INTERNATIONAL

CRANES

AND SPECIALIZED TRANSPORT

Volume 28 ■ Number 3
■ DECEMBER 2019
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New technology

Wind energy

INTERVIEW:
Paul van Gelder, Mammoet CEO

REVIEW:
WCTS

Heavy lifting

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VOLUME 28 ■ NUMBER 3 ■ DECEMBER 2019

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EDITOR'S VIEW

At the 2019 World Crane and Transport Summit in Amsterdam last month one of the keynote speakers, Erich Sennebogen, extolled the virtues of keeping things simple and avoiding unnecessary complexity. What a breath of fresh air that was. It resonated with me in the context of having recently taken delivery of a new car.

A smartphone to go with a new car seems to be a prerequisite these days. It was made a lot easier for me by having children to help set the whole thing up – making the phone and the car talk to each other – almost before turning a wheel.

Don't get me wrong, I love new technology, especially in electronics; for example, the aforementioned smartphones with their engagingly twinkly screens and jewel like icons. The possibilities they hold, and the window on the world they provide, are amazing.

Although I probably could have set my car and smartphone up myself, given enough time, I am sure the process could still be simpler and, well, just better. I am a big fan of keeping things as simple as possible. On a practical everyday level it is irritating that we are so beholden to these mobile devices in terms of having to constantly ensure they have sufficient charge in their batteries. To me the balance between simplicity and sufficient value or utility will only really come when we can forget about having to monitor the amount of charge in a device's battery. Nor do I expect to have to carry a power bank on me or fiddle around with cables.

There are lots of things the technology in a new car (and similarly many other things) can do but are so many choices and variables really necessary? Is a choice made from the outset to buy something because it is already how you like it or, increasingly, because you can fiddle around with it endlessly to make it the way you choose it to be? Default settings for the entire system anyone?

Too much choice can end up being no choice at all. Surely the real value is in something that already best fits your needs at the point of sale; wouldn't that be the supreme sophistication of simplicity?

I guess this then triggers discussion of "needs" and "wants" – a can of worms for another time perhaps, as is looking more at what is meant by technology.

I am looking forward to the festive season with its blend of candles, open fires and no doubt some battery-powered electronic toys – hey, it's my turn, I want to have go.

If you are having time off in December have a good one.

ALEX DAHM
Editor

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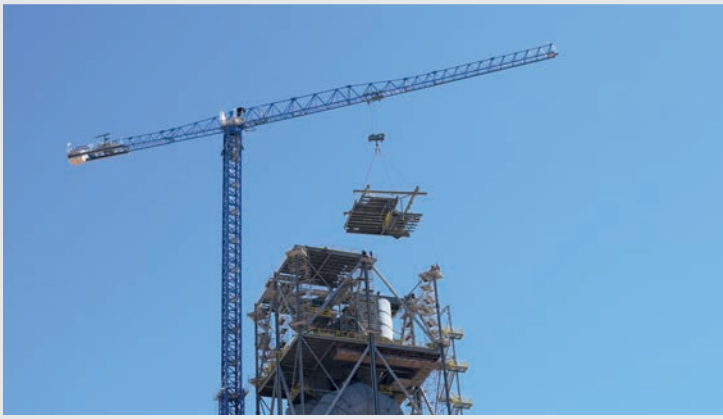

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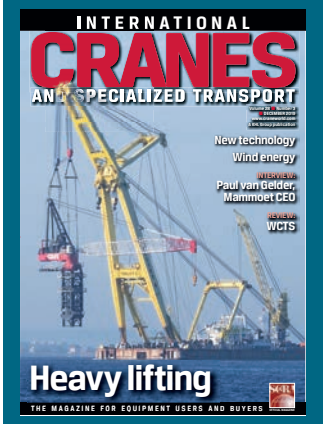

It has been some time since we had a Taklift on the front cover but these giant heavy lift cranes remain busy around the world. See page 16 for more on heavy lifting.

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HIGHLIGHTS

■ Russian crane company Avtokran-Tjumen has added a new Liebherr LR 1500 crawler crane to its fleet for wind work. The 500 tonner is at work constructing wind turbines on the Adygeyskaya WES wind energy construction project in the Republic of Adygea in the Southern Federal District of the Russian Federation. Main contractor for the turbines, Avtokran-Tjumen, ordered the crane during the Bauma exhibition in April. Beforehand it conducted technical studies to determine the best choice of crane.

■ Belley, France-based tower crane sales and rental company Valente, which has represented Manitowoc brand Potain since 1996 and supplies cranes to customers across the Rhône Alpes region, has been recognised by Manitowoc for its work in taking 100 Potain orders to date. The achievement was recognised during a during a ceremony at the Batimat 2019 construction trade show in France. This latest ceremony follows one in April where Valente was recognised for having purchased the most GME tower cranes in Europe and Africa in 2018.

Super cranes up for sale

The two Bigge 125D A-Frame Ring Derrick (AFRD) super heavy lift cranes are up for sale.

San Francisco Bay, USA-headquartered crane rental and sales company Bigge Crane and Rigging Company first put the cranes to work in 2011.

Bigge designed and built them in-house with modular construction heavy lift work in mind. Target applications include nuclear power plant development, oil platform fabrication and decommissioning, and marine construction work. The cranes are now on the market having completed projects at nuclear power plants in the USA.

The AFRDs have a capacity of 4,000 tonnes with 560 feet (171 metres) of main boom. The cranes rotate on a 280 foot (85 metre) diameter track ring. Their hook coverage area is 28 acres (11 hectares). The AFRD has a maximum load moment rating of 125,000 tonne-metres.

According to Bigge, the AFRD has simplified many jobsite logistical problems by allowing for the elimination or consolidation of site heavy transport requirements through its large working range coverage and lift capacity.

"We are excited to bring this piece of equipment back on the market," said Thom Bostrom, senior vice president at Bigge. "It has successfully executed numerous critical lifts over 1,400 tonnes at unprecedented reaches. The AFRD performs like nothing else and has the ability to replace the use of additional heavy lift equipment on an entire project site."

The full load chart for the cranes and further details are available from: afrd.bigge.com

Bigge's AFRD cranes have a capacity of 4,000 tonnes and a maximum load moment rating of 125,000 tonne-metres

Crane rental confidence survey: call for entries

To help provide an accurate picture of the global crane rental market, each year we put together a short questionnaire to survey people in the crane rental industry. We collate and analyse the results anonymously and publish the results in the January 2020 issue of International Cranes and Specialized Transport magazine.

By completing the survey you can help build a comprehensive picture of the global market as it stands and where it is heading next year.

Entering the survey also helps you benchmark your company against others in the industry.

To participate please complete the online survey available at: www.khl/ic. It will just a few minutes to do and entries will be entered into a prize draw.

Dublin, Ireland-based small crane rental company Liffey Crane Hire has taken delivery of a Kato CR-350Ri city crane. The crane lifts 35 tonnes at 2.6 metres and has a six-section telescopic boom that extends from 7.5 to 32.5 metres. It has a maximum lifting height of 33.4 metres. The crane also has a three-section telescopic jib, which extends the possible lifting height to 43.7 metres.

The crane was sold to Liffey through Kato distributor Rivertek Services. Michael Gill, Liffey director, said, "We see huge potential for this crane and its unique fly jib in our industry. It will increase our product offering to our customers and we are very pleased with the support we have received from Rivertek throughout the years and look forward to building on this. We have a long history with Rivertek and Kato; our first mobile crane was a Kato ten tonne city crane which we still operate in our fleet to this day."

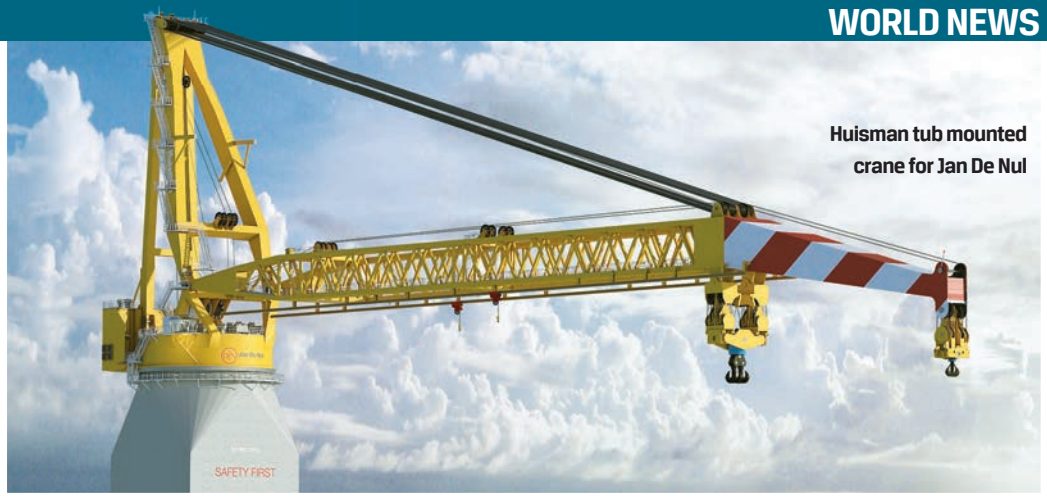
TEREX RTS FROM CROWLAND

Crowland Cranes has been appointed as distributor for Terex rough terrain cranes in the UK and Ireland.

From 5 November Crowland handles all machine sales, parts and service support for the entire Terex RT range, said Peter Issitt, Crowland Cranes managing director.

Crowland has more than 40 years' experience in the crane and lifting industry. It offers 24 hour service via its team of more than ten service technicians. In addition, there is office-based technical support and Crowland will invest in a holding of spare parts at its head office in Peterborough, central England. Crowland is also a Grove RT crane distributor via its Universal Cranes subsidiary company.

Peter Issitt said, "This agreement now provides Crowland Cranes and our customers with a complete product portfolio of rough terrain cranes suitable for all Europe. We have already experienced some very good customer reactions and there's clearly a great acceptance of the rough terrain product in the UK and Ireland. We believe by now offering the Terex portfolio of cranes, this acceptance will only improve and increase the awareness of this unique and very versatile product."



Huisman tub mounted crane for Jan De Nul

5,000 tonner for Jan De Nul

Huisman will design, engineer, construct and deliver a 5,000 tonne capacity tub mounted crane (TMC) for Les Alizés, Jan De Nul Group's newest offshore installation vessel.

Les Alizés will be capable of building the latest generation of offshore wind farms and other installations, plus it will be suitable for decommissioning old oil platforms. Offshore wind turbines can now stand more than 270 metres, have blades 120 metres long, and foundations weighing 2,500 tonnes, Jan De Nul explained.

Huisman will build the TMC in Xiamen, China. Installation will be at the China Merchants Industry Holdings Co. Ltd. shipyard, in Haimen, Nantong City, where Les Alizés will be built. Huisman said it will be the largest offshore wind turbine foundation installation crane on a monohull vessel. Delivery of the crane is scheduled for 2021 and Les Alizés the following year.

Joop Roodenburg, Huisman president

The 5,000 tonne capacity TMC's design is similar to the 3,000 tonne leg encircling crane Huisman is building for Jan De Nul's Voltaire, another new installation vessel. The TMC allows operations with main and auxiliary hoists in extreme weather. It will have Huisman's Dual Main Hoist System for upending large structures.

Les Alizés, (which means trade wind in French) will have a deck loading capacity of 61,000 tonnes and a deck area of 9,300 square metres. It is designed for floating installation so it has a dynamic positioning system instead of jack up legs. Alongside Voltaire it will be the first seaworthy installation vessel in the world designated as an Ultra-Low Emission Vessel or ULEV. It will have diesel exhaust emissions to Euro Stage V certification.

Commenting on the order Joop Roodenburg, Huisman president, said, "Huisman is excited to build upon the working relationship with Jan De Nul to deliver an innovative offshore wind installation solution and support the renewable energy industry to build the future wind farms at sea."

Robby De Backer, Jan De Nul Group director, newbuilding department, said, "For this tub mounted crane we have carefully selected various innovations, all of which will increase safety, workability and swiftness of the operation."

Crane specialist BKL chose all terrain cranes for glass installation in Frankfurt, Germany. Large panes were handled by a pair of four axle Liebherrs, installed as part of the refurbishment of the Frankfurt Exhibition Centre Tower. At 256.5 metres, it was the tallest building in Europe. Having to set the cranes up on an underground car park meant that the LTM 1090-4.2 and LTM 1100-4.2 were the largest units possible.

BKL was working for facade specialist Seele. The company was responsible for the design, manufacture and installation of an 1,800 square metre steel and glass facade. The 90 tonne crane started with the first 17 metre long glass element. It weighed around 6 tonnes, making it one of the largest laminated curved panes of glass to be installed in a high-rise block.

HIGHLIGHTS

The seventh iteration of the GIS show, which took place in Piacenza, Italy, in early October, saw record visitor and exhibitor numbers. More than 11,000 visitors came from Italy, while there was a major increase of industry professionals from around the world, said show organisers. The number of exhibitors exceeded 400 this year, compared to 359 at the last iteration in 2017. Conferences and workshops were also part of the programme, as were three gala dinners attended by around 800 people.

ESTA 2020 AWARDS CALL FOR ENTRIES

Entry forms and full details for ESTA's 2020 Users' Night and Awards – organised in conjunction with ICST – are now available for download on the ESTA website.

Entries can be made English, French, German, Italian and Spanish and the closing date is 17 January 2020. The awards dinner will take place at the Postillion Hotel Amsterdam, Netherlands, on Thursday 23 April 2020.

As in previous years, the judges will choose a maximum of four finalists in each category from which one winner will be selected. The finalists in each category will be announced in March 2020 with the winners revealed on the night.

Mammoet expands at Port of Coeymans

Heavy lift and transportation specialist Mammoet has announced a collaboration with deep water marine terminal Port of Coeymans. The port is located ten miles south of Albany, in the state of New York, and 100 miles north of New York City. The port is owned by Carver Companies, which has interests in the construction, mining, martime and logistics sectors.

The collaboration allows Mammoet access to the port's 400 acre (162 hectare) terminal, storage, load in and load out services, and local barge supply. Mammoet said it also means it is well placed to serve offshore wind projects in the region.

Mammoet has stationed a 660 tonne capacity CC 2800 crawler crane there for heavy lift services inside the port. Auxiliary equipment for staging and storage is also available.

Aerial view of the Port of Coeymans, USA and Mammoet transporting a heat recovery steam generator

The collaboration came about following the development of a working relationship with Carver Companies when it used the Port of Coeymans for the roll-off operation of a fully assembled HRSG module and the Willis Avenue Bridge, among others.

Carver Companies also owns ports in Charleston, South Carolina, Brayton Point, Massachusetts, and Port Manatee, Florida, with similar collaborative possibilities, Mammoet said. The company already has partnerships in Texas and Alabama.

Danish port expands lifting capabilities

Lindø port of Odense, the largest port in Denmark, is expanding its lifting capabilities with a Liebherr LHM 800 mobile harbour crane.

Located between the North Sea and the Baltic Sea, the port agreed the purchase with German manufacturer Liebherr to be ready for the future development of the offshore wind industry and its larger turbines.

Capacity will be 308 tonnes and it will be electrically powered. Liebherr claimed a saving of 300 tonnes of carbon dioxide emission a year, while also being emission-free at the point of use.

The crane will have a high-rise tower extension, said to be the world's largest and strongest of its kind, plus a multi-layer winch for a lifting height of 96.7 metres above the quay.

With a 300 metre cable drum, the LHM 800 will be able to move up to 600 metres along the quayside. It will join an existing LHM 550, with which it will be able to do tandem lifts of offshore wind turbine components, including 400 tonne nacelles.

Representatives from Lindø port of Odense and Liebherr Rostock

Potain dealer Tognaccini Noleggi supplied a self erecting tower crane for repair work on a 14th Century former monastery in Italy.

The Igo 50 was put to work helping to repair 4,000 square metres of damaged roof on the Sant'Orsola building in Florence. It is claimed as the final resting place of Lisa Gherardini, the model for Leonardo Da Vinci's Mona Lisa painting.

Sant'Orsola was derelict for 30 years before the city's current renovation programme started with a view to opening it to the public. Project completion is scheduled for 2023.

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Volvo FMX and Epsilon crane both operated by Drimote radio remote control

Crane and truck first

To improve its operations Roos Kunststof Rijplaten Rental from The Hague, Netherlands, has a new Volvo truck with an Epsilon crane, both operated remotely from one transmitter.

The temporary roadway company's new Volvo FMX 460 8 x 2 tridem truck has a 17 tonne-metre Palfinger Epsilon hydraulic loader crane. The vehicle is used for installation and removal of plastic temporary roadway sheets laid at events. One remote control is used to operate both. It is the first Volvo truck in the Netherlands with this option, Volvo said. The customised solution was developed by the dealer, Volvo Group Truck Center, Palfinger and Drimote.

Bas van Nierop, Roos Kunststof Rijplaten Rental co-owner, said, "The plastic road plates must fit seamlessly together, so it is important to lay them accurately."

It used to be that the driver had to use two remote controls, one to operate the crane and the other to move the truck. Van Nierop said he wanted to bring the operation of the truck and crane together in one control.

"We have been working with it for some time now and the experience is very positive," van Nierop continued. "This solution is particularly useful when installing road plates for events, often over large surface areas. The truck must be moved every two or three ramps.

"The fact that everything can now be done with a single remote control makes work easier for the driver and means work can be carried out faster and productivity increases."

Systems installed to ensure safety during operation include an object detection sensor to monitor the front of the truck and activate the brake when an object is detected. In addition, the vehicle brakes if communication between transmitter and receiver is interrupted. An emergency stop button is also fitted.

It has an electronically-controlled Volvo Dynamic Steering power steering system and the I-Shift gearbox.

Sarens raises the roof in Dubai

UAE-Italian joint venture Cimolai Rimond commissioned Belgium-headquartered heavy lift and transportation specialist Sarens to help raise the steel dome of the Expo 2020 Stadium in Dubai, UAE. The dome was lifted as one piece and weighed 850 tonnes. It was lifted to a height of 46 metres over the course of two days.

Sarens provided 24 units of its 200 tonne strand jacks and associated cribs, and 12 km of strands. All the equipment was shipped in ten containers and assembled on site over the course of six weeks.

Eighteen strand jacks were used for the lift, each positioned 20 degrees around the dome. An additional six were placed on the ground to restrain horizontal movement during the lift, whether from wind or other factors. The jacks were inserted into cribs so they could adapt to different angles and work with more flexibility than if they had been placed vertically. This was key, said Sarens, because 18 jacks pulling up a big structure in unison needed to adapt to its movements, not the other way around. The lift had to be conducted with extreme precision as the structure could easily deform if one jack pulled more than another, Sarens explained. To avoid this Sarens monitored the lift in real time.

For more heavy lift news, see the feature starting on page 16.


During lifting, the dome was monitored to guard against it possibly deforming

PEOPLE IN DEMAND

Kevin Minton, CPA chief executive, opened the event

The skills shortage was a central issue discussed at the fifth Construction Plant-hire Association (CPA) annual conference. It was held mid-October in the UK.

In the opening panel session, Katie Kelleher, a crane operator and appointed person at Select Plant in the UK, stressed the importance of apprenticeships in attracting more women into the industry.

In another panel session, in which the CPA's skills strategy was discussed, Paul Skitt, managing director at the company Business and Skills Support, and Chris Cassley, CPA policy manager, said there are significant skills and employment shortages in recruitment and retention, particularly for plant operators, plant mechanics, hire desk controllers, plant managers and HGV drivers.

Plant operators present the most significant employment and skills challenge, and the ageing workforce is a major contributing factor. Strategies include enhancing the profile of the construction equipment sector, attracting new entrants into the industry, the introduction of apprenticeships, provision of training at both a local and national level, and ensuring that CPA members can access high quality training.

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Third-quarter results help crystallise the economic outlook for companies as we approach the end of the year. CHRISTIAN SHELTON reports

Observing Manitowoc's share price progress compared to where it was last year, it may be approximately 25 per cent down but, in the shorter term, performance between weeks 41 and 46 has shown a sharp improvement, of more than 45 %.

In the company's third-quarter financial results it reported an adjusted EBITDA figure of US$ 42.8 million, which it says represents a $12.3 million or 40 % improvement compared to the prior year.

"Our results prove that we can effectively deliver on our commitments despite challenging market conditions," commented Barry Pennypacker, Manitowoc president and CEO. "Through the transformation of Manitowoc over the past three years, we are better positioned to generate positive returns to our shareholders throughout the cycle while maintaining adequate liquidity."

Another item of 'good news' released by Manitowoc, that may have buoyed investor confidence, was regarding the 100th sale of a Potain tower crane by its French agent Valente.

Another company diplaying a large share price growth compared to the previous period but also down on where it was a year ago is Terex. The company reports it is enjoying strong demand from its truck business, Terex Trucks, and it has appointed a new dealer in France to meet the country's growing demand for articulated haulers.

Another company expanding its deler network and displaying a positive change compared to the previous period is Hitachi Construction Machinery.

The company's European division has appointed new distributors, Alwark SIA and Alwark UAB, in Latvia and Lithuania, respectively.

Hitachi said its outlook for the region was positive and that Lithuania's construction market is anticipated to grow by 2.9 % annually for the next eight years, thanks to its strategic location between Russia and the European Union.

The company said massive infrastructure projects such as Rail Baltica and related residential and commercial developments, would drive growth in the region's construction market over the next ten years.

Palfinger also displayed a good positive percentage compared to the previous period. In its third-quarter results it reported a 10 % increase in revenue, a 31.6 % rise in the consolidated net result for the period, and an EBIT margin of 9.2 %. The company says its strong performance is driven by its new organisational structure. "This is helping us to unlock synergies within the Group and achieve efficiency gains," said Andreas Klauser, CEO at Palfinger AG. ■

DECEMBER *IC* SHARE INDEX

STOCK	CURRENCY	PRICE AT START	PRICE AT END	PRICE CHANGE	% CHANGE	PRICE 12 MTHS AGO	12 MTH % CHANGE
IC* Share Index		**64.85**	**66.73**	**1.89**	**2.91**	**50.92**	**31.05**
Legacy *IC* Share Index**		223.60	251.33	27.73	12.40	318.31	-21.04
Dow Jones Industrial Average		26,346	27,782	1,436	5.45	25,340	9.64
FTSE 100		7,168	7,312	144	2.00	7,001	4.43
Nikkei 225		21,552	23,303	1,751	8.13	22,271	4.63
Hitachi Construction Machinery	YEN	2,478	2,807	329	13.28	3,545	-20.82
Konecranes	€	26.18	29.01	2.83	10.81	27.85	4.17
Kobe Steel	YEN	560	563	3	0.54	1,001	-43.76
Liugong	CNY	6.34	6.18	-0.16	-2.52	9.84	-37.20
Manitowoc	US$	10.70	15.57	4.87	45.51	21.01	-25.89
Palfinger	€	23.70	28.25	4.55	19.20	27.00	4.63
Sany Heavy Industry	CNY	14.42	13.89	-0.53	-3.68	8.32	66.95
Tadano	YEN	995	1,058	63	6.33	1,251	-15.43
Terex	US$	23.37	28.87	5.50	23.53	36.29	-20.45
XCMG	CNY	4.52	4.38	-0.14	-3.10	3.40	28.82
Yongmao Holding	SGD	0.84	0.88	0.04	4.17	0.50	75.00
Zoomlion	CNY	6.06	5.99	-0.07	-1.16	3.25	84.31

**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	7.125	7.021	-0.1045	-1.47	6.92	1.46
€	0.9076	0.9072	-0.0004	-0.04	0.8630	5.13
Yen	107.42	108.68	1.26	1.17	111.79	-2.78
UK£	0.8176	0.7770	-0.0406	-4.96	0.7604	2.18

Period: Weeks 41 to 46

First choice

A series of offshore and onshore firsts comprise the core of this month's feature. CHRISTIAN SHELTON reports

With two claimed new world records and at least three 'firsts' covered in this heavy lift sector round-up, it is clear that progress with regards to new equipment and techniques is being made both on land and at sea in this important lifting sector.

Starting with a world record lift by a crane vessel, the semi-submersible super heavy lift crane vessel (SSCV) Sleipnir, owned by Netherlands-headquartered offshore oil and gas contractor Heerema, made a record 15,300 tonne lift over the weekend of 7 and 8 September 2019. It was used to install a topsides module for the Noble Energy Leviathan gas field development in the Mediterranean Sea off the coast of Israel. It was the larger of two main topsides lifted in by Sleipnir. Total weight was 24,500 tonnes. Both lifts were completed in less than 20 hours, Heerema said.

Sleipnir was built by SembCorp Marine in Singapore. The vessel has a capacity of 20,000 tonnes on two revolving cranes. It is 220 metres long by 102 metres wide and carries a pair of turret cranes each rated to lift 10,000 tonnes, which can work in tandem or individually. The revolving cranes, built by Dutch lifting, drilling and subsea solutions provider Huisman, can lift their 10,000 tonne maximum load to a radius of 48 metres. Capacity is still 7,000 tonnes at 62 metres radius and 4,000 tonnes at 82 metres. Maximum radius is 102 metres. The auxiliary hoist lifts 2,500 tonnes to 60 metres radius.

Core components

Instead of bogies or large wheels for the slew system, as seen on traditional tub cranes, the Huisman ones have 30 metre diameter bearings designed and made in-house. A primary benefit is to save a substantial amount of weight, Heerema said. Also on board is a pedestal mounted lattice boom crane lifting 70 tonnes at a 12 metre radius. Up to 400 people can be accommodated.

The brakes for the 10,000 tonne capacity cranes are from German brake manufacturer Pintsch Bubenzer. They are rated for 8,000 Nm (5,900 ft-lb), which Pintsch Bubenzer says is an increase of around 35 per cent over standard brakes of the same motor frame size. Each brake is IP67 rated for submersible protection.

Power is from 12 Tier III, four-stroke MAN Diesel & Turbo 8L51/60DF engines which can run on either low sulphur marine gas oil (MGO) or liquified natural gas (LNG). Each engine is rated at 8 MW, giving a combined total of 96 MW, providing a transit speed of 10k. They are grouped three each in four engine rooms.

The electrical part of the power and propulsion system include 12 sets of 8 megawatt (MW) generators, eight units of 5.5 MW propulsion motors, medium-voltage switchboards, transformers and MV7000 drives. These were provided by General Electric's Marine Solutions business.

The vessel has a valve remote control (VRC) system from Emerson Automation Solutions. The custom, fully-redundant Damcos VRC. The system controls the critical task of stabilising Sleipnir during lifting operations by transferring water between onboard tanks to counter-balance the weight of shifting loads. The VRC comprises a total of 847 valves, actuators, local power units (LPUs), and eight interface cabinets connected by a P-NET communication bus.

Eight 5,500 kW underwater mountable thrusters will be responsible for the accurate

XCMG's 4,000 tonne capacity class XGC88000 crawler crane lifted a 1,926 tonne washing tower

SSCV Sleipnir lifted a 15,300 tonne topside in September

BARGE CRANE CARRIES TOWER CRANES

Two 330-tonne capacity M2480D tower cranes, owned by Australian crane company Marr Contracting, have been lifted into location while fully-assembled in Turkey using a Taklift 4 floating heavy lift barge crane.

The cranes weighed 600 tonnes each and, according to Marr Contracting, this is the first time cranes of this size have been lifted into place in one piece.

The heavy lift luffer parts were shipped from Sydney to a dry dock at Gallipoli (Gelibolu), Turkey, where they were assembled onshore on purpose-built foundations. On 3 November 2019 the first M2480D was lifted and transported a kilometre to the middle of the Dardenelles (Çanakkale Strait) by the 2,200 tonne capacity Taklift 4 floating heavy lift barge crane. The second crane was carried out onto the water on 8 November 2019.

Both cranes are now set up and ready to begin work on the 1915 Çanakkale Bridge on behalf of EPC (Engineering, Procurement, Construction) contractor DLSY (Daelim – Limak – SK E&C – Yapi Merkezi) Joint Venture.

The 1915 Çanakkale Bridge is due for completion in 2022 and will become the world's longest span suspension bridge, connecting the towns of Gelibolu (Gallipoli) on the European side of Turkey with Lapseki on the Asian side.

Aerial shot of the M2480D being lifted by Taklift 4

positioning of the vessel. These have been supplied by Finnish engine and power systems manufacturer Wärtsilä. Four of the eight thrusters will also be retractable and have been developed specifically for this project. In addition, Wärtsilä supplied auxiliary equipment for steering and lubrication, control units, and Wärtsilä's Propulsion Condition Monitoring Service (PCMS). Wärtsilä also supplied centrifugal pump packages.

Palfinger Marine supplied two bulk loading stations while Rolls-Royce suppled an £8m ($11.3m) 12-point mooring system.

Wind farm work

Dutch crane and offshore engineering specialist Huisman will also supply a 4,000 tonne crane for Royal Boskalis Westminster N.V. The offshore mast crane (OMC) will be installed on the Boskalis vessel Bokalift 2, currently under construction. It follows Huisman's delivery of a 3,000 tonne OMC for Bokalift 1 in 2017.

The 4,000 tonne capacity is available up to 100 metres above the deck which allows wind turbine jackets to be lifted off it. Adding the fly jib allows smaller components to be lifted 125 metres above the deck. Monopiles and other long loads can be upended from horizontal to vertical.

Bokalift 2's first project will be installing jackets for the Taiwanese Changfang and Xidao offshore wind farm, a project recently awarded to Boskalis.

Huisman designed its OMC to have a small footprint and no tailswing, maximising space on deck for payload. Its capability will future proof it for installing current and future generation offshore wind turbine foundations. In addition it should find work in offshore oil and gas, decommissioning and salvage.

Land-based lifting

When it comes to land-based lifting, the oil and gas sector is continuing to be a fruitful source of work. On 24 October 2019, Chinese crane manufacturer XCMG used its 4,000 tonne capacity class XGC88000 crawler crane to lift a washing tower weighing 1,926 tonnes in Jubail Industrial Zone, Dammam, Saudi Arabia. This was XCMG's first job outside China, commissioned by Chinese oil and gas enterprise Sinopec (China Petroleum & Chemical Corporation).

The tower measured 101.1 metres high and 8.6 metres in diameter. The 88,000 tonne-metre rated crawler lifted the tower with its main boom at 102 metres and its auxiliary boom at 27 metres. A 1,250 tonne capacity crane was used for tailing duties.

According to XCMG it took 30 days for the crane to be transported via boat from China to Saudi Arabia. XCMG said the sand and high temperatures encountered in the desert did not pose any problems for the crane. The heavy lift was carried out over a time frame of around five hours.

The crane will be used twice more on this project, to lift two reactors weighing 1,312 tonnes, before working on related projects for the Saudi National Natural Gas Company and at an oil refinery project in Oman.

According to XCMG, since the crane's launch in 2013 it has travelled over 30,000 kilometres and participated in 11 large projects in eight provinces across China where it has successfully completed 150 lifts »

Al Faris used its Enerpac SBL900 hydraulic gantry to load over-sized oil refinery equipment

Eseasa using its Liebherr LR 13000 crawler crane to load one of seven oil platforms in Mexico

ALE lifted a 2,100 tonne steel bridge to a height of 120 metres in Azerbaijan

with a combined total weight of more than 120,000 tonnes.

Another heavy lift for the oil sector in the Middle East was carried out by heavy lifting company Al Faris Group which provided the complete logistics, from loading to transportation, for over-sized oil refinery equipment being moved between Jafza Port, Dubai, to storage at Dubai World Centre, UAE.

The equipment included three sections of the refinery's column which were up to 10.4 metres in height, 30 metres in length and 9.5 metres in width and weighed up to 315 tonnes.

For the offloading process, Al Faris said it had a tight timescale and confined space to work in. It also had to engineer a customised platform using steel mats to reach the required lifting height for the gantry.

The Enerpac SBL900 folding boom, telescopic, hydraulic gantry was used, equipped with two stage lifting cylinders enabling lifts up to 11.3 metres and loads up to 604 tonnes at the top of the second stage. An octagonal boom is designed to add strength for increased capacity and lifting height, and mechanical locking permits load holding for extended periods of time. Self-propelled tank rollers are designed to provide synchronised travel and optimise load distribution.

The SBL 900 gantry's control system allows users to operate the lift locally at each leg or use the Intellilift remote control. The wireless system ensures continuous control and monitoring of lifting and travel operations while providing complete visibility of the load.

Custom parts

Another company to utilise custom parts in a heavy lift is UK-headquartered lift and transportation specialist ALE. It used a custom transport frame during the heightening of ten ship-to-shore cranes at the Port of Felixstowe, UK, for Rotterdam based crane heightening specialist ZPMC Netherlands. Five of the cranes weighed 1,530 tonnes and five weighed 1,650 tonnes.

The custom transport frame was used to support the cranes as they were being transported to designated area and jacked-up for heightening. According to ALE, this saved time compared to transferring the cranes between separate support structures during each upgrade procedure.

The cranes were jacked-up 6 metres and 10 metres, depending on their required final heights. These lifts were performed using ALE's Mega Jack 800 system in a four-tower configuration. Following the upgrades the cranes were jacked down and returned to their original locations. The upgrade work means that the port can now accept larger vessels carrying more layers of shipping containers, helping it take steps to accommodate a predicted doubling in capacity by 2030.

ALE also used custom parts during for what the company claims as a record-breaking lift during the construction of the La Luna hotel in Baku, Azerbaijan.

A curved steel bridge, weighing 2,100 tonnes, was installed between the hotel's two towers, at a height of 120 metres, using specially-designed jacking beams equipped with strand jacks mounted on the hotel's towers, 138 metres above the ground. ALE says this was the greatest weight to ever be lifted so high using this technique. The entire beam assembly consisted of jacks, beams, clevises and strand jacks, with SPMT used to provide additional support to the clevises.

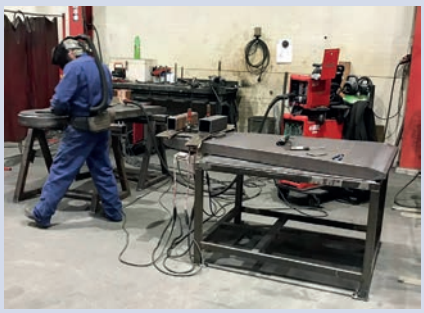
In Mexico, Mexican crane and heavy haulage contractor Eseasa used its Liebherr 3,000 tonne capacity LR 13000 crawler crane to load seven oil platforms onto barges at the port city of Tampico, on the Gulf of Mexico, for Mexican oil group Pemex.

The platforms weighed up to 1,200 tonnes and were positioned on the barges using a crane radius up to 38 metres. Eseasa saved time using the large crawler compared to an alternative method previously employed which utilised SPMT and jack-up systems. With SPMT and jack-up systems the load-in took around 18 hours whereas with the LR 13000 the load-in took three hours.

The use of SPMT and jack-up systems took longer because they required the barge to be positioned at a 90 degree angle to the quay and held in place by several tugs. This also meant that the waterway needed to be closed, adding to the costs incurred by Eseasa.

Using the crawler crane meant that tugs were required for a shorter time than with the alternative technique and smaller barges could be used, too, since they did not have to accommodate the heavy SPMT, further reducing costs. ■

NEW CRANE DEVELOPMENT



Following finalisation of structural engineering details and appointment of suitable subcontractors, the first steel has been cut for Mammoet's heavy lift Focus 30. It is a 2,500 tonne capacity class lattice boom crane that can be erected vertically without the need for large areas of clear ground in which to assemble and lay out a long boom.

Around 1,000 tonnes of steel will go into the new crane which will be built by a group of several subcontractors. The first Focus crane is scheduled to be available in the second quarter of 2020.

Complementary

Mammoet has a long history punctuated with takeovers and name changes, the latest of which is the acquisition of ALE. Such big news was naturally a major topic of ICST's interview this month. PAUL VAN GELDER, Mammoet CEO, talked to ALEX DAHM about the company and the industry going forward

In talking to Paul van Gelder, chief executive officer at Mammoet, the aim was to learn something about him, the state of the market and the direction the world's largest heavy lift and transport company will now take, especially in light of its impending takeover of fellow international transport and lifting specialist ALE.

Although van Gelder has only been in the crane industry since 2017, he knows it well. Following a distinguished career in the Dutch Navy, van Gelder returned to the civilian world in 2004. After a couple of years in the aviation industry he joined BP in the Netherlands as a maintenance manager. Soon after he was made project director and, at the end of 2007, he became managing director. In 2010 he changed jobs to become CEO of the national grid company in the Netherlands. After three years he left to troubleshoot a company in distress. A couple of years later he was approached by SHV, Mammoet's parent company, where he joined the board of sister company Eriks.

In 2017 SHV asked him to join Mammoet from where van Gelder takes up the story. "At that time Mammoet was in a period of ongoing change and had some difficult projects. When I stepped in Jan Kleijn [existing CEO] and I already knew each other. We changed the whole structure of the company, putting in place a new board. I stepped in as CEO and since then have been working on a new strategy, strengthening the regions and also really navigating this ship through some storms, I would say. This is where we are right now and things are looking much better."

New strategy

At the end of 2017 Mammoet started an in-house strategy called Reshape to Win. "Its purpose is to transform Mammoet and prepare it for a future in which customers, employees and societies place ever greater demands, not only on our performance as such, but also on the way we do business: safely, responsibly and sustainably.

"Our industry will be greatly transformed, say, 30 years from now. Although that looks like a very long time, the industry at large and so Mammoet, too, will need such time to develop according to demands of a globalising economy that's conscious of its social and environmental footprint. In doing so we want to retain our market leadership."

Of course, this is first and foremost about commercial excellence, van Gelder says. "It's about serving our customers in the best way and trying to achieve maximum customer satisfaction. For Mammoet it means we focus on three areas where we serve our customers best: projects, including mega-projects; long term service agreements and master service agreements; and daily rental of cranes and transport equipment. These areas complement one another and each area has its own customer requirements regarding engineering capacity, service levels, safety and efficiency.

> "We are looking with our innovation department at how we can open up new markets. We are already quite active in civil construction and we feel we can do more"
>
> **PAUL VAN GELDER, Mammoet CEO**

"This can only be achieved if we have the best people in the business which, in turn, means being the employer of choice. It also means operational excellence and efficiency. From that basis, we want to grow the company further, both from within, with our innovation agenda, for example, and outside in the market place through organic growth.

"As a CEO I'm a strong believer in organic growth. You should always go for organic growth and try to retain your customers. Inorganic growth is also something we should be looking at. Out of that came the incentive to acquire ALE.

"We also laid down a number of basic principles we want to adhere to and drive through the organisation. For example, we want to reduce complexity and to improve the speed of decision making. We'd like to see entrepreneurial people taking accountability."

July 2018 saw the rollout of Reshape to Win. "I am very proud to say that we've already achieved quite something, with the acquisition of ALE and the development of the Focus crane. We're now looking at developing a new wind crane for higher altitudes. We're also pushing for modular concepts. All these things have come about already as a result of the strategy that we're executing right now."

Ownership incentive

Changes were also made to reduce complexity. The number of operating regions was cut from nine to five. They now comprise: North America; Europe and Russia; Middle East and Africa; Asia Pacific, including Australia; and Latin America. What does that mean in terms of the equipment fleet?

"In general, what we try to do is make sure that the regions feel ownership of the equipment. If they feel ownership, they will have an incentive, they will feel a push to utilise the equipment, to push the equipment into use. Cranes north of 1,600 tonnes lifting capacity, however, are part of the global pool of equipment."

In terms of the market generally, while much of the work is still oil and gas, where else is Mammoet looking for business? "We are looking with our innovation department at how we can open up new markets. We are already quite active in civil construction and we feel we can do more. We look at our home market, the Netherlands, as a testing ground for new concepts. What we see there is that construction sometimes

business

needs to take place in a congested city, not just in open areas.

"Continuously we are having internal discussions on how we can add value to construction in the civil side. We also experience that the markets need these rapid replacement options. Nowadays you can't take out a bridge for longer than two days, otherwise traffic really becomes a mess. You should be looking at concepts that help in the construction of bridges and viaducts to do it overnight or in a weekend. We are looking at how we can use our SPMT, how can we make use of special skidding techniques, to allow for rapid bridge replacement."

To achieve this will there be more specialized equipment or will Mammoet make more clever use of standard equipment?

"It's both. We have a lot of standard equipment. We want to push utilisation of equipment we own as much as possible. Before we move into developing new equipment we will always first take a look at what we have on the shelf in our yards and see how can we make use of that. You don't want to invest continuously in getting new equipment because these kinds of companies in general have a tendency to collect a lot of equipment. The trick is really to make use of your existing equipment in a smarter way.

Mammoet and ALE

At the time of writing Mammoet's acquisition of UK-based international heavy lift and transport specialist ALE was reported as progressing well, with only a couple more countries to give approval. What Mammoet is paying for ALE is undisclosed. Van Gelder commented, "We paid the right price." In terms of combined turnover van Gelder said, "Mammoet is around € 1 billion, ALE is around € 350 million so you're roughly looking at € 1.3 or 1.4 billion.

"Mammoet is acquiring 100 per cent of the shares of ALE and, although it is a takeover, we treat it as a merger of two equal companies. We are buying ALE but in the way we are going to integrate it, we are trying to do that on an basis of equality and give everybody the same opportunity.

"In general, when I travel around in the Mammoet organisation I see that the people in both organisations are very enthusiastic and I hear the same thing from Mark Harries [ALE co-owner]. Both our employees view it as a great step because they see that our organisations are complimentary.

"It will help strengthen certain regions and together there is a new future for Mammoet and ALE. People are very enthusiastic. Regarding the integration we sometimes have to really calm the people down because they want to move very fast. At this time we are still awaiting the full approvals of the competition authorities and until we have that we will not move together with ALE.

"There's absolutely great enthusiasm and so far I haven't picked up on any major concerns in the people. There will be some redundancies but let us first look at the integration and define the new company structure. It is difficult to find the right people so our view is to first define the structure. We have already looked at the organisational structures of both companies and feel that it is a good match. Then will take it step by step. We will first announce the appointment of the people who will lead the regions. From there on those people will start to drive the integration through their respective regions.

"We will not keep the name ALE so the new company will be called Mammoet. We will continue with the tagline of ALE. After closing, when we become one company, it will read, 'Mammoet, Smarter, Safer, Stronger. We're saying farewell to the Mammoet slogan [The biggest thing we move is time]. The announcement has received very positive reactions."

A good fit

In terms of the two companies being a good fit there are many areas where they will complement each other, van Gelder says. "If you look at the regions and you look, for example, at America, Mammoet has a very strong organisation in North America. In Latin America ALE is strong in Argentina and we have an operation in Brazil, for example, so they are complementary. Europe, Russia and the Americas are the two biggest regions for Mammoet. In the Middle East ALE is stronger and in Asia Pacific ALE also has a very strong presence. Their presence in Asia Pacific and in the Middle East will certainly strengthen our regions »

for further growth and development."

Turning to ALE's equipment fleet, what is van Gelder really looking forward to getting his hands on? "Well, what we have really come to like in ALE is the fact that they are a very innovative company and that they've done great research and development, especially with the development of new equipment over the last five to ten years. Mammoet on the other hand is further in developing as a corporate organisation, since we are significantly larger. Following our fast growth from 2000 to 2012, we have implemented management practices that help us steer a company of this size in the right direction.

Paul van Gelder at the recent World Crane and Transport Summit in Amsterdam, Netherlands

Taking stock

"We will look at what comes with the acquisition, what kind of equipment we will get. We are very glad to take over the SK cranes, which are different from our ring cranes. We think they are well engineered and efficiently constructed. We'll have to learn their capabilities and how to integrate the people that come with them in our existing organisation. We want to focus on this first. It will take a couple of months or maybe even a year or so, and then let's take it from there.

"We also are very glad to take over the Mega Jack systems. We have the skillset in jacking but they are further on than Mammoet. I think, however, the true value will not come from the equipment but from the people. The most important thing is that we want the best person for the job and we are looking at all the people in the ALE organisation and also in the Mammoet organisation. It will be a major step in the whole integration moving forward.

Looking ahead what is next for Mammoet in terms of further expansion? "For now we have to concentrate on the integration. Buying a company is a tricky process. The real challenge is in doing the integration. This is where you begin to create value or destroy value. For now in our strategy Reshape to Win, we will focus on the integration, reduce complexity, and get the maximum out of the new organisation before we will look at acquiring any other companies."

A longer version of this interview will be available online at: www.khl.com

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MADE FOR YOUR MISSION

New-generation Nooteboom flatbeds

The Teletrailer Longrunner

Wijchen, Netherlands-based trailer manufacturer Nooteboom has launched the Teletrailer Longrunner, its latest generation of lightweight extendible flatbed trailers.

The trailer is available with a choice of two or three hydraulically steered axles and a single or double extendible load floor, which can be lengthened to a maximum of 30 metres. The manufacturer said this makes it particularly suitable for the transport of long, self-supporting loads such as steel and concrete structures and for the transport of containers.

The trailer has a net maximum payload of 42.5 tonnes at 80 km/h. Its deadweight is from 7.3 tonnes. Nooteboom says the chassis is light due to the use of high-grade steel. Hydraulically steered axles provide a steering angle that's greater than 50 degrees.

A new TUV-certified headboard has been designed. Nine versions are available in different heights, either completely closed or with an open frame at the top. According to Nooteboom, the headboards comply with NEN-EN 12642 code XL standards and are strong enough to stop at least 50 percent of the load capacity, up to a maximum of 25 tonnes.

A choice of tyre sizes is available, including 245/70R17.5, 435/50R19.5, 275/70R22.5 and 385/65R22.5. Trailers can have SAF or BPW axles and drum or disc brakes. Electronic air suspension and a manual control are standard

12 WEEK DELIVERY TIME FOR TRAILERS

Kampen, Netherlands-headquartered trailer manufacturer Broshuis has announced that the delivery time for most of the trailers in its range is now 12 weeks. This was made possible, the manufacturer said, following the opening of its fully automatic factory in the summer of 2018.

The short delivery time is also due to a restructuring of the rest of its factory halls with the aim of increasing efficiency, the Dutch manufacturer added.

Ship to substation site delivery

A pair of 335 tonne transformers presented a delivery challenge for Collett & Sons in the South East of England.

Daher Projects contracted Collett to make a 30-mile (46 km) trip using its 500 tonne capacity Scheuerle girder bridge trailer. The transformers were destined for the Sellindge substation in Ashford, Kent.

Both transformers arrived on the same ship to Dover. The first one was lifted from the hold and placed on self propelled modular transporter (SPMT) before being put onto stools for storage. The second unit was loaded straight into the girder bridge trailer.

The overnight journey took six-and -a-half hours. The route took in the outskirts of the town of Folkestone before hitting the M20 motorway towards the site. Planning for the job started in January 2019. Route surveys were carried out, including topographical surveys and swept path analysis to identify any required modifications and street furniture removals. The route included an alternative to an impossibly tight right turn on one of the M20 junctions. The transport continued towards the next junction at Ashford before heading back down the motorway to the site's access road and on to the site itself.

One of the two transformers on Scheuerle SPMT

Options for moving on site were restricted by length so operations began to transfer the cargo from the girder bridge to SPMT. Mats, supports and beams were positioned under the transformer before the girder bridge hydraulics were used to lower it. The side frames of the bridge were then driven clear. Climbing jacks lifted the transformer high enough to get SPMT underneath. A four-file, ten-axle configuration with a power pack was used. With it jacked back down onto the SPMT it was manoeuvred to a temporary plinth ready for a jacking and skidding operation to get it into its final position.

Collett then went back to Dover for the second transformer, following the same procedure as the first one.

Hydraulically steered axles offer good manoeuvrability said Nooteboom

features. A Wabco lift axle control or Wabco smartboard can also be specified. This allows control of many functions, including raising and lowering, axle load readings, setting a second ride height, checking the odometer, and operating a lift axle. Its minimum load floor height is 1,145 mm.

Storage options include a series of open or lockable boxes. They are mounted underneath the load floor as a substructure, which varies in size depending on the trailer type and the chosen load floor length.

LED side-marker lights in the side rail are available. These can be fitted on the extensions as an added option.

To further increase road safety the rear side-marker lights operate synchronously with the flashing of the direction indicators. Nooteboom said it has done this in anticipation of impending future regulations regarding side marker lighting.

FAYMONVILLE FOR FINLAND

Faymonville 2+4 VarioMax combination carrying more than 75 tonnes in Finland

Finnish customer Tmi Pentti Toivanen has added a new 2+4 VarioMax combination trailer from manufacturer Faymonville to its fleet. It has pendular axles and a low construction height with flat outer beams. An ideal loading height under extreme load is guaranteed, Faymonville said.

The company has used it to transport a Mantsinen 60 material handling machine. It weighed 75.7 tonnes and was moved 1,120 km from Ylämylly to Inkoo and on to Äänekoski in Finland.

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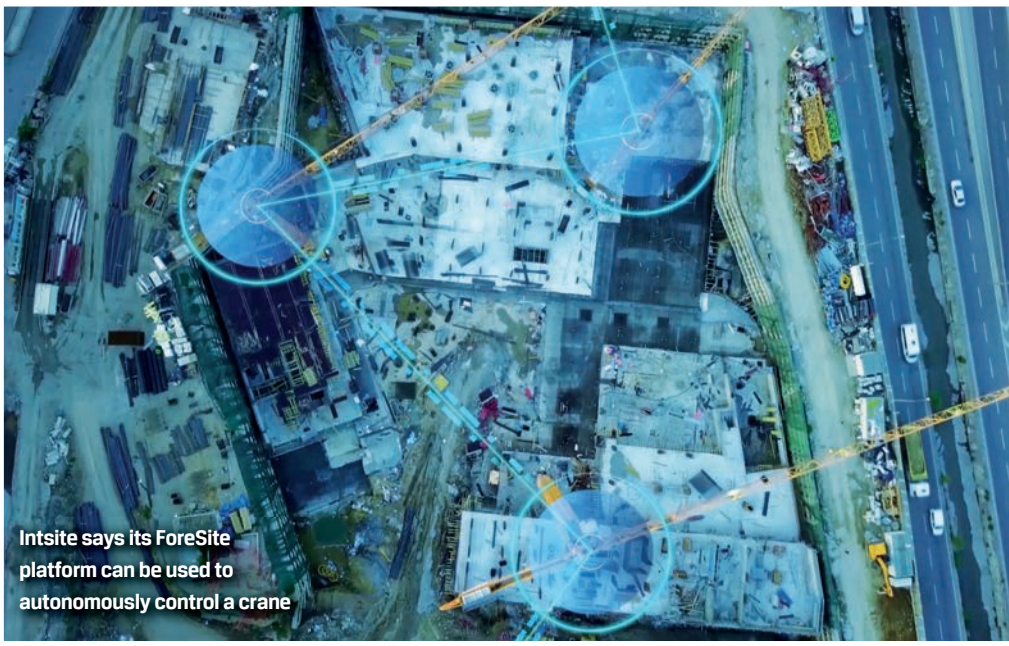
From map to app

From digital twins and autonomous cranes to augmented reality and learning cameras, technology and electronics are breaking new ground on the construction site. CHRISTIAN SHELTON reports



Intsite says its ForeSite platform can be used to autonomously control a crane

'Humans have an ancient desire to make machines work for us without intervention'. This was a quote that Marcel Flir, head of product management - digital solutions, Liebherr-Werk Nenzing, opened his presentation with at our *World Crane and Transport Summit*, in Amsterdam in November (speaker presentations available online now).

Flir's presentation, titled 'digital solutions for the construction site of the future', quoted Nick Hertzman, content strategist at cloud-based geographic information system (GIS) mapping company Unearth Technologies, and the statement encapsulates the direction technology is taking the modern construction site while underscoring that this aim is nothing new. "Technology enables us to overcome interfaces and reduce complexity," Flir continued. "It's about productivity, efficiency, safety, and completing on-time." And it's these elements that comprise the end goal of many of the latest tech and electronic products on the lifting and specialized transportation market referenced here.

Unearth Technologies states on its website that construction software should do three things well: shorten, simplify, and document work. One of the best ways of doing this, Unearth Technologies asserts, is by digitising one of humanity's oldest tools: the map. "Organising a construction site into files and folders doesn't make sense," Unearth Technologies claims. "Organising a construction site by location does. Maps are the only way to effectively manage a physical project. That's why place-based construction software is the future of construction. As digital construction maps become the new frame of reference for projects, we will slowly see them develop into the ultimate tool: digital twins of construction sites."

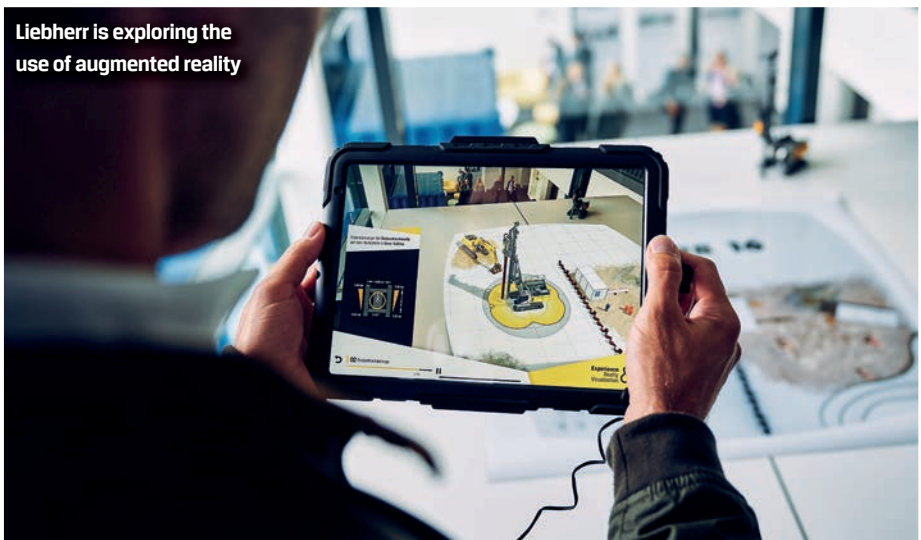
Twin technology

The difference between a digital construction map and a digital twin, Unearth Technologies says, is that the digital twin provides live updates of site progress without human input, giving users the ability to remotely monitor and control construction.

The possibilities of digital twin technology are also being explored in a collaboration between UK construction company BAM Nuttall, tech-firm Iotic, and researchers at Cranfield University in the UK. Between them they have developed an AI-based computer-vision system using digital twin technology in a bid to increase on-site productivity and operational performance in construction.

Under the banner 'The Learning Camera' they have used a standard webcam integrated with an IoT (Internet of Things) framework of smart sensors to collect real-time environmental data, such as wind speed and weather conditions, combined with contextual information, including location, date and time. All this data is fed into a cloud-based system to create digital twins, which they say bridge the physical and virtual worlds.

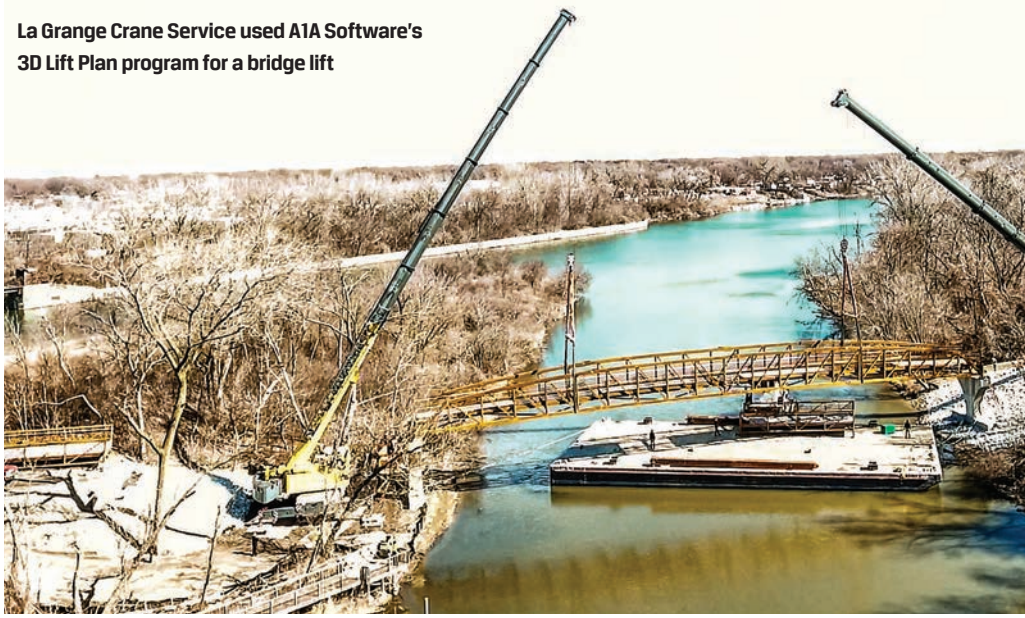
Iotic describes its digital twin as an autonomous and interoperable version of a 'thing' or an asset with all its data and controls that can interact, interrelate and behave in a digital environment as its twinned counterpart in the real world. Pairing these two worlds with the Learning Camera enables the monitoring and analysis of on-site data to identify and head off problems before they cause potential delays, accidents and increased costs, while also helping with future planning by being able to run accurate simulations with real data, the »



Liebherr is exploring the use of augmented reality

company claims. Specific applications could include programming cameras to recognise abnormal activity on a construction site 24 hours a day and then generate alerts so that someone can attend to rectify any problems. This reduces the need for repetitive on-site checks and security monitoring in hazardous areas and all weather conditions, Iotic says.

"We are very excited by the impact this could have on productivity and in providing construction staff with a safe working environment," states Sophie Peachey, head of customer success at Iotic.



La Grange Crane Service used A1A Software's 3D Lift Plan program for a bridge lift

Autonomous crane

Another company exploring ways in which to increase efficiency, safety and profit using a continuously updated site map, and a crane activity dashboard, is Israeli startup Intsite. The company describes itself as operating in the machine vision technology for heavy machinery arena which it defines as a "new field combining computer vision with AI, machine learning, deep learning, and algorithms from the aerospace industry".

Within this area of work the company has developed an autonomous crane utilising its ForeSite platform. "ForeSite quickly and inexpensively transforms any existing crane into a smart, connected, and autonomous machine," explains Tzach Ram-On, co-founder and CEO at Intsite. "Advantages of this include: 24-7 operation; real-time detection of all fixed and moving objects on the worksite; optimised trajectories and movement patterns; reduced time between tasks; and a connected, synchronised network from which to co-ordinate jobsite activities. The real-time insights gained regarding the construction process across all areas of the worksite enhance decision-making, enable on-the-fly problem-solving, and allow the team to actually meet tight schedules and budgetary demands."

Intsite says ForeSite came about following an article on the company's technology published in this magazine in July 2018, which led to it receiving an investment of $1.35 million and the signing of a strategic agreement with Israeli construction and infrastructure company Shikun&Binui - Solel Boneh. For the following 12 months the company says it completed thousands of hours of R&D and on-site testing in Israel and overseas before returning to market with a demonstration of the system's autonomous crane capabilities. This has resulted in Proof of Concept certification and the company is currently actively selling ForeSite. It says it has several pilots under way which it hopes will lead to significant sales worldwide.

Laser eyes

In a white paper titled Eyes for Container Crane Automation German laser-based sensor specialist Lase states that increasing numbers of sea and intermodal ports, as well as steel plants, have started automating their cranes. To perform this task without humans the cranes require 'eyes' which can be achieved by applying 2D- and 3D laser scanners, states Lase.

These sensors and an analogue evaluation of the measurement data by application-specific software, allows automated trans-shipment of containers, coils, slabs and even scrap metal, Lase explains.

Specifically Lase cites the example of laser technology being used in straddle carrier operations where exact positioning and collision avoidance between the load handling device (spreader) and the straddle carrier are a priority.

Straddle carriers or spreaders can be detected by means of a 2D laser scanner attached to the chassis at a height of approximately five metres, creating a horizontal scan plane. The straddle carrier has reference marks on its chassis which are detected by the laser scanners and tracked by the measuring system in their position, Lase explains. A digital display on the STS crane's gantry chassis can show the driver of the straddle carrier the load's position relative to the centre of the crane. This can be displayed numerically or by means of symbols.

Terminal trucks can also benefit from the application of laser scanners, says Lase, which can aid the truck's positioning in relation to the centre of the cranes. Using 3D laser data a digital display on the gantry structure of the STS crane can transmit the truck's position to the driver. This also can be displayed numerically (+/- 99 cm) or by means of symbols (arrows and crosses). After positioning, the container and trailer are measured in 3D so that the position in trolley travel and the rotation about the vertical axis are known for automatic transfer.

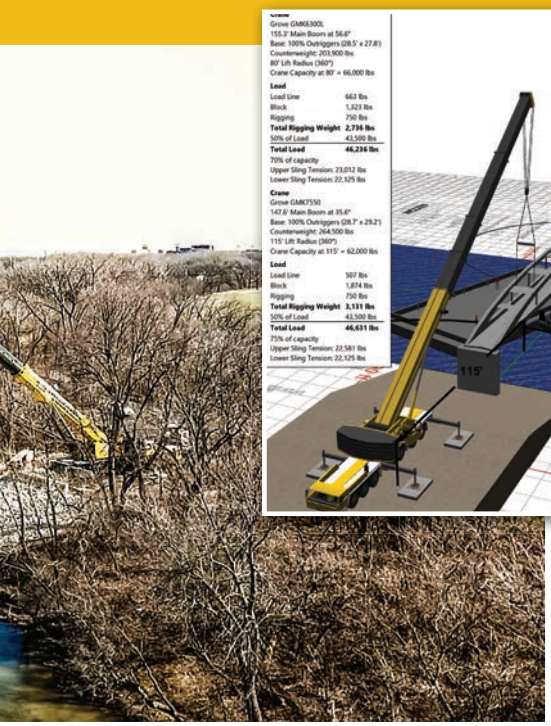
These examples, says Lase, show the extent to which crane automation continues to progress, particularly where new sensor technologies and system solutions form the basis for automation.

Allelys Group is using RFID technology to enable in-house inspection

Augmented reality

Liebherr is exploring the use of an augmented reality app for smartphones and tablets with its Liebherr AR Experience app.

The app is designed to demonstrate the



capabilities of its equipment and, according to Liebherr, can use almost any horizontal backdrop – from a desk to the floor or even windows – upon which it projects digital 3D data creating a virtual construction site.

There are three possible virtual construction sites to choose from and for Liebherr's lifting portfolio its LR 1300.1 crawler crane can be viewed from multiple perspectives. The app enables complex tasks to be presented and explained simply and comprehensibly, says Liebherr. It can be downloaded for free and works on AR-enabled smartphones or tablets.

Selection software

To help companies select exactly which crane to use on the job site, software developer Black Core has launched a Cranes Guide app, for web, iOS and Android platforms. The app selects a suitable crane based on the load, radius and height parameters. Once the specific details have been entered Black Core says the app selects appropriate cranes in just a few seconds.

The current version of the app, 1.0, provides information on crane types supplied by Liebherr in 2019. The forthcoming 2.0 version will add more liebherr cranes plus cranes from the Tadano Faun, Terex, Demag and Grove portfolios.

The 2.0 version will also facilitate searching by crane brand and year of construction and enable users to specify limited space conditions or obstacles on the job site that may impact crane selection.

Black Core says the new version will also aid the optimisation of transport costs by defining the maximum mass of the load. Future plans for Black Core's app include expanding it to include all crawler and tower cranes available on the market.

Lift planning

When it comes to lift planning, Chicago, USA-based crane rental company La Grange Crane Service used the 3D Lift Plan program from heavy construction industry software developer A1A Software to plan the two-crane lift of a 120,000 pound (54 tonne) steel bridge section over the Calumet River. The software can also be used as a sales tool, for bid proposals, crane selection and setup, lift planning, and documentation, says A1A Software.

The bridge project was conducted for Copenhaver Construction and the Illinois Department of Transportation and involved assembling the bridge sections off site and transporting them by barge to the location. The company used its 450 tonne Grove GMK 7550 and 300 tonne GMK 6300L cranes on opposite sides of the river to carry out the lift. "Using 3D Lift Plan to correctly scale the cranes and jobsite allowed us to accurately bid the project and allowed us to price accordingly," said project manager Riley Pettrone. When formulating the lift plan Pettrone started by working off blueprints and information gathered from site visits. »

He then overlayed Google Earth images and imported crane data and site data. "It enables customers and contractors to envision not only the crane but how a crane will interact with all the other obstacles a construction site imposes," explains Pettrone "A fully informed field team ensures that all working parties are on the same page come pick day."

Schedule management

When it comes to schedule management, UK heavy haulage and lifting firm Allelys Group has adopted a bespoke RFID system from specialist software firm CoreRFID, which has enabled the company to move inspection in-house. Allelys will use the system to locate assets and to determine availability and operational status to allot resources and run smoother repair schedules.

The RFID solution is based on CoreRFID's CheckedOK system which enables engineers working on site to record results on tablets. The data is then sent to a hosted database which can be accessed immediately by the rest of the team, enabling reports and certifications to be produced in minutes.

Matt Cobain, engineering manager at Allelys Group, says, "The move to the new system enables us to take complete control and monitoring of our inspection processes. It improves our logistics and customer service and at the same time increases profitability through better efficiency."

CraneCare Lifting Services using CoreRFID's CheckedOK program

Another company to adopt CoreRFID's established CheckedOK solution is Dublin, Ireland-based lifting gear supplier and equipment inspection firm CraneCare Lifting Services. In addition to the inspection module, which has enabled it to transfer its inspections from a paper-based system to an online solution, CraneCare has also implemented the breakdown and repair facility of CheckedOK. According to CoreRFID, this ensures the immediate recording of labour and parts used to carry out a repair and the automatic generation of accurate invoices to make sure no revenue is lost.

Sean McCaffrey, managing director at CraneCare, comments, "Each on-site inspection carried out used to be recorded on paper by inspectors and was then sent through to the office where data was re-entered manually onto a spreadsheet, which was labour intensive and error prone. This caused delays in retrieving data and issuing certificates to the customers. CheckedOK will give us greater accuracy, productivity and speed, helping us to enhance our reputation as an industry leader.

"We are hugely excited to see the benefits this new system will have for our company going forward."

We can see from this snapshot that a wide range of new technologies and electronics are being employed in our ongoing attempts to make machines work for us with the enduring end aim of reducing errors and saving time whilst also increasing productivity, efficiency and safety. ■

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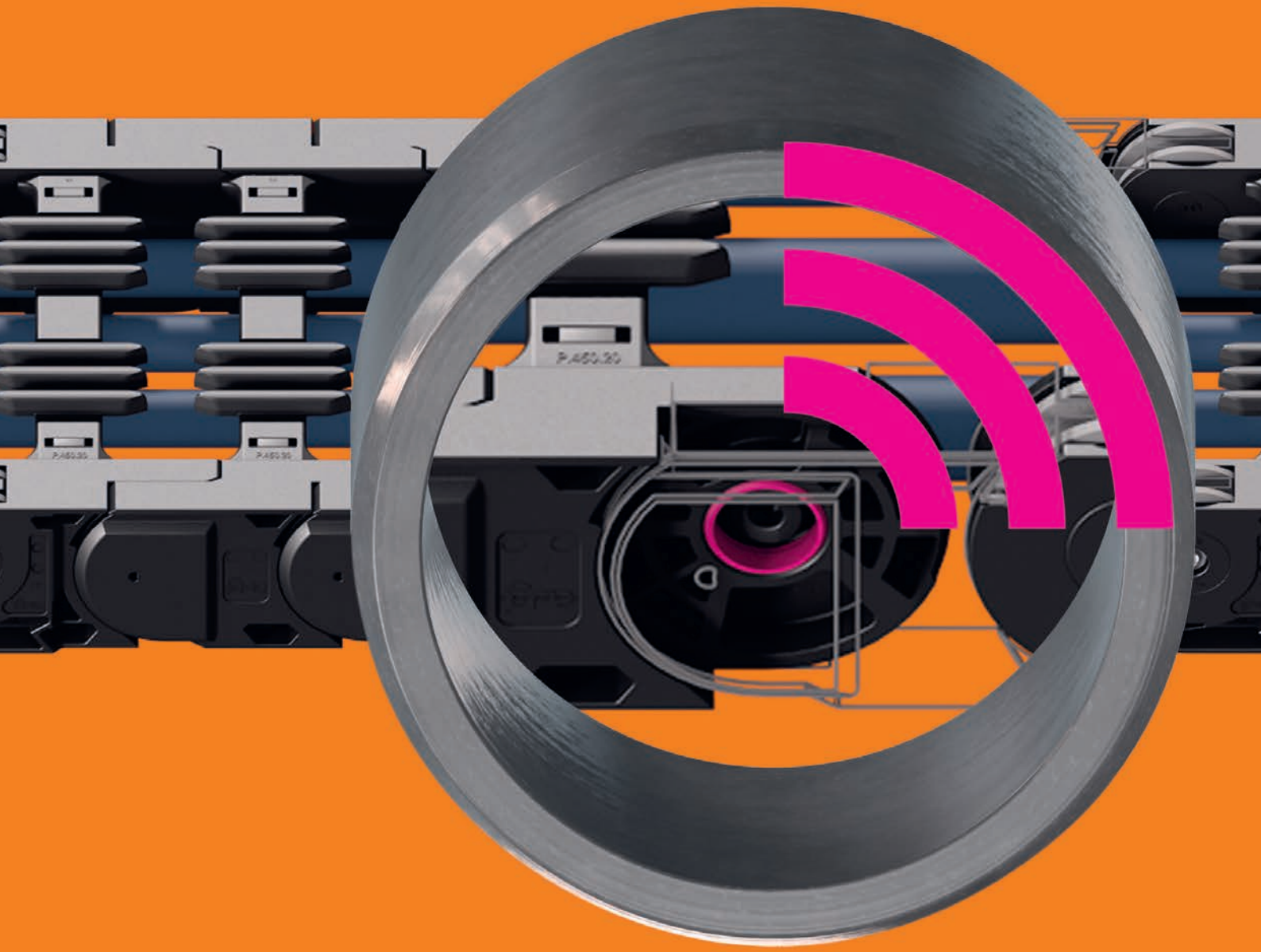

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With the wind power sector growing around the world, the need for definitive best practice guidelines been more pertinent. CHRISTIAN SHELTON reports

ESTA president David Collett hopes the forthcoming best practice guidelines will become accepted industry standards

Safety first

A major new report on safety during the lifting and transportation of on-shore wind turbines in Europe is due to be published early in the New Year in an attempt to reduce the worrying level of serious accidents in the industry.

Experts estimate that the sector suffers an average of a serious crane incident every month plus a growing number of transportation accidents – often caused by cost-cutting and poor planning.

In a move that underlined the concerns, the report was due to be published this autumn but was delayed to take account of a series of recent accidents in Scandinavia.

Called 'Best Practice Guidelines for Transport and Lifting Operations in On-shore Wind Farm Construction', the report is being published by ESTA, the European Association for Abnormal Road Transport and Mobile Cranes, with the support of VDMA Power Systems, the arm of the German engineering federation that represents most of the leading turbine manufacturers.

The work also has the support of the crane manufacturers through FEM, the European Materials Handling Federation.

At well over 100 pages, including appendices, it is believed to be the most detailed study ever produced on the subject. ESTA hopes the work will not only improve safety but will also lead to increased efficiency and productivity on site.

Outline details of the report were announced at the recent *World Crane and Transport Summit* in Amsterdam by ESTA president David Collett, managing director of the Collett Group in the UK.

He said, "We are all very good at telling ourselves what the problems are. This report is an attempt to engage with the wider industry and create an agreed and accepted industry-standard.

"We all know about the incidents and the reasons for them. What we have to do now is push this work further up the supply chain, because the only way we are going to deliver lasting change is if all of us - clients, users and manufacturers - keep referring to it."

The idea of producing a best proactive guide was first mooted after a conference organised by ESTA in 2017 in Hamburg. By the middle of that year, a wind safety working group had been established.

Importantly, its members included six leading turbine manufacturers – Enercon, GE Renewable Energy, Nordex, Senvion, Siemens-Gamesa and Vestas – reflecting the concerns felt not just among ESTA members but throughout the wind industry.

Keen not to 'reinvent the wheel', the working group drew on relevant reports that had already been published to support their cause, notably the FEM's 'Safety Issues in Wind Turbine Transportation and Installation' and the ICSA's 'Leaving mobile cranes unattended in (partially) erected mode'.

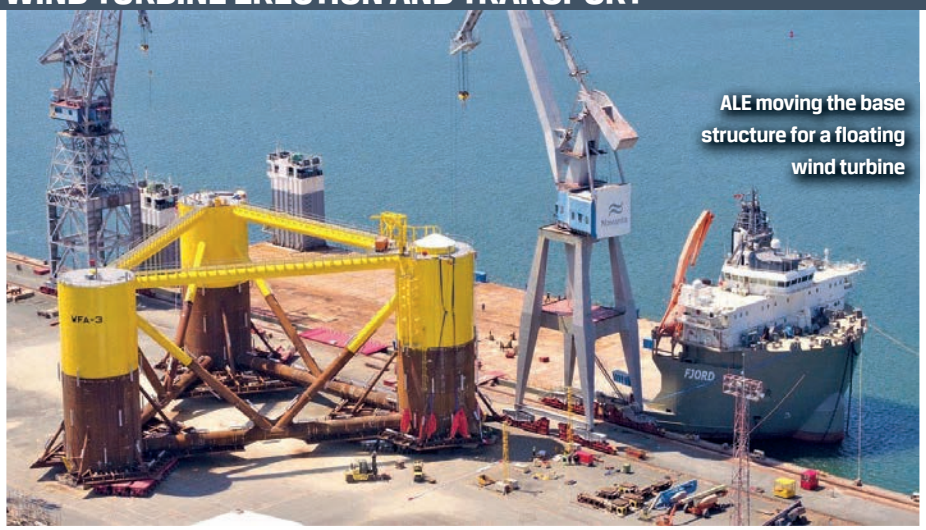
It also incorporated the 'European Best Practice Guideline for Abnormal Road Transports' and ESTA's own 'Best Practice Guide for Self Propelled Modular Trailers'.

The final version of the new guidelines will be published early in the New Year and will be downloadable for free from the ESTA website at: estaeurope.eu

Transportation safety

Increased safety was a key reason given by heavy lift and transportation specialist Mammoet for the use of its powered trailer system Trailer Power Assist (TPA) to »

Mammoet's TPA in Norway on its first ever job



ALE moving the base structure for a floating wind turbine

transport 23 generators and hubs for a wind farm in northern Norway.

The TPA was used to transport the wind farm components across challenging terrain. Anders Bräuner, sales manager Mammoet Denmark, explains, "Safety is vital on every project. The four kilometre section of the route to the Narvik site that we were required to complete involved climbing an 18 percent gradient and navigating 14 hairpin bends. With each generator weighing 74 tonnes and each hub weighing 47 tonnes we needed to use the TPA system to maintain safety."

According to Bräuner, an operation of this magnitude would traditionally have involved several vehicles working together. "With multiple drivers having to work as one, this would have made negotiating numerous hairpin bends especially difficult and time-consuming," he continued. "With the TPAs' tight turning circle, and the improvements this brings for navigating tight bends, this solution mitigated the risks involved with multi-truck configurations and improved the safety and speed of each individual journey."

Mammoet says that by reducing the number of vehicles needed to complete the transport, the TPA can also help companies reduce their carbon footprint during heavy transportation jobs.

The TPA comprises six axle lines, the middle four of which are driven by a 1,000 horsepower hydraulic Power Pack Unit. According to Mammoet, this delivers up to twice the pulling force of conventional prime movers.

This was the TPA's first job and it was carried out by Mammoet for Deugro Danmark and Siemens Gamesa.

Innovative installations

When it comes to onshore wind turbine erection, UK-headquartered heavy transportation and lifting company ALE claims it is the first company in Australia to install wind turbine generators (WTCs) using a tower crane. ALE used its K1650L tower cranes to install the WTGs at Lincoln Gap Wind Farm, near Port Augusta in southern Australia, where they will help to power 155,000 homes.

According to ALE, the K1650L tower crane was selected due to its high wind speed tolerance and small footprint. It says that due to the crane's compact size the area hardstand can be reduced by more than 50 percent in comparison with other cranes widely used in the wind industry. This, it says, allows cost and time savings in civil works. The company further claims this also helps reduce the crane's environmental impact.

ALE has also carried out the load-out of a floating wind turbine structure which will be used in the world's first semi-submersible floating wind farm. The WindFloat Atlantic project will see floating wind turbines chained to the seabed, an approach designed to minimise complex and disruptive offshore operations while also enabling wind farms to move into deeper waters further from the coast where winds are stronger and more reliable.

ALE was commissioned by Spanish transport engineering company Coordinadora to load the structure, which weighed over 2,000 tonnes, onto the heavylift vessel Fjord at the Navantia-Fene shipyard in Spain. Strict time limits were in place to load-out the structure which was 30 metres tall, with 50 meters between its columns.

To perform the load-out, ALE installed »

DREAM JOB FOR CRANE DRIVER


Buckner's LR 11000 on the island of O'ahu

On the Hawaiian island of O'ahu, North Carolina, USA-based heavy lifting specialist Buckner HeavyLift Cranes is using a 1000 tonne capacity Liebherr LR 11000 crawler crane to erect wind turbines. The LR 1100 started work on the island in October 2019 and is scheduled to remain there until the end of December. Liebherr claimed it is the largest crawler crane to have ever worked on the island. It is being used to erect eight Vestas V-136 wind turbines.

The LR 11000 is set up in SL3F configuration with a main jib of 108 metres and a fixed tip of 12 metres, providing a maximum load capacity of 173 tonnes. The wind turbines' hubs weigh around 100 tonnes and are being lifted up to a height of 105 metres.

When equipped with 90 tonnes of central ballast and a slewing platform ballast of 250 tonnes, the crane can be used without a derrick. Liebherr said this was an important criterion for Bigge when selecting the right crane for the job. This is because the wind farm is in hilly terrain and the crane has to be frequently moved and occasionally converted. This can be done more quickly and easily without a derrick, Liebherr explained. Buckner also has auxiliary cranes on site, including a Liebherr LR 1350/1 crawler crane.

The supply of spare parts could potentially have been a challenge due to the island's location so far from the USA mainland. This has not been an issue, however, as Kevin C. Long, director sales at Buckner, explained, "Our construction site is supplied from the new Liebherr warehouse in Lodi, California, but for safety's sake we also have various tools and spare parts available locally for this job. So far, however, we have managed to do entirely without spare parts and erection engineers."

The crane driver for Buckner in Hawaii is Burkhardt Hartinger from Germany. "The offer to work in Hawaii was very tempting," said Hartinger. "And I also have a little free time to explore the island after work."

236 axle lines of SPMT underneath the three corners of the structure. Three groups of 54 metre ramps were also installed between the quay and the deck of the Fjord, allowing the ro-ro operation to take place. The structure was then towed to a position approximately 20 km off the coast of Viana de Castelo, Portugal. It will be joined by three similar structures in the near future, says ALE.

Transglobal transportation

Another large-scale load-out ALE has been involved with was in conjunction with Taiwanese lifting and transportation company Giant Heavy Machinery Service Company. Together they carried out the onshore handling, transportation and storage of wind turbine foundations – consisting of 20 monopiles and transition pieces – as part of phase two of the Formosa 1 wind farm project off the coast of Taiwan.

The job started at the monopiles' fabrication facility in Rostock, Germany, and ended at the Port of Taichung, Taiwan. In Germany, ALE used a tandem-twin strand jack gantry system to lift the monopiles from the fabricator's trailers. SPMT with pre-installed ocean transport cradles were then moved into position underneath the monopiles before load-out onto two flat deck carriers for ocean transportation.

ALE developed the storage yard in Taichung, Taiwan, from vacant grassland into a marshalling area with the 10 tonnes per square metre ground bearing capacity required to receive all foundation elements. The yard was constructed using reinforced concrete slabs, compliant with local regulations designed to mitigate against earthquakes and typhoons, which are common in the area.

On their arrival in Taiwan, load-in of the monopiles was carried out during a narrow tidal window. ALE used 128 axle lines of SPMT in a tandem 4 file 16 configuration.

Separately, the 465 tonne transition pieces were discharged onto a custom transport frame designed by ALE's R&D department and fabricated by Giant's approved local supplier. These were then offloaded onto the storage yard by 1,250 tonne capacity cranes. The monopiles and transition pieces are being loaded-out by ALE onto the crane vessel Seaway Yudin, owned by Seaway Heavy Lifting, for installation in the Taiwan Strait.

ALE and Giant transported 20 monopiles and TPs between Germany and Taiwan

Palfinger Marine will supply 81 PF12000-4.6 LDB cranes for use on the Yunlin offshore wind farm

Wind energy crane order

Remaining in Taiwan, YunNeng Wind Power, which is responsible for the development and operation of the Yunlin offshore wind farm and is largely owned by German wind farm developer wpd, has commissioned offshore wind service cranes manufacturer Palfinger Marine to deliver 81 PF12000-4.6 LDB (lay-down boom) cranes for the wind farm.

The wind farm consists of 80 turbines and has a project capacity of 640 MW. Each turbine platform will be equipped with one fixed boom crane which has an outreach of 4.6 metres and a lifting capacity of 1 tonne. Additionally, one crane will be installed onshore for training purposes.

According to Palfinger Marine, as long as the cranes are serviced regularly, they will not require any spare parts for around two years – as long as it is used for typical offshore wind applications.

All components meet corrosion class ISO 12944-9 category CX and all electrical components that will be staying outside permanently comply with a protection class of at least IP 66. These standards have been verified and confirmed by standards organisation DNV GL.

Palfinger says it has supplied 145 cranes to the Taiwanese offshore wind market, helping the company meet its target of 5.5 GW by 2025. From these jobs referenced, it is evident that both on land and in seas around the world the wind sector is expanding. And with rapid growth comes the danger that safety standards could slip. Let's hope that the forthcoming ESTA guidelines help establish a new global industry standard of safe practice. ■

BEARING REPAIR CRANE

Utrecht-based consultancy, engineering, design and engineering company Eager.one (formerly Euro-Rigging) says its new Rotorhook crane has been successfully used by USA-based wind turbine repair company LiftWerx for its first rotor and main bearing exchange at a site near Boulder, Colorado, USA.

The RotorHook is mounted in a wind turbine nacelle and is designed to exchange the main bearing of a Siemens 2.3 MW wind turbine generator, which requires the removal of the complete rotor. The crane is electrically-driven, powered using the wind turbine's power supply.

The crane is designed specifically to exchange the main bearing of the Siemens 2.3 MW turbine, which requires the removal of the complete rotor (the hub and blades). Eager.one claims the RotorHook crane system can do the same job as a large mobile crane yet requires just three trucks for its transport (in standard 40 foot containers), which do not require special road permits.

A summit of quality

More than 200 people attended the seventh World Crane and Transport Summit, which took place in Amsterdam, Netherlands, in mid-November. ALEX DAHM reports

The 2019 World Crane and Transport Summit in Amsterdam opened with keynote speaker Fabio Belli, Fagioli CEO, calling for heavy lift and transport contractors to consider joint ventures and other risk-mitigation strategies in response to more difficult market conditions.

Belli said that the lifting and transport sector should consider following the example of major EPC contractors, who have responded to lower capital investment in oil and gas – 40 per cent down from the peak in 2014 – by creating joint ventures for major projects and by focusing more on project breakeven point and speed of execution.

Belli said the improving oil and gas price meant that some major oil and gas projects were now returning, but with rental prices for cranes and SPMT and payments for loadouts still 30 to 40 % lower than in 2014.

He said lifting and transport companies should consider joint ventures, mergers and acquisitions and asset sharing as means to improve profitability and reduce costs and risks. "EPC contractors are spreading the risk," said Belli. "We have to do the same. We have to think about physically joining companies. I think that is the right thing to do. We have to step back from ego and co-operate. Step back and look to the sustainability of this business."

Erich Sennebogen extolled the virtues of keeping it simple and avoiding unnecessary complexity

Garrick Nisbet, head of lifting assurance at Notus Heavy Lift Solutions and lifting manager on the Hinkley Point C nuclear power station construction project

Manufacturer keynote

Another highlight in the programme was Erich Sennebogen, managing director at Sennebogen Maschinenfabrik in Germany, who gave a thought-provoking view of new technology and its value to machinery users and buyers.

Europe's largest construction project was covered by Garrick Nisbet from Notus Heavy Lift Solutions who talked about the crane and lifting element of the UK's Hinkley Point C nuclear power station construction. Sarens' 5,000 tonne capacity SGC 250 ring crane is operating alongside dozens of tower cranes, rough terrain cranes, crawler cranes and all terrains, among others, across the vast site.

Safety was a key topic of the WCTS, this year addressed by several speakers, including

Blanca Claeyssens, managing director at ASA France, drew interesting safety-related parallels between the lifting industry and the aviation sector

Peter Gibbs, COO at Ainscough Crane Hire in the UK, talked about making safety a priority

The opening session at the World Crane and Transport Summit with Fabio Belli, Fagioli CEO and conference host Nadine Dereza

Hamish Adamson, engineering manager at Osprey, has a background in heavy transport engineering and as a naval architect

Ton Klijn, ESTA director, gave an update on the ECOL scheme with Philip Grootenboer from Mammoet

Gert Hendrickx, sales director, projects, at heavy lift and transport specialist Sarens, talked further about the energy sector, with a focus on renewable energy

The round-table session was a discussion about wind turbine erection and transport. On the panel were: David Collett, managing director, Collett & Sons and ESTA president; Klaus Meissner, director engineering systems, product safety and IPM at Demag Mobile Cranes; and Gerard Bastiaansen, Wagenborg Nedlift managing director.

Sponsors and exhibitors have an opportunity to demonstrate their products and services

Peter Gibbs, COO at Ainscough Crane Hire in the UK, and Blanca Claeyssens of ASA France. Crane operator training was discussed by Philip Grootenboer of Mammoet, ESTA director Ton Klijn and Dave Collett, ESTA president and director at Collett & Sons.

More than 200 delegates attended the Summit at the NH Grand Krasnapolsky hotel in Amsterdam. The conference is organised by KHL Group and ICST magazine. See the presentations and also video recordings in the appropriate section of www.khl/ic and look out for announcements about future crane and transport events. ■

Nick Lamb, senior business development manager at bridge builder, Cleveland Bridge International, gave an insight into the lifting and transport operations in constructing and refurbishing some of the world's most spectacular bridges

Top-level attendees and speakers are a hallmark of the World Crane and Transport Summit

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Keeping the good ones

If you're looking for a smoking-gun reason as to what makes a good employee quit, well, it isn't always that easy. In fact, it could be a combination of things over time. That said, there are typically a certain set of 'common' reasons that drive employees towards leaving an organisation.

There's also a frequent assumption that today's workers, especially Millennials and Gen Z, change jobs more often than past generations – and thus, are only really concerned about themselves versus loyalty to a company.

Surprisingly enough, statistics today reveal that employees actually stay longer with a company compared to 25 years ago. That, however, doesn't make it any easier for companies experiencing high turnover rates. Pulling back the curtain on those statistics will often divulge a range of factors that account for tenure, like particular industry, age, race, education and ethnicity.

So, the question remains: Why do employees leave their jobs and, more specifically, why do good employees leave?

Lack of trust, respect and autonomy is a big one. Leaders who don't trust or respect their employees – or who micromanage them – are setting themselves up for failure with high-performing employees, who don't really need this type of supervision. Another big one – and this has certainly been associated with younger workers – is under-appreciation. Lack of recognition carries a lot of weight in the workplace these days. Consistent failure on this level will likely have you searching for new talent more often than you want to.

No opportunity for growth, development or advancement has also quickly become a headline in today's job market. If your company is lean on these opportunities, you'll probably also be lean on employee tenure when it all shakes out.

Poor management and poor communication are also a modern recipe for employee departure. Not only do today's workers want to be valued, respected and given the opportunity to advance, they want to belong to a system that achieves these things through efficient processes and professional – if not motivational – interactions. Leading by example will still get you pretty far in this regard, as long as the example you're setting is inspiring versus discouraging.

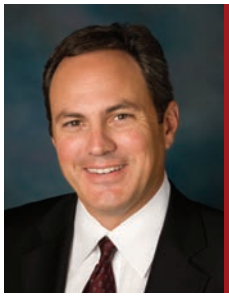
Necessary steps

A few more key words to keep an eye on: overwork; work-life balance; and support. The modern workplace, no matter the industry, recognises when their staff is struggling with too much work and-or a lack of support. Productive employers make adjustments to address and solve these issues. When workers feel like you care, they will care in return. It sounds like simple math – but it's also an undeniable two-way street.

Lastly, if your stated company mission, vision and value structure doesn't align with what's happening on the ground or in the office every day, then you better fix it, and fast. Modern employees not only want to know they're working for a productive, professional organisation, they also want to belong to an authentic company. Once you start losing quality employees for this reason, or any of the above reasons, something else will also happen – more quality employees will start looking in other directions. All the more reason to do regular company-employee assessments.

Ultimately, whether or not modern employees statistically stay longer today doesn't override the fact that they also have much less tolerance for being unhappy. Processes are always being analysed, and leaders are always being watched. Workers today aren't just going to stay in a job that doesn't fulfill them, doesn't provide growth and advancement and doesn't provide a satisfying work environment.

Today's organisations across all industries will only make themselves stronger and more attractive to high-value employees by identifying root causes for employee turnover, and taking the necessary steps to create a happier, more engaged workforce. ■



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Fax: +1 703-698-0297

ConExpo is on the horizon and SC&RA, along with its partners, is already sponsoring 16 educational sessions at the construction show held in Las Vegas, USA, next March. MIKE CHALMERS reports

Show time looms

Set for 10 to 14 March 2020 in Las Vegas, Nevada, USA, ConExpo – Con/Agg is North America's largest construction trade show. Represented are asphalt, aggregates, concrete, earthmoving, lifting, mining, utilities and more. Held every three years ConExpo comprises an enormous week boasting plenty to see, including an award-winning Tech Experience area and an array of presentations given by industry leaders.

The majority of ConExpo attendees are contractors, with dealers, distributors and rental companies making up the next-largest group. That said, ConExpo is the only show that connects attendees from every major construction sector, with most areas well-represented during the week.

The show's sheer size and breadth is impressive – 2,800 exhibitors across 2,500,000 square feet make for a robust lineup of things to do and see. Most major crane manufacturers will be in attendance; ConExpo is world-renowned for the opportunity it presents to get up close and personal with some truly impressive equipment. The lifting tent is also a must-visit: hundreds of exhibitors will be showing every imaginable type of rigging and wire rope gear, in addition to training simulators and more.

And this year's expo will feature 150 education sessions, with topics ranging from workforce trends to tech innovation.

To that end, SC&RA, along with its partners, are sponsoring 16 educational sessions at ConExpo – to which Association members can register at a discount.

"The crane, rigging, and aerial lift track at ConExpo was put together and is sponsored by SC&RA and the NCCCO Foundation," said SC&RA senior vice president, Crane & Rigging, Beth O'Quinn. "The track features industry veterans who are experts in their fields. Other tracks within the education portion also feature sessions sponsored by SC&RA."

Beth O'Quinn, SC&RA senior vice president, Crane & Rigging

One of those sessions, titled 'Best Practices for Oversized Cranes and Specialized Carrier Permits', will be led by O'Quinn's colleague at SC&RA, Steve Todd, vice president, Transportation.

"In this session, I'll be highlighting the permitting and moving of oversize cranes and transportation carriers," said Todd. "We'll certainly touch on our FHWA [Federal Highway Administration] interpretation of divisible load from 2018. We'll also talk about a few states that have already changed their policy to be more crane-industry-friendly, and we'll warn the industry that there are many other states that haven't adopted it."

The better part of his presentation, indicated Todd, will be reviewing technology as it relates to permitting and movement of oversized cranes. The overall value of SC&RA's track and the event overall, he added, is undeniable.

"Speaking primarily from a carrier standpoint, I believe that any specialized carrier that is marketing itself in any way, shape or form to the construction industry is missing a golden opportunity by not attending ConExpo. As I've heard from carrier members in the past – although there is an expense involved, when you compare that to individual flights that it would take to see numerous customers and potential customers – you have them all in one place at ConExpo. There's immense value to that."

Available tools

While Desiree Matel-Anderson, chief wrangler at Field Innovation Team, is not an SC&RA member, she will be covering some SC&RA material, namely the Association's Severe Weather Guidelines, during her presentation 'Crisis Workshop: How to Keep Your Company Prepared'.

She believes that for companies to remain positioned productively moving into a new decade, especially as it relates to being prepared in the event of disasters, leaders should always be thinking about how they can help.

"Be ready to drive, load, move and support response efforts post-disaster, co-ordinating with local emergency management to support

Steven Todd, SC&RA vice president, Transportation

Desiree Matel-Anderson, chief wrangler at Field Innovation Team

citizens," she emphasised. "If the jurisdiction you are working in is not able to get back up and running, then your skills are needed."

Innovation is high on Matel-Anderson's priority list during times of crisis. "How can your skills, equipment and knowledge be repurposed to support disaster preparedness, response, recovery and mitigation?" she noted. "In disaster preparedness, is it possible that cranes could utilise sensors to provide data that could be analysed to alert communities to incoming risks, like weather? During response, can a fleet of co-ordinated forklifts carry medical supplies and pallets of clean drinking water to areas in need? During recovery and mitigation, could bulldozers communicate with one another to route swarms of machines to jobsites and expedite the rebuild?"

Matel-Anderson's primary goal at ConExpo is to develop with her audience an understanding that "...we all have it within us to support our communities and be an innovator to support problem-solving challenges in disasters. Innovating in disaster – whether response, recovery, mitigation or preparedness – is essential when we lack resources, time and personnel, and lives are on the line."

Joe Collins, heavy lift division manager at member company Becht Engineering

From post-disaster to preventing disaster, especially on the jobsite, Joseph Collins, heavylift division manager at SC&RA member company Becht Engineering, will be delivering a presentation at ConExpo titled 'Managing Ground Bearing Pressures'.

"The new cranes are larger and heavier than ever before," he pointed out, "and we can't take the crane foundation design for granted. There are many tools available today to determine allowable ground-bearing pressures. The contractor and-or site owner (controlling entity) is responsible for investigating the ground conditions. The contractor is responsible for designing crane foundations using an appropriate safety factor."

Collins believes there is simply no reason for a crane project to experience ground-bearing failure today. "The most effective method to determine the allowable ground-bearing pressure is by core drilling with an engineered interpretation of the boring logs," he said. "Alternatively, the geotechnical engineers can perform a density test to confirm the effectiveness of back-fill and where the soil will see lighter loads. There is also a nuclear method. If there is a question about underground voids, utilities or abandoned structures, I advise utilising ground-penetrating radar."

Ultimately, Collins hopes that attendees to his session leave with a much better understanding of the tools and procedures available to prevent accidents caused by ground failure. "This, hopefully, will result in more informed decisions at the worksite regarding this topic: How much does the soil capacity investigation cost? What is the appropriate safety factor for allowable ground-bearing pressure? And why can't we simply divide the weight of the load by the area of the matting system?"

Continued evolution

Joost Eertman, technical director at SC&RA member Ropeblock in the Netherlands, will look at (potential) onsite disasters from above the jobsite when he presents 'How to Delay or Prevent Rope Twist and Cabling from Rope-Sheave Interaction'.

His aim is to establish a profound understanding with his audience in connection with the aspects going on in their crane and rope and learn what the options are enabling the best crane uptime by choosing the right gear.

According to Eertman, the top issues construction companies need to be paying attention to in the industry today regarding wire rope condition and-or operational practices derive from the continued evolution of both machines and projects.

"With the higher vertical transport nowadays, i.e. wind power, the risk of rope twist and cabling-related crane downtime looms," he said. "This risk may well mature in a wider scale once the market starts to decommission older, smaller installations. Taller heights will require first-class rotation-resistant ropes. That investment deserves special care, as twisting it reduces longevity significantly."

Joost Eertman, technical director at SC&RA member Ropeblock

SC&RA looks forward to seeing hundreds of members at ConExpo 2020. Attendees can find SC&RA at booth F-100101. ■

■ For more information on SC&RA's presence, contact Beth O'Quinn at: boquinn@scranet.org

ECOL progresses as Meissner joins board

Klaus Meissner, director of engineering systems, product safety and IPM at Demag Mobile Cranes, has joined the Supervisory Board of the European Crane Operators Licence scheme.

He took the position following the resignation of Steve Filipov who stepped down in the wake of the Tadano acquisition of Demag from Terex Corporation.

Meissner was proposed as the replacement for Filipov by the German engineering federation VDMA. He is also president of the mobile cranes product group of FEM, the European materials handling and lifting equipment federation of manufacturers.

ECOL continues to make progress as the number of organisations supporting the project increases. At the time of writing two education and training institutes and three examination institutes had been certified by ECOL with a further six in the process of qualifying.

News from the European Association of Abnormal Road Transport and Mobile Cranes (estaeurope.eu)

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■ To find out more, see: www.estaeurope.eu/Supporter

ESTA ANNUAL REVIEW PUBLISHED

ESTA's 2019 Annual Review has been published and is available to download from the ESTA website.

CONTACT ESTA

For more information about ESTA and its work, see the association's website at: www.estaeurope.eu/summit or contact: Caroline van Geest, ESTA office manager, on +31 [0] 71 572 4705 or officemanager@estaeurope.eu or Graham Anderson, ESTA communications officer, on +44 (0) 1865 318123 or andersonmedia@btinternet.com

Meeting in Piacenza

Discussions on the urgent need for closer European co-operation and harmonisation – whether in safety, permitting regulations or skills certification – dominated proceedings at ESTA's early October autumn meeting in Piacenza, Italy.

Further details of the issues raised – both in the crane and transport section meetings and also in the members' only General Assembly – are on ESTA's website.

The meetings were held during the GIS construction equipment exhibition, and attendees were also treated to a spectacular networking dinner hosted by ESTA Italian member association, ANNA.

Next year's autumn meeting will be held in Finland on 15 and 16 October and will be hosted by ESTA member INFRA.

Beckedorf joins ESTA

Olaf Beckedorf, chairman of the Board at German company BigMove, has been unanimously elected to the ESTA Board. BigMove is a Europe-wide network of heavy-duty logistics companies and is a member of ESTA's German member association BSK.

Beckedorf replaces Robert Markewitsch of Gebr. Markewitsch, who is retiring.

David Collett, ESTA president, commented, "We have all been very grateful for Robert's expertise, support – and also his good humour."

Olaf Beckedorf

NEW MEMBERS

ESTA has several new members and supporters.

The Transport Section of the Confederation of Danish Industry (ATL/DI), based in Copenhagen, has become an Ordinary Member. The total of Ordinary Members now stands at 21 following the decision of two Turkish associations AKT and AND to join ESTA earlier in 2019.

DTL Kran Blok Erfa, part of the Danish Transport and Logistics Association, has joined as an Affiliate Member, bringing the number of members in that category to 39 companies. ESTA has also confirmed four new supporters – AVI Cranes, CDS, Gebr. Markewitsch and SAE.

MARKING AND LIGHTING REGULATIONS UPDATE

ESTA's proposal to to harmonise the marking and lighting regulations for abnormal loads across Europe is being presented to relevant orgaisations in an attempt to garner their support.

ESTA set up a cross-industry working group led by Section Transport president André Friderici and vice president Iffet Türken, to study the different regulations in operation around Europe and produce its own recommendations. The group's proposals were published in the autumn. Türken told the recent World Crane and Transport Summit conference in Amsterdam, "The current situation is ridiculous. The rules for marking and lighting of abnormal transports are different in every EU country. "This is perhaps not the most important topic but a recurring and costly nuisance. Why does everyone want their own signs? And why is a side marking board in one country 50 x 50 cm and in another country 42.5 x 42.5 cm?"

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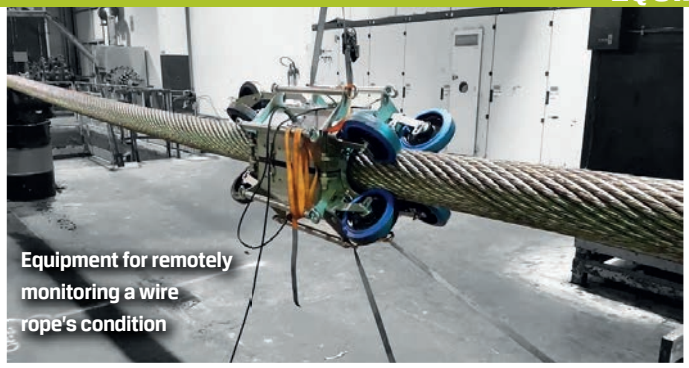
Enerpac's new XC1302SE cordless dump and hold pump

Menomonee Falls, Wisconsin-USA headquartered industrial tool manufacturer Enerpac has introduced the XC1302SE cordless dump and hold hydraulic pump designed for crimping, clamping and bending type applications.

The new model in the series delivers 0.25 litres of flow per minute and has a pendant control to allow the operator to be up to 3 metres away. It has two buttons, pump pressure adjustment and LED indicators for visual feedback, plus there is vibratory feedback.

A bladder reservoir allows the pump to be used in any position. Power is from a 28 Volt lithium-ion battery that can be recharged in one hour. Additional functionality includes single-acting, double-acting and torque wrench applications.

For more information, see: www.enerpac.com



Equipment for remotely monitoring a wire rope's condition

Remote rope inspections from Certex

A wire rope inspection and remote monitoring system is now available from wire rope lifting equipment provider Certex UK.

The system utilises technology from sister company AMC Instruments, an Italian company acquired in 2018 by parent company Lifting Solutions Group. AMC's system uses a device attached to a rope while it remains in use, and this device enables remote monitoring of the rope's condition. Crane and elevator hoist ropes are typical applications, including offshore and other harsh environments, Certex said.

According to Certex, the system allows more accurate determination of a rope's life and all the devices used conform to the 'ISO 4309:2017 Cranes — Wire ropes — Care and Maintenance, Inspection and Discard' standard.

Certex UK will distribute the AMC system throughout the UK.

For more information see: www.certex.co.uk

OUTRIGGER PADS

Iowa, USA-headquartered outrigger pad manufacturer Dica has launched the ProStack Slot Lock Cribbing Block which is designed to stack and lock together so that users can gain cribbing height in uneven conditions.

According to Dica, two ProStack Blocks used in conjunction with a SafetyTech Base Pad provide a 100,000 lb. (45 tonne) working load limit and a max allowable pressure of 500 psi.

Each layer increases cribbing height by five inches, and the surface allows room for outrigger feet measuring up to 18"x18".

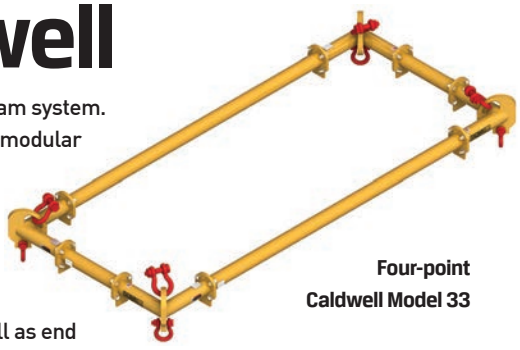
For more information see: dicausa.com

Modular spreader system new from Caldwell

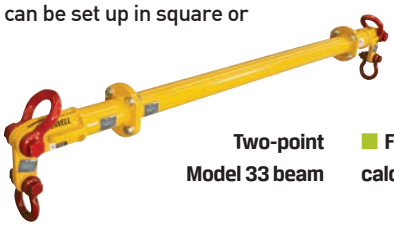
Rockford, Illinois, USA-headquartered lifting solutions specialist Caldwell Group has launched a two- and four-point modular spreader beam system.

The new Model 33 modular lifting system is the latest addition to the company's line-up. The system utilises different beam sections, as well as end and corner fittings, to provide a large number of configuration possibilities, the manufacturer claimed. The flexible system is designed to allow requirements to be quickly met, it added.

Assemblies are available in a range of capacities and sizes. The four-point system can be set up in square or rectangular configurations and both systems' components are interchangeable with other similar systems, Caldwell said. Being modular aids easier handling on site the company claimed. End fittings and beam sections can be bought separately when a complete system is not required. Another feature is easy transport in component form, Caldwell said.



Four-point Caldwell Model 33



Two-point Model 33 beam

For more information see: caldwellinc.com

LUBE FREE HOIST FROM HARRINGTON

A new air hoist series without the need for lubrication in the air supply has been launched by hoist manufacturer Harrington in the USA.

The TCL series operates without leaving an oil mist in the air from the exhaust. This, Harrington said makes them suitable for the food, chemical and pharmaceutical industries.

They are available in ¼, ½ and 1 US ton capacities with cord or pendant controls. Rated for continuous duty they also offer high lifting speed. The spring-loaded multi-vane motor is designed to allow fine feathering control, adjustable lifting and lowering speed and there is an external speed adjustment screw operated by hand. A heavy-duty disc motor brake system is also fitted.

For more information see: www.harringtonhoists.com

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EVENTS DIARY

2020

SC&RA BOARD AND COMMITTEE MEETINGS
8 to 11 January 2020
Cabo, Mexico, USA
www.scranet.org

WORLD OF CONCRETE
4 to 7 February 2020
Las Vegas, USA
www.worldofconcrete.com

THE ARA SHOW
10 to 12 February 2020
Orlando, Florida, USA
www.therentalshow.com

SC&RA SPECIALIZED TRANSPORTATION SYMPOSIUM
18 to 21 February 2020
Charlotte, North Carolina, USA
www.scranet.org

CONEXPO-CON/AGG
10 to 14 March 2020
Las Vegas, Nevada, USA
www.conexpoconagg.com

OFF-HIGHWAY GLOBAL BRIEFING
11 March, 2020 (during ConExpo)
Las Vegas, Nevada, USA
www.offhighwaybriefing.com

SAMOTER 2020
21 to 25 March 2020
Verona, Italy
www.samoter.com

SC&RA ANNUAL CONFERENCE
14 to 18 April 2020
Amelia Island, Florida, USA
www.scranet.org

CEMAT 2020
20 to 24 April 2020
Hannover, Germany
www.cemat.de

ESTA AWARDS 2020
23 April 2020
Postillion Hotel,
Amsterdam, Netherlands
www.khl-group.com/events/esta

INTERNATIONAL RENTAL EXHIBITION
9 to 11 June 2020
Maastricht, Netherlands
www.IREshow.com

TOWER CRANES NORTH AMERICA (TCNA)
23 June 2020
Miami, Florida, USA
www.khl-tcna.com

PICTURE OF THE MONTH

UK-headquartered motion expert Collett & Sons is feeling festive following the delivery of a large Christmas tree to Grade I listed cloth hall Piece Hall in Halifax, UK. To transport the tree to the location and unload it Collett used a 20 foot flatbed and a DAF 6x2 XF mounted with a PM 68 S crane.

PEOPLE NEWS

■ February 2014 is when **PAUL BROWN** officially retired, for the first time at least, after thirty-seven years in the crane industry, the last twenty-five of which were with manufacturer Tadano.
That first retirement lasted a little over three years. Brown was then called back into action on a part-time basis, in August 2017, to help with crane sales in Italy. Now, however, effective 31 October 2019, he said he really has called it a day.

■ Illinois, USA-based lifting solutions specialist Caldwell has appointed lifting and spreader beam expert **MALCOLM PEACOCK** (right of picture) as business development specialist. Doug Stitt, president and CEO, said, "Malcolm's appointment allows us to extend our existing plans to leverage our Caldwell and Renfroe intellectual property in lifting applications globally. Over 50 years we have developed great business in North America but would like to take that renowned expertise in engineering and product application further afield."

Caldwell has also appointed **JAY SCHROEDER** as regional sales manager. He will oversee sales for RUD, Caldwell and Renfroe products in the eastern half of the USA and Canada. Schroeder, formerly sling team sales manager, has been at Caldwell since May 2018, following a move from RUD Chain, Inc.

■ **SYLVAIN BERHAULT** has joined Kässbohrer France, the French division of German trailer manufacturer Kässbohrer, as France country manager. Berhault has worked in the semi-trailer sector for the last 24 years.

■ Spanish heavy lifting equipment supplier Airpes has named **TAD DUNVILLE** general manager, North America. Dunville has held high profile positions in the electric overhead traveling (EOT) crane and material handling markets, including chief financial officer at Dearborn Crane & Engineering, as a crane builder, and as director at manufacturer Ace World Companies. Airpes said its new USA operation will build on lifting and handling equipment installations in steel mills and service centres in Central and South America.

■ Please 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, United Kingdom, or by e-mail to alex.dahm@khl.com. Entries for Picture of the month should include: the month and year taken, the place, type of crane, owner and project, plus any other relevant information.

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- Construção Latino Americana (Portuguese) ☐
- Cranes & Project Transport Turkiye (Turkish) ☐
- Demolition & Recycling International ☐
- International Construction ☐
- International Construction Turkiye (Turkish) ☐
- International Rental News ☐

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- Construção Latino Americana (Portuguese) ☐
- Concreto Latinoamericano (Spanish) ☐
- Concreto Latino-Americano (Portuguese) ☐
- Demolition & Recycling International ☐
- 国际建设月讯中文版 (Chinese) ☐
- International Rental News ☐
- International Rental News Product & Services Update ☐
- World Construction Week ☐
- KHL Crane Market ☐

3 ORGANISATION TYPE

- Construction Contractor / Consultant ☐
- Equipment Rental ☐
- Energy / Petrochemical ☐
- Specialized / Heavy Transport / Rigging ☐
- Industrial Establishment ☐
- Airports / Ports / Docks / Offshore ☐
- Manufacturer of Lifting Equipment ☐
- Distributor / Agent / Equipment Sales ☐
- Government / Defence / International Authority ☐
- Public / Private Utilities ☐
- Windpower ☐
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Job title: _____

Company: _____

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_____

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e-mail: _____

5 Do you purchase or influence the purchase of lifting and transport equipment or services?

YES ☐ **NO** ☐

6 What is the annual revenue of your company (US$ millions):

- Under $1 million ☐
- $1-3 million ☐
- $3-5 million ☐
- $5-20 million ☐
- $20-100 million ☐
- Over $100 million ☐

7 FORMAT OF MAGAZINE

PRINT ☐ **DIGITAL** ☐ **PRINT & DIGITAL** ☐

8 YOUR PREFERENCES

KHL Group will keep you up-to-date with industry insight, products and events relevant to you as a professional in the construction or power industry.
If you do not wish to receive such information, please tick the selected boxes below.

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KHL Group works with other companies in the construction and power industry and will contact you about their products and services.

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MARKETPLACE

The Marketplace is divided into easy to read colour coded sections to help you quickly find what you need.

Contact JOHN AUSTIN on: +44 (0)1892 786245 or e-mail: john.austin@khl.com

CRANES AND EQUIPMENT FOR SALE OR RENT

TELESCOPIC AT-CRANES

Capacity	Manufacturer	Type	Year	Drive/Steering	Boom/jib (m)	Delivery
450 t	Liebherr	LTM 1450 N	1992	16 x 8 x 14	50 / 61 / 84	direct
400 t	Liebherr	LTM 1400	1988	16 x 8 x 12	50 / 61 / 84	direct
200 t	Terex-Demag	AC 200-1	2009	12 x 8 x 10	67,8 / 25	January
200 t	Liebherr	LTM 1200	1990	12 x 8 x 8	54,5 / 22	direct
160 t	Liebherr	LTM 1160-5.1	2007	10 x 8 x 10	62 / 22	December
160 t	Faun	ATF 160 G-5	2006	10 x 8 x 8	60 / 13,2+runn.	direct
160 t	Liebherr	LTM 1160	1986	12 x 8 x 8	45 / 20 / 52	direct
140 t	Terex-Demag	AC 140	2010	10 x 8 x 8	60 / 1,5	direct
130 t	Grove	GMK 5130-1	2007	10 x 8 x 10	60 / 18	direct
120 t	Demag	AC 120-1	2006	10 x 8 x 8	60 / 17	December
100 t	Terex-Demag	AC 100-4	2009	8 x 8 x 8	50	December
100 t	Terex-Demag	AC 100-4	2008	8 x 8 x 8	50	February
100 t	Grove	GMK 4100 L	2008	8 x 6 x 8	60 / 17	December
100 t	Terex-Demag	AC 100	2006	10 x 8 x 8	50	direct
100 t	Terex-Demag	AC 100	2005	10 x 6 x 8	50 / 17	direct
100 t	Liebherr	LTM 1100-4.1	2005	8 x 8 x 8	52 / 19	direct
100 t	Liebherr	LTM 1100-4.1	2004	8 x 8 x 8	52 / 19	direct
100 t	Demag	AC 100	2000	10 x 6 x 8	50,2 / 17	direct
100 t	Demag	AC 265	1989	8 x 8 x 8	37 / 17	direct
80 t	Terex-Demag	AC 80-2	2007	8 x 8 x 8	50 / 17,6	direct
80 t	Terex-Demag	AC 80-2	2007	8 x 8 x 8	50 / 17,6	direct
80 t	Grove	GMK 4080-1	2007	8 x 8 x 8	51	December
80 t	Terex-Demag	AC 80-2	2004	8 x 8 x 8	50 / 17,6+runn.	direct
80 t	Terex-Demag	AC 80-2	2004	8 x 8 x 8	50	December
80 t	Grove	GMK 4080	2001	8 x 6 x 8	43 / 13	direct
80 t	Demag	AC 80-1	1998	8 x 6 x 6	50 / 17,6	direct
80 t	Demag	AC 205	1996	8 x 8 x 8	50 / 17,6	direct
80 t	Demag	AC 205	1996	8 x 6 x 6	50 / 17,6	direct
75 t	Grove	GMK 4075	2005	8 x 6 x 8	43,2 / 17	direct
70 t	Liebherr	LTM 1070-4.1	2007	8 x 6 x 8	50 / 16	direct
70 t	Liebherr	LTM 1070-4.1	2005	8 x 6 x 8	50 / 16	December
70 t	Liebherr	LTM 1070	1990	8 x 8 x 8	42 / 18	direct
65 t	Tadano Faun	ATF 65 G-4	2006	8 x 6 x 8	44	December
60 t	Terex-Demag	AC 60/3 L	2008	6 x 6 x 6	44	direct
60 t	Liebherr	LTM 1060/2	2005	8 x 6 x 8	42 / 17	direct
60 t	Liebherr	LTM 1060/2	2004	8 x 6 x 8	42 / 17	direct
60 t	Liebherr	LTM 1060/2	2004	8 x 6 x 8	42 / 17	December
60 t	Faun	ATF 60-3	2004	6 x 6 x 6	40,2 / 16	direct
60 t	Liebherr	LTM 1060/2	2003	8 x 6 x 8	42 / 17	direct
60 t	Liebherr	LTM 1060/2	2002	8 x 6 x 8	42 / 17	December
60 t	Liebherr	LTM 1060/2	2001	8 x 6 x 8	42 / 17	direct
60 t	Liebherr	LTM 1060/2	2000	8 x 6 x 8	42 / 17	direct
55 t	Liebherr	LTM 1055-3.1	2006	6 x 6 x 6	40 / 16	December
55 t	Liebherr	LTM 1055-3.1	2005	6 x 6 x 6	40 / 16	December
55 t	Liebherr	LTM 1055/1	2004	6 x 6 x 6	40 / 2,5+runn.	direct
50 t	Terex-Demag	AC 50-1	2004	6 x 6 x 6	40 / 17,6	direct
50 t	Terex-Demag	AC 50-1	2002	6 x 6 x 6	40 / 17,6	direct
50 t	Demag	AC 150	1997	6 x 4 x 2	40 / 17,6	direct
45 t	Liebherr	LTM 1045-3.1	2007	6 x 6 x 6	34 / 16	direct
45 t	Faun	ATF 45-3	2006	6 x 6 x 6	34 / 15,2	direct

More machines, crane details and photos on: www.homar.nl

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