

INTERNATIONAL

CRANES

AND SPECIALIZED TRANSPORT

Volume 30 ■ Number 3 ■ DECEMBER 2021

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New technology

Going in heavy

Wind energy

INTERVIEW
Burger
Group

SC&RA jobs
of the year



Winners revealed

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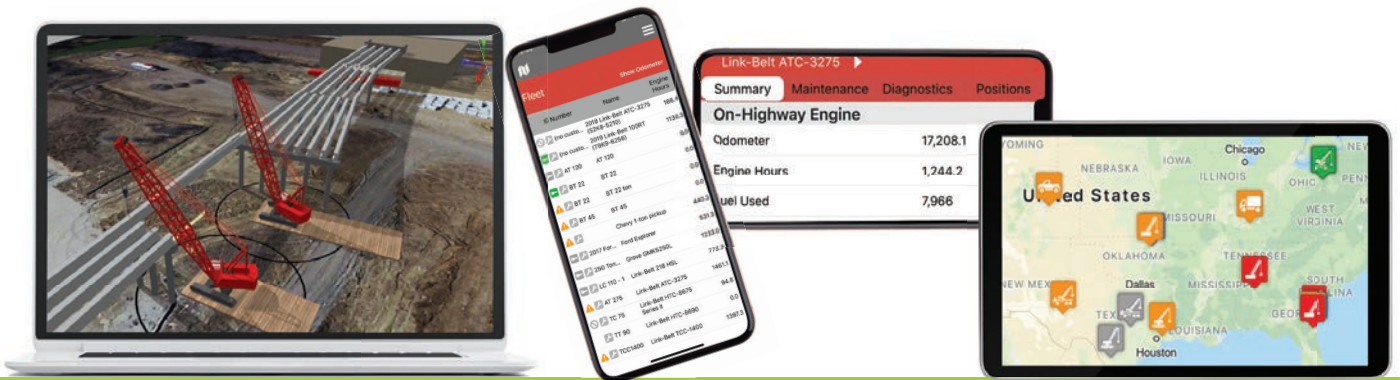


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EDITOR'S VIEW



This time last year I was surprised just how many new cranes were being announced.

A year on, still stuck with the virus, and still new cranes are coming thick and fast.

Anyway, nobody is complaining. No less than three of them here are electric, not counting the new offshore ones we announced recently. In the news starting on page 6 the new electric mobile cranes are from XCMG, Maeda and

Liebherr. Largest of the other new cranes is a 4,500 tonne giant from Sany, claimed as a world record and exceeding two of its own previous records, of 4,000 and 3,600 tonnes. Both of those were also double boom crawler cranes. See this one on page 7.

That isn't the only new record breaker. Also from China, and electric (but not mobile), we bring news of the Zoomlion W12000-450 flat top tower crane. This giant is claimed by its manufacturer as the world's largest top slewing tower crane.

Well, its 450 tonne capacity outstrips the 330 tonnes of the Favelle Favco M2480D. Similarly, the new Zoomlion giant's 12,000 tonne-metre maximum load moment rating exceeds the 10,000 tonne-metres of the legendary Krøll K10000.

Some units of that long-time record holder were first used to construct nuclear power stations in Russia. Subsequently, they have found their way to, among other places, the fleet of Mammoet, to the Norwegian oil industry, and in port at Singapore. Like the K10000, the new Zoomlion has a tower crane sprouting from its top, as a service crane. It is a 32 tonne luffer – by no means a small crane – but completely dwarfed by the one it sits on. See page 6.

Talking of tower cranes, I write this just after the sixth International Tower Cranes (ITC) conference. In the immediate lead up to the 1 and 2 December event more and more bad news about Covid just kept coming, in a threatening manner. In the end, however, more than 160 people managed to attend and I'd like to thank all of them for helping to make it a great event.

At risk of sounding biased, being there was well worth the effort. The presentations were interesting and, as ever, it was great to continue learning about the industry. While it isn't the first live industry event since the end of the last lockdown, it is still a refreshing feeling just to be out and about and meeting in person. This one just happened to be in France so, as you might expect, good food was more than the icing on the cake, as it were.

ALEX DAHM

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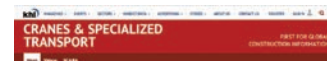


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IN THIS ISSUE

ON THE COVER

INTERNATIONAL CRANES AND SPECIALIZED TRANSPORT

New technology
Going in heavy
Wind energy
INTERVIEW
Burger Group

SC&RA jobs of the year
ICTL TOPLIFT
Winners revealed

THE MAGAZINE FOR EQUIPMENT BUYERS AND USERS

Cranes at Tiffany's: Orange County Ironworks and McLaren Engineering Group lifted this Bay Crane Liebherr as part of the winning project in our 2021 TopLift. See p34.

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FEATURES

HEAVY LIFTING 15
Some spectacular lifts from recent months show the sheer sizes and weights that can now be accommodated. *Niamh Marriott* reports.

INTERVIEW: STACY BURGER 19
Chilean crane rental house Burger Group is in a growth phase. *Stacy Burger* explained the expansion and upcoming challenges to *Cristián Peters*, editor of *ICST* sister magazine *Construcción Latinoamericana*.

REGULARS

NEWS 6

BUSINESS 13

SPECIALIZED TRANSPORT NEWS 23

E&A 41

BACK PAGE 43

MARKETPLACE

- PRODUCTS, PARTS & ACCESSORIES 46
- CRANES AND EQUIPMENT FOR SALE OR RENT 46

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NEW TECHNOLOGY 24
With hardware and software alike, the latest technology for the crane and transport industry focuses on improving safety and reliability of operations. *Niamh Marriott* reports.

SC&RA JOBS OF THE YEAR 26
Details of the winning projects in the 2021 Rigging and Hauling Job of the Year Awards announced at the 2021 SC&RA Annual Conference in Texas, USA.

WIND ENERGY AND TRANSPORT 31
The market is growing, and so is the equipment. With larger turbines comes new challenges to be overcome for the transport and installation of these massive monoliths of green energy. *Niamh Marriott* reports.

ICTL TOPLIFT: THE RESULT 34
The votes have been counted and the winner has been chosen...

SC&RA

SC&RA COMMENT 37
Joel Dandrea, SC&RA chief executive officer.

SC&RA NEWS 38
A round-up of updates shows how SC&RA rolled up its sleeves and produced in 2021.

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LIEBHERR'S 110 TONNE UPGRADE

Changes on the latest version of Liebherr's 110 tonne wheeled mobile crane include new features, updated control system, new cab and an improved gearbox. The LTM 1110.5.1, first shown in 2019, is now LTM 1110 5.2. It has a new carrier cab, the new LICCON3 crane control system and the ZF Traxon DynamicPerform gearbox. There is also a new multi-plate oil-cooled wet clutch. The latest LICCON3 is the third generation, with more storage and more computing power. Features of the redesigned cabin include multifunction steering wheel, side roller blind on the driver's door, improved instruments and modules, plus new displays. Central locking is optional as is a cool box.

Zoomlion shows 450 tonne tower crane

Crane and construction equipment manufacturer Zoomlion has launched what it claims is the world's largest top slewing tower crane.

The 450 tonne capacity W12000-450 flat top was first shown in the iron at the company's factory in Changdu, Hunan Province, China.

Rated at 12,000 tonne-metres, the manufacturer said it is the first top slewing tower crane with a maximum load moment greater than 10,000 tonne-metres. Maximum lifting height is given as 400 metres and it weighs 4,000 tonnes.

On top the new giant, sprouting from the mast above the main crane's jib is a 32 tonne



Zoomlion W12000 450 flat top tower crane at its October launch

capacity Zoomlion L500-32 luffing jib auxiliary crane. This alone is a 6,700 tonne-metre crane with a maximum 60 metre jib at the end of which it can lift 21.48 tonnes.

The first unit is destined for

a project in China to build the Changzhou-Taizhou Yangtze River Bridge. It will be the world's largest road and rail cable stayed bridge and will include two roadways and a railway line.

New Liebherr 400 tonne crawler crane...



The LR 1400 SX is a 400 tonne capacity crawler crane now available from Liebherr-Werk Nenzing

A 400 tonne capacity crawler crane has been announced by Liebherr-Werk Nenzing in Austria. The LR 1400 SX extends the division's offer above the 300 tonne threshold previously the domain of Liebherr-Werk Ehingen in Germany. "This is a big step for our location," said Gerhard Frainer, managing director for sales.

Maximum boom length is 178 metres giving 130 metres as the longest radius. Power is from a 450 kW diesel engine.

Deliveries have started,

Liebherr said. Easy transport and assembly were key requirements. Transport weight of the basic machine is given as 46 tonnes. Dimensions of the basic machine are 3 metres wide, 3.45 metres high and 12.62 metres long.

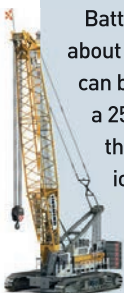
"You can operate the whole crane with the remote control," said Paul Belcher, Mountain Crane Service owner and managing director in the USA.

First to take delivery in Germany is family-owned contractor Depenbrock.

...AND ANOTHER NEW ELECTRIC CRAWLER CRANE

Details have been revealed of an electric version of Liebherr's 160 tonne capacity LR 1160.1 lattice boom crawler crane. As with its bigger siblings – the 220 tonne capacity LR 1200.1 unplugged and the 250 tonne LR 1250.1 unplugged – the latest one can be operated via a mains power cable, or untethered, on batteries.

Battery capacity is designed to allow four hours of operation (or about 650 metres of crawler travel) and recharging the battery can be done in 4.5 hours. The 700 Volt DC system onboard uses a 255 kW electric motor in place of the diesel engine to drive the hydraulic pumps. It has a 165 kW-hour capacity lithium-ion NMC (nickel manganese cobalt) battery as standard and there is a 198 kW-h option for longer running time. Existing unplugged crane customer Select Plant in the UK will get three units of the latest model.



Italian real estate developer Gruppo Irgenre is using seven Potain tower cranes, from dealer Edilcom Gru, to help construct a tourist hub in Pompeii.

The fleet includes five Potain MCT 88 flat top city cranes and two larger MDT 189 flat tops. The MCT 88s are assembled at heights between 21 and 31.5 metres, with a 52 metre boom. Capacity is 5 tonnes while at



HIGHLIGHT

Crosby has acquired Airpes Sistemas Integrales de Manutencion Y Pesaje, a Spanish lifting, handling and weighing equipment company. Its products include a yoke blade clamp for safe wind turbine installation and maintenance. Airpes joins the technology solutions portfolio, along with BlokCam, Straightpoint and Verton.

MAXIM APPOINTS MCDONNELL AS CEO



Paul McDonnell has been named chief executive officer at Maxim Crane Works. McDonnell has more than 25 years of

experience in the construction equipment rental business. He worked for more than 20 years at United Rentals, the largest equipment rental company in the world. He was most recently executive vice president and chief commercial officer. Prior to this he ran his own company, D&E Steelplate Rental, before it was acquired by United Rentals.

In conjunction with McDonnell's appointment, the interim office of the CEO has been dissolved and the team that has been running the business – Sean Collopy, CFO; Don Goebel, chief legal officer; and Larry Lis, vice president of the midwest region – will return to their original roles.



Sany completes 4,500 tonne crawler crane

A 4,500 tonne capacity crawler crane has been built by Sany and handed over to its first customer.

The Chinese crane and construction equipment maker claimed a lifting capacity record for its new SCC45000A crawler crane with double lattice booms.

The 28 October handover followed previous Sany milestone models, including a 3,600 tonner in 2011 and a 4,000 tonner in 2020. The company claimed the latest 4,500 tonner as "the largest lifting capacity of mobile cranes ever recorded in human history."

Its maximum load moment rating is claimed to be more than 98,000 tonne-metres. "The crane is theoretically able to hoist more than 3,000 sedan cars, outperforming all similar products," the company said.

Maximum boom length is 216 metres. In addition to the 4,500 tonne double boom configuration, the crane can be rigged with one boom. Capacity is then 2,000 tonnes.

The superlift ballast wagon is mounted on crawler tracks and the superlift radius can be adjusted from 28 to 37 metres. ■

The Sany SCC45000A is a 4,500 tonne capacity crawler crane with a maximum load moment rating of more than 98,000 tonne-metres

CATME 2022 CONFERENCE



The third Cranes and Transport Middle East (CATME) conference will be held in Dubai, UAE, on 22 and 23 March 2022. Paul van Gelder, Mammoet CEO, will be keynote speaker.

The event was originally scheduled for October 2020 but postponed due to Covid. CATME will be held at the Swissotel Al-Murooj, in the Downtown area close to the Dubai Mall.

CATME is a learning and networking event for anyone working in the region's crane and specialized transport sector. Topics will include improving health and safety, productivity and fleet management, best practice and case studies. See: www.khl-catme.com

Maeda and Deutz launch electric crawler crane

Japanese crane manufacturer Maeda unveiled the CC 1485 mini crawler crane with an all-electric drive from German drive systems specialist Deutz, at a

Deutz Days trade event. The 6 tonne capacity telescopic boom crane has a 360 Volt, 40 kW, drivetrain powered by a lithium-ion battery.

"Environmentally friendly construction sites are now a reality, not a distant dream. We are delighted to present the prototypes for an electric construction-site vehicle," said Markus Müller, Deutz chief technical officer. "The CC 1485 is already fully functional. Our electric drive is quiet, efficient and emission free, even when used on a building site."

Tomiaki Habasaki, executive general manager, industrial



The CC 1485 mini crawler lifts up to 6 tonnes

jib-end it is 1.1 tonnes. Both the MDT 189s are 40 metres tall with 60 metre booms. Capacity is 8 tonnes and 1.8 tonnes at the tip.

Work will be transporting construction materials around the site, before starting on the buildings. The 200,000 square metre Maximal Pompeii complex, close to the Pompeii archaeological site, will include 200 shops and 25 restaurants.



machinery headquarters at Maeda, said, "Maeda has already been in the electrified vehicle market with its small spider crane in Europe."

Deutz and Maeda will showcase the new crane in Munich, Germany, at the bauma 2022 trade fair in October. Full production of the Deutz electric drive is scheduled for 2023. ■



The range-topping Hiab iQ.1188 HiPro

Hiab launches largest loader crane

Cargotec has launched a 110 tonne-metre rated loader crane, the Hiab iQ.1188 HiPro.

It is the largest Hiab crane to date, offering long reach and high lifting capacity in a light and compact package, the company said, adding it is similar in size to a 90 tonne-metre model.

Installed on a 4 axle truck

it still leaves room for payload, Hiab said. Its performance to weight ratio is achieved by the new V12-Power boom profiles.

“Our customers want big cranes that are suited for a great variety of tasks in a smaller crane package to increase flexibility, reduce operating costs and improve fuel efficiency. We are proud to have launched our

biggest Hiab crane to date,” said Marcel Boxem, director of product management, loader cranes heavy and super heavy at Hiab.

The new range-topper comes with the company’s new control system SPACEvo and its CombiDrive 4 remote control which, it said, delivers new productivity and safety benefits. ■

HIGHLIGHTS

■ Abu Dhabi-based Aertssen Machinery Services has ordered seven GR-1450EX and four GR-500EXL rough terrain cranes from Japanese crane maker Tadano. Aertssen wants to standardise its fleet with all Tadano cranes, using them primarily for construction work in the energy sector, the manufacturer said.

■ In the USA CraneWorks has acquired Midwest Crane Repair based in Illinois. Midwest will be rebranded as CraneWorks St. Louis and will be the company’s ninth nationwide location. Midwest Crane Repair has operated in the St. Louis area since its founding in 2013.

Giant Huisman cranes for offshore wind

Dutch crane and engineering specialist Huisman has been awarded contracts to construct three giant leg encircling cranes.

A contract from Van Oord is to construct a 3,000 tonne capacity leg encircling crane (LEC). It will be the largest of its type built by the company. The other contract, from COSCO Shipping (Qidong) Offshore, is to design and construct two 2,000 tonne capacity LECs for Cadeler.

The larger crane will lift 3,000 tonnes or more and will be mounted on fellow Dutch company Van Oord’s new offshore installation vessel due to enter service in 2024. The jack up vessel, now known to be called Boreas, will be capable of installing 20 MW turbines and their foundations. Components to build as many as seven turbines will be carried on board. It will be powered by methanol as part of its design to have a minimal carbon footprint.

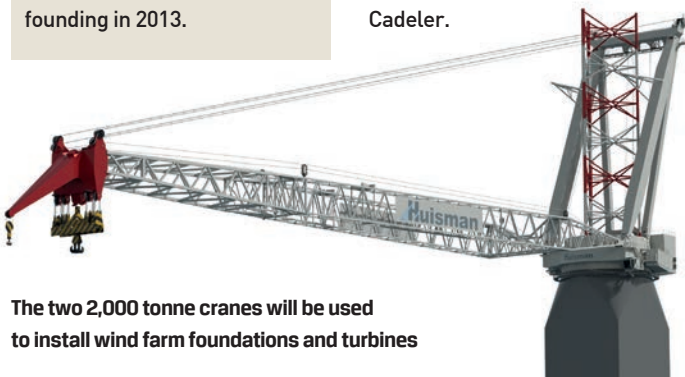
The 2,000 tonne cranes will be installed on Cadeler’s two new build X-class vessels and used to install foundations and turbines for offshore wind farms, as well as for operation and maintenance work. The identical cranes will have 155 metre booms, capable of reaching 180.5 metres above



Artist’s impression of the new Van Oord offshore installation vessel for 20 MW turbines with 3,000 tonne Huisman leg encircling crane

deck. An option to extend the boom to 175 metres will increase lifting height to 200.5 metres.

To read about the latest news in heavy lifting go to page 15. ■



The two 2,000 tonne cranes will be used to install wind farm foundations and turbines

ITC CONFERENCE SUCCESS

The International Tower Cranes (ITC) conference in Nice, France, opened on 2 December, with Albert Galoy, president of DLR’s tower crane group, emphasising the importance of training of tower crane erectors and fitters. Galoy said the tower crane market that needed to undergo a paradigm shift; “Technology innovation is not enough if there is no real change in the way we work. We not only have to adapt and innovate, we also have to imagine the market of the coming years to lay the foundations today.”

The conference attracted more than 160 delegates and heard speakers from Windcrane, AMCS, Raimondi, Liebherr, Wolffkran, Lextan, Skycrane, UltraWis, SMIE and Manitowoc.

Videos of many of the presentations will be available to view online at internationalcranes.media after the event. Also, see the event website: khl-itc.com

HIGHLIGHT

■ Australian heavy duty tower crane and specialist lifting company Marr Contracting has opened an office in the UK. The company has already been operating outside its home country for more than ten years but Marr Contracting International, in London, will help improve contact with clients in the UK, Europe and Middle East. Tom Batley is heading the operation as managing director.

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The new XCT25 EV truck crane from XCMG at its launch in November. It is a 25 tonner with hybrid powertrain

Chinese manufacturer XCMG has shown a new 25 tonne capacity truck crane with a hybrid diesel and battery-electric power train.

The XCT25 EV is a three axle crane with a four section telescopic boom. XCMG claims an operating range of more

Hybrid truck crane new from XCMG

than 800 km. This is achieved with fully charged battery and full diesel tank, the company said. Operating modes can be switched between a combination of diesel and battery, just battery, just diesel or the crane can be operated via a cable from a mains electricity supply.

Acceleration time from 0 to 40 km/h is given as 16 seconds and recharging time to full is said to be 1.5 hours. The manufacturer

said the noise level of the new crane is 60 decibels instead of 80 db for the diesel-only model. In 2021 XCMG said it registered 44 patents in China and nine patents in other countries for its mobile cranes.

This new hybrid version of the XCT 25 was one of five new C-series wheeled mobile cranes, including all terrain models, launched at the event held in China, mid-November 2021. ■

ULTRAWIS TESTS REMOTE OPERATION

Israeli start up UltraWis' ground control system, Widesite, was used over a 10 month pilot period by construction firm Tidhar.

Tidhar, together with Harel insurance firm, are building a new project for Kiryat Ono College in Israel, which includes three buildings, eight floors each, for a total of 63,000 square metres. UltraWis installed its Widesite system on Tidhar's Potain MDT 302, one of three tower cranes on the job. Tidhar said operating a crane from the ground can bring productivity and safety benefits, as well as improve working conditions.

Widesite uses cameras to supply and record continuous video from the site. Data is captured in real time with overlapping of the recorded scene for added safety and improved decision making.

HIGHLIGHT

■ Palfinger has acquired TSK Kran und Wechselsysteme and TSR Lacktechnik. The take over will be finalised at the beginning of 2022. It will strengthen the crane maker's position in the German market.



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The last four weeks have seen some serious growth. The market seems to be turning the tide on Covid but with new variant threats and continued global supply chain disruption, will it be sustained? NIAMH MARRIOTT reports

Giant leaps

There have been some big changes to the share prices both from last month and compared to 12 months ago. Notably, the 12 month percentage change is dramatic from USA-based Terex and Japan-based Tadano, with increases of 45.21 and 49.70, respectively. The biggest change seen is from USA-headquartered global crane manufacturer Manitowoc with 84.12 per cent.

Austrian manufacturer Palfinger has also recorded year-on-year growth. Following the extension of its long-term targets last month due to record order intake, the company announced it has expanded in Germany with the acquisition of

TSK Kran und Wechselsysteme and TSR Lacktechnik. The take-over will be finalised at the beginning of 2022. According to Palfinger CEO Andreas Klausner, it “emphasises the importance of the German market.”

There is a potential delay for the merger of Cargotec and Konecranes, as the UK Competition and Market Authority (CMA) concluded in its findings that the transaction may result in a substantial lessening of competition in several product markets, an opinion the companies unsurprisingly disagree with. The two will continue to engage with the CMA, as well as their dialogue and co-operation with other

relevant competition authorities. These include the European Commission and the US Department of Justice. Cargotec remains confident the merger will be completed by Q1 2022.

Japanese manufacturing conglomerate Kobelco, on the index as Kobe Steel, released its financial results for the first half of fiscal 2021 and the forecast for the full fiscal year. The company anticipates a decline in sales volume in the materials businesses due to a decrease in automobile production, and a decline in unit sales in the construction machinery business due to a decrease in overall demand and intensified competition in China. It also believes that major raw material costs are anticipated to rise from the previous forecast due to the impact of rising coal prices.

Crane and specialized equipment manufacturer Manitex International announced its third quarter 2021 results showing net sales up by 39.7 per cent year-on-year, to US\$50.9 million, compared to \$36.5 million in the same period of 2020.

“The third quarter played out largely as expected, with solid top line growth even with global supply chain constraints, seasonal shutdowns in Europe, and the ongoing pandemic,” said Steve Filipov, Manitex International CEO. “Our backlog remains robust, at \$113.6 million. The supply chain disruptions and logistical bottlenecks have impacted our ability to meet industrial demand and have increased material costs. We are streamlining operations to mitigate these unusual headwinds.”

NOVEMBER IC SHARE INDEX

STOCK	CURRENCY	PRICE AT START	PRICE AT END	PRICE CHANGE	% CHANGE	PRICE 12 MTHS AGO	12 MTH % CHANGE
IC Share Index*		111.20	102.18	-9.02	-8.11	110.21	0.90
Legacy IC Share Index**		353.51	344.39	-9.13	-2.58	271.36	30.28
Dow Jones Industrial Average		35,713	35,804	91.31	0.26	29,872	19.55
FTSE 100		7,234	7,093	-141.67	-1.96	6,331	14.27
Nikkei 225		28,805	28,752	-53.23	-0.18	26,644	8.11
Hitachi Construction Machinery	YEN	3,405	3,425	20.00	0.59	2,986	14.03
Konecranes	€	36.84	35.48	-1.36	-3.69	29.22	26.08
Kobe Steel	YEN	649	581	-68.00	-10.48	526	23.38
Liugong	CNY	7.66	7.46	-0.20	-2.61	7.74	-1.03
Manitowoc	US\$	21.10	20.69	-0.41	-1.94	11.46	84.12
Palfinger	€	37.45	34.60	-2.85	-7.61	25.20	48.61
Sany Heavy Industry	CNY	25.16	22.49	-2.67	-10.61	31.11	-19.13
Tadano	YEN	1,265	1,061	-204.00	-16.13	845	49.70
Terex	US\$	46.09	47.73	1.64	3.56	31.74	45.21
XCMG	CNY	6.23	6.01	-0.22	-3.53	5.31	17.33
Yongmao Holding	SGD	0.76	0.77	0.01	1.32	0.75	1.33
Zoomlion	CNY	8.05	7.03	-1.02	-12.67	8.28	-2.78

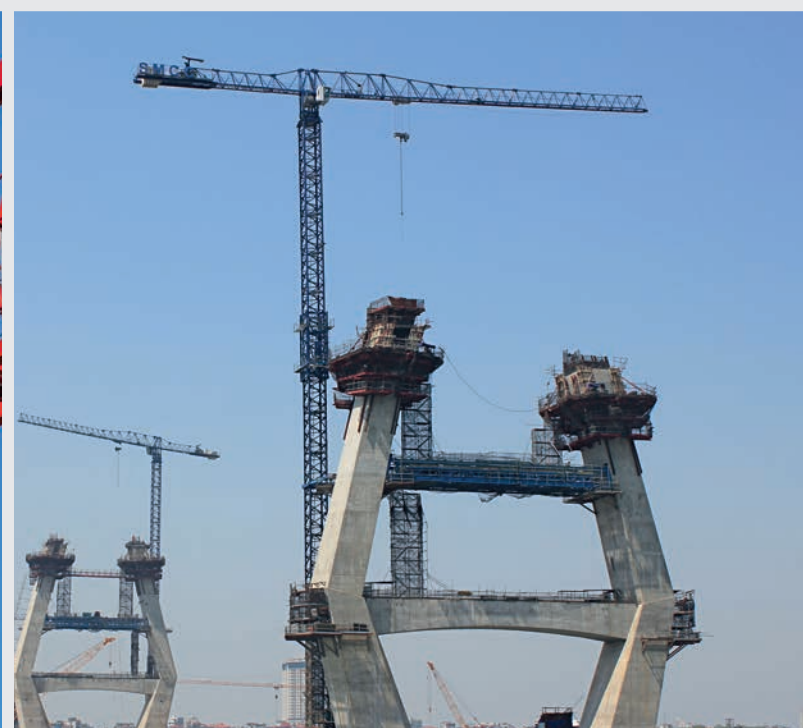
*IC Share Index, 1 Jan 2011 = 100

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

EXCHANGE RATES – VALUE OF US\$

CURRENCY	VALUE AT START	VALUE AT END	VALUE CHANGE	% CHANGE	VALUE 12 MTHS AGO	12 MTH % CHANGE
CNY	6.323	6.389	0.07	-1.02	6.58	-3.87
€	0.859	0.886	0.03	-3.09	0.84	2.42
Yen	113.626	113.949	0.32	-0.28	104.15	9.10
UK£	0.726	0.750	0.02	-3.15	0.75	-3.14

Period: Weeks 43-48



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Some spectacular lifts from recent months show the sheer sizes and weights that can now be accommodated.

NIAMH MARRIOTT reports

Site congestion was the biggest challenge for a recent project for Mammoet with a J&R Engineering T1402-4-39 Lift-n-Lock gantry on behalf of client Walsh/Fluor in Chicago, USA

Lampson's Transi-Lift LTL-3000 has hydraulic hoisting capabilities



Heavyweight champions

The space industry is one that notably benefits from heavy lift equipment. In a recent project, Sarens was involved with the transportation, lifting and placement of a launch chamber used by SpinLaunch in New Mexico. The spaceflight technology development company, working on mass accelerator technology to move payloads to space, commissioned Sarens to work with its team on the engineering and construction tasks required for the installation of the

launching chamber, which with 33 metres diameter and more than 1,000 tonnes, is the largest of its kind.

Lift and launch

Sarens designed a detailed engineering plan that included all the tasks necessary to lift and tilt the launching chamber at the required angle. The company mobilised a 32-truck operation to transport all the equipment from its facilities in Virginia and Houston

to New Mexico. As part of this operation, the Belgian company deployed two 5,800 millimetre SMLT towers, four strand jacks each with a 450 tonne safe working load, two 45 tonne strand jacks, 64 axle lines of K24 self propelled modular transporter and four power pack units.

Once all the necessary equipment was in its final location, the launch chamber was lifted vertically 16 metres, rotated 90 degrees and then transported 200 metres.

Raising cranes

Elsewhere in the world, Sarens worked at Port Said in Egypt, on behalf of its client, Chinese crane manufacturer ZPMC, working to raise six ship to shore cranes. The project involved inserting 11.5 metre extension legs below each crane. To raise them Sarens used its CS5000 jacking system.

Sarens completed a similar job with the CS5000 in Antwerp, Belgium, and was confident in the system's suitability for this project as well.

Once the equipment was on site, Sarens faced a challenge as the terminal yard was sloped, with no reference points on site for setting up the equipment. The four jacking bases needed to be positioned and aligned

HEAVY LIFTING AT WORLD'S LARGEST OFFSHORE WIND FARM

Heerema Marine Contractors has installed both of Ørsted's Hornsea Two offshore substations, marking an important milestone for what will become the world's largest offshore wind farm. Heerema executed the installation of the RCS and OSS jacket foundations in October 2020 and has now returned to install the topsides. One topside weighed 8,000 tonnes and the second one was 2,000 tonnes.

Hornsea Two is 89 kilometres off the Yorkshire, UK, coast in the North Sea, and the project will consist of 165 turbines with a combined total capacity of 1.4 gigawatts.



HEAVY LIFTERS GETTING HEAVIER

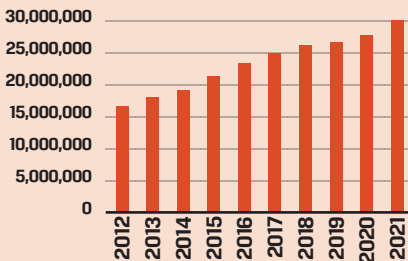
A seemingly relentless trend in the crane industry is that heavy lift cranes are getting bigger and more powerful, while fleets owned by the biggest crane rental companies are also moving up the scale.

A new joint report between ICST and specialist research and forecasting company Off-Highway Research bears this out through analysis of more than ten years of data from the IC50 league table. This shows that while the number of cranes owned by the world's hundred largest crane rental companies has historically grown by 2 per cent per year, the total load moment rating of the fleet in tonne-metres has increased 7 per cent per year over the last decade – a clear indication that when crane rental companies renew their fleets they tend to trade-up for more powerful cranes with greater lift capacity.

Another clear indicator is the size of the biggest crane in each fleet. Twenty years ago the average lifting capacity of the largest crane across the league table was 800 tonnes but, by this year, that figure had risen to 1,200 tonnes.

For more information about the Global Mobile Crane Fleets report, please go to: www.offhighway-store.com

Total IC Index (tonne-metres)



perfectly at the same level so that the rest of the structure on top would fit so this was done using a total station.

With everything in place, Sarens jacked up the upper part of each 1,360 tonne STS crane by 12.5 metres so that the client could insert 11.5 metres sections below. In total, there were 15 elements per tower, and each measured one metre high. Because of the weight of the crane, bracings were installed for extra stability during the lift.

The preparation for this heavy lift was unusual as the site is located in a military zone. This meant that every person needed to be screened four weeks in advance and the sole access to the site was via a ferry.

“Finally, after six months of preparations and some unusual site conditions, we are rewarded with this spectacular view,” says project manager Joris Beevers.

Big Carl back in action

The world's biggest crane, nicknamed Big Carl, has been in action again at Hinkley Point C nuclear power station in Somerset, UK. The 5,000 tonne capacity Sarens SGC-250 placed the first steel ring section onto the second reactor building, 11 months after the same operation on the first reactor. The 575 tonne prefabricated ring, which is 47 metres in diameter and 17 metres high, forms part of a reinforced cylinder around the nuclear reactor. This installation was an identical design to the first reactor but the second ring was built 25 per cent faster than the same part on unit one. EDF says this is due to a 'replication effect' and will benefit the current project and the Sizewell C project in Suffolk.

Like the part above weighing nearly 600 tonnes, Kate Lampson from Lampson



International in the USA sees a growing trend of heavier components needing heavy lift equipment. “I believe that the need to lift heavier components at power plants, the erection of larger wind towers, the desire for easy assembly and dismantle on site and sleeker designs to fit in smaller footprints, are all increasing the demand for heavy lift equipment and are driving current trends in the heavy lift industry,” Lampson says.

“We are seeing a demand for our Lampson Transi-lift as it has independent track driven crawler transporters which allows the crane to make a lift, while at the same time carrying and setting the load,” Lampson continues. “It has a small footprint, giving it the ability to fit into tighter spaces on job sites. There is also the advantage of the Transi-Lift's ability to provide much longer reach capabilities due to its capacity at radius.”

Lampson adds, “Our highest capacity heavy lift equipment that we offer is the Lampson Transi-Lift LTL-3000. This crane has 400 feet [122 metres] of main boom, 120 foot [37 metre] jib and a 20 foot [6 metre] ‘jiblet’. It also has a 3,000 ton [2,721 tonne] front crawler, hydraulic hoisting capabilities, a larger boom cross section, a newly designed enclosed engine compartment and an increase from 1 ½ inch wire rope to 2 inch [38 to 51 mm] wire rope.”

“Our second largest capacity crawler crane is our Lampson Transi-Lift LTL-2600, which we used recently for construction at a power plant in Georgia.”

Pete Crisci, product line director of heavy lifting technology and machining products at



Sarens's 5,000 tonne capacity crane, Big Carl, has been in action again at Hinkley Point C in the UK



Sarens lifted a launch chamber for spaceflight technology company SpinLaunch

Enerpac says lifts are getting heavier largely due to prefabrication. "This trend is more pronounced in certain industries than others. As lifts get heavier, they are becoming more complex and require more specialized lifting equipment," he says.

Preparation is key

Crisci says a vital consideration for heavy lifts is proper ground preparation. "As an

example, when using telescopic hydraulic gantries, most time is spent properly setting, aligning and levelling the track to insure proper load distribution."

Mammoet recently built a custom-made gantry system for a heavy lift in Vietnam, for Dung Quat Shipyard (DQS). With no readily available lifting system in the market that could lift 1,100 tonnes on a crane barge, DQS approached Mammoet to provide a solution for the replacement of a pintle bearing, located at the bottom of the crane.

The custom system comprised four tower gantries, four SJ850 strand jacks, each with 850 tonnes lifting capacity. High precision was required so the team used special software to operate and control the strand jacks. When the gantry was fully constructed, it was assembled onto the crane so DQS could replace the pintle bearing.

Offshore from Vietnam, Mammoet was selected to work on the Sao Vang and Dai Nguyet (SVDN) gas and condensate development project, approximately 300 kilometres south-east of Ho Chi Minh City. Mammoet's contribution included a load out of the Sao Vang jacket, flare tip installation, installation of the living quarters module and topsides integration. The project's first phase involved the load-out of the jacket. Extensive

engineering preparations were needed, and Mammoet used a strand jack load-out system. The living quarters were transported via 56 axle-lines of SPMT then the LQ module was placed on top of four Mega Jack 5200 towers for lifting to a height of 18.6 metres and into place.

To be successful, heavy lifts take proper planning and preparation, and often require custom made equipment. With massive innovation coming from this sector, the sky really is the limit. ■



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Chilean crane rental house Burger Group is in a growth phase. STACY BURGER explained the expansion and upcoming challenges to CRISTIÁN PETERS, editor of *ICST* sister magazine *CONSTRUCCIÓN LATINOAMERICANA (CLA)*

Burger's newest fleet-topping addition is the first unit in Chile of Liebherr's new 700 tonne capacity LTM 1650-8.1 wheeled mobile telescopic crane



Raising growth

The Burger Group, a Chilean company with more than 40 years of experience in the domestic market, continues to grow and look for new alternatives to expand its borders. The company founded by Raúl Burger Rojas (1933-2021) is now led by his son Raúl Burger Torres and grandchildren Stacy and Erich.

The company featured on the front cover of the June 2021 issue of *ICST* as part of the long-established IC50 ranking of the world's largest crane-owning companies.

Since its inception Burger has experienced strong growth which made it an important reference in the lifting and specialized transport of oversize and-or overweight loads. An interesting fact that supports the company's specialization is that it is responsible for the installation of more than half of the wind turbines in Chile.

Cristián Peters talked to Stacy Burger, Burger Group's marketing manager, who spoke about the growth the company has experienced, its challenges and the new equipment being acquired to further increase the fleet.

CP: WHAT ARE THE GROWTH CHALLENGES FOR A FAMILY BUSINESS IN THIS SECTOR?

SB: The company was founded by my grandfather Raúl Burger Rojas – may he rest in peace – and then my dad joined the company in 1996 and continued the legacy and drove it to be the leading company it is today. A year ago, and my brother five years

ago, we joined and are in transition from being the third generation of the family in the lifting world.

Being a family business gives us a competitive advantage because today large corporations have documentary and decision-making processes that are very extensive. Instead we, as long as we agree as a family board, can make investment and business decisions quickly. This agility is what customers are looking for. We can adjust to the immediate needs they have in the market, which I think is an advantage rather than a weakness.

HOW HAVE YOU DEALT WITH THE COVID PANDEMIC?

The beginning of the pandemic was, for everyone, challenging, especially because our field is face-to-face services. Everything involving communication technologies and also to safeguard the health of our employees, became difficult, as it did for most companies in the field. It has to do with how we shifted to teleworking, being that we were very used to being on the ground in the plant. We had to adapt.

Once we overcame that great challenge, in the second semester we set out to accelerate the year and fortunately managed to recover. We closed with a good year. This year too the »

Three generations: Burger Group's late founder Raúl Burger Rojas, front, with grandson Erich, left, granddaughter Stacy, right, and son Raúl Burger Torres

“ Being a family business gives us a competitive advantage because we can make decisions quickly. ”

STACY BURGER,
Marketing manager, Burger Group



expectation is to continue accelerating. We have already received new cranes and new trucks, for example, a Liebherr LTM 1650-8.1, the first in Chile, that is already in the port of San Antonio, in addition to two other LTM 1120-4.1 wheeled mobile telescopic cranes.

WILL THIS CRANE BE AIMED AT A PARTICULAR INDUSTRY?

A great benefit of this 700 tonne capacity equipment is that it is on tyres so it works both for mining and for the installation of wind turbines. Being a large crane it is very versatile, which allows us to operate according to the needs of the business.

I am proud to say today we have a fleet of 50 high-tonnage cranes. It is a mix between hydraulic telescopic and lattice jib cranes. They range in lifting capacity from 50 to 700 tonnes, with the LTM 1650-8.1 at the top.

YOU ALSO HAVE SPECIALIZED TRANSPORT SERVICES.

Exactly, we have a subsidiary company with a fleet of special transport equipment that has almost 20 trucks.

Today the model is to offer customers a complete service. From the corresponding port we transport the turbine then install it and leave it ready for operation.

It makes sense, we must take advantage of synergies that have to do with the conversation between companies. In this way our transport fleet co-ordinates very well

“ We haven't ruled out or closed plans to expand into countries such as Perú and Colombia. ”

STACY BURGER,
Marketing manager, Burger Group

with our fleet of cranes and the wind parks are made more efficiently.

WHAT ARE THE MOST IMPORTANT INDUSTRY SECTORS FOR THE COMPANY?

Clearly mining is one of our fundamental pillars. Today we work in the north and in the centre of the country with more than five major mining companies. They are long-term contracts of five or six years. We are, however, also very interested in renewable energies, as, for example, we are planning to work on a new green hydrogen plant, unique in Chile. We are also the company that has set up the most wind farms in the country. (Burger has installed more than half of the existing wind turbines in Chile).

I would not like to leave only these groups as important. In addition, we specialize in everything that has to do with industrial procedures, from the metro to whatever we can think of.

ARE YOU LOOKING AT THE POSSIBILITY OF EXPANDING OUTSIDE THE COUNTRY?

Indeed, a couple of years ago we had conversations, especially in countries such as Perú and Colombia. It is very interesting. First, because of the proximity, but second because in these two countries there are many wind projects in the planning phase. I would say that we have not done so but we are 'at the gates.' Our fleet has a 95 per cent utilisation rate so, before internationalising we have to finish capitalising internally the projects we are executing. After covid the recovery is progressing and the fleet is quite busy. We have not yet closed the plans in Peru and Colombia.



Wind energy work, including turbines and foundations, is a mainstay of activity for Burger

WHEN COULD THIS INTERNATIONALIZATION BE?

One year is the deadline we set ourselves as a company and that's where the plans are headed.

WOULD IT BE BURGER GROUP OR IN PARTNERSHIP WITH A LOCAL COMPANY?

We are evaluating. There is a feeling of camaraderie with all the companies we have talked about in both Perú and Colombia and the idea is to make a joint venture. It makes a lot of sense for us to have alliances between Latin American countries to take these projects forward.

HOW HAS THE BURGER ACADEMY EVOLVED?

Academy Burger started in 2019 and was intended to contribute to the development of local communities by training high-tonnage lifting professionals. It has been a success. We have trained more than 200 operators and riggers, both internal and external. This is thanks to, first, our teachers, who have more than 30 years of experience and, second, because this academy contemplates a lot of technology. Let's have a simulator called Burger 4D that allows you to practice real cases before getting on the crane – we are minimising the risks as much as possible.

Operators go through practical and theoretical online courses and simulators. We are very proud to contribute to the development of people.

The teams are very happy and so are we. We want to continue with the evolution of the Academia and hopefully continue to outsource it so that more people can access it. ■



The company said it has installed more than half the wind turbines in Chile

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Mega yacht moved

In Italy, self-propelled modular transporter type MSPE by Cometto was used to transport a 997 tonne yacht due for maintenance. Once out of the water, the yacht was transported from the floating dock to the repairing building site on a transport of 40 axle lines. Heading the operations were TER company, a member of the Piccini Group, which regularly handles mega yacht transportation.

The company said the assembly structure of the SPMT fleet was quite unusual. In the rear of the ship, two lines with 14 MSPE axles each were assembled in a side-by-side configuration but for the front part of the freight, three 4-axle units were put together in 90 degree position to build a larger, more stable platform. Five powerpack units offered the necessary power to propel the convoy. ■

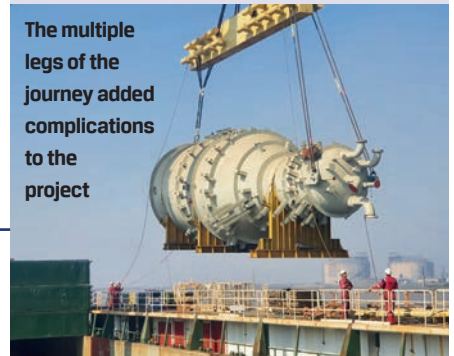
MULTIPLE MOVES FROM WEST TO EAST OF INDIA

Total Movements in India delivered a 7 metre long super OD solid stainless steel recondenser for a LNG regasification terminal on the East coast of India.

The project involved multiple transportation legs. First, the cargo was transported on road from the factory to a nearby jetty then via barge to a nearby seaport on the West coast of India. Following this, it was transported by sea on a heavy lift vessel to a discharge port on the East coast. From there it was taken to the final site. Multiple transportation legs were a significant challenge of the job, in addition to getting a suitable coastal tonnage in time for breakbulk shipping of the cargo.

A spokesperson for Total Movements said, "We are happy to have delivered this cargo safely. A big shout out to all the stakeholders involved who played a key role to make this operation a success."

The multiple legs of the journey added complications to the project



Allelys delivers electric motor

UK specialist Allelys was contracted to deliver, lift and install 15 components for the Rassau project, a grid stabilisation project in the UK. The components delivered form a synchronous condenser, which is a motor that adjusts electrical power conditions on the transmission grid, the first to go live in the UK.

The components ranged in weight between 7.5 and 200 tonnes and were installed in a generator hall. The confined space in the hall added an extra layer of complexity to the project and required a bespoke engineering solution to be designed. First, the company had to deliver, lift and

install five containers to a raised foundation using a 200 tonne mobile crane and specialist lifting tackle. The crane then installed an 11.5 tonne auxiliary transformer. Next, a 73.5 tonne step up transformer, transported to site on a 6 axle MPA low loader trailer, was lifted using a 500 tonne mobile crane. A 450 tonne hydraulic gantry system was then mobilised on site to lift, propel and position the 9.5 tonne pony motor, followed by a 62.5 tonne

fly wheel, a 7.5 tonne oil skid and 10 tonne cooler unit. The 12 metre long outdoor cooler was the next to be delivered, then a 200 tonne generator was transported to site on a 18 axle flat top trailer. After lifting the final piece, a 20 tonne cover, SPMT transported the generator downhill and around tight corners, inside the hall ready to be lifted. ■

WORLD'S LARGEST AIRCRAFT CHARTERED

Gebrüder Weiss chartered the world's largest cargo plane to Rzeszów airport to transport goods from China to Poland.

The six-engined Antonov AN-225 landed at the airport, 170 kilometres east of Krakow, in mid November 2021, carrying project-based cargo. The aircraft had left the Chinese airport of Tianjin a day earlier.

Stanislaw Rosciszewski, country manager for Poland at Gebrüder Weiss said, "Although charter flights are a regular part of our air services, handling the transport of goods with a cargo aircraft of this size was something special for us. Our air freight managers in Poland and China were able to organise the entire supply chain in a very short space of time and under difficult pandemic conditions."



The company said the oversized freighter is ideal for heavy transport



The components weighed between 7.5 and 200 tonnes

On site, crane operator safety should be a top priority. Drivers work long hours and navigate difficult and diverse conditions and restrictions.

Ohio, USA-based Baker Concrete Construction is one of the latest companies to adopt Crosby's BlokCam system of camera-based operator assistance devices. Crosby says the crane is at the heart of the construction site and that it's vital to understand the value of keeping the lifting crew and all site personnel safe and operational. The company says its modular cameras can improve communication and overall awareness during lifting operations.

Speaking about the BlokCam system, Mike Arrabi, a crane operator at Baker Concrete Construction, says, "You're able to see the depth that you're working with, even in a blind spot. I think all cranes should be mandatory camera-equipped and the Crosby BlokCam product is by far the most advanced system I've seen."

Seen and safe

Camera systems are installed in more than 85 per cent of tower cranes in the UK, and uptake in the USA is dramatically



Crosby's BlokCam X2 has an auto focus lens

With hardware and software alike, the latest technology launched for the crane and project transport industry focuses on improving the safety and reliability of operations. NIAMH MARRIOTT reports



Tech up

improving too, according to BlokCam.

The Crosby BlokCam X2 was the industry's first fully modular system compatible with tower cranes, the company says. Features include an auto-focus lens to always give a clear views of the load and surrounding

area beneath the hook (HD 1080p resolution). It also offers users audio from the sensor to the cab and optional single and split-screen modes can be provided with additional cameras. The system can record on loop for up to 30 days.

The Crosby BlokCam M3 is a modular camera for telescopic and mobile cranes and has a HD display with built in speakers, automatic brightness control, and multi-voltage AC and DC inputs. The latest product in the range is BlokAlert, a wireless AV warning system to alert crane operators when workers are in harm's way. The unit is mounted to the hook block of a crane.

Screen supreme

A new wireless handheld control system has been designed and manufactured by Autec to improve safety in lifting operations. The system can assist a range of hoisting machines, including overhead cranes, jibs, hoists and winches. It can be configured with 4, 6 or 8 two-step pushbuttons and uses both a standard internal and rechargeable Li-ion external battery.

Also recently launched from the Italian manufacturer is a range of monitoring solutions, Autec Vision System (AVS), which can display live video feedback. Wireless control systems with 4.3 inch (110 mm) display screens can be configured in several ways to suit the user. Images, machine data and signals or alarms can be displayed simultaneously, either side by side or overlapping, and up to four video cameras can

COLLISION AVOIDANCE

The expansion of the Eurovea complex by JTRE, near the Danube river in Bratislava, is the largest construction project in Slovakia. With three contractors working on the site, Adifex, Strabag and Sytiq, there have been up to 16 Liebherr cranes working at the same time, from self-erecting K series, EC-B flat-top cranes to EC-H high-top cranes. The layout of the construction site is only 300 x 100 metres and some cranes have a common working area with more than five other cranes.

Michal Lipák, Kranimex sales manager, says, "It was a challenge to co-ordinate cranes between three companies on such a little area. We chose AMCS Technologies anti-collision systems. It was a big challenge to convince our clients to let us try it on such a complicated jobsite as they were thinking that it will make cranes slower and cost them time, but DCS 61-S with IoT Lifting application provided us with real-time data."

This meant they could show cranes were slowed down or stopped only approximately 3 per cent of its working time. "After installation of the system on the jobsite we didn't have single collision between cranes and we were able to reduce service cost for the cranes."





Palfinger's Smart Control moves the crane tip



Autec Vision System displays live video feedback

be employed on the same machine with two simultaneous feeds shown on the display.

Tip top control

Palfinger's Smart Control helps operator control the tip of the crane more efficiently and intuitively.

"We want to make working with a loader crane even easier, efficient and smarter," says Michael Völker, head of product management loader crane at Palfinger.

The crane tip can be moved vertically or horizontally to the desired position with one lever movement on the radio remote control. With conventional control, this requires several lever movements. The logic of the movements of the new crane control can be processed in the Paltronic control unit. The system autonomously calculates the direction

AUTOMATION NATION



Syracuse, an Israeli startup, is developing a system augmenting cranes with autonomous operating capabilities. Its system uses physics and robotic motion algorithms to operate the crane along a certain trajectory. By using a complex set of movements, the company says its system can reduce load transport times by 50 per cent, while ensuring collision-free operation. The system incorporates high-grade, industrial components, including Lidar range sensors and video cameras to generate a real-time 3D digital twin of the job site, that includes the static and dynamic obstacles in the construction site, hook block position, as well as load dimensions and position. The company started development in late 2019 and is backed by Skyline, a large tower crane rental company in Israel. Currently, Syracuse has two prototype systems installed on commercial tower cranes.

Autec's handheld control system

of movement using sensors and electronics. In conjunction with the HPSC-Plus Load function, the truck inclination can also be included and compensated.

When the extension boom system is fully extended, Smart Control calculates the deflection of the position of the boom up to



the crane tip and automatically compensates it. The company also offers Flow Sharing which distributes the correct amount of hydraulic oil.

Collaboration can create new technology to improve safety on site. Zyter, a digital health and internet of things (IoT)-enablement platform, has said it is collaborating with Zurich North America, Qualcomm Technologies, Everguard.ai and Rudolph Libbe Group to advance the use of AI-based IoT technologies to enhance construction safety. The goal is to help prevent jobsite incidents and accidents that can result in serious injuries and costly property damage.

Train to gain

Properly training operators can mitigate risk on site and equip workers with the confidence to handle real world experiences. CM Labs develops portable and accessible training simulators that can be run on its desktop package Vortex Edge Plus, its motion-enabled Vortex Edge Max, and its fully immersive Vortex Advantage, which can all be paired with control levers.

Its latest simulator is the Boom Trick which teaches operators how to deploy and use a digger derrick attachment. It was designed in collaboration with different OEMs to help ensure precision engineering and realistic machine behaviour. Trainees progress through a curriculum developed

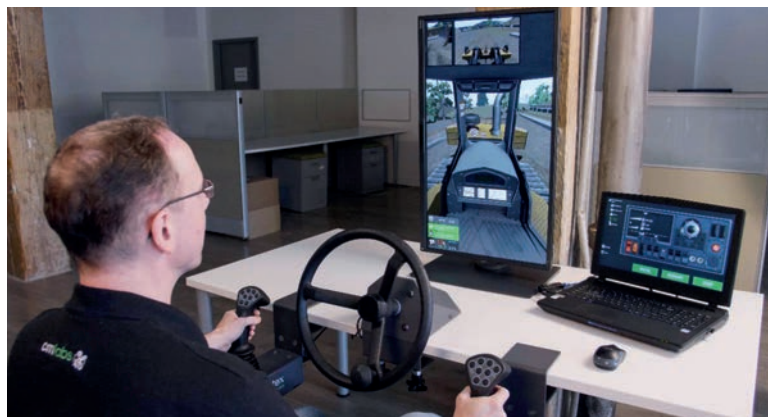
in consultation with training organisations and the built-in certification exercises ensure operators receive practical training for real world experiences.

Julien Richer-Lanciault, CM Labs' construction and forestry product manager says, "With the construction industry doing absolutely everything it can to eliminate barriers to training, this is an ideal solution to getting the next generation of skilled labour exposed to the challenges and rewards of a construction career."

Automation and digitalisation

Lancashire, UK-based CoreRFID has installed its automated safety inspections system, CheckedOK, for Dynamic Safety Solutions Ltd, which has bases across Ireland.

CheckedOK enables equipment inspectors to use a mobile or tablet device to input data onsite. That data is then automatically updated to a secure hosted database, and documents are available for viewing and download. It also assists users meet industry regulations such as LOLER and GA1.



CM Labs developed portable training simulators to equip workers with the confidence to handle real world experiences

The 2021 SC&RA Job of the Year entries were for projects demonstrating ingenuity, skill, and commitment to safety. Winners were recognised for meeting some of the industry's most complicated challenges and responding with superior professionalism, SC&RA said.

For the rigging jobs the winners were announced in four categories and for the hauling jobs there were three winners, all as set out in the following pages.

RIGGING PROJECT WITH A VALUE OF MORE THAN US\$2 MILLION

Italian specialist heavy lift and transport contractor Fagioli employed its full spectrum of services for construction of the San Giorgio Bridge in Genova, Italy.

From August 2019 to April 2020, Fagioli put all its capacity on the table in terms of equipment, know-how and engineering for the transport and installation of the new San Giorgio Bridge in Genova, Italy.

Following the collapse of the Morandi bridge in 2018, Fagioli was contracted by Pergenova S.C.p.A. to design and build the Polcevera viaduct on the A10 motorway, for the transport and installation of the main sections of the new bridge with sections weighing up to 2,000 tonnes. Fagioli used 238 axle lines of self propelled modular transporter (SPMT), strand jacks and a tower lift system, six 1,200 tonne capacity crawler cranes, modular trailers, barges, a gantry lifting system and climbing jacks.

An average of 35 Fagioli personnel were onsite daily, with a peak workload of up to

FAGIOLI
Helping to construct the San Giorgio Bridge in Genova, Italy



The Specialized Carriers & Rigging Association (SC&RA) announced the winners of its annual 2021 Rigging and Hauling Job of the Year Awards on 29 October, during the Association's Annual Conference in Texas, USA. ICST reports

A&A MACHINERY MOVING
Moving an historical industrial press



Winning work

MAMMOET
Lifting and moving a 1,472 tonne pedestrian walkway



50 people. The job saw nine months of uninterrupted work for Fagioli within the main scope, including Covid considerations and a busy jobsite with multiple operations happening at once. Set at a firm-fixed price, the job required minimal subcontractors, and realised no claims or losses, and zero accidents.

RIGGING PROJECT WITH A VALUE BETWEEN \$750,000 AND \$2 MILLION

Global heavy lifting and transport specialist Mammoet transported a pedestrian walkway at Seattle-Tacoma International airport in the USA.

In the first half of 2020 Mammoet transported and lifted a 1,472 tonne pedestrian walkway at the Seattle-Tacoma International Airport in Seattle, Washington. Four columns of 14 lines of SPMT were installed in a four-point configuration near the corners of the bridge span, and the transport began at midnight on 24 January 2020, after clearance was given by the Port of Seattle. The three-mile trip took nearly three hours from an assembly area, down a closed runway and between a pair of V-piers.

The bridge was jacked and staged in April before construction was completed. In addition, Mammoet installed four 900 tonne capacity strand jacks and used strand reel frames from Holland for the first time in the USA. The bridge span was lifted 22 metres at about 10 meters per hour, before being



EMMERT INTERNATIONAL
Breaking a Nevada highway record



Museum of Industrial History (NMIH). Weighing an estimated one million pounds (454 tonnes) overall, the four-post Whitworth press/forging presented a range of challenges. One key element was to tactically separate the press into major components. Lifting the press crown assembly was done using a 300 ton capacity, two-post hydraulic gantry with a WF14 x 455# lift beam, 24.5 feet (7.5 metres) long, and two lift links.

After lifting the crown the hydraulic gantry was removed and reset at the NMIH for reassembly. The remaining components were removed using a 400 ton hydraulic crane. Once reassembled, the cut tie-rods were welded together.

Planning the project took 10 months and the rigging scope from site preparation to completion was done in 15 days. A&A was the prime contractor to NMIH, and the job was set at a firm, fixed price. No claims, injuries or illnesses were reported.

heaters in the Sherburne County Generating Station in Becker, Minnesota, USA.

The scope of work included providing all engineering, equipment, and labour to remove the heaters, weighing 101,000 pounds (46 tonnes), and install two new heaters, weighing 93,000 pounds (42 tonnes). The heaters were on a mezzanine 20 feet (6 metres) above the operating floor, positioned in an east-west orientation.

Logistical challenges appeared at every turn but the Vic's team proposed to move the heaters to the east open area, rotate 30 degrees to align between building columns and used a slide track to move the heaters to the south west onto a sled suspended from two overhead cranes. Vic's also unloaded the new heaters and hoisted them to the operating floor. It also provided all rigging to move them on and off the sled and transported and unloaded the old heaters to the scrap yard. The project was completed with no injuries, equipment damage or pending claims.

2021 WINNERS

RIGGING (entry based on total contract amount)

- Under US\$150,000: **Vic's Crane and Heavy Haul**
- \$150,000 to \$750,000: **A&A Machinery Moving**
- \$750,000 to \$2 million: **Mammoet**
- More than \$2 million: **Fagioli**

HAULING (entry based on net weight of the job)

- Under 160,000 pounds net: **Precision Specialized**
- 160,000 to 500,000 pounds net: **Omega Morgan**
- Greater than 500,000 pounds net: **Emmert International**
- Moving Job of the Year: **Emmert International**

welded in place. The job was set at a firm fixed price. Mammoet executed all of its scope in-house, and there were no recordable injuries or illnesses.

RIGGING PROJECT WITH A VALUE BETWEEN \$150,000 AND \$750,000

An historical press relocation project by A&A Machinery Moving.

From September to October 2020, A&A Machinery Moving in the USA relocated an historically significant, 7,000 US ton capacity press from its then-current location as an outdoor monument inside a traffic circle to the nearby Smithsonian-affiliated National

RIGGING PROJECT WITH A VALUE BELOW \$150,000

Vic's Crane and Heavy Haul installed a heater in a near-impossible space.

Bid on a firm-fixed lump sum, and executed in phases between January and April 2020, Vic's Crane and Heavy Haul performed the rigging work as part of a project to remove and replace two feedwater

HAULING JOB GREATER THAN 500,000 POUNDS NET

Emmert International achieved a record for the heaviest load ever moved on Nevada, USA, highway system.

After completing the engineering and permitting process from March 2019 to May 2020, Emmert used a combination of Goldhofer platform THP/SL trailers, Goldhofer ADD Drives and seven prime movers, to transport a nuclear reactor pressure vessel cask (RPV) from North Las Vegas to Clive, Utah.

Between July and August 2020, the 400 mile (650 km) journey required a detailed route survey that was presented to the Nevada Department of Transportation (NDOT) for analysis. Over the course of 12 months, NDOT and Emmert identified a suitable route that entailed 7 percent grades, culverts that had to be shored up, and civil improvements, along the roadway and at railroad crossings.

The RPV's dimensions were 47' 7 1/4" x 15' 9" x 19' 4 1/2" (14.5 x 4.8 x 5.9 metres), and it



VIC'S CRANE AND HEAVY HAUL
A near-impossible position

EMMERT INTERNATIONAL

Using the world's largest rail car



weighed 1,470,00 pounds (667 tonnes). The project comprised 1,260 man-hours, with no injuries, illnesses or DOT recordable incidents documented.

HAULING JOB BETWEEN 160,000 AND 500,000 POUNDS NET

Omega Morgan took cold box modules on a three-day journey.

From March to May 2020, Omega Morgan was hired to transport two cold box modules in the USA from the Port of Longview, Washington, to a semiconductor factory in Hillsboro, Oregon. Load dimensions (LWH) were 144 x 17 x 15 feet (44 x 5 x 4.6 metres). It weighed 457,600 pounds (208 tonnes).

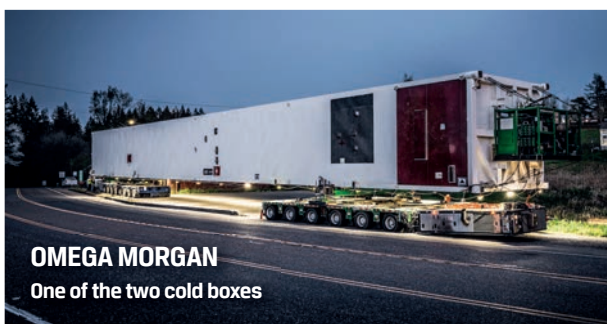
The pieces were loaded onto a barge directly from ship's gear. They were moved across the Columbia River into Oregon and offloaded using SPMT and placed on beams and stands. Hydraulic dollies were used for the first half of the 45 mile (73 km) journey.

For the second half, the units were transloaded onto six lines of four-file K25 trailer and eight lines of two-file Goldhofer trailer, with custom bunks and turntables on both. The route, which took three nights to traverse, required unique equipment configurations, locations that allowed transloading the pieces, and extreme amounts of co-ordination to shut not only two roads, but a state highway, and jump a bridge in the same night. Many overhead cables had to be lifted and removed. Night congestion and traffic control was also a focus because there were more than 15 vehicles.

The project totalled 5,384 man-hours, and there were no OSHA or DOT recordables.

HAULING JOB UNDER 160,000 POUNDS NET

Precision Specialized executed the largest move in the company's history.



OMEGA MORGAN
One of the two cold boxes

From September to October 2020 Precision Specialized was involved in the largest move it has ever executed.

It included the movement of eight modules from Oakville, Ontario, Canada, to the port of Hamilton. Precision was tasked with assisting in the manufacturing, as well as all aspects of the transportation scope, from start to finish.

The largest, Module 2, was for power generation. It was built in Oakville, and shipped to France. The scope was transportation only. Dimensions were 36 x 21 x 21 feet (11 x 6.4 x 6.4 metres). Net weight was 110,000 pounds (50 tonnes). Loaded dimensions were 150 x 21 x 24 feet (46 x 6.4 x 7.3 metres). Gross weight was 240,000 pounds (109 tonnes).

Precision used a 4-axle Western Star tractor and a 13-axle perimeter rear steer (3-axle jeep / 6-axle dolly) trailer. While the normal routing from origin to destination is 15 miles (24 km), the final approved

route for Precision was 70 miles (113 km). The job comprised 12,097 man-hours, and included complete road closures, related press releases, social media and television awareness campaigns. Despite the addition of covid protocols, challenging terrain and infrastructure in southern Ontario, the team's focus and attention to detail led local police to admit it was the best-planned move they had seen in twenty years.

There were no recorded injuries or illnesses, or DOT recordables. The job was delivered on time and on budget.

MOVING JOB OF THE YEAR

Emmert International moves a massive RPV.

From May to June 2020, Emmert

International in the USA used the largest rail car in the world to move a 1,470,000 pound (667 tonne) nuclear reactor pressure vessel (RPV) from San Onofre in California, to North Las Vegas, Nevada.

The 36-axle schnabel rail car had to perform more than 600 lifts and shifts to navigate the rail route.

In addition, the sides of the RPV cask had to be shaved down to fit within the confines of several truss bridges. In some cases, clearance was less than 25 mm.

The RPV was 47' 7 1/4" x 15' 9" x 19' 4 1/2" (14.5 x 4.8 x 5.9 metres), and the route was 375 miles (608 km). A heavy-duty slide system was also needed to load and offload the rail car, plus engineered compression plates and pin attachments.

Emmert performed a railroad survey with a laser-outfitted high-rail truck, where more than 40,000 data points were taken to validate clearance. They also had to shore the San Juan railroad bridge, upgrade siding at the point of origin and build new rail siding at the North Las Vegas delivery point.

The job required 1,440 man-hours, and safety considerations included low-level radiation, an emergency response plan and rail car training. There were no recorded injuries and no DOT recordables.

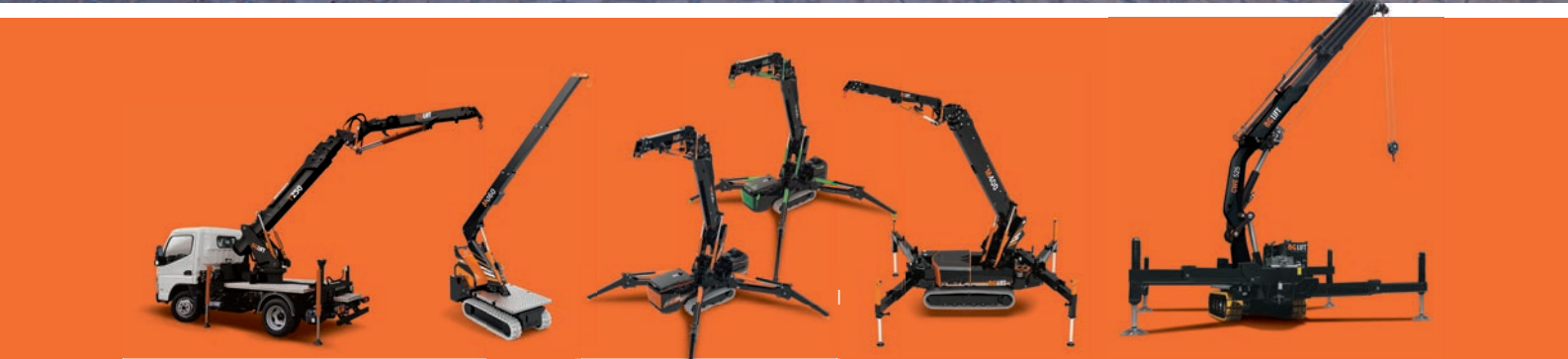


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Crane manufacturer Tadano says the height of turbines is massively increasing



The wind energy sector is still growing, as is the size of the equipment.

New challenges have to be overcome to safely

transport and install

these massive

monoliths of

green energy.

NIAMH

MARRIOTT

reports

Sarens used a Demag PC 6800-1 pedestal crane to lift piles for Van Oord

Terrific turbines

The wind turbine transport market is changing and developing, as the technology itself ever-advances and grows. For the transport side, Frank DeVries, general manager at Pinnacle Logistics Solutions, says, "In addition to the conventional wind transport equipment, including schnablen, half-schnablen, extendable blade trailers, etc. we are currently developing blade-dolly systems for the longer and heavier blades we are starting to see all across the market. With the increased size and weights, conventional

extendable trailers may not be able to scale legally from an axle weight perspective, particularly in western Canada."

DeVries continues. "We currently have three sets on the ground, with others in development in both bunk mounted configurations, and schnable configurations for the root ends."

The increased size of turbines is becoming almost unmanageable on regular roads. DeVries says, "Component size has always been a concern in the wind industry. Blade lengths are now reaching levels to

where conventional equipment no longer has the ability to legally transport blades in many jurisdictions."

Taller turbines

Crane manufacturer Tadano also notes that turbine size is increasing massively. A spokesperson says, "The height of the turbines is definitely increasing. In Northern Europe, we can see turbines with a total height (tower and blade) of 300 metres."

To deal with this, Tadano now has a range of cranes to lift and install, both crawlers and all terrain models. Its lattice boom crawler cranes are used extensively in this industry, with its CC 38.650-1, PC 38.650-1, CC 68.1250-1 being used mainly for erecting wind turbines in the field. Tadano says its CC 68.1250-1 and CC 88.1600-1 cranes are ideal for erecting larger wind turbines near-shore and offshore.

Tadano says all terrain cranes have their place in the wind energy market too. "Depending on the size of wind turbines, the AC 8.500-1 and AC 9.700-1 all terrain cranes can erect turbines. Repowering and maintenance are applications where larger all terrain cranes are used. Our new AC 7.450-1 all-terrain crane with its 80 metre

Enerpac's hydraulic levelling and fixing systems are being used to install turbines at the Saint-Nazaire offshore wind project



boom and a lifting capacity of 37.9 tonnes on fully telescoped main boom with SSL will be ideally suited for this type of work.”

There’s more development coming. Tadano says, “We are working on new solutions that we want to introduce at bauma (October 2022), which will be perfectly tailored for wind turbines of 180 metres and higher.”

Equipment end user Mammoet also sees the trend of greater heights, beyond the reach of crawler cranes. It has introduced its own lifting system the wind turbine assembly (WTA) crane, which the company says allows theoretically infinite hub heights.

WTA assembles wind turbine generators by attaching directly to the tower itself, using a series of clamps to self-assemble and then climb to each lift location. It assembles tower sections, hubs and nacelles, and has a capacity of 150 tonnes. Maximum wind speed is 20 metres per second which reduces downtime during construction and extends the build season.

Mammoet says that with no boom laydown requirement, far fewer components and a lower total weight, the WTA is also faster to move from one pad to another. The system’s small size also means quicker and more cost-effective mobilisation. The company says while a conventional crawler crane can require up to 50 truck loads to reach site, the WTA uses just nine.

Offshore obstacles

Precision is key when it comes to the installation of offshore wind farm equipment. Enerpac’s hydraulic levelling and fixation systems are being used by Smulders and



Mammoet’s new WTA lifting system allows theoretically infinite hub heights

T&I contractor Deme Offshore for

the installation of 80 units of the GE Haliade 150-6 megawatt turbines at the Saint-Nazaire offshore wind project in the Loire-Atlantique region of coastal France. The Enerpac system is being used to provide accurate levelling and fixing of the transition pieces on their monopile foundations.

Grouted connections are widely used in offshore wind turbine construction to transfer multiple loads from the transition piece fitted on top of the monopile. The transition piece is first lowered onto the monopile and levelled. It is then grouted into position to fix the transition piece to the monopile. Levelling is important to ensure the turbine will generate maximum yield.

The levelling uses twelve pre-installed Enerpac 150 tonne capacity aluminium hydraulic cylinders inside the TP such that the cylinders rest on the MP. By adjusting the spring return cylinders, precise levelling of the TP is achieved, even if the MP was not completely level in the first place. Once



Tadano’s cranes can install at 180 metres+

levelled, the 25 tonne steel fixing cylinders positioned subsea at the bottom of the TP are activated to hold the TP in position during completion of the grouting process.

The subsea fixing cylinders have a reinforced return spring that eliminates the risk of point load and contact corrosion with the monopile.

“Enerpac cylinders are a robust and proven solution for the levelling and fixation of TPs,” says Patrick Frencken, key account manager for North West Europe at Enerpac. “We delivered the cylinders and hoses to Smulders in Belgium where the TPs were being assembled ready for installation. Deme Offshore then transported the TPs by barge to the project site in France.”

As demand for greener and cleaner energy grows, the wind energy industry and its enormous components are set to grow exponentially too.

ESTONIAN ISLAND INSTALL

Sarens recently deployed a 500 tonne capacity Liebherr crane to help client Five Wind Energy lift and install several Siemens wind turbine components, including the 40 tonne gearbox and main shaft, on the Estonian island of Saaremaa.

Sarens transported all the crane components, including ballast, superlift, and fly jib, to the job site on twelve trucks. It then took one day to set up the Liebherr LTM 1500 8.1 wheeled mobile telescopic crane with 105 tonnes of counterweight in TAY3S configuration. An auxiliary crane, the Liebherr LTM 1070 with 70 tonnes of counterweight, was also used.



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Bling lift bags the



The votes have been counted and the winner has been chosen for the 2021 IC TopLift competition. *ICST* reports

Despite the chaos and disruption of the pandemic, the 12 months leading up to September 2021 saw many spectacular lifts worldwide, covered by our illustrious magazine. We selected the top ten and put them to you, our readers, to vote on

WINNER

ENTRY 6

PERFECT FIT

Equipment user: McLaren Engineering Group and Orange County Ironworks

Equipment used: 500 tonne capacity Liebherr LTM 1500

Location: New York City, USA

Working in tight building space constraints, McLaren Engineering's construction engineering division used a 500 tonne capacity Liebherr LTM 1500 wheeled mobile hydraulic telescopic crane to lift a smaller Liebherr LTM 1130 wheeled mobile crane to a rooftop at the iconic Tiffany & Co. building on Fifth Avenue in New York City, USA, to support the store's multi-year renovation.

McLaren put together seven crane plans for this project, designed rigging to lift the crane, designed rooftop dunnage to support the crane on the roof and analysed the building for imposed loads. During the pre-bid process, McLaren worked with the contractor Orange County Ironworks (OCI) vetting a geometry and capacity checks concept for the cranes and then a preliminary look into building reserve capacity. This ended up saving months on the project schedule and millions of dollars too.

"During the pre-bid process, our idea of lifting a crane seven stories over the streets of midtown Manhattan to place it on the



The fully assembled LTM 1500 required eight trucks delivering more than 165 tonnes of counterweight

roof of the Tiffany & Co. building was initially considered by many as an approach too outside-the-box," said Matthew Messing, senior VP of operations Orange County Ironworks. "But we knew that the traditional method of doing crane work from the street would be difficult due to the tight space constraints and would require recurring street closures, ultimately adding two months to the construction schedule. Our solution saved time, alleviated the need to stop work at the site during the NYC Holiday Embargo, and ended up saving costs."

"Our approach may have seemed unconventional, but we actually spent months finely analysing the best means and methods. The building's location made Tiffany's vertical expansion an engineering challenge," added Jon Skinner, PE, VP of construction engineering McLaren Engineering Group.

"What really enabled this success, was the teaming of OCI and McLaren," concluded Messing. "Although Jon and I dreamt up the scheme, OCI project manager Adam Van Kleeck, and the rest of the project teams, made it happen."

"Our companies have a long history of teaming up to find innovative approaches to complex and challenging construction projects with a unique blend of vision and engineering. We have built a reputation of not being afraid to try something new, and having it work," said Skinner.

To see a video of the lift, go to: shorturl.at/uEV36

VIDEO COURTESY OF TIFFANY & CO.



McLaren's construction division provided a 45 US ton (40.8 tonne) capacity Tadano TR450XL rough terrain crane that assisted in putting the LTM 1500 together



top spot

your favourite lift and decide the winner of the TopLift 2021 competition.

Aided by a digital voting form both on our website and social media channels, we had hundreds of responses this year, with every lift receiving multiple votes, and we'd like to

thank everyone who got involved. There was, however, a stand-out winner with a massive majority of the vote, Entry 6 – A Perfect Fit. In a very respectable second place was Entry 10 – Girl Power and, coming in close behind in third, was Entry 9 – Wind Farm Wonder.

If your company has completed a lift job in the last couple of months, or if you complete one before August 2022, that you think merits entry into next year's TopLift competition, and/or it would make an interesting site report in *International Cranes and Specialized Transport* magazine, please send details to the editor, Alex Dahm, by emailing alex.dahm@khl.com, or by sending by post to: KHL Group, Southfields, Southview Road, Wadhurst, East Sussex TN5 6TP, United Kingdom. ■

SECOND PLACE

ENTRY 10

GIRL POWER

Equipment user: **GGR Group**

Equipment used: **URW-706 Furukawa Unic mini spider crane**

Location: **Bedford, UK**

A six tonne capacity URW-706 Unic mini spider crane was used for lifting operations at the 18th Century Stevington windmill in Bedford, UK. The crane was operated by two female operators. Kirsty Parkin, long standing operator, surveyor, and appointed person at GGR Group, and Olivia Rollinson, GGR's newest female operator, took them helm, with Olivia in the operating seat and Kirsty as the AP. The job required lifting and placing beams weighing 300 kilogrammes and sail frames ready for installation.

Parkin said, "I don't mind being one of the only few women on site, but it would be great if there were more females in the construction industry out there. If you're thinking about getting into the industry, go for it!"

Speaking about the job, Rollinson added, "Working on this windmill project with Kirsty has been my most enjoyable project so far and it was great to have some female support on site."

Kirsty Parkin and Olivia Rollinson discuss their lift plan on site



THIRD PLACE

ENTRY 9



WIND FARM WONDER

Equipment user: **Huisman**

Equipment used: **2,600mt Skyhook Crane**

Location: **Xiamen, China**

Huisman's Skyhook crane in China lifted its first offshore wind farm components. The luffing jib quayside crane hoisted 100 metre long foundation monopiles, each weighing 1,700 tonnes, from the deck of a cargo vessel. The Skyhook crane occupies its own facility near Xiamen in China. According to Huisman, this lift proves the model is suitable for offshore wind marshalling ports. According to its manufacturer, the Skyhook is the largest of its type in the world, capable of lifting 2,600 tonnes at a 30 metre radius.

Cees van Veluw, cranes product manager at Huisman, said, "With the high ambitions for global offshore wind, we see that more permanent yet more flexible lifting solutions are key to further efficiency gains in the logistics chain. The capacity of the Skyhook matches the foundation sizes we see in the near future. With new marshalling ports being developed worldwide, Skyhook can contribute to further optimising the logistics of offshore wind turbines."

▶ Watch a video of the first monopile lift at: <https://www.youtube.com/watch?v=910TN6ZgtKM>

The all-female lifting team working with the Unic URW-706



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Customer experience is key

Moving into 2022, especially amid current global supply challenges, it would behoove us all to remember a universal business truth: there is a notable difference between customer service and customer experience.

The terms, though related, are often used interchangeably – but they're not the same thing. The difference is: while customer service is one piece of the puzzle, focused on human interaction and directly supporting customers, customer experience (CX) is the sum of the entire customer journey with your business.

The bigger picture

Viewed through this lens, customer service is just one aspect of the entire customer experience – and it's usually the place where companies fix things when part of the experience has been less than satisfactory. All the more reason to make sure this one front-line component of the overall CX is as efficient and well-executed as possible. Because, ultimately, customer service is rarely memorable, unless it's bad. And you don't want to be remembered for that.



Brand loyalty

You do, however, want to be remembered for something bigger and longer-lasting. Let's call it brand loyalty, which often isn't a result of satisfactory transactions, but of the longer experience journey that involves multiple touch points over time – even years – progressing eventually into the life cycle of a client relationship. Thinking that service equals experience, and that good service will solve all your problems, is basically the proverbial duct tape over the check-engine light. You're addressing the symptoms and ignoring the underlying reality, which puts you at risk.

At the end of the day, CX includes every interaction between the customer and the business. It involves all the ways your business interacts with a customer, including and outside of, traditional direct, customer-facing service. CX captures how the customer uses your product or service, their interactions with self-service support options, the feeling of walking into your shop or onto your jobsite, customer-service interactions with the team and more.

Needless to say there are a lot of touch points and a lot of ways it can go wrong. It pays off to do the preparatory work to help you get it right as often as possible.

Dig deeper

For a start rethink your customer journey. Put yourself in your customers' shoes and make sure you're everywhere they are – or at least everywhere they expect to find you. Ultimately, you're trying to create a relationship rather than just have a series of interactions. Look ahead at the potential life cycle of the relationship, which includes selling, onboarding, maintenance and renewal. What happens after the sales rep's handshake?

To that end, what do your customers want in a relationship? What problems do you solve, and how long could you potentially be a solution for them? To design a great customer experience, start by figuring out who or where your entry point is to the customer. Most customer service starts when a customer calls with a problem.

By contrast, customer experience starts with hope – with the reason the customer chooses you in the first place. Thus, if they've chosen you, or seem very interested, don't just leave it to chance. Do your due diligence – develop a plan for them across all their current needs, and then what they will likely need as this relationship evolves.

Finally, follow the numbers and the money. Where is the value coming from? Which customers represent the most value to you over time – versus the biggest disruption?

Then dig deeper. Why do they spend, and what do they spend it on? How, and how long, are they spending? This matters because resources spent servicing unprofitable customers can be a distraction from work that's creating successful customer experiences for those that matter most to your business. ■

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Powering

As 2021 comes to an end, the message coming out of SC&RA is that the Association has weathered the storm, and the overall sense for 2022 is one of excitement and optimism.

CEO Joel Dandrea emphasised he's grateful for the broad support of SC&RA members – perhaps best represented by a retention rate of 91.25 per cent from 2020 into 2021.

"It's a great sign of loyalty and trust," he said. "Our members see that in light of the challenges, we've been able to reduce expenses, retain an excellent staff, continue on all of our key advocacy and communication efforts while also focusing on our affinity programmes – and even add back in live events."

To that end, Dandrea indicated that both attendance and involvement at the Specialized Transportation Symposium in June, the Crane & Rigging Workshop in September, and the Annual Conference in October was very encouraging.

"Sponsorship commitments have been strong, and participation in awards programmes like the Jobs of the Year was as impressive as ever. Simply put, our members understand the big picture and, while not a perfect environment, we've all been willing to take some risks to move forward."

Dandrea also recognised the 2022-2023 renewal of SC&RA's two endorsed market partners, NBIS and National Interstate Insurance Company, and four preferred producers; Allied Insurance Brokers, Emery & Karrigan, Hays/Brown & Brown and USI Insurance Services.

"These two key market partners continue to provide exceptional products and services for SC&RA members," he said. "The platform of four preferred producers provides yet further options for members with diverse insurance and risk-management needs and diverse approaches to shopping and placing their coverage. We're thrilled to have them committed to the Association for another two-year term."

Jason Bell, SC&RA director of membership, echoed Dandrea by pointing to the Association's membership retention rate. "The fact that we're at nearly ninety-two per cent, given everything that's going on in the world right now, is very indicative of the value

SC&RA rolls up its sleeves and delivers in 2021

SC&RA members believe that we bring to them," he noted.

"Of the departures we've seen during the pandemic, those companies are most likely struggling beyond the Association's control, although we look forward to their return when the time is right for them."

Continued effort

Throughout 2021, the Association continued to endeavour for the safety and awareness of all its members via its Covid-19 Crisis Command Center, available on the SC&RA website. Relatedly, SC&RA joined the Construction Industry Safety Coalition (CISC) earlier in the year and has been signatory on letters fighting for its members on issues that include hazard communications, the CDC vaccine and OSHA's Emergency Temporary Standard.

In addition to joining CISC, SC&RA also worked with the US Small Business Administration (SBA) on two standards: tree removal and emergency response. And throughout 2021, SC&RA has been emphasising the inclusion of crane-related information in permit discussions at the state and local levels.

"We've begun the process of asking state permit officials crane-specific questions, which will be included in future permit manual updates," said Beth O'Quinn, SC&RA senior vice president of crane and rigging. "We're also researching which states offer a blanket permit specifically for mobile cranes, and we're very close to including mobile crane weights and permitting into the Association's overall harmonisation efforts."

SC&RA also submitted a letter to the California Occupational Safety and Health Standards Board, said O'Quinn, requesting they reconsider proof load tests be based on manufacturers' load ratings for the conditions of use, while not exceeding 110 per cent of the maximum load ratings for the boom on the crane.

"We continued our work with the International Crane Stakeholders Assembly," she added. "Collectively, we've been able to release a guidance – Mobile Crane

Ground Preparation for Wind Farm Construction – available to our members through our website or mobile app."

Another key accomplishment this year, O'Quinn said, was the Understanding Tower Crane Bare Rental Agreements document, a new tool to help tower crane companies protect themselves against unfair and biased agreements. This guide provides education on what specific terms mean, what clauses companies should be aware of, and how they affect business and insurance liability.

In a continued effort to advocate for mobile crane members, O'Quinn also



through

SC&RA's workshop discussed how to solve Massachusetts' super load limit

SC&RA mobile crane and special mobile equipment operators scored a huge win in South Carolina when the state recognised that it was improperly taxing them through IRP/IFTA – when they were otherwise exempt.

Smith discussed collaboration with the Crane & Rigging Group in solving Massachusetts' 130,000 pound super load limit and required route surveys.

"To provide additional support, SC&RA has joined the state trucking association there in its efforts to repeal sales taxes on rolling stock equipment," he said.

"Additionally, a new UPT 2021 strategic plan to help get the final fourteen states over the line on automation continues to move forward. And representing another notable win, HB19 passed the Texas Legislature this summer and was signed into law – preventing the naming of the carrier in an accident lawsuit until the court can determine if the driver was found to be at fault."

Pivoting to the recently passed infrastructure bill, Smith emphasised that "while no policy is perfect, we believe the benefits for our industry far outweigh the risks, and SC&RA joined numerous other associations in support of its passage."

On the resources front, Smith explained that the SC&RA Safety and Pilot Car Committees have convened a joint task force to develop a best-practice guide for pre-trip meetings between pilot cars and carriers.

Looking ahead to 2022, he recognised that SC&RA's Permit Policy Committee will pursue Phase III permit harmonisation with AASHTO.

He was also looking forward to using the much-needed research he was able to gather in 2021 and refocus on advocacy efforts in a state-by-state approach.

Overall success

Much of that research was spearheaded by the Specialized Carriers and Rigging Foundation (SC&RF).

Over the summer, SC&RF conducted its own internal Workforce Survey, where 68 members responded. The data is being

“ While no policy is perfect, we believe the benefits of the infrastructure bill for our industry far outweigh the risks, and SC&RA joined numerous

other associations in support of its passage. ”

CHRIS SMITH, SC&RA
Vice president, transportation



analysed and a report will be released in early 2022. In addition, the Foundation approved US\$15,000 in funding for the update and revisions to its 2011 research study Transporting a Global Economy.

The updates will help to bolster SC&RA advocacy platforms and include crane data as well as the new workforce data collected.

"This research holds particular value because we haven't really had specific information about our industry up to this point," said Jackie Roskos, director of SC&RF and SC&RA Ladies Group.

"Now we have a significant snapshot of industry-specific workforce data for crane, rigging and OS/OW."

Scholarships also remain an integral component of SC&RF, said Roskos. "This year, the board felt it prudent to slightly reduce funding, but to date, eleven recipients have been selected, and \$15,830 has been awarded in addition to \$17,900 in 'Partner in Education' tuition."

In addition, at the Annual Conference, SC&RF announced several new multi-year commitments, including The Taylor Family Foundation, NBIS, the James Lomma Memorial and the Doug Ball Memorial.

On the workforce side, Roskos explained the Foundation is looking at how to better define the objectives and goals for Lift & Move USA. "Covid gave us the opportunity to reimagine Lift & Move, to reidentify what worked, what didn't, to reclarify objectives and goals," she concluded. "And hopefully a new programme rolls out as a result – one we can work with members on and continue to benefit the industry with."

spotlighted how both the Crane & Rigging and Transportation Groups worked collaboratively in 2021 to address an increase in crane issues at the US state level. These included the following: improperly taxed operations in South Carolina, super load limits and exorbitant engineering survey requirements in Massachusetts and now, newly required police escorts and night-time movements in Maryland.

State by state

Echoing O'Quinn, Chris Smith, SC&RA vice president, transportation, confirmed that

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Whatever the weather, the crane driver can use the hoist to safely access the cabin

Add-on hoist

The Geda 2 PK is a rack and pinion crane operator hoist with aluminium ladder segments. It can be installed on most tower crane models up to a standard height of 150 metres, but greater heights are available.

The hoist is designed to transport two people and has a load capacity of 200 kilogrammes. People or equipment can be transported upwards with a hoisting speed

of 24 metres a minute. Once the base unit is assembled and anchored, the aluminium ladder sections, weighing 22 kilogrammes, are installed through the open cabin roof and, using the patented quick-release connections, assembled without any screws. Special rail anchoring provides tension-free attachment to the crane mast. There is also an additional steering mechanism in the



ground station or as an option at the upper exit point.

In high winds the crane driver can also guide the cage from the upper landing gates downwards and then park the hoist there for the duration of the work. The car of the Geda 2 PK has an entry ramp for safe access.

■ For more information see: www.geda.de/en

DRIVES FOR INDUSTRY

The new range includes a built-in choke and display



Invertek has launched a new high powered variable frequency drive range suitable for heavy duty crane and hoist applications. The Optidrive P2 and Optidrive Eco, with an IP55 enclosure for direct mounting and IP20 for control cabinet mounting, can control electric motors up to 480 Amps with a power rating up to 250 kilowatts. They replace the existing Size 8 which was only available for control cabinet mounting with IP20 protection.

The new range also adds DNV marine certification, in addition to a built-in EMC filter to meet Category C3 standards, with a factory fit option to upgrade to a high-performance EMC filter that meets Category C2. They also come with high-definition TFT displays as standard. Both have an ambient operating temperature up to 50 °C and conform to UL, EAC and RCM.

Kes Beech, technical manager at Invertek Drives, said they were responding to increasing demand for energy efficient drives capable of controlling power-hungry applications in increasingly demanding environments.

"The drives are already used in other global industries for high performance applications," he said.

■ For more information see: www.invertekdrives.com

SHACKLE RANGE EXTENDED

New sizes of the Green Pin Super Screw Pin Bow Shackle are now available. The current range is extended with seven new sizes and is now available with a working load limit from 3.3 up to 85 tonnes. The company said handling the Super Bow Shackle SC is easier due to its smaller size and weight. The screw pin of this grade 8 shackle enables quick (dis)assembly which, the company said, makes the shackle perfect for rigging activities in which assembly and disassembly occur relatively frequently.

■ For more information see: www.greenpin.com



Maintaining cranes

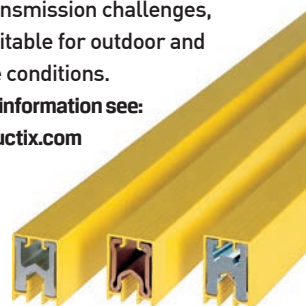
Overhead cranes are a vital tool in industrial production environments. Often, several cranes are operated on one crane runway, offering flexibility and increasing productivity. For crane operators, the challenge is to safely maintain a single crane without having to shut down all the others, and without endangering the safety of the maintenance workers. Germany-

based Conductix-Wampfler's latest offering, PowerGuard 0800, which can be retrofitted to existing crane systems, is a switch system that can turn-off and ground individual maintenance zones, while allowing the rest of the runway to remain active and fully usable. The company also launched its conductor rail type CopperECO, designed to overcome high-

current transmission challenges, which is suitable for outdoor and warehouse conditions.

■ For more information see: www.conductix.com

Conductix's CopperECO rail aids safety



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Sun Valley Resort, Idaho, USA
www.scranet.org

SC&RA SPECIALIZED TRANSPORTATION SYMPOSIUM

22 to 24 February 2022

Glendale, Arizona, USA
www.scranet.org

ESTA AWARDS DINNER

17 March 2022

Noordwijk, Netherlands
www.estaeurope.eu/events

LIFTEX BAHRAIN

21 and 22 March 2022

Bahrain, UAE
www.liftex.org

CRANES AND TRANSPORT MIDDLE EAST

22 and 23 March 2022

Dubai, UAE
www.khl-catme.com

SC&RA ANNUAL CONFERENCE

25 to 29 April 2022

Washington, DC, USA
www.scranet.org

INTERMAT INDIA 2022

27 to 29 April 2022

Mumbai, India
www.india.intermatconstruction.com

TOWER CRANES NORTH AMERICA

20 and 21 June 2022

Biscayne Bay, Miami, USA
www.khl-tcna.com

HILLHEAD 2022

21 to 23 June 2022

Buxton, UK
www.hillhead.com

SC&RA CRANE AND RIGGING WORKSHOP

3 to 5 October 2022

Dallas, Texas, USA
www.scranet.org

BAUMA 2022

24 to 30 October 2022

Munich, Germany
www.bauma.de

SAMOTER

March 2023

(Postponed from March 2021)

Verona, Italy
www.samoter.com

PICTURE OF THE MONTH



Chinese crane and construction equipment manufacturer XCMG was delighted to top ICST's ICm20, a ranking of the world's largest crane manufacturers, published in last month's issue. To celebrate this and to mark the launch of five new cranes, the company held an event, pictured. Crane sales increased an amazing 74 per cent over the previous year, driving its three place rise in the ICm20 from 4th last year.

OBITUARY

BOB DIELEMAN
1948 – 2021

ICST regrets to report ROBERT

"BOB" DIELEMAN died on 31 October 2021 after a brief battle with pancreatic cancer. Born in Boulder City, Nevada, USA, on 19 January 1948, Dieleman will best be remembered as a legendary crane man with a penchant for suspenders (trouser braces).

An innovator and inventor, he was always interested in the latest technology. With a keen engineering mind, he organised, funded and spearheaded multiple significant and forward-thinking heavy lift and heavy haul projects. Most notable are the JXS, a Cal-Trans compliant heavy haul trailer with a 700,000 pound (318 tonne) hauling capacity that won 13 patents and a SC&RA Job of the Year award in 1990; and the SL 400, nicknamed the "Crystal May," a street-legal 400 ton (363 tonne) lattice boom truck crane. The ground-breaking crane doubled the capacity of roadworthy cranes at the time. His last work was to receive three patents on a manufacturer-friendly schnabel transport system with pivoting goosenecks for rapid deployment.

Dieleman is survived by his family, including wife Kay and children Crystal and Jacob.



PEOPLE NEWS

■ ANGELA CHEN has been promoted to regional sales director of Europe at lifting accessories manufacturer Yoke Industrial Corp. Chen has been with the company for eight years, located initially in Taiwan and then relocating to Europe, where she focused on growing distribution channels and will now work with the sales team to strengthen partner relationships as well expanding training and technical support.



■ Buchanan Hauling & Rigging has appointed of ROB RAUSCH as chief operating officer. Rausch joined in February 2021 as vice president of operations, bringing years of logistics and leadership experience. He will focus on long-term growth while remaining focused on operational excellence in safety and service to BHRI customers.



■ At Tadano GIUSEPPE POMPEO has been appointed to the European team as director of key accounts. In this newly created role, Pompeo reports to Klaus Kröppel, senior VP of sales at Tadano Europe.

■ 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 email 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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58

Operational aids, communication systems, components, controls, software, crane mats and outrigger pads, crane repair, hydraulics, jacks, attachments, personnel baskets, rigging hardware, rollers, slings and chains, tires, winches, wire rope, batteries, braking systems, and new, used and refurbished parts.

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Training, insurance, inspections, financing, consulting and safety equipment.

SPECIALIZED TRANSPORT

Transportation permits, freight forwarding, heavy haul, pilot car services, trailers, wheels and tyres.

CRANES AND EQUIPMENT FOR SALE OR RENT

59

Crane, rigging and lifting equipment for sale or rent, new or used.

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SAFETY, TRAINING & INDUSTRY SERVICES

Training, insurance, inspections, financing, consulting and safety equipment.

SPECIALIZED TRANSPORT

Transportation permits, freight forwarding, heavy haul, pilot car services, trailers, wheels and tyres.

CRANES AND EQUIPMENT FOR SALE OR RENT

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CRANES AND EQUIPMENT FOR SALE OR RENT

66

Crane, rigging and lifting equipment for sale or rent, new or used.

SAFETY, TRAINING & INDUSTRY SERVICES

Training, insurance, inspections, financing, consulting and safety equipment.

SPECIALIZED TRANSPORT

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PRODUCTS, PARTS & ACCESSORIES

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ALL TERRAIN-CRANES

Make / Type	y. o. m.	Drive	Boom / Fly Jib
40 t Terex-Demag AC 40-1 City	2013	6x6x6	31,20m + 13,00m+1,20m
45 t Faun ATF 45-3	2006	6x6x6	34,00m + 15,00m
45 t Faun ATF 45-3	2005	6x6x6	34,00m + 15,00m
45 t Grove GCK 3045	2010	6x6x6	34,00m
50 t Terex-Demag AC 50-1	2007	6x6x6	40,00m + 17,60m
50 t Terex-Demag AC 50-1	2007	6x6x6	40,00m + 17,60m
50 t Tadano Faun ATF 50G-3	2008	6x6x6	40,00m + 16,00m
55 t Terex-Demag AC 55 City	2006	6x6x6	40,00m + 13,80m+1,20m
55 t Liebherr LTM 1055/1	2004	6x6x6	40,0m/16,0m/2,5m
80 t Grove GMK 4080-1	2006	8x6x8	51,00m + 15,00m
90 t Liebherr LTM 1090-4.1	2007	8x8x8	50,00m + 19,00m
90 t Tadano Faun ATF 90G-4	2014	8x6x8	51,20m + 18,00m
95 t Liebherr LTM 1095-5.1	2014	10x8x10	58,00m + 19,00m
100 t Liebherr LTM 1100-4.1	2004	8x8x8	52,00m + 19,00m
100 t Terex-Demag AC 100/4L	2016	8x6x8	59,40m + 19,00m
110 t Tadano Faun ATF 110G-5	2008	10x6x8	52,00m + 16,00m+Runner
130 t Grove GMK 5130-1	2007	10x8x10	60,00m + 18,00m
140 t Terex-Demag AC 140	2013	10x6x8	60,00m + 17,00m
150 t Liebherr LTM 1150-5.1	2005	10x8x10	56,00m + 21,00m+3,40m
160 t Tadano Faun ATF 160G-5	2010	10x8x8	60,00m + 13,20m
160 t Terex-Demag AC 160-2	2006	10x8x10	63,90m + 33,00m
200 t Terex-Demag AC 200-1	2007	10x8x10	67,80m + 17,00m

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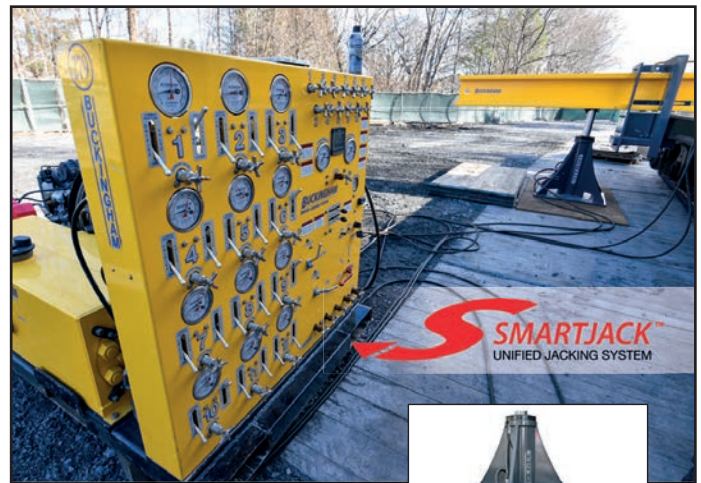


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TELESCOPIC AT-CRANES						
Capacity	Manufacturer	Type	Year	Drive/Steering	Boom/jib (m)	Delivery
450 t	Liebherr	LTM 1450 N	1992	16 x 8 x 14	50 / 61 / 84	direct
400 t	Liebherr	LTM 1400	1988	16 x 8 x 12	50 / 61 / 84	direct
200 t	Liebherr	LTM 1200/1	2003	10 x 8 x 8	60+7 / 22+run.	direct
160 t	Tadano-Faun	ATF 160G-5	2010	10 x 8 x 8	60 / 13.2+run.	direct
160 t	Terex-Demag	AC 160-2	2006	10 x 8 x 8	63.9 / 33	direct
150 t	Liebherr	LTM 1150-6.1	2009	12 x 8 x 12	66 / 19	direct
150 t	Liebherr	LTM 1150-5.1	2005	10 x 8 x 10	56 / 21 / 3.4	direct
140 t	Terex-Demag	AC 140 Compact	2013	10 x 6 x 10	60 / 17	direct
130 t	Liebherr	LTM 1130-5.1	2007	10 x 8 x 10	60 / 19	direct
130 t	Grove	GMK 5130-1	2007	10 x 8 x 10	60 / 18	direct
120 t	Liebherr	LTM 1120	1989	10 x 6 x 8	42 / 24	direct
110 t	Tadano-Faun	ATF 110G-5	2008	10 x 6 x 8	52 / 16.2+run.	direct
100 t	Terex-Demag	AC 100-4 L	2016	8 x 6 x 8	59.4 / 19	direct
100 t	Liebherr	LTM 1100-5.1	2006	10 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	Liebherr	LTM 1100/2	2003	10 x 8 x 8	52 / 19	direct
100 t	Liebherr	LTM 1100/2	2002	10 x 6 x 8	52+14 / 19	direct
95 t	Liebherr	LTM 1095-5.1	2014	10 x 8 x 10	58 / 19	direct
90 t	Liebherr	LTM 1090-4.1	2007	8 x 8 x 8	50 / 19+run.	direct
90 t	Liebherr	LTM 1090-4.1	2004	8 x 8 x 8	50 / 19	direct
90 t	Liebherr	LTM 1090/2	1997	8 x 8 x 8	52 / 19	January
80 t	Grove	GMK 4080-1	2006	8 x 6 x 8	51 / 15	direct
70 t	Liebherr	LTM 1070-4.1	2005	8 x 6 x 8	50 / 16	direct
65 t	Tadano-Faun	ATF 65G-4	2006	8 x 6 x 8	44 / 16	direct
65 t	Faun	RTF 65-4	1994	8 x 6 x 8	40.5 / 16	direct
60 t	Liebherr	LTM 1060/2	2004	8 x 6 x 8	42 / 17	direct
60 t	Liebherr	LTM 1060/2	2003	8 x 6 x 8	42 / 17	direct
55 t	Liebherr	LTM 1055-3.2	2012	6 x 6 x 6	40 / 16	direct
55 t	Grove	GMK 3055	2006	6 x 6 x 6	43 / 15	direct
50 t	Grove	GMK 3050-1	2012	6 x 6 x 6	38 / 15	direct
50 t	Tadano-Faun	ATF 50G-3	2008	6 x 6 x 6	40 / 16	direct
50 t	Terex-Demag	AC 50-1	2008	6 x 6 x 6	40	direct
50 t	Terex-Demag	AC 50-1	2007	6 x 6 x 6	40 / 17.6	direct
50 t	Terex-Demag	AC 50-1	2007	6 x 6 x 6	40 / 17.6	direct
45 t	Grove	GCK 3045	2010	6 x 6 x 6	34	direct
45 t	Faun	ATF 45-3	2006	6 x 6 x 6	34 / 15.2	direct
45 t	Faun	ATF 45-3	2005	6 x 6 x 6	34 / 15.2	direct
40 t	Terex-Demag	AC 40-1 City	2013	6 x 6 x 6	31.2/13+1.2	direct
40 t	Liebherr	LTM 1040-2.1	2006	4 x 4 x 4	35 / 9	direct
40 t	Liebherr	LTM 1040-2.1	2006	4 x 4 x 4	35	direct
40 t	Demag	AC 95	1997	4 x 4 x 4	32.2	direct
30 t	Grove	AT 635 B	1997	4 x 4 x 4	30/7,3,1	direct
ROUGH TERRAIN CRANES						
20 t	Kobelco	RK 200-3	2002	4 x 4 x 4	25 / 5,5	direct
TRUCK CRANES						
90 t	Grove	TMS 900 E	2006	8 x 4 x 4	43.2 / 17	direct
90 t	Grove	TMS 900 E	2005	8 x 4 x 4	43.2 / 17	direct

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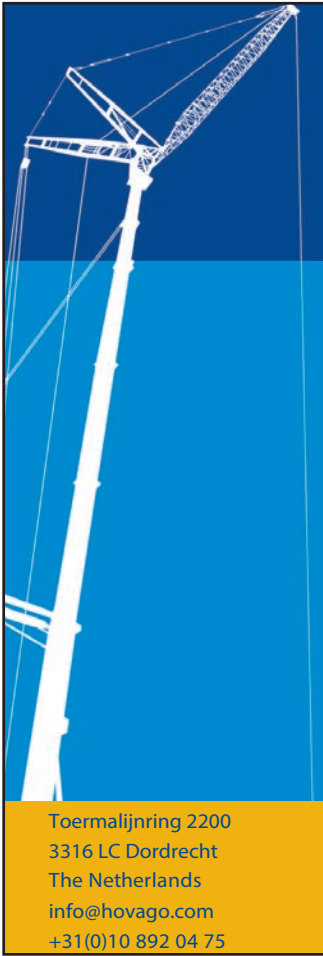
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1x	130 t	Liebherr LTM 1130-5.1	2019
1x	130 t	Liebherr LTM 1130-5.1	NEW!
1x	220 t	Tadano AC 5.220-1	NEW!
1x	250 t	Tadano AC 5.250-1	NEW!
1x	300 t	Demag AC 300-6	2019

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1x	100 t	Liebherr LTR 1100	NEW!
1x	650 t	Demag CC 3800 + SWSL	
1x	650 t	Demag CC 3800 + WIND	
1x	650 t	Demag CC 3800 + BOOM BOOSTER	

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1x	100 t	Liebherr LRT 1100-2.1	NEW!
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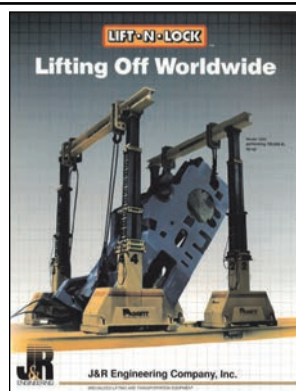
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 Year 2005
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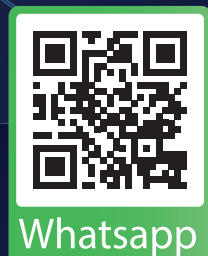


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- Ton** : 600 T
- Year** : Dec. 2015
- Main Boom** : SL13DFB/B2: 13 - 156 M (SL 13)+ 12 M (F)
- Jib** : Fixed lattice fly jib: 12 M
- Heavy duty jib** : S - Head section for max. capacity 600 T
- Y Guying System** : Derrick boom: 36 M
- Quick disconnect sys.** : Yes for superstructure
- Engine** : Liebherr D946 A7 - Tier 4F EPA / CARB
- Hours** : 4.445

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