and a lack of space. If the ground is not stable enough it must be paved in advance. Self-erecting capabilities of all Terex cranes are particularly useful when setting up a crane in constrained spaces as they make it possible to forego the use of an assist crane for a variety of assembly steps."

Offshore solutions

In some countries, for example, Japan, where it is difficult to find adequate locations for wind turbine installation, the number of offshore wind farms is growing slowly. "Offshore wind power is highly useful as a source of generating energy," a spokesperson from Uchimiya points out, "and with the expansion of marine contractor sector, we anticipate that the demand for floating cranes will increase in the future."

To help meet demands in the offshore wind industry, Liebherr-Werk Nenzing in Austria offers several heavy lift offshore cranes, including the CAL 64000, CAL 45000 and the MTC 78000. The latest model, the CAL 45000, lifts 1,200 tonnes at a radius of 27.5 m. It has a boom length of 108 m and can lift 120 m above deck, the manufacturer says.

Offshore installations require more time and preparation compared to onshore sites, as Kroeppel explains, "There are considerations for different solutions for working on offshore projects, including pre-assembling wind turbines before transporting them in one or two pieces to be installed at sea.

"Far bigger cranes onshore will be required to load the wind turbines onto barges because of the weights and radii of the lifts. Bigger cranes will also be required to lift the wind turbines from the barges onto their foundations at sea," Klaus Kroeppel concludes. ■

The Zoomlion QUY350 has extendable and retractable crawler carriers for driving on narrow roads at wind power farms, the manufacturer said

Depending on the fleet size, tonnage and rental rates, guarantees for operating loss can also be underwritten

Get covered

Sorting out the correct insurance and planning risk management is a vital step in protecting your business. LAURA HATTON speaks to experts in the industry

Crane rental companies and lifting and handling contractors must underwrite various types of insurance to protect staff, equipment and the business.

Insurance for mobile cranes usually comes in the form of a general damages insurance contract.

Bérenger Gibon-Guilhem, a specialist in the lifting, heavy transport and handling industries, explains, "A general damages insurance contract covers, subject to general and specific exclusions, physical damage to lifting equipment, whether accidental or not, and whether it has originated from a third party or the action of the insured, its employees and, or, agents.

It is vital that crane rental companies and lifting and handling contractors underwrite the right type of insurance to protect staff and equipment

"Companies are therefore covered for the internal or external failure (malfunctions, failures, non-consecutive failures to normal wear), traffic accidents or exploitation, fire, vandalism and theft. It has been known, however, that some insurers no longer guarantee internal breakage once the equipment has surpassed a certain number of years of use. The lifting company also has the option, upon subscription, to modulate the extent of the guarantee and partly insure itself on some risks.

"Deductibles [such as insurance excess] for example, are generally based on a percentage of the amount of damages, or the insured value of the equipment, with a minimum and a maximum. Deductibles may vary according to the cause of the accident, such as breakage, fire or theft.

"If the damages are subsequent to the bypass of the rated capacity indicator [RCI], some insurers double or even triple the amount of the deductible, while others simply refuse warranty," Gibon-Guilhem adds.

Guarantees for operating loss can also be underwritten, Gibon-Guilhem adds. Depending on the fleet size, tonnage and rental rates, several options are available. "Contracts should cover all potential risks that are associated with the company, including crane rental, lifting, handling and transportation. The contract should also cover non-consequential damages for personal injury and equipment, such as delays and stoppages. In addition, a policy covering the company's contractual liability of the carrier, which allows it to limit this liability by taking advantage of legal limits for compensation, could also be purchased."

Companies, such as NBIS, a managing general underwriter for crane, rigging, construction and transport, provides comprehensive coverage, including, general liability, auto liability, inland marine, workers' compensation and excess coverage. The company also offers risk management services.

"NBIS is the exclusively endorsed property and casualty insurance provider for the Specialized Carriers and Rigging Association (SC&RA)," Bill Smith, NBIS executive vice president of risk management and claims, says, "Our primary focus is heavy construction equipment and operators, related specialty transport operators, concrete pumpers, commercial equipment dealers and commercial equipment rental.

"We partner with insurance carriers in customising responsive risk management

THIRD PARTY REPAIRS

Concerns have arisen in the industry regarding what certification third party repair centres have, especially those instructed by insurers to carry out repairs. The issue was highlighted at the latest crane open meeting, organised by the Construction Plant-hire Association (CPA) in the UK.

There is a greater need for repairs to be carried out with correct information, including material properties and welding procedures

The main issue that was highlighted was that cranes are becoming more complex and they have more efficient structures. It was emphasised that repairs should be carried out either by the manufacturer, or a repairer who is approved by the manufacturer and has the information and resources to carry out repairs to the required standard.

Other factors that need to be taken into consideration are that repairs and modifications require calibration and adjustment of settings of the rated capacity limiter (RCL). This can only be done by the manufacturer or authorised personnel who have access to the RCL programme.

"Where a crane has been involved in an incident where the sensors have been overloaded or severely shaken, verification is crucial to ensure the accuracy of the RCL," Tim Watson, Construction Plant-hire Association, explains. "The accuracy of the RCL, especially for the cut-off limits, is defined in the product standards and non-compliance with these requirements may create unsafe situations and would lead to non-compliance with the relevant standards."

If there is a failure in a repair not authorised by the manufacturer, the liability falls on the crane owner rather than the manufacturer and there can be possible problems with insurance liability for both owner and repairer. The situation regarding warranties on structural repairs is another area for discussion, as Bérenger Gibon-Guilhem adds, "Sometimes manufacturers refuse any structural warranty if repairs are carried out by anyone else but them."

programmes. Our team of experts includes long standing *ANSI Standards* committee members for the *B30.5* and *B30.27* Committees, actively certified crane inspectors and FMCSA versed risk managers," Bill Smith adds.

Reducing costs

Insurance can be costly and preparing for every situation is impossible for any safety manager, but there are ways to keep costs down. Bill Smith explains, "Contract management is the first step to lowering the cost of insurance. Once the job has begun, all activities performed must comply with the current regulations within the area of operation. The owner, the safety and risk manager and all employees can impact the cost of insurance, making sure regulations are followed and all activities are properly documented. A properly defined and implemented safety plan is the second step to lowering the cost of insurance."

Contracts should cover all potential risks, including rental, handling and transportation

Another way to reduce insurance costs is through staff training and certification. Over the past few years there has been debate on the difference between being certified to operate a crane and actually being trained to operate a crane. Some companies offer an operating certificate, confirming that someone has the right to operate a crane, but it doesn't necessarily mean that they have been properly trained to do so. (More on operator training will be covered in the March 2015 issue of *IC*).

In addition to keeping operators certified, keeping up with fleet maintenance, meeting OSHA regulations and insurance requirements are other ways to help keep costs down. Insurers, including companies such as Allied Insurance, suggest that identifying loss exposures, writing safety manuals and rental agreements, fire prevention, customer pre-qualifications, hand signals and ANSI standards are some other ways to keep costs down.

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The WCTS event was held for the first time at the Biltmore Hotel in Miami, USA

WORLD CRANE AND TRANSPORT SUMMIT 2014
MIAMI, FLORIDA, USA
12 AND 13 NOVEMBER

A turnout of more than 260 high-level delegates at the 2014 World Crane and Transport Summit in Florida, USA, further bolstered the success of this established event. *IC* reports

Up for discussion

More than 260 people attended the fourth World Crane and Transport Summit (WCTS), held for the first time in Florida, USA, on 12 and 13 November 2014.

Alan Barnhart, Barnhart Crane & Rigging chief executive officer, opened the WCTS in Miami with a keynote speech. Barnhart said the crane and transport industry should celebrate its record of innovation and profit generation, and recognise the importance and rewards of work.

"Work is not something you do to afford to do the good stuff in life. Work is part of the good stuff," Barnhart told the audience at the Biltmore Hotel. "We should celebrate the innovation, the pofits, and the value they create - I think we should celebrate work."

The two-day WCTS is organised by KHL Group and its magazines *International Cranes and Specialized Transport* and American Cranes & Transport.

Following Barnhart's address, Jim Wiethorn of Haag Engineering outlined the results of an analysis of more than 500 crane accidents in North America. One >

Brent Wise and Diane Waghorne from Tech Safety Lines explain their height rescue equipment

The round table discussion on lifting and transport in the oil and gas sector included, from left to right, Joseph Collins, Becht Engineering heavy lift manager; Joey Andrews, CITGO Petroleum lift planner; Keith Anderson, Bechtel chief rigging engineer; Frank Bardonaro, Maxim Crane president

Alan Barnhart, Barnhart Crane & Rigging chief executive officer, opened the WCTS in Miami with a keynote speech

finding was that 51 out of 147 fatalities were of persons not directly involved in the crane operation. Wiethorn said this illustrated the important role that site supervisors had in managing lifting operations.

Telematics and what the technology means for the industry was the topic of the next presentation, from Bill Stramer, Link-Belt vice president, marketing, sales and customer support. Stramer said that customers are looking for a tool to track all of their equipment so that they can manage their entire fleet, they don't want something that is brand-specific.

Also speaking on day one was Brent Wise, a captain in the Dallas Fire and Rescue Department and co-founder of Tech Safety Lines. TSL supplies training and equipment for fall protection and rescue from height. Bill Smith at insurance company NBIS discussed US regulations and the delay to the full implementation of the *Cranes and Derricks in Construction* standard. Also, Smith forecast that in future crane accidents there will be fewer cases of operator error but more among lift supervisors, appointed persons and so on.

Jim Wiethorn, Haag Engineering chief engineer and chairman, presented his findings on the impact of a crane's age on crane accidents, according to his study of thousands of crane accidents over many years

Rodney Rather, ALE vice president, reported on the spectacular world record load out of the Arkutun Dagi topside

Attendees visiting the sponsor tables during a coffee break

Day two started with a project report detailing Fagioli's involvement in the recovery of the cruise ship *Costa Concordia* from rocks off the coast of Italy. Mario Covino, Fagioli Group HSE and quality manager Americas, explained the complicated operation.

An interesting joint presentation by Rüdiger Zollondz from Terex Cranes and Rainer Sasse from TII Group (Nicolas, Scheuerle, Kamag) clearly demonstrated the influence of developments in the oil and gas sector on the design both of heavy lifting and specialized transport equipment. Modules in this sector have hugely increased in size since 2005. Gary McArdle from Rouse Services reported the state of the market in the USA and further afield in terms of crane sales and financial results. Scott Bragg, Bragg Companies vice president, followed up with a discussion on California's business environment for cranes and heavy equipment, and David Rodrigues, Makro Engenharia CEO, shared the view from Brazil, covering issues on safety. Graham Brent, executive director National Commission for the Certification of Crane Operators, concluded the theme of safety with a presentation about the attitudes to safety, training and best practices in the USA.

New energy

The third session of the two-day event started with a presentation from Scott Hazelton, director, IHS Global Insight Construction and Manufacturing Industries Practice. Opening the energy, oil & gas section, Hazelton discussed the impact on construction equipment and cranes on the growth in gas shale energy exploration in North America. He also provided the audience with forecasts on the return of the non-residential construction sector.

Attendees enjoying pre-dinner drinks

Following Hazelton was a round table discussion with Joseph Collins, Becht Engineering heavy lift manager; Joey Andrews, CITGO Petroleum lift planner; Keith Anderson, Bechtel chief rigging engineer; Frank Bardonaro, Maxim Crane president.

The event came to a close with a spectacular report on a world record load-out project, presented by Rodney Rather, ALE vice president.

The next World Crane and Transport Summit will be on 4 and 5 November 2015, returning to the Krasnapolsky hotel in Amsterdam, Netherlands. Keep up to date with developments with the event at www.khl.com/wcts and in *IC* magazine. ■

Looking good and ready for dinner

Rising to the challenge

Over the last few months votes have been coming in for *IC*'s 2014 TopLift contest to determine readers' favourite lifting job. *IC* reveals the results

FIRST PLACE

ENTRY 10

Parbuckling operation

EQUIPMENT USER: FAGIOLI
LIFTING EQUIPMENT USED: TOWER LIFTS
LOCATION: ITALY

Fagioli used 12 tower lifts and 168 strand jacks, plus 48 lines of SPMT for a parbuckling operation to remove the wreck of the *Costa Concordia* cruise ship. Stabilisation was carried out by securing four anchor blocks to the sea bed between the centre of the wreck and the coast by 300 and 450 tonne strand jacks.

FIRST RUNNER-UP

ENTRY 3

Space constraints

EQUIPMENT USER: CHUNJO CONSTRUCTION
LIFTING EQUIPMENT USED: MANITOWOC 31000 CRAWLER CRANE
LOCATION: SOUTH KOREA

A 2,300 tonne capacity crawler was used to lift a 670 tonne wash tower. The crane was configured with 120 metre main boom and positioned between refinery equipment and a small river, leaving a limited space of only 15 m for the VPC system.

SECOND RUNNER-UP

ENTRY 6

Refined lift

EQUIPMENT USER: GUAY CRANE
LIFTING EQUIPMENT USED: 600 TONNE CAPACITY TEREX CC 2800
LOCATION: CANADA

Guay used a Terex CC 2800 configured with 35.9 metre of main boom, 41.7 m of luffing jib and 250 tonnes of superlift counterweight to lift the 97 tonne column at a radius of 41.7 m.

In the September issue of *IC* readers were asked to pick their favourite job from 10 outstanding lifting projects. This year's entries for the *IC* Top Lift 2014 included a range of impressive lifts.

The clear winner for this year's TopLift was the parbuckling operation carried out by Fagioli, from Italy. Fagioli used 12 tower lifts and 168 strand jacks, plus 48 lines of SPMT for a parbuckling operation to remove the wreck of the *Costa Concordia* cruise ship. Phases of the project included detaching the wreck from the rocks where it rested, using strand jacks to rotate the vessel 25 degrees, and rotating to a final total of 64 degrees by means of jacks and ballasting of sponsons. Seven additional anchor blocks and 12 towers were installed to secure the position of the wreck's keel during rotation.

In second place was 'Space Constraints'. Chunjo Construction used a Manitowoc 31000 crawler crane to lift a 670 tonne wash tower at the Korea Petrochemical plant in Ulsan, South Korea. The wash tower was 92 metres tall and weighed 670 tonnes. The 31000's variable position counterweight (VPC) made the lift possible because the counterweight could be suspended above the ground, a company spokesperson said.

In third place was 'Refined Lift' from crane service provider Guay Crane, for lifting a 97 tonne column at Valero's refinery in Levis, Quebec, Canada with a Terex CC 2800. The tailing crane was a Grove GMK6300L.

IC would like to congratulate the winners and thank all who took the time to vote – your efforts are appreciated.

The competition is only made possible by the spectacular jobs taking place around the world and the people who share them with us by sending the pictures and information into the magazine.

■ If your company has completed a job in the last couple of months or, if you do one before mid-August 2015 that you think should be entered for next year's TopLift competition, and/or it would make an interesting site report in *International Cranes and Specialized Transport magazine*, please send the details to the editor, Alex Dahm, at alex.dahm@khl.com or by post, to: KHL Group, Southfields, Southview Road, Wadhurst, East Sussex TN5 6TP United Kingdom.

COMMENT

Joel M Dandrea

The future is computerised

Saying goodbye to one year provokes the inevitable consideration for what the next twelve months will bring. Many of our international members will look back on 2014 and agree that it was productive, if not successful, while others might look ahead towards 2015 as an opportunity to improve on various levels and explore the types of strategies that will more effectively grow their companies.

But in the age of technology, the future is now, and leaders in every industry will prove wise to pay attention: the next big business phase is computerization. Not the decade-old "tech-era" that we've all gotten comfortable with, where our clever phones can double as stereos, GPS systems, and portable internet providers, but a true digital connecting of objects: buildings, machines, appliances, medical devices, vehicles of all size and type, roads, containers, apparel, and so much more.

By 2020 we can expect to see nearly 30 billion objects maintain the capacity to communicate with us, or one another, up from the current number of 1 billion.

How will it happen? Reduction, for starters. Motion sensors that cost less than a dollar currently will drop at least two percent a year in the next decade. WiFi computer chips will see a two hundred percent drop in price, changing the scope, scale, and sheer power of wireless networks, apps, and software products beyond anything that we're used to at present.

Worldwide network

By 2025 estimates point towards extraordinary cost savings for manufacturers, up to five percent of yearly operating costs. Travel times will also reduce considerably, especially in cities around the world.

To put all of this in perspective, this worldwide network of technology and communication will prevent equipment breakdowns and failure on unprecedented levels. Time delays and losses of property, business, or even lives will decrease on a colossal scale. Imagine a scenario where built-in sensors and WiFi devices will communicate with one another at blinding speeds and monitor for wear and tear, stress, temperature changes, pressure deviations, notifying personnel to meet service requirements or avoid breakdowns. Better yet, they only notify personnel when the issue has been resolved.

This type of advanced technology will be widespread in manufacturing, construction, and transportation. Real-time tracking of people, products, locations, and flows will let entire cities adapt and adjust to redirect backups before they even happen, and respond on the fly to changing circumstances.

As Helmuth Ludwig and Eric Spiegel noted in an article for *Strategy + Business,* the technology and practice of large-scale manufacturing are moving into a new era of proficiency – not just typified by improvements in established processes, but taking the form of a software-powered series of new production systems that are qualitatively different from those of previous years.

Ludwig and Spiegel encouraged leaders in almost every industry around the world to be ready to embrace continuous advancements in the following current systems of development and production:

Production planning: Automation design technology that makes it possible to digitally design entire factories or individual pieces of equipment, and then simulate and optimise against a range of production scenarios for cost, speed, productivity, utilisation, energy usage, and quality.

Engineering: New software will make it easier for modern production engineers to programme and co-ordinate all automation tasks from a single portal, optimising workflows and improving productivity.

Execution: Manufacturing execution systems will more effortlessly monitor production performance in real time, enabling short-term control of manufacturing output and long-term optimisation of production-unit configuration.

Service: Mobile devices, powerful networking, and big data analytics will continuously enable technology-based services opportunities such as remote monitoring and advanced predictive failure analysis, reducing costs and improving utilisation and productivity. ■

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The SC&RA looks back on the past twelve months of successful annual meetings, networking events and awards programmes

A year of commitment

Bolstered by the strength of 1,300 member companies from 46 countries (with 63 per cent of companies representing five or more years of membership), SC&RA continued to advance its four-way commitment to members around the world in 2014 through advocacy, education, networking, partnering and awards programmes. This year's success was a clear example of the mutual benefit shared between the Association and its valued membership.

That value was on full display throughout the year at the four annual meetings, which kicked off in Park City, Utah, USA, with the January board meetings. There the board of directors and committees of the Association and SC&R Foundation met to approve the annual budgets and formalised plans for the upcoming year.

Following the board meetings, in March the Specialized Transportation Symposium brought together top executives, safety directors, state and federal transportation officials, and related trade associations in Houston, Texas, USA. Among the 443 in attendance, six countries were represented, including 74 first-timers. One of many highlights at this year's event was the recognition of SC&RA's Douglas Ball, who retired after more than 13 years of service as the Association's vice president of transportation.

SC&RA MEETINGS 2015

4 - 7 JANUARY: January Board & Committee Meetings.
Grand Wailea, Maui, Hawaii
3 - 6 MARCH: Specialized Transportation Symposium.
Marriot Marquis, Atlanta, Georgia, USA
14 - 18 APRIL: Annual Conference.
La Costa Resort & Spa, Carlsbad, California, USA
23 - 25 SEPTEMBER: Crane & Rigging Workshop.
Sheraton Denver Downtown Hotel, Denver, Colorado, USA.

The international reception at the Annual Conference in April provided a key opportunity for the 78 international attendees to network and get to know more about the Association

In March, the International Crane Stakeholders Assembly (ICSA) met in Las Vegas, Nevada, USA. The ICSA was established in 2011 to facilitate information sharing and meaningful dialogue between crane industry stakeholders on safety, technical, and regulatory issues of concern to the international crane industry. Twenty-eight members attended the meeting from six countries. Current members include AEM (Association of Equipment Manufacturers), CCMA (China Construction Machinery Association), CICA (Crane Industry Council of Australia), ESTA (European Association of Abnormal Road Transport and Mobile Cranes), FEM (Federation of European manufacturers of materials handling equipment) and SC&RA.

In April, the Annual Conference brought together owners, senior management and top executives in Boca Raton, Florida, USA. The 740 in attendance, including 78 internationals, set a record, which reflected in the high numbers across all meetings and events, including 104 first-timers and 90 exhibitors. As a fitting end to a productive week, outgoing SC&RA president Ron Montgomery, of Intermountain Rigging and Heavy Haul, graciously turned over the gavel to incoming president Alan Barnhart, of Barnhart, who delivered an inspiring acceptance speech.

As 2014 moved along, the Crane & Rigging Workshop bookended the SC&RA schedule for the year in Dallas, Texas, USA, in September. A record 85 booths enhanced the Exhibit Center floor this year, and of the 552 in attendance, 32 attendees represented Aruba, China, Germany, Guatemala, Mexico, Netherlands, Peru, Puerto Rico, and United Arab Emirates.

In November the World Crane & Transport Summit, hosted by *IC* publisher KHL Group, with SC&RA as the official progamme partner, was held in Miami, Florida, USA. It was fully supported by top crane associations ESTA, Sindipesa, and CICA, together with many of their members. The event brought together key stakeholders in the global lifting and heavy transport industry and offered equipment end users from all sectors a chance to meet their industry peers and discuss the important topics affecting their businesses.

The Crane & Rigging Workshop in September enjoyed 94 first-timers

Dedicated teams

In October SC&RA joined the Coalition for Crane Operator Safety (CCOS), a group dedicated to ensuring the swift revision and finalisation of the crane operator certification requirements within the Occupational Safety and Health Administration's (OSHA) *Cranes & Derricks in Construction* Standard, more than two decades in the making. In addition, SC&RA joined the Alliance for Toll-Free Interstates (ATFI) in 2014. This group's mission is to prevent new tolls on existing interstates through media relations, advertising, decision-maker engagement and education. The goal of the ATFI is to maintain the longstanding policy of protecting existing interstates from new tolls by supporting federal legislation to eliminate the failed pilot programmes that allow states to impose tolls on existing lanes of the interstate highway system.

In support of crane and rigging advocacy, in July 2014, Haag Engineering published *Crane Accidents: A Study of Causes and Trends to Create a Safety Work Environment*. In February SC&RA staff met Jim Wiethorn of Haag and his staff, inquiring about the possibility of Haag addressing New York City's introduction of legislation set to limit the age of tower cranes working in and around the city. Wiethorn agreed that once their study was complete, SC&RA could submit questions to which Haag would respond within a white paper. The white paper will be beneficial for the Association in moving forward to combat this issue.

On the transportation advocacy side, one of many SC&RA efforts involved applying for limited exemption from compliance with the 30 minute rest break requirement of the FMCSA's 27 December 2011, *Final Rule on Hours of Service of Drivers (Hours of Service Rule) 49 C.P.R. § 395.3*. The exemption request, produced with assistance from NBIS, would apply to specialized carriers and drivers responsible for the hauling of loads that exceed maximum legal weight and dimension (OS/OW loads), which require a permit to be issued by a government authority.

Then-outgoing SC&RA president (current chairman), Ron Montgomery from Intermountain Rigging and Heavy Haul, speaking at the Annual Conference in April

The 2014 January Board Meetings, in Park City, Utah (USA), brought together members from around the world to discuss annual budgets and formalise plans for the upcoming year

This request is for a waiver on all jurisdictional roads.

The Association also continued to offer its membership a unique, partially self-funded insurance programme for employee health insurance in 2014. SC&RA began working with Association Benefit Resources/Benovate (ABR/Benovate) in 2012, developing the SC&RA Health Benefit Plan, which offers members a healthcare programme that could save dollars and change lives. Find out more at www.scraHealthPlan.com

Staying social

The SC&RA Meeting App debuted at the Crane & Rigging Workshop in 2014 with great success. It will be used during all meetings in the future. Features include attendee search, messaging, ability to create your own schedule and notes, surveys and polls, maps and even an Exhibit Center booth layout.

Similarly engaging from a social media perspective, the popular photo contests were introduced through SC&RA's Facebook page, and more than 375 entries flowed in from 12 monthly contests. The photo contest is open to SC&RA members and non-members around the world (with a wide range of acceptable projects). It offers participants a chance to have their winning photo appear as SC&RA's cover photo for an entire month. This past year, 10 international entries won the contest.

Products that continued to prove popular with SC&RA members in 2014 were the SC&RA Permit Manual *Oversize/Overweight Permit Manual* and the *Operating Cranes Around Power Lines* training set (comprising both a booklet and video). The *Permit Manual*, with more than 450 pages of material, is the most comprehensive digital manual of its kind, and includes information for all 50 states and Canadian provinces.

The *Operating Cranes Around Power Lines* training set, which can be used during both planning and training, contains an in-depth look at how employers and operators can conform to the OSHA standards now in effect, *29 CFR 1926 Subpart CC*. In addition, the International Union of Operating Engineers (IUOE) uses the training video at all of its training facilities.

It was also a big year for big jobs. The 2014 SC&RA Job of the Year awards featured 28 exceptionally strong entries. In the Rigging Job of the Year category Fagioli, based in Italy, took home honours in the Over $750,000 category. Omega Morgan from Washington State, USA, captured the $150,000 to $750,000 award. Barnhart Crane & Rigging, based in Tennessee, USA, received the Under $150,000 award.

In the Hauling Job of the Year Category, Berard Transport, based in Louisiana, USA, took home honours for the Moving Job of the Year. In the Over 150,000 pounds (net) category, Northwest Crane Service in Oklahoma, USA, nabbed the distinction. In the Under 150,000 pounds (net) category, Precision Heavy Haul, based in Arizona, USA, proudly accepted the award.

As 2014 winds down, SC&RA wants to thank its valued membership for another successful year. The strength of this Association, and in many ways, the strength of the industry, depends on your continuous innovation, perseverance and interest in the success of one another. The momentum gained this year will no doubt transition to 2015, and there's no better place to get the year started than Maui, Hawaii, the destination for the 2015 January Board Meetings.

The Board Meetings set the tone for the year to come, and serve as a first step for many in getting involved with the Association. The agenda consists of committees and networking involving owners, top management and officers of both the Association and Foundation. ■

For all SC&RA event and registration information, see: www.scranet.org/meetings

Join the ESTA celebration

Small- and medium-sized heavy transport and mobile crane companies are being encouraged to celebrate their successes by entering the European Association of Abnormal Road Transport and Mobile Cranes (ESTA) Users' Night and Awards for 2015.

The event regularly attracts top quality entries from many of the biggest companies and projects but ESTA wants to ensure that the event reflects all types and sizes of company.

Søren Jansen ,ESTA director, said, "These awards are about the very best in the industry, not the biggest, and there are many fantastic smaller projects. We want the whole industry to celebrate their successes together, from the biggest firms to the smallest."

The 2015 ESTA awards will be held on Thursday 23 April during the Intermat exhibition in Paris at the Hilton Hotel Charles de Gaulle Airport in France. The awards dinner is jointly run by ESTA and *International Cranes and Specialized Transport* magazine.

The evening regularly attracts around 500 guests from around the world. Winners at the 2014 event included Fagioli from Italy; Mammoet, Sarens Nederland and Wagenborg Nedlift from the Netherlands; Nordic Crane Stangeland from Norway; Michielsens from Belgium; and Collett and ALE from the UK. Liebherr-Werk Ehingen in Germany took the safety prize for its Variobase crane support system.

The final deadline for entries for the 2015 awards is 17 January 2015 but, whenever possible, ESTA is asking companies to try and get their entries in early. The full list of categories is as follows:

- Transport job of the Year, trailer and load over 120 tonnes GVW
- Transport job of the year, trailer and load under 120 tonnes GVW
- Crane Job of the Year, telescopic cranes, lifting capacity under 120 tonnes
- Crane Job of the Year, telescopic cranes, lifting capacity over 120 tonnes
- Crane Job of the Year (lattice boom cranes)
- Safety Award
- Innovation Award for end users
- Innovation Award for manufacturers
- Combined Techniques Award
- SMPT Job of the Year.

A personality of the year award is also presented when there is a suitable candidate.

David Collett, ESTA president, said, "The ESTA evening has become firmly established as one of the main events of the year. It is a great chance to meet old friends and business colleagues, to make new contacts and celebrate the industry's achievements and new developments."

- For further information see: www.khl.com/esta and www.esta-eu.org

HIGHLIGHT

The Polish Heavy Transport Association OSPTN is the latest European organisation to join ESTA. The association was established in 2008 and now has more than 60 members. It offers legal and consulting support for its members and campaigns to harmonise local regulations governing heavy transport. OSPTN's Łukasz Chwalczuk said his organisation faced the same difficulties and shared the same goals as many of ESTA's member associations in other countries, especially on the subject of permits.

HIGHLIGHT

The president of ESTA's transport section, Andre Friderici, said that the organisation is recruiting for a transport officer to help it expand its activities and grow membership and contacts, especially in new markets where it is not currently represented. ESTA is stressing that this is a new paid post, and does not replace any existing positions. The successful candidate is likely to be multi-lingual. The work of the transport section is expanding fast, notably with the development of the best practice guide for SPMTs. Additional support is needed if momentum is to be maintained. Friderici said, "ESTA is becoming too big and the workload becoming too heavy to rely on volunteering."

SPMT UPDATE: BEST PRACTICE GUIDE DUE OUT IN NEW YEAR

ESTA hopes that its much-anticipated new best practice guide for the operation of self-propelled modular trailers, or SPMTs, will be published in early 2015.

The working group behind the guide was set up by ESTA following concerns expressed by a number of clients just over two years ago. They were worried that some SPMT loads had tipped over, even though the existing operating rules and stability calculations had been precisely followed.

As part of its work ESTA has also commissioned the Euro-Rigging consultancy to develop a common mathematical model that could be used throughout the industry and that would better take into account the full range of forces affecting an SPMT and its load. The work is some of the most detailed - and expensive - that ESTA has ever carried out.

David Collett, ESTA president and Collett & Sons managing director, said, "ESTA's approach is to improve safety at all levels. We are aware that there have been accidents involving SPMTs and we need to understand how they have come about, and improve the working practices that we have. Currently, there is no best practice guide."

Collett emphasised that the final report would not cover every eventuality, "We are not aiming to produce a recipe book for every circumstance, but a starting point. But when you need to go beyond that baseline, to carry out a more difficult or complex project then, a more detailed engineering solution will be required."

The ESTA working group behind the guide involves senior engineers and representatives from leading user companies, manufacturers and clients.

Members include Collett, Fagioli, Goldhofer, Kamag, Mammoet, RDW (the Dutch Department of Road Transport), Sarens, Scheuerle, Shell, Wagenborg Nedlift and The Works International.

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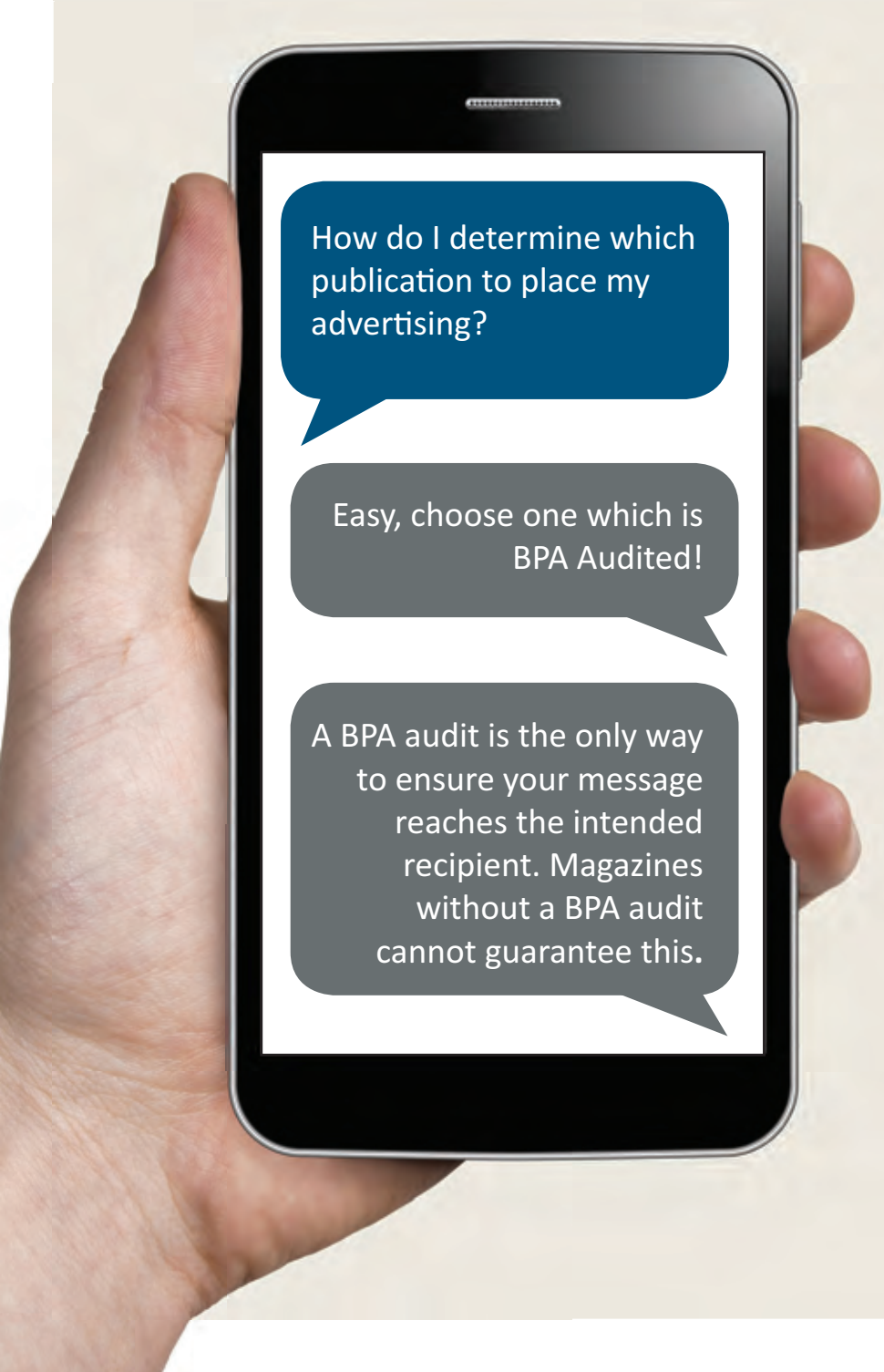

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NEW CRANE SCALE FROM INTERCOMP

USA-based manufacturer of crane scales, Intercomp, has launched an updated version of its CS750 crane scale. The new model has capacities ranging from 50 to 500 kg. It can be ordered with RFX wireless weighing technology and has a battery life of 800 hours (or 5,000 hours when in standby mode), the manufacturer said. It takes four D-cell batteries or can alternatively be connected to a direct power source.

The company is *ISO 9001:2008* certified.

■ For more information see: www.intercompcompany.com

Seeing more with Brigade

Brigade Electronics has launched a new Eyeball camera with a wide camera range for the mobile vehicle industry.

The VBV-3XXC series Eyeball cameras are fitted with an adjustable ball and socket lens to provide flexible fitting positions. In addition, the lens can be rotated 180 degrees to allow drivers to see blind spots. A microphone is also fitted to the camera, along with five LEDs for work in low light.

The cameras are suitable for side, front, rear and internal applications with a viewing angle of 102 x 78 x 145 degrees (HxVxD), the manufacturer said. They are compatible with Brigade monitors.

The VBV-3XXC series replaces the BE-30X and VBV-0X0 ranges. The cameras meet industry standards including CE, E mark, water and dust resistance to *IP69K* and corrosion resistance to *ISO0227* (salt spray), the manufacturer said.

■ For more information see: brigade-electronics.com

FibreMax synthetic crane pendants

Manufacturer of lightweight cables, FibreMax, based in the Netherlands, has launched a lightweight synthetic crane pendant. The pendants, made of aramid fibre (Twaron), are available in a range of lengths.

"We see a growing interest in synthetic crane pendants," a spokesperson from FibreMax said. "The primary advantages are the weight reductions, making the pendants easier to handle and cutting installation time. Operators can manually handle the pendants, rather than requiring an assist crane. The lighter weight also allows for a longer boom, increased lifting capacity, or both."

FibreMax offers lightweight synthetic pendants for crawler cranes, luffing jib cranes, tower cranes and offshore cranes.

They also supply synthetic suspension cables for draglines that operate in open-cut mining, a spokesperson added.

■ For more information see: www.fibremax.nl

KEEPING COSTS ON TRACK

US tyre manufacturer Falken has launched a new truck tyre for both on- and off-road vehicles in the UK.

The M+S marked and re-groovable GI388 and GI378 tyres have deep tread profiles and serrated grooves to improve grip. The tyres include stone ejectors to prevent foreign objects becoming trapped in the grooves, sidewall protection bands and rust inhibitors, the manufacturer said. They are made with a casing that has heat resistant inner rubber layers and a low abrasion compound that can be re-grooved, a spokesperson said.

Matt Smith, Falken director, UK and Ireland, said, "We know from talking to operators that tyre failures are costly and our tyres are packed with sensible design features to ensure minimal downtime and extend the life of the tyre. "This value proposition from a trusted brand should be relevant to any operator in sectors such as construction or municipal where no-nonsense savings are key to fleet cost management."

The new Falken GI388 is available in three dimensions. The GI378 for steering axles and trailers is also available.

■ For more information see: www.falken-europe.de

Falken GI378

Falken GI388

DICA outrigger pad rack

DICA Outrigger Pads has launched a new pad rack that allows crane operators to store outrigger pads without manually lifting them.

The ZeroLift Pad Rack has a carrying capacity of 450 kg and can be adjusted to fit pad sizes up to 1.2 x 1.5 metres. The rack is made of high strength steel and can be folded up when not in use. It weighs less than 30 kg and can be installed on either the front or rear of rough terrain cranes.

Kris Koberg, DICA CEO, said, "The ZeroLift Pad Rack provides a reliable and convenient method to store outrigger pads. It can virtually eliminate lifting injuries because outrigger pads are stored at an easy-to-access height where they can be slid instead of lifted."

■ For more information see: www.dicausa.com

The ZeroLift Pad Rack can be installed on rough terrain cranes and carries up to 450 kg

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www.scranet.org

SC&RA SPECIALIZED TRANSPORTATION SYMPOSIUM
4 – 6 March 2015
Atlanta, Georgia, USA
www.scranet.org

DEMOLITION CONFERENCE TURKEY
12 March 2015
Istanbul, Turkey
www.khl.com/dct

SC&RA ANNUAL CONFERENCE
14 – 18 April 2015
Carlsbad, California, USA
www.scranet.org

INTERMAT 2015
20 – 25 April 2015
Paris, France
www.intermat.fr

ESTA AWARDS OF EXCELLENCE
23 April 2015
Paris, France
www.khl.com/esta

VERTIKAL DAYS
13 – 15 May 2015
Haydock Park, UK
www.vertikaldays.net

INTERNATIONAL TOWER CRANES (ITC) 2015
27 and 28 May 2015
London, UK
www.khl.com/itc

PLANTWORX 2015
2 – 4 June 2015
Bruntingthorpe, UK
www.coneq.org.uk

CRANES & TRANSPORT LATIN AMERICA
8 June 2015
São Paulo, Brazil
www.khl.com/catla

M&T EXPO
9 – 13 June 2015
São Paulo, Brazil
www.mtexpo.com.br

IN THE KNOW

This issue's picture of the month was sent in by *IC* reader Kenneth Bernardo, from Bay Crane Service in the USA. The picture is of Bay Crane lifting a Norway spruce off a trailer after its 155 mile (250 km) journey to Manhattan, New York. The 90 year old tree is 26 metres tall and weighs 13 tonnes. It was put up at Rockefeller Plaza and decorated with more than 45,000 LED lights and a 3 m wide Swarovski star. Bay Crane used a Liebherr LTM 1130-5.1 wheeled mobile telescopic crane to load the tree in Danville, Pennsylvania, an LTM 1100-4.1 to install it at the Rockefeller Center, and a Terex AC 55 City to hoist the Swarovski star on top.

PEOPLE NEWS

■ The Crane Industry Council of Australia (CICA) has appointed BRANDON HITCH as chief executive officer. Hitch has been a registered professional mechanical engineer in the USA since 2009 and has been a chartered professional engineer (mechanical) with Engineers Australia since 2013. Hitch has taken over from Alan Marshall, CICA's outgoing CEO who has retired. Commenting on his new role, Hitch said, "I am honoured at the opportunity to take on the leadership responsibilities with CICA. I look forward to continuing the momentum that has been building this year and fostering an association that is passionate about improving the industry in areas of access, inspections and maintenance, and training of existing and future personnel."

■ Specialized lift and transport service provider Mammoet Germany has appointed JENS KRAWCZYNSKI as managing director for Mammoet Germany. Prior to his new role, Krawczynski was a petrochemical business unit manager at an engineering company. In his new role he will help Charles Jas to reinforce Mammoet Europe in a business development role, a spokesperson said.

■ MacGregor, part of Cargotec, has appointed JOHN CARNALL as senior vice president for the Global Lifecycle Support Division. Prior to his new appointment, Carnall was vice president, parts and services, at Danfoss Power Solutions. Carnall has also held similar positions at Atlas Copco. He starts in his new role in early 2015, a spokesperson said. Mika Vehviläinen, Cargotec president and CEO, said, "John Carnall will focus on developing our services and building a world-class service organisation to drive profitable growth. He is an ideal choice for this important position due to his long experience and proven track record in developing successful and growing service business in several different global environments." Vehviläinen continued, "We are very pleased to welcome Mr Carnall to the MacGregor team."

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

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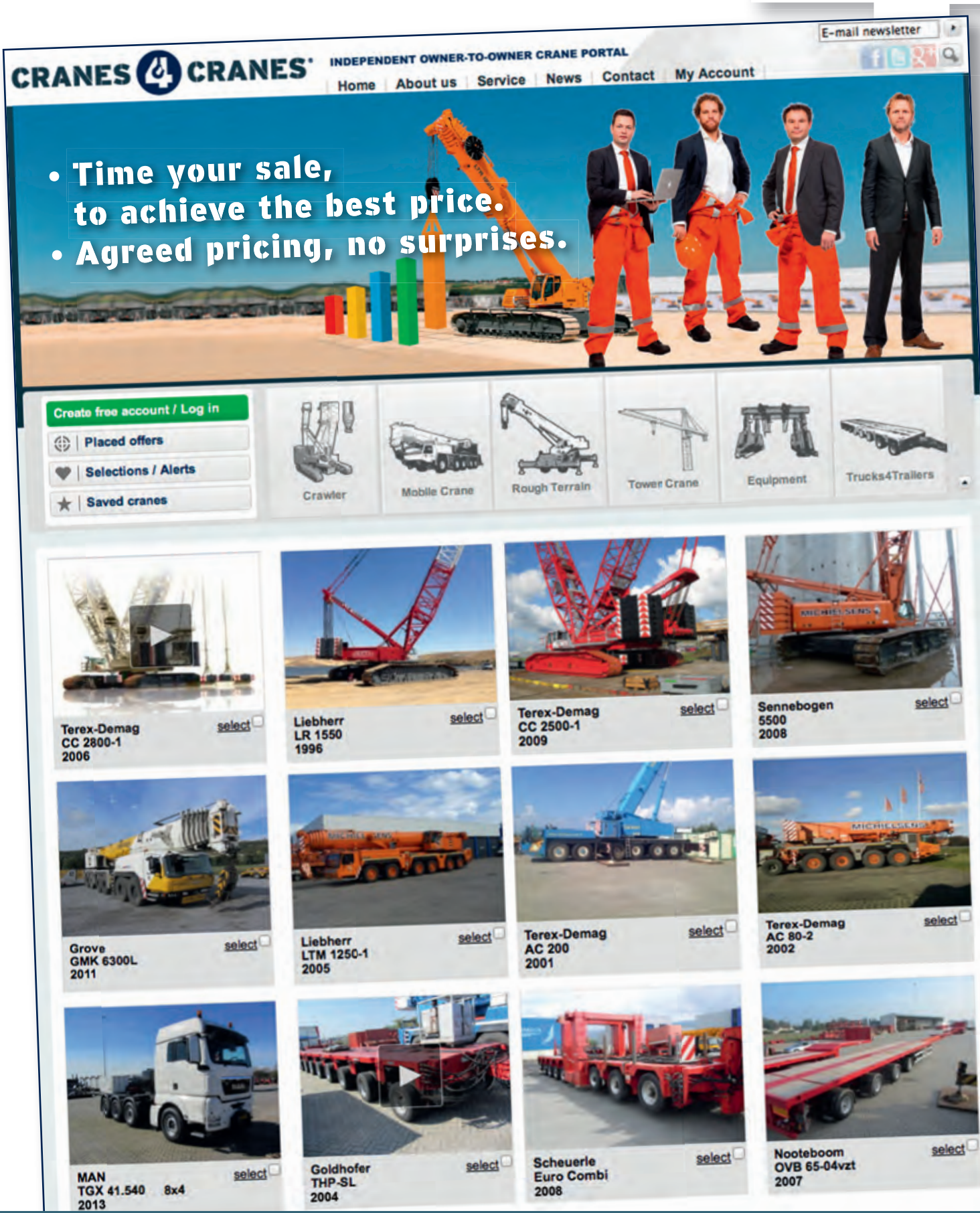

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