

# INTERNATIONAL **CRANES** AND SPECIALIZED TRANSPORT

APRIL 2022

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KHL Group publication

ON SITE

**Aibel Comansa  
in Norway**

**Al Faris in Iraq**



TOWER CRANES

# Large flat tops

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# EDITOR'S VIEW



What a difference a year makes, or not. Last April it was forecast by market data specialist Off Highway Research that 2021 would have record sales of construction equipment. And so it was – global construction equipment sales rose 10 per cent to a new record of 1.196 million units, OHR has just reported.

Major markets all grew last year, other than China. Sales by number of units were up 25 % in North America and 22 % in Europe. It also looks good for 2022, OHR said, with further growth expected.

Production for 2022 is already sold out at some manufacturers who are quoting longer and longer delivery times. Demand is outstripping supply due to a formidable number of widely reported supply chain issues. These include a shortage of components and computer chips, a lack of suitable people, materials shortages, and shipping issues.

Demand worldwide for construction machinery is forecast by OHR to fall by around 5 % in 2022 but that would still be the second highest sales volume on record.

If the continuous stream of new cranes being announced by manufacturers is anything to go by, their time in lockdown was well spent. Topping out this month's round is Liebherr's announcement of a 2,500 tonne capacity crawler crane. Other interesting ones are electric tele crawlers from Marchetti, delivery of the first electric PV-E crawler, an electric model from IMT, and Liebherr's electric power version of the LTC 1050 compact all terrain.

In addition to the big Liebherr, there are also many more new conventionally powered cranes this month, including a 100 tonne capacity Liebherr lattice crawler, and a 77 tonne tele crawler from Grove. See the news starting on page 6 for news on much of the above.

Finally, if your company owns wheeled mobile, crawler or heavy lifting ring cranes, please do take the time to fill out and return the IC100 (formerly IC50) entry form for a place in the world ranking of crane-owning companies. You can download the form here: [www.internationalcranes.media/news/IC100-call-for-entries/8018196.article](http://www.internationalcranes.media/news/IC100-call-for-entries/8018196.article) or I will gladly email you a copy on request.

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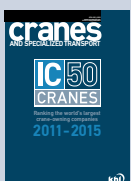
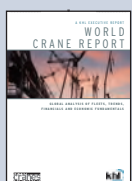


Cranes and Lifting Professionals

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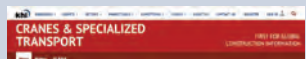
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Worldcrane week

Global news from International Cranes and Specialized Transport and American Cranes & Transport

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Crane market

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How are contractors applying digital construction techniques on projects in the real world?

### FUTURE EVENTS

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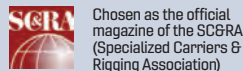
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What's new  
A specially adapted 50 tonne capacity Comansa 21LC1050 flat top towers over the Aibel yard in Haugesund, Norway. More on page 27.



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# Cargotec–Konecranes merger abandoned

Crane manufacturers Cargotec and Konecranes have cancelled their planned merger.

The announcement to abandon the plans to merge two of the

world's largest crane companies was made on 29 March as a result of the UK Competition & Markets Authority putting a block on the deal, Cargotec said.

It followed soon after The European Commission's conditional approval was given on 24 February (*ICST* March 2022, page 11). It agreed the merger on the basis that Konecranes would sell its Lift Truck business and Cargotec its Kalmar Automation Solutions unit. Cargotec said this "would have removed all overlapping businesses of the two companies."

CMA's final report issued on 29 March said the proposed remedies would not be effective in addressing the CMA's concerns and thus the planned merger between Cargotec and Konecranes cannot be completed.

For the deal to go ahead approvals are needed from all relevant competition authorities. Clearances were granted

by numerous competition authorities, Cargotec said, including the same remedy package approved by the EC but rejected by CMA. Others clearing the merger included the State Administration for Market Regulation in China and nine other jurisdictions, Cargotec said.

The deal remained subject to approvals from other competition authorities, including the Department of Justice in the United States.

Cargotec reported that by the end of 2021 it had booked €57 million in merger-related transaction and integration planning costs while Konecranes had booked €56 million.

Ilkka Herlin, Cargotec chairman said, "The Board of Cargotec is convinced that the merger would have created substantial value for the entire industry as well as shareholders by improving sustainable material flow. The combination would have created a strong European company enabling accelerated shared abilities to innovate without harming competition.

"We have done all we could to realise the merger and are disappointed that our plans have had to be abandoned."

## Marchetti launches electric crawler cranes

Italy-based manufacturer Marchetti has launched two new electric versions of the CW25.35 Sherpina 25 tonne capacity telescopic crawler crane.

In the hybrid battery version, there is a small EU Stage 5 diesel engine which will charge the batteries when there is no option to recharge via mains electricity. In this version, the CW25.35 is always driven by an electric motor.

The second version has a standard Stage 5 129 kW diesel engine. It can work exactly like the previous versions, but it can also work by means of an electric motor connected via cable to the mains electricity supply (400 V AC, three-phase). It doesn't have a battery.

The company said the Sherpina is a versatile machine designed for working in restricted areas. It has almost no tail swing radius and a virtual wall system is built in to the LMI to prevent booming up or out or swinging into obstacles.

Marchetti said the models are perfect for work near to roads or railways. The company said its 25 metre full power boom is generally more than adequate but there is also an option of a fly jib which can work up to 40 degrees offset.



The new versions are a hybrid of diesel engine and electric power

### HIGHLIGHTS

» **Fabio Belli**, CEO at Italian heavy transport and lifting company **FAGIOLI**, has been confirmed as the new president of ESTA, the European Association of Abnormal Road Transport and Mobile Cranes. Belli was proposed for the role by the ESTA Board in February and the decision was confirmed by a unanimous vote of the association's ruling General Assembly on 17 March.

» **CROPAC EQUIPMENT's** territory for **TADANO CRANES** now includes Saskatchewan, Alberta, British Columbia, Yukon and the Northwest Territories. Tadano America has expanded Cropac Equipment's territory as an authorised distributor of Tadano rough terrain, all terrain, and telescopic boom crawler cranes in Canada.

Tower crane manufacturer **POTAIN** has appointed **Stirnemann** as its distributor for Denmark, Greenland and the Faroe Islands.

The Swiss Potain dealer handles sales, service distribution, spare parts and rental of all types of Potain crane in these areas. Stirnemann has a new 4,000 square metre yard and parts warehouse near Copenhagen.

Its rental fleet will be boosted by 17 new cranes, including an Igo T 99 self erector – the first unit in Scandinavia. Some used and refurbished models are also part of the order. Stirnemann cranes are already working on sites in Copenhagen and in Jutland. "The new





# Liebherr announces 2,500 tonne crawler crane



From left, Duncan Salt and Andreas Kahl from Wolff, with Bent Mikkelsen and Espen Hanssen from Mikkelsen

## Wolffkran JV in Norway

Tower crane manufacturer Wolffkran Holding and Norway's Mikkelsen have established Wolffkran Norge.

It offers sales and rental of Wolff tower cranes in Norway. The new company sealed the deal with its first order, for three cranes, to work on a project in Molde.

Wolffkran Norge will be run by Espen Hanssen, Mikkelsen Kran managing director. Its headquarters are in Drammen, 40 kilometres southwest of Oslo. Commenting on the new JV Hanssen said, "Concentration of our combined efforts as Wolffkran Norge AS makes us more competitive and helps us increase market share across the country."

Bent Mikkelsen, Mikkelsen AS founder and owner, has been in the industry more than 50 years.

A 2,500 tonne capacity crawler crane is new from Liebherr-werk Ehingen in Germany.

The LR 12500-1.0 fits in the upper end of the product range between the 1,350 tonne LR 11350 and the 3,000 tonne LR 13000. It has distinctive design differences from other Liebherr models.

The boom is wider and gives the same stability as using the double lattice PowerBoom or the SX boom, the manufacturer said. It is called HighPerformanceBoom. Maximum length is 100 metres but it can be extended using sections from the luffing jib. A short version of the luffing jib makes a WV type jib for vessel lifting, typically tall columns in the petrochemical industry.

Erection of larger wind turbines and other renewable energy work will be a common application for this new giant.

The crane's maximum tip height of around 200 metres is achieved with 100 metre main boom and 108 metre luffing jib.

The crane's superstructure is much narrower than existing models and the two main hoist winches sit on top of it instead of in between. The back mast



Liebherr LR 12500-1.0 on the test pad in Ehingen, Germany, with just the back mast and no main boom

is mounted at the front of the superstructure immediately behind the boom foot.

Easy transport is a key element of the new design. Largest is the 4 metre wide superstructure front section which can be transported on a low bed trailer. Other components come in at 3.5 metres wide or less.

Crawler units can have the tracks removed to reduce the 150 tonne overall weight of each one. Without tracks the crawler

frames each weigh 97 tonnes and they can be split further, into two pieces.

Counterweight slabs are the same 25 tonne concrete ones as used on the LR 13000. They have twistlock fittings on each corner and can be transported like a 20 foot container.

The narrow rear section of the superstructure houses a pair of engines. The Liebherr straight six diesels offer a combined output of 800 kW.



territories offer good opportunities for our business. Potain is a strong brand in these areas, and we can leverage our long experience from Switzerland and from building up a new market in Austria," said John Cristian Asmussen, Stirnimann CEO in Denmark, Greenland, and the Faroe Islands.

From left: Patrick Leuenberger, CFO at Stirnimann AG; Jørgen Saabye, Stirnimann consultant; John Asmussen, CEO at Stirnimann AS; Kenneth Nielsen, tower crane technician at Stirnimann AS; Wybe Smit, Manitowoc regional director; Fritz Oschwald, Stirnimann Group

» International heavy lift and transport specialist **SARENS** is the first customer for Liebherr's new LR 12500-1.0 crawler crane. Carl Sarens, managing director, said, "The high lifting capacity of the LR 12500-1.0 is the outstanding feature for us. The new crane will enable us to close the gap between our crawler and ringer cranes."

» The world's most expensive cities for construction are in Europe and North America, according to the latest International Construction Costs report published by **ARCADIS**. London, UK, is the most expensive, followed by Geneva in Switzerland and Oslo in Norway. New York in the USA comes next, followed by Copenhagen.



# PV-E Crane delivered to Volker Wessels

Following the January 2021 announcement that Dutch crane and heavy equipment specialist PVE Cranes & Services was developing a series of fully battery-electric crawler cranes, Volker Wessels has officially taken delivery of the first PV-E Crane.

The major Dutch construction contractor ordered three units to add to its own equipment fleet for use on construction projects in the Netherlands. The new 160 tonne capacity EC160 battery-electric crawler crane was handed over to the company at the PV-E Crane factory in Oosterhout, Netherlands on 18 March.

PV-E Crane is working on a line of 100 per cent battery-powered lattice boom and telescopic boom crawler cranes.

The unit for Volker Wessels has a 42 metre main boom and 43 metre luffing jib. Maximum main boom for this model is 75 metres. On a 63 metre main boom a 31 metre fixed jib can be added. The EC160 has a 200 kW electric motor in place of a diesel engine, which is used to drive



The electric motor (green) in the centre is flanked on the right by the hydraulic pumps and tank, while one of the two batteries is behind the tilted panel



the hydraulic pumps as per a conventionally powered hydraulic crawler crane.

Replacing the diesel tank is a 260 kWh lithium-iron-phosphate (LiFePO4) battery pack, arranged as two exchangeable units of 130 kWh each. These batteries are the latest development in traction cell technology and have some major advantages, the company said, for example, they contain no acids or heavy metals and are fully recyclable.

“Our aim is to make a substantial contribution to the transition to a low emission, healthier construction site,” said Rob van den Boogaard, PV-E Crane managing director. “The crane is fully CE and TÜV certified and has already been extensively tested in field conditions.”

## Comansa signs dealer for Norway

Spanish tower crane manufacturer Comansa has signed a three-year distribution agreement for Norway with Rental Group Crane AS.

The deal was signed mid-March at the Spanish tower crane factory in Huarte, Navarra. Comansa said it will support Rental Group Crane at all levels. The companies have already worked together for years.

The Norwegian rental group has bought several cranes, including large models, from the 21LC series and also 16LC units. Projects for these included construction of the new Radiumhospitalet hospital.

Representatives of Rental Group Crane, Jan Ståle Døhl and Espen Jensen, receiving an event memento from the Comansa team



PHOTO: COMANSA

### HIGHLIGHTS

» Australian loader crane specialist **HYVA PACIFIC** has acquired **TRUCK CRANES AUSTRALIA PTY LTD**. TCA is based south of Brisbane in Queensland. Hyva said it is a platform for expansion in the Queensland market, close to Port Brisbane and business partners. TCA was set up in 1991 and took on the F.lli Ferrari crane dealership in 2008.

Hyva Container Handling equipment was added in 2012. It is also Queensland dealer for Tadano straight boom cranes and Loadmac truck-mounted forklifts. Hyva Pacific said it plans to grow by building on existing lines and adding new Hyva product lines, including tipping solutions, waste handling, skiploaders and truck and trailer accessories.

French transport specialist **GROUPE CAYON** took delivery of three new 60 tonne capacity Grove GMK3060L-1 all terrain cranes in 2021 and one GMK5150L-1 in February 2022.

Groupe Cayon chose the 60 tonners for their long boom and strong taxi load charts, and the 150 tonne capacity taxi crane for erecting tower cranes.

“The compact size, long boom and strong load charts on the GMK3060L-1 are perfect for our fleet and will help improve productivity,” said Julien Cayon, director of Groupe Cayon.

All four new Grove cranes will be used on jobs in and around Lyon in France.







# THE START OF SOMETHING BIG

**Make no mistake – this 2-axle is a big deal.**

Introducing the future of the Tadano all terrain line. Jointly developed with the vast experience of both Tadano's Lauf and Zweibrücken locations in Germany, the AC 2.040-1 is an extremely versatile and compact crane. Showcasing exceptional strength at steep boom angles, it can lift 7.6 t at an 8 m radius when fully telescoped (35.2 m). A robust and reliable undercarriage provides excellent gradeability and acceleration. And for operation in confined areas, the eco-friendly E-Pack can run this nimble powerhouse. This is your ideal, ready-to-use taxi crane!

Learn more about the AC 2.040-1 and other news we have planned for the future at:  
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# Grove launches GHC85 tele crawler

With its capacity of 85 US tons (77 tonnes) and the longest boom in its class, Manitowoc has added an eighth model to its telescopic boom crawler crane range for sale the Americas.

The GHC85 sits in the middle of Grove's range of telescopic boom crawlers. Its five section main boom is 137.7 feet (42 metres) long and can be elevated between -3 and +80.5 degrees. A 49.3 foot (15 metre) bi-fold swingaway standard boom extension can be offset at 0, 20 and 40 degrees. A 10 foot (3 metre) heavy-duty jib with 10 degree offset is another option, and it can be stowed on the left-hand side of the boom.

Typical applications include utilities, general construction, bridge work, pile driving and as an assist crane for assembling other cranes. Frame-mounted jacks and counterweight lifting cylinders enable the crane to self-assemble, which can be controlled via a wireless remote.

"The biggest advantage of a tele crawler is that you can work efficiently on both even and uneven terrain with solid pick-and-carry charts," said JJ Grace, product manager for GHC cranes.



The 85 US ton (77 tonne) capacity GHC85

The 36-inch triple-bar grouser track shoes offer stability, in addition to reducing soil compaction, by producing ground bearing pressure as low as 13.2 psi without load, and as high as 24.9 psi with load. The crane's several track span settings (symmetrical and asymmetrical) are made possible by the hydraulically extendable and retractable cross members.

"The maximum track span is 16.7 feet [5 metres], but one track could be set at 100 per cent and the other at 50 per cent, enabling an operator to manoeuvre and pick in confined spaces," JJ Grace explained.

A Cummins B6.7L Tier 3 (218 hp / 164 kW) or Tier 4 Final (249 hp / 186 kW) engine powers the crane and a two-speed hydrostatic drive for tracking.

**WEISS KRANSERVICE in Germany has taken delivery of a 450 tonne capacity Tadano AC 7.450-1 all terrain crane.**

Erecting and dismantling tower cranes will be its primary application. Dominik Magg, junior manager at Weiss, said the crane was selected for its compact design, large lifting capacity and long boom.

The new crane takes the place of a 300 tonne which was getting too small for lots of today's projects.



# Record construction equipment sales in 2021

Global construction equipment sales rose 10 per cent in 2021 to a new record of 1.196 million units, according to Off-Highway Research's newly updated Global Volume and Value Service.

A fall in demand of around 5% is expected in 2022 but that would still give 2022 the second highest sales volume on record.

Off-Highway Research managing director, Chris Sleight said, "The combination of low interest rates, stimulus spending on infrastructure and high commodity prices last year was a heady combination for the construction equipment market. Residential construction is booming, there is strong demand for equipment from mines and the pipeline of infrastructure work looks solid."

All major markets of the world grew last year, with the exception of China. Some of the most robust growth was seen in North America (up 25%) and Western Europe (up 22%), while emerging markets, excluding India and China, were up 24%.

Sleight said, "Equipment sales in China have moved to a different rhythm from the rest of the world since the start of the pandemic."

## APRIL /C SHARE INDEX

STOCK CURRENCY	PRICE AT START	PRICE AT END	PRICE CHANGE	% CHANGE	PRICE 12 MTHS AGO	12 MTH % CHANGE
<b>/C Share Index*</b>	<b>93.42</b>	<b>85.55</b>	<b>-7.88</b>	<b>-8.43</b>	<b>137.72</b>	<b>-32.17</b>
<b>Legacy /C Share Index**</b>	<b>298.56</b>	<b>297.18</b>	<b>-1.39</b>	<b>-0.46</b>	<b>348.96</b>	<b>-14.44</b>
Dow Jones Industrial Average	33,224	34,905	1681.21	5.06	32,619	1.85
FTSE 100	7,374	7,468	93.68	1.27	6,723	9.69
Nikkei 225	26,477	28,062	1585.68	5.99	29,177	-9.25
Hitachi Construction Machinery	YEN 2,797	3,175	378.00	13.51	3,500	-20.09
Konecranes	€ 32.50	27.70	-4.80	-14.77	38.26	-15.05
Kobe Steel	YEN 597	628	31.00	5.19	715	-16.50
Liugong	CNY 7.33	6.47	-0.86	-11.73	9.51	-22.92
Manitowoc	US\$ 16.34	15.66	-0.68	-4.16	20.37	-19.78
Palfinger	€ 27.65	24.15	-3.50	-12.66	33.60	-17.71
Sany Heavy Industry	CNY 20.17	17.53	-2.64	-13.09	35.68	-43.47
Tadano	YEN 970	1,040	70.00	7.22	1,206	-19.57
Terex	US\$ 40.77	38.09	-2.68	-6.57	44.81	-9.02
XCMG	CNY 5.57	5.11	-0.46	-8.26	7.49	-25.63
Yongmao Holding	SGD 0.72	0.62	-0.10	-13.89	0.65	10.77
Zoomlion	CNY 7.14	6.63	-0.51	-7.14	12.21	-41.52

\*/C Share Index, 1 Jan 2011 = 100

\*\*Legacy /C 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	6.317	6.363	0.05	-0.73	6.54	-3.45
€	0.893	0.908	0.02	-1.71	0.85	5.09
Yen	115.477	121.725	6.25	-5.13	109.66	5.30
UK£	0.747	0.758	0.01	-1.48	0.73	2.86

Period: Weeks 9-13



## Huge cost of Ukraine war

The cost of direct damage to Ukraine's infrastructure since Russia invaded the country has reached US\$63 billion, according to an analysis from the Kyiv School of Economics (KSE).

According to data from KSE, at least 4,431 residential buildings, 92 factories and warehouses, 378 schools, 138 healthcare institutions, 12 airports and seven power plants have been damaged, destroyed or seized.

In terms of infrastructure, the most expensive damage has occurred to roads – the cost is estimated at over US\$27 billion.

Anna Bjerde, World Bank vice president for Europe and Central Asia, said, "Ukraine needs massive financial support immediately."



The winners on stage at the awards evening

## ESTA Awards 2022 winners

The winners of the 2022 ESTA Awards of Excellence for lifting and transportation have been announced.

The awards were presented during a gala dinner evening in the Netherlands on Thursday 17 March. It was a hotly contested event this year with 36 companies in the ten categories shortlisted from a total of 45 entries.

The 11th award, the Gino Koster award, isn't handed out every year but this year it was.

The winners in all categories were as follows:

- » Innovation, manufacturer **Spierings Mobile Cranes**
- » SPMT **Wagenborg Nedlift**
- » Cranes, telescopic, lifting capacity less than 120 tonnes **Wagenborg Nedlift**
- » Cranes, telescopic, lifting capacity more than 120 tonnes **Schot Verticaal Transport**
- » Cranes, lattice boom **Fagioli**

- » Transport, trailer and load under 120 tonnes gross weight **Fagioli**
- » Transport, trailer and load more than 120 tonnes gross weight **Fagioli**
- » Combined techniques **Wagenborg Nedlift**
- » Safety **Liebherr-Werk Nenzing**
- » Innovation, end user **Fagioli**
- » Gino Koster Award **Jan IJmker.**

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A roundup of some of the latest tower crane projects around the world. **NIAMH MARRIOTT** reports

# Going up

Echterhoff will use state-of-the-art technology to minimise disruption

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## Building bridges

Several Wilbert cranes are working on the reconstruction site of one of Germany's motorway bridges, which was originally built in 1967.

The condition of many German motorway bridges are worse than expected, says Wilbert. The company states that many bridges built before 1985 will have to be renewed or rebuilt entirely and considerable effort and investment will be necessary. As part of this, all bridges on the A45, a vital north-south connection for the country, will be rebuilt.

The crane concept for the project was developed by Wilbert and German construction company Gebr. Echterhoff. Echterhoff says they will use state-of-the-art technology to optimise construction and minimise traffic obstruction.

During the first construction phase, the northern two-lane halves of the bridge were blasted, and traffic was diverted to the two remaining lanes. Once the new construction



of the motorway in the northerly direction (then three lanes) has been completed, the southern two-lane halves of the bridge will be blasted as well, and the new bridge in the southerly direction will be built using the same crane concept.

Wilbert cranes working on site include two WT 150 e.tronics, each installed on a 6 x 6 metre cross base and with 50 metre jib for the abutments on both sides of the bridge. The main cranes, two new flat top models WT 300.1 e.ronic and one WT 180 e.ronic, are also installed on a 6 x 6 metre cross base.

With their 60 and 45 metre jibs, they easily cover the working area and over-slew each other thanks to their different heights, says Wilbert.

The WT 300.1 with a jib length of 60 metres, as is used on this project, has a capacity at the tip of the jib is still 4.6 tonnes, thanks to the new Wilbert loadplus feature, says the company. The crane has a particularly short counter jib which means significantly less restricted area when it comes to using several cranes together on a construction site.



Twelve BKL cranes are being used at the airport



# High above the skies

With twelve tower cranes and several mobile crane operations, BKL is helping build the new Terminal 3 at Fraport in Germany. It is one of Europe's largest privately funded infrastructure projects.

Twelve BKL construction cranes are operated at Fraport, where the new main terminal building and several piers are being built. BKL's tower crane specialists assisted Dechant Hoch- und Ingenieurbau, the company responsible for the Terminal 3 structural shell, during the preparatory phase. Using CAD-based planning, they visualised the different crane heights to ensure safety and an optimum configuration.

To create the crane concept, the team capitalised on BKL's rental fleet, from mobile 22-metre bottom-slewing cranes to five flat top cranes in the 300 tonne-metre category, with hook heights up to 85 metres and a radius of 75 metres, culminating in a 1,050 tonne-metre giant.

BKL says the ten mobile fast erecting

BKL System Cattaneo CM 221s cover a large area as they can be relocated on site as required, while the stationary top slewing cranes handle the heavier loads. A Comansa 21LC1050 is also on site, installed with a hook height of 53 metres and an 80 metre radius on a 70 metre track system. This allowed installation of the 1,050 tonne-metre crane with a tip load of more than 11 tonnes and a capacity of 50 tonnes to lift heavy steel.

BKL set up two other large cranes, a Liebherr 630 EC-H and a Comansa 21LC750, both with more than 70 metre radii, at CargoCity South, also being extended during construction of the new terminal. ■

## New tower crane

The new Potain MCT 805 – a high-capacity flat top tower crane, will soon be available in Asia, Australia, New Zealand, the Middle East, Africa and Latin America. Its design is based on the company's France-built MDT 809.

Potain claims best-in-class transport and erection on a par with a typical 450 tonne-metre crane. It can be set up twice as fast as a standard 40 tonne capacity crane, while requiring less space, the manufacturer says. Assembly to a 50 metre height takes less than three days.

A counter jib of 27.3 metres gives 7.5 tonnes capacity at 80 metres. The tip load of the M32 and M40 configurations make it ideal for heavier lifting loads within confined job sites. The M32 lifts its 32 tonne maximum to a radius beyond 22 metres, while the M40 lifts its 40 tonne maximum beyond 18.5 metres.

In addition to the regular frequency-controlled hoist options, two highlights are the M32 with the 150HPL80 – that can lift 1.8 tonnes at up to 151 m/min; and the M40, 270LVF100 Optima: 3.5 tonnes at 162 m/min. Both have a drum capacity for 1,063 metres of rope when fitted with the larger hoist option. Users can also choose between two-fall for faster lifting or four-fall configuration for heavy lifting.

The new residential project comprises seven separate structures, each 22 storeys



## Development in Pune, India

More than a dozen Potain cranes were used to progress construction of a prestigious residential development in Mamurdi, northwest Pune, Maharashtra.

The cranes were a mix of Potain MCI 85 and MCT 85 models. The MCI 85 is one of the most popular tower cranes of all time in India, with units in operation all over the country to this day. In recent years it has been replaced with the MCT 85, a flat top tower crane with similar characteristics but with several design advances, the manufacturer says.

At around 15 acres, Godrej Forest Grove

is 14 towers, each 22 storeys, built as seven separate structures. Despite being at the intersection of three major roads – the 1,100 apartment complex is surrounded by green hills and two lakes.

Godrej Properties engaged several contractors, including Madhure, Millennium, Tricon, and Viraj Projects. The project was constructed using 14 Potain tower cranes; a mix of the original MCI 85 hammerhead and the MCT 85 flat top crane.

All units were configured for internal floor-climbing and ended the project with

heights under hook between 70 and 80 metres, and with jibs from 25 to 30 metres.

Especially popular in India and throughout Asia, the internal climbing configuration is built around 1.2 metre square mast sections for the crane to fit inside narrow elevator shafts and operate with shorter jib lengths to maximise capacity. In this set-up, the cranes can be initially configured at a maximum freestanding height of 33.2 metres.

Flat tops are easier and faster to erect than hammerheads and can be transported in fewer truckloads, says Potain. ■



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## PART ONE



The largest low top series crane to date is the Jaso J1400 providing a 62 tonne capacity at 25 metre radius

Is it low top or flat top tower crane design that is leading the way in the high-capacity tower crane classes? **HEINZ-GERT KESSEL** reports in the first of a two-part feature to be continued next month

**A**t first glance it seems all modern saddle jib tower crane designs are flat tops.

It hasn't always been the case as many in the industry may consider a flat top tower crane a relatively new kid on the block. Even the Linden 8000 series from the 1970s was not the world's first construction tower crane without a tower head. In 1930, for example, crane designer Arthur Loeb designed a real topless top slewing internal climbing crane with a 4-chord shaped saddle jib and counter jib. It was on the custom-built cranes used to raise the 65 metre high hotel de ville at Villeurbanne, France.

At the end of the 1940s, under the name of C.A.C.L. J. Weitz, it was again Arthur Loeb who designed the typical low top crane later known as Weitz Richier construction cranes. Milestones were set by the G280B in 1961 with a capacity of 20 tonnes and, in 1968, by the high-capacity low top Richier-Weitz GT1450 versions capable of lifting 62.5 tonnes.

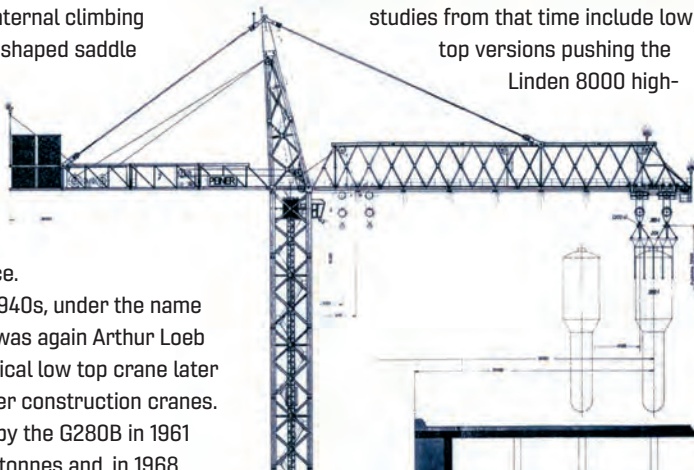
### BREAKING RECORDS

Many crane manufacturers in the 1970s, including Peiner, Potain, Liebherr and Krøll, sought new tower crane capacity records by still relying on classic tower head design with jib pendants. Not Swedish company Linden, however, which set new standards in the modular design of flat top cranes with its famous 8000 series.

In 1977 Linden-Alimak turned heads when supplying 139 metre (free standing), 1,400

# High capacity

tonne-metre class flat top cranes with 50 tonnes capacity at a 17.6 metre radius (and still 16.7 tonnes at 46 metres) for a Polish power plant project. Linden-Alimak project studies from that time include low top versions pushing the Linden 8000 high-



capacity series into the 3,600 tonne-metre class. These Linden HD versions with, for example, 15 tonnes capacity at 100 metres radius and 45 tonnes at an 80 metre radius, never left the drawing board, even though they prove the versatility of a combination of modular flat top crane jib design and classic tower head.

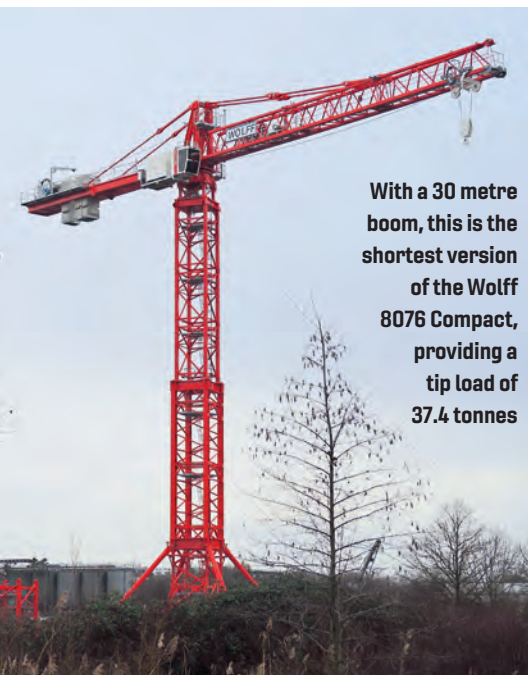
In 1978 Peiner carried out tower crane studies for a nuclear power plant project in the USA where 385 tonnes had to be lifted at a 50 metre radius using a hammer head crane. The so called SK20000 with conventional tower head was designed with a 6.40 metre, high profile and heavy-duty

**Design study of the giant Peiner SK20000 with 385 tonne capacity at 50 metres radius for a nuclear power plant project in 1978** »



Wolff 8076 Compact shows off its full 80 metre jib





With a 30 metre boom, this is the shortest version of the Wolff 8076 Compact, providing a tip load of 37.4 tonnes



The Comansa 21LC1400 with 66 tonne capacity is designed with PPVC construction in mind

jib. Each jib section had to be split by a bolt connection for transport in two u-shaped frameworks. These were very similar to the jib on Zoomlion's 12,000 tonne-metre W12000-450 flat top launched in 2021.

## EVEN BIGGER

Also for a bridge project, fellow Chinese manufacturer XCMG raised maximum capacity to 600 tonnes, at a 25 metre radius. It had been decades before flat top or low top crane designs entered such mega capacity classes.

After the Linden 8000 series it was tower crane designer Franc Jost who focused again on flat top crane design, albeit in the sub-400 tonne-metre class back in 1998. At that time rental fleets were growing, with demand for low and medium sized city cranes.

An economical concept for transport and

## Counterjib section transport of the Krøll K1230F

rigging was needed to reduce the number of support trucks and the rigging time. A brilliant way to achieve this was eliminating the need to handle pendants during jib installation. It meant the under hook height of the erection or dismantling crane could be reduced by about 6 metres.

On construction sites with several cranes the overall height of the umbrella crane could also be reduced, lowering the tower height. Competing crane manufacturers which had not converted the classic tower head type design into a flat top design tried to address the market requirements in the city crane class. They offered a low top version alongside a classic tower head type in the same capacity class.



With an extremely short counter jib and just 19.6 metre boom these Krøll K860Fs are especially adapted to PPVC construction

An example is the Wolff 5520FL-6K developed in 1997. Customers could change the standard 6.30 metre tower head for a 2.27 metre short version. It was a forerunner of the flat top "Wolff clear" series in the city crane market.

The low top design was reborn by Spanish manufacturer Jaso in 2005, not just for city cranes but also to reduce erection and transport expense in the high-capacity class. Its J600.20 design provided 20 tonnes capacity and a jib up to 80 metres. The J700 followed, then updated as a heavy lift version of the J800, following the same design principles. It offers capacity up to 48 tonnes.

## CONTAINERISATION

There is no difference in the clearance heights of similarly capable flat top cranes but all the components fit into standard sized containers for easy transport. While jib length can be chosen in 2.5 metre increments and even an extremely short, 23 metre, jib version is available, the counter jib can be adapted in four modular counter jib configurations ranging from 18.6 to 28 metres.

With a 64 tonne capacity the Jaso J1400 is the biggest low top crane in the market. It has a unique rectangular modular counter jib design with four counter jib options from 29 down to 18.1 metres without needing to use different lengths of pendant. This crane giant can be transported entirely in standard containers. For this purpose, the

high frame counter jib modules are completely foldable and stackable.

Like at the J800, the jib can be erected section by section. If the assist crane capacity is limited, the first two sections, held by the short pendants, can be lifted in to place separately thanks to a special erection lock of the pendant lines. Base boom

installation weight can be reduced from 28 to 12.14 tonnes on the J1400 and from 20 to 11.5 tonnes for the J800. Jaso says it sees no disadvantage to its low tower head design against flat top cranes during the installation process. It also highlights that there is less jib deformation with heavy loads and less dead weight of the complete jib structure, when using short pendants for the first two jib sections.

For additional stiffness Jaso opts for four chords in the first four or five jib sections. The same idea lies behind the design features of the all-new Wolff 8076 Compact. In contrast to the four pendants of the Jaso J800 holding the counter jib, in this case only two pendants are used, reducing the installation procedure

In contrast to the J800 only three and not



# ULTIMATE JOBSITE FLEXIBILITY

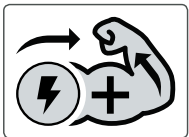


## CITY CLASS FLAT TOP TOWER CRANES

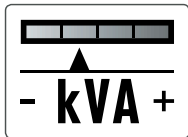
TEREX offers a complete range of “City Class” Flat Top Tower Cranes from 5 to 10 t, with modular design that easily adapts to different job sites.

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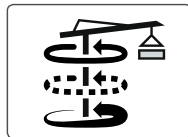
The T-Torque slewing technology gives the operator accurate control of load handling and positioning.



Terex Power Plus



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T-Torque slewing

## THE RANGE

	Max capacity	Max jib length	Max tip load
CTT 91-5	5 t	50 m	1.4 t
CTT 132-6	6 t	60 m	1.4 t
CTT 172-8	8 t	65 m	1.5 t
CTT 202-8	8 t	65 m	2.1 t
CTT 202-10	10 t	65 m	2.1 t



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## TOWER CRANES

four counter jib lengths can be selected. The shortest is 22.3 metres while Jaso's J800 is just 18.6 metres. The Wolff 8076 Compact's 80 metre jib can be reduced to 30 metres in 5 metre increments while Jaso's J800 jib can be reduced in 5.5 or 2.5 metre steps to just 23 metres.

This modular design of extremely short counter jib and jib is essential for the PPVC construction market increasingly prevalent in Singapore in recent years. The first two jib sections of the Wolff 8076 Compact, including the pendants, forms one erection unit of 23 tonnes. The lifting capacity of the Wolff low top is well above the J800 Jaso. For example, 24 tonnes can be lifted at a 40 metre radius, and 7.6 tonnes at 80 metres. It appears from the design that with a double trolley arrangement even more than the actual maximum of 40 tonnes could be handled.

Wolff engineers say the low top 8076 Compact is designed to optimise the size and weight of all crane components. They estimate that in comparison to a standard 800 tonne-metre class crane with tower head the overall jib weight is 20-30 per cent higher. At the same time the weight reduction in contrast to a flat top version is about 18 to 25 %.

### TRIANGULATION

In contrast to conventional triangular jibs on flat top cranes, the short pendants, together with the strong rectangular base boom section, add to the stiffness of the jib when the crane is slewing.

In 2021 Krøll introduced the short jib and boom version of its K860F for the PPVC construction market. It can be operated with a 16 metre tail radius. Capacity is 48 tonnes, to a 19.6 metre outreach. To meet rising demand for high-capacity class cranes in general construction, Krøll is developing a K1030F with a tip load of 9 tonnes at 80 metres and a 48 tonne maximum. At 44 metres it lifts 24 tonnes and 48 tonnes at 22.5 metres.

In this crane class transport dimensions must cope with street regulations. The maximum base jib section height is restricted to 3.20 metres. In 2019 a custom-built K1230F



For large construction sites long jib configurations of 80 metres are often essential. These Comansa 21LC1050 with 50 tonnes capacity had to be installed under cramped site conditions



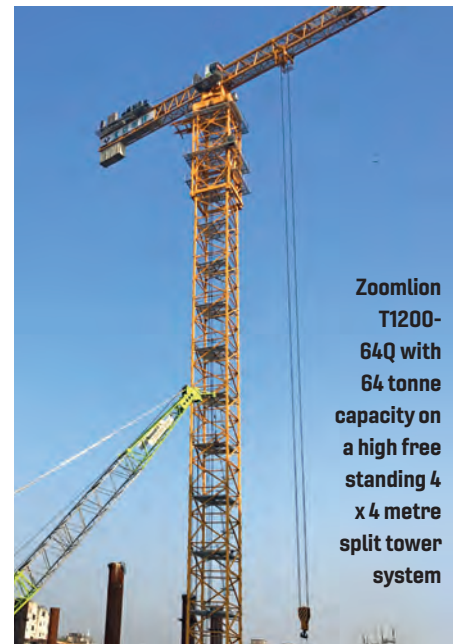
was delivered for a Canadian oilfield project. Capacity is 48 tonnes at a 30.5 metre radius. It has a 3.6 metre boom system over its full length of 46.3 metres. If the jib is extended to 80 metres the outer sections are 2.56 metres tall to fit a high cube container. All jib sections are low weight designs, each between 1.8 and 9.3 tonnes.

After launching the 66 tonne 21LC1400 with large PPVC construction work in mind, the Comansa 21CM1100 was launched from the China factory, built to European EN standards. Most boom sections can be interchanged with 21Cm750 sections. A short counter jib version between 19.9 and 27.9 metres allows adaptation to cramped sites. Even at an 80 metre outreach capacity is 10.2 tonnes.

As with the earlier Linden Cranes the Comansa models all have triangular jibs. It means 6.2 metre high base sections on the LC3000 series cranes, with a maximum capacity of up to 90 tonnes. Even these fit into a standard open-top container because the upper part of the jib sections can be folded down for transport.

Design studies for the LC3000 series include 90 metre jib and 125 tonnes capacity. A special heavy duty version with 40 metre jib and 125 tonne capacity at 13.2 metre radius have been on the drawing board for a wind turbine installation project.

How the transport height and volume of high jib sections is reduced on the largest models of Comansa flat top cranes



Zoomlion T1200-64Q with 64 tonne capacity on a high free standing 4 x 4 metre split tower system

In contrast to Wolffkran, a conventional flat top crane version is offered by Potain in the 800 tonne-metre class. At the end of the 80 metre jib 8.3 tonnes can be handled by the MDT809-M40. It is close to the 8.4 tonnes of the Wolff 8076 Compact. In the short jib range up to 40 metres some 17 to 20 % more capacity is provided by the Wolff 8076 showing the benefit of the low top design.

### LARGE CONVENTIONAL FLAT TOP

On the other hand, the Potain MDT804 has already demonstrated its fast-rigging capability on several construction projects. It turned out that the MDT804 can be assembled twice as quickly as conventional tower cranes in the 40 tonne capacity range with a tower head, underlining the benefit of a flat top crane design for easy rigging, especially in the higher capacity class.

Another benefit is the moderate erection weight. When installing the jib in three

The Potain MD804 can be assembled twice as quickly as other cranes





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**Zoomlion T1200-64W mounted on a compact 3 x 3 metre monoblock tower system for PPVC work**

sections the largest load for the assist crane is less than 13 tonnes. Following the original Jost flat top design principle, as many European crane manufacturers have, China's Zoomlion applies the jib foot section as a central unit above the slewing unit, where jib and counter jib are connected.

In contrast to many other Chinese crane manufacturers a rectangular framework forms part of a reinforced base boom section, added to with conventional triangular jib

sections for the outer boom. The rectangular lattice boom design is also used for the counter jib, reducing weight. A simple modular pendant-free design solution shows maximum flexibility for a short counter jib version.

The hoisting winch on top of the rectangular counter jib allows the hoist rope to move freely above the central part of the

tower crane before it is led over a pulley on the second jib section. In contrast to a monorail concept, both chords of the jib are used as the runway for the trolley. All crane manufacturers preferring this design claim better load distribution and higher torsional resistance of the trolley when slewing.

### REDUCED RADIUS

A further aspect is the overall length of the trolley in heavy lift operation. A monorail means a longer unit with multiple rollers which reduces the maximum available hook radius at a comparable jib length. Inverted triangular jibs with H-beams as a runway may lead to safety issues during pre-installation at ground level due to their small base.

Rigging support jacks help secure the jib during erection but this can be avoided with conventional rectangular and triangular jib designs. Zoomlion's T1200-64Q lifts 64 tonnes and 15 tonnes at 80 metres. The three counterweight radius options are from 25.1 to 17.1 metres. It has transport-optimised component heights of a maximum 2.88 metres for the jib. Its 22 tonne turntable and slewing ring unit is the heaviest single load.

**END OF PART ONE** See next month's issue of *ICST* to continue reading about high capacity, primarily flat top and low top tower cranes, with a focus on the Chinese manufacturers.

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A Norwegian shipyard is using a large customised Comansa tower crane for offshore oil platform construction. **ALEX DAHM** reports

# A year at Aibel

Offshore contractor Aibel has just completed its first year using a 50 tonne capacity tower crane for platform construction at its yard in Haugesund, Norway on the North Sea coast.

The 21LC1050 from Spanish manufacturer Comansa is a large flat top tower crane. Its first job, starting in the first quarter of 2021, was to help construct the John Sverdrup process Platform Phase 2 (JSP2),

Aibel's largest project. As is typical for this application, the crane was put through a process of adaptation and customisation to suit the customer's specific requirements. These are usually more demanding than straight construction projects, the manufacturer says.

Cranes in offshore construction yards are often rail mounted to travel up and down the yard at the side of the vessel or platform under construction.

In this case the crane was configured both for fixed and rail mounting. It also has a marinised paint finish to protect against



Customisation was key on this unusual tower crane project for Aibel in Norway

corrosion from the sea air. Similarly, the electronics and other components are sealed to protect against the ingress of moisture and other contamination. LED lighting illuminates the work area, the operator cabin is equipped to allow 24 hour working, and there is an elevator.

Comansa worked with distributor Rental Group



At more than 90 metres, the Comansa 21LC1050 towers over the oil platform it helped to construct



## SITE REPORT

**The portal was specially reinforced for this application**

Crane on the customisation for Aibel. The crane stands at more than 90 metres tall on a portal in a D25 wind zone so its base needs to withstand a force of 400 tonnes per corner. Comansa reinforced the 10 metre portal here where it can be rail mounted or supported on levelling spindles.



The 10 metre portal in its confined surroundings

### CUSTOMISATION

The special paint is 250 microns thick to prevent corrosion. To help ensure safety there is a camera on the trolley to give the operator a view of the loads and its surroundings. An alarm system is fitted as are signalling lights, to comply with European EN14439 standard.

Counterweight slabs are protected by custom-built galvanised steel frames. Making the electrical cabinet from stainless steel further helps protect from the elements. The LED lights and the free-slew brake release can be operated at ground level.

A constraint from the beginning was that the crane had to be easy to assemble in the minimal, 700 square metres, of available space. Comansa made use of Aibel's facilities to pre-assemble components which arrived in



Galvanised steel frames on each block

32 truckloads. A 500 tonne capacity wheeled mobile crane configured for a lift height of 115 metres was used to erect the crane. Heaviest of the components was 23 tonnes. It took two

days to assemble the crane on its portal.

Its 80 metre boom allowed the one 21LC1050 to reach the whole platform. Lifting work includes loading 20 tonne containers onto the platform, 24 hours a day, 7 days a week, Comansa says.

Two key requirements from Aibel are for Comansa and Rental Group Crane to be able to provide timely technical service. In particular, these are quick delivery of spare parts and swift movement of the crane to another part of the yard.

Rental Group Crane is two hours away from the Aibel yard and holds stock of mechanical and electrical parts. The company has similar cranes in its fleet and says there are synergies between these and the 21LC1050 model. ■



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# Tandem transport

Specialist transport company Allelys has executed the UK's first double girder frame convoy while delivering a reactor and transformer to Ninfield substation in the south of England.

A reactor weighing 150 tonnes and a transformer weighing 195 tonnes were transported on specialist Goldhofer girder frames with a total combined weight of 667 tonnes, travelling in tandem.

The cargo was delivered in three parts: from Stafford to Ellesmere Port, then by sea to Shoreham Port on the south coast of England and on eastwards from there by road to Ninfield.

The girder frame was built in Stafford using a 55 tonne capacity mobile crane and the reactor, measuring 10 x 5 x 5 metres, with a total transport length of 68 metres, was loaded using an overhead crane into the girder frame.

The final stage of transport to Ninfield was the most challenging and saw two girder frames used in convoy, one for each of the units, and configured with low set hangers for the reactor.

Crossing the River Duse with such heavy cargo was a challenge. The team closed the



A27 main road and constructed an overbridge so as not to exert load into the structure. The 27.5 metre bridging mats were positioned using a 500 tonne capacity and a 300 tonne capacity crane lifting in tandem.

On site Allelys installed both units. The transformer was jacked up off the transport, down onto skates and then skidded 25 metres into its final position. ■

## Express moves across India

Express Global Logistics (EXG) co-ordinated the move of a large and heavy cargo from Tarapur in Maharashtra state, to Barmer in Rajasthan, India.

EXG's involvement included transportation, railway shutdowns, civil work at various points, and the dismantling of a toll plaza. The toll plaza had to be dismantled and reconstructed due to the height and length of the cargo.

The team dealt with heavy non-seasonal rains rendering the roads pot-holed and uneven in many places, making the movement risky. Civil work was done in several areas along the way.

Heaviest of the loads was a 220 tonne stripper column, 42 x 5 x 5.7 metres, moved using a 12.5 metre spacer. Among the others was a 129 tonne naphtha stabiliser column which was 50.7 x 4.8 x 5.4 metres. ■



The cargo consisted of an absorber column, a stripper column, a naphtha stabiliser column and a heavy gas condenser



### Reels on wheels

Swiss family company Wipfli used its specialist experience in the transport of heavy steel cable reels on a recent project for manufacturer Fatzer.

For this work Wipfli favours its CombiMax modular trailer system units from Faymonville. In this case it was a series of five reels or bobbins carrying cable made from high strength steel wire. Each one weighed 105 tonnes, was 3.9 metres in diameter and 3.2 metres wide.

The CombiMax was configured as a 4+7 combination with excavator deck in between. Through Switzerland they travelled with a 10 x 4 tractor unit at the front and a 6 x 4 pushing at the rear. Total pull weight was 186 tonnes over a total combination length of 42 metres.

Following onward travel that included river and sea transport, the final destination for the reels was a new cable railway at a ski resort in Chechnya.



# Mammoet from Spain to Texas

Noatum Project Cargo contracted Mammoet to move seven vessels by road from port to a petrochemical plant in Texas, USA, after sailing from the Spanish Port of Algeciras.

At the planning stage, the team determined that its preferred bolstered load trailer configuration would not be approved

by the Texas Department of Transportation. It would overload two bridges along the route.

Those bridges weren't wide enough to add dollies to spread the load so an alternative had to be found. The solution was to add a third trailer underneath the load at the belly of the vessel. It would increase the footprint

while not overloading the two bridges or widening the transport.

The six smaller reactors were discharged from the ship directly to Mammoet trailers and transported 11 km from the port to the project site.

The largest load was a deisobutaniser weighing 441 tonnes and 60 metres long. It was offloaded from the ship onto two double 12 line Goldhofer PST Bolster trailers pre-staged on a waiting barge.

## SPMT and gantry to move rail locomotives

Shipping specialist TIBA Group contacted Engineered Rigging to develop a lift plan to safely and quickly remove three rail locomotives from a ship, transport them 1 km to a port railway system, and lift them onto the tracks.

The locomotives were delivered to Chile's Terminal Cerros de Valparaíso (TCVAL) and had to be unloaded as quickly as possible to minimise costly port fees. Each engine weighed 150 tonnes, was 21 metres long and 4.5 metres high.

The locomotives were removed sequentially using 12 axles of self propelled modular transporter. At the tracks an SBL500 gantry and SSU300 powered slide shift were used to lift the locomotives from the SPMT and place them onto the track. The three locomotives were unloaded and transported to the tracks in nine hours.



The railway locomotives were removed sequentially using Engineered Rigging SPMT



The 972,912 pound deisobutanizer is placed on barge-mounted Mammoet SPMT for offloading

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# Mini marvels

Some of the smallest cranes available, mini crawler mounted articulating cranes, offer big advantages for difficult and confined workspaces. Saving time and money, and even improving safety, these tiny models can go where no other can.

**NIAMH MARRIOTT** reports

**D**espite their diminutive size, mini crawler mounted articulating cranes can be indispensable on a wide range of job sites.

Austrian crane manufacturer Palfinger's Hemmo Luijterink says "smaller cranes offer tremendous help with small onsite assembling and installation jobs," and that they each certainly have their place among the larger range of crawler cranes.

"Of course the genes of the PCC help here, being able to demount the crane from the crawler, make it literally walking on its outriggers, forward and sideways like a crab. This is extremely useful inside petrochemical plants, industrial installations for 24-hour maintenance and upgrading, as well as in city-centres and tunnels.

"Compared to conventional stiffboom cranes, the PCC is extremely low. With the crane separated from its crawlers and sitting

on the ground, the boom can horizontally go inside everywhere.

"Even through the smallest doors, the crane stands outside but the lifting happens inside, with a knuckle boom on a hook, or with a 3.5 tonne winch giving more than 12,000 kg capacity on four falls of rope."

Getting to site and fitting through difficult access routes is an advantage offered by mini crawler cranes. They are designed to provide the most capacity for their small size, weight and footprint.

## ARTICULATED OPTIONS

Treviso, Italy-headquartered mini crane manufacturer Jekko offers articulated boom crawler cranes: JF365, JF40, JF545, JF545 V-Max and JF990, plus straight boom models. They are designed to fit through a standard single doorway or in an elevator, for work in confined areas.

The JF545 combines the performance of a truck-mounted crane with the benefit of a self-propelled crawler chassis, Jekko says. It was designed as a starting point for a new future for crawler cranes. Customers define it as a versatile crane, easy to use, with »

Palfinger's PCC115.002, shown below in Germany, can split to shift inside a building



(Top) Jekko's SPX650CDH has electric options (below) Jekko's SPX650 launched in 2020





## MINI CRAWLER MOUNTED ARTICULATING CRANES

great load power and compact (5.4 x 1.8 x 2.8 metres), the company says. Its articulated main boom has six extensions.

Jekko says the advantage of the V-Max version is a jib and a mounting for hydraulic tools such as auger, grapple or bucket.

The Jekko JF365 has a fixed base with a load capacity of 2.7 tonnes. It offers the same options as the JF545: proportional radio control, hydraulic activation for accessories, stability control and a smaller and lighter jib which allows installation of a platform.

The JF40 is the smallest Jekko at 2.4 x 0.8 x 1.8 metres, while the JF990 is the largest, with dimensions of 6.7 x 2.1 x 3.4 metres.

Jekko has identified an industry need for small crawler cranes that also have a small

carbon footprint. The company launched its mini crawler crane SPX650 in 2020. This year, Spanish boiler manufacturer Talleres Laguillo purchased the first diesel and electrically powered version of that model.

The Cantabria, Spain-based company chose the 5 tonne capacity model for its indoor and outdoor capabilities; it can reach a maximum height of 23.5 metres with a jib.

### DUAL POWER

Ian Trenzano, sales manager at Jekko Spanish distributor Transgrúas, says, "The SPX650CDH is very compact and it's a high performance model. We've already sold four and three additional ones will soon follow. We think we can sell many more to plant hire companies, who've shown their interest."

"Jekko is extremely satisfied on having delivered the first diesel-powered SPX650 to Spain. Countries such as Spain and Italy are going through the ecological transition in a similar way: both responsive to this topic yet aware that diesel systems still play a major role," adds Jekko's head of sales Alberto Franceschini. "We have combined this latter with an electric motor to turn the SPX650CDH into a real eco-friendly crane for the Spanish and Italian yards."

For a video of this crane see: <https://www.youtube.com/watch?v=7kw0zx8SWlc>

### DESIGNED TO BE CONFINED

Mini crawlers come to the rescue for projects where other cranes can't even fit through the door. The larger manufacturers note their usefulness and even the biggest see the value in investing in the smallest models.

Back in 2018 international heavy lift and transport specialist Mammoet expanded the small end of its fleet with a pair of new 4 tonne capacity Hoeflon C10 mini crawlers.

The Dutch-built telescopic C10 is 800 mm wide to fit through doorways. Target applications include work in refineries and industrial plants where there is no room to get a conventional crane.

At the maximum 19 metre reach it can lift 209 kg and the greatest hoisting height with all extensions is 22 metres. It weighs 4.7 tonnes and can be fitted with a radio remote control. Power is from a three-cylinder Yanmar diesel but it can also be powered electrically. The track width can be adjusted for optimum stability according to the available space.

Mammoet intends for the range to run alongside its existing trailer and loader crane fleet for industrial services customers. Gert Jan Uildriks, Mammoet Assen branch operations manager, says while Mammoet is known for its big projects, it has significant

Mammoet's 4 tonne capacity Hoeflon C10 mini crawler crane



operations in its rental business and maintenance work.

"The addition of the Hoeflon C10 means we now have the necessary and complete range of equipment to expand into new and growing markets, such as machine relocations," Uildriks says.

### CONTINUOUS CONTROL

GGR Group's range of mini crawlers includes its TMC 525 with a capacity of 14 tonnes and a maximum lift height of 32 metres. It benefits from continuous slewing which gives good control for load placement and it can travel on rough or uneven terrain, and slopes. Data can be fed back to the operator via the remote control transmitter during lifting operations.

There is also an electric version. The lithium-ion battery-powered TMC25 retains all the compact dimensions and lifting power of the diesel variant, GGR says. At 780 mm wide it is designed to reach the tightest of areas. Further reach is afforded by its dynamic jib that can extend maximum working radius from 8.43 to 12.85 metres.

### SUSTAINABLE FOCUS

Going green is increasingly securing contracts for jobs, says Luijterink at Palfinger.

"This green thing is becoming a part of the tender, for getting a job. Mainstream heavy lift companies are recognising the benefits of e-drive. Zero carbon footprint on site, low-noise and with an energy consumption which in general is very low, just 15 kW. Compare that with a 300 kW roaring diesel drinking away your precious fuel hour after hour." ■



## SPIDER TRACK

Italy-based manufacturer Palazzani has provided two of its units to help with the electrification of a railway line between the towns of Pettoranello and Isernia in the south-central Italian region of Molise.

A 500 kg capacity Ragno XTJ 37 was used for work on a railway bridge, while a higher reach Ragno XTJ 43 was used for works around tunnel arches.

As Palazzani explains, workers had to carry out inspections on the railway bridge in question and subsequently carry out core drilling and installation of plates to support poles on the external sides of the bridge.

On some areas of the bridge it was possible to operate from the road below using the XTJ 43, but at some points the work could only be carried out with access from above. The XTJ 37 made it possible to carry out the work safely and efficiently, the company says.

Space restrictions on site meant there was less than four metres width at some points, posing a challenging scenario for the operators to secure the unit for the work. An onboard generator was necessary for the operation of tools in the personnel basket.



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Special skills and knowledge help execute lifting and transport projects in Iraq's challenging environment. **ALEX DAHM** reports

# Al Faris at work in Iraq



Al Faris has a full range of equipment for oil field, refinery, power work and more



Refinery vessel installation at the WQ1 oil field

Leading Middle Eastern crane and transport specialist Al Faris has further broadened its presence in the region with its latest projects in Iraq.

While the company said it has a dominant presence in the United Arab Emirates and the Kingdom of Saudi Arabia, Iraq is a very different and challenging market.

Its branch set up there a year ago is running at full capacity with several heavy transport, heavy lifting and skidding projects. Jobs are ongoing in the civil, oil & gas, power generation and petrochemical industries, the company reported. Alberto Pittaluga leads the Al Faris operation in Iraq.

## MULTIPLE MOVES

The company brought to bear its industry experience, local knowledge and engineering techniques on a project to transport 96 components, each weighing up to 150 tonnes, for an NGL (natural gas liquids) plant. »



Equipment used was prime movers and hydraulic trailers in multiple convoys.

Another project was to transport and install components including KO drum refinery vessels and flare stacks ranging from 25 to 78 tonnes for the West Qurna (WQ1) oil field. Al Faris used its hydraulic trailers for the transport and its Liebherr mobile cranes for the installation.

“Quick mobilisation of the cranes and competent skills of our engineers and site crew enabled us to optimise the overall project schedule, thus attaining utmost customer satisfaction,” explained Alberto Pittaluga, Al Faris Group general manager in Iraq.



Transformers were transported in long convoys for a power generation project

## WORKING WITH PEOPLE

In Iraq the company operates a secure and sustainable “Life Support Base” in Khor Al Zubair. Half of its workforce in the country is

local people, helping to support the country's industrial growth. On these infrastructure and industrial development projects the company works closely with local government authorities and is supported by the Iraqi army during its operations. For security all its projects involve 24-7 government security escort vehicles and local communities support, Al Faris said.

The Al Faris heavy lifting equipment fleet includes Liebherr cranes up to 600 tonnes capacity. For heavy haulage the equipment includes hydraulic trailers up to 110 axles, self propelled modular transporter, semi-trailers and low-bed trailers. A range of alternative lifting solutions, for example, hydraulic telescopic gantries, jacking and skidding equipment, is also available.

Flare stack components were at the smaller and lighter end of the range of loads transported



On the move with convoys of oil field equipment prior to its installation by Al Faris using large wheeled mobile and crawler cranes from its own fleet







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# Trailblazers



Mammoet purchased four new tower section clamps to transport wind turbine towers

Although it might seem obvious, the lighter the transport equipment, the heavier a load can be and, with loads continuing to push limits, transport companies are looking to save trailer weight wherever possible.

Germany-based Goldhofer notes the trend for lighter weight design in trailers. "We have been able to continuously reduce the deadweight of Goldhofer vehicles.

"Reductions in the amount of materials required or the use of lighter materials are key. The new low-wear polymer deck coating, TraffideckGO, for example, is extremely

resistant to environmental influences such as UV light as well as damage caused by the cargo. It also has a significantly better coefficient of friction for improved load safety than the rubber linings previously used. And yet it is significantly thinner and lighter, offering weight savings of up to 500 kilogrammes per vehicle."

## HEAVY DUTY

Goldhofer's heavy duty module Addrive, along with its software Addronic, can combine "the advantages of a towed heavy-duty module with a SPMT," says a spokesperson.

Addrive can "meet the most demanding requirements of modern road haulage operations in terms of versatility, tractive force, speed, availability and economics, and avoids the need to transfer the cargo from a road transport vehicle to one or more self-propelled vehicles, which may be necessary

several times on certain routes.

"For each switchable drive axle line, Addrive offers tractive force (200 kN) and maximum climbing ability. As the mechanical drive system can be completely disengaged, there is almost no wear or heat build up in towed mode. Thanks to the integrated multi-combination coupling, Goldhofer heavy-duty module systems can be used in combination.

Addronic supports operations of up to four self-propelled units. The software synchronises basic functions of steering, leveling and driving.

Its towed models, the THP/SL series of heavy-duty modules are used worldwide for transporting heavy loads requiring a high bending moment. With low deadweights, the shortest routes can be used, including motorways and bridges with load limits which would otherwise involve detours.

## SPECIALIZED SUSTAINABILITY

Sustainability is a key conversation this year, with many companies working to meet climate targets and reduce emissions.

"We have a number of challenges to face in 2022. In addition to the ongoing pandemic, there are growing other challenges in connection with today's increased focus on sustainability and ambitious climate change policies," says a Goldhofer spokesperson.

Goldhofer has also been designing and introducing transport solutions for



Nootboom's new Mega Windmill Trailer XL is for the wind energy market





## SPECIALIZED TRAILERS

sustainable equipment. Its latest addition FTV 850 is used to transport wind turbine blades. It can be used in standard three metre width and in split combinations in widths up to 4 metres. Depending on the configuration, even the latest rotor blades can be picked up and transported, says the company.

Blade S, a trailing dolly system for the tip of a blade, is another recent addition to the Goldhofer range of blade transporters. The company says it can lower the overall weight of cargo and therefore reduce fuel consumption and save money.

### LARGER TURBINES

The larger the wind turbine, the more stable the supporting structure must be. To transport heavy and large tower sections Goldhofer modified its tower adapters. The new RA 2-110 can handle tower sections weighing up to 100 tonnes and 6.8 metres long. The extra payload comes from the combination of a front bogie in the form of a four-axle dolly with pendulum axles and a heavy-duty THP/SL-S (285) module trailing.

This vehicle concept meets the additional safety requirements specified by Danish wind turbine manufacturer Vestas. Instead of the usual configuration with two free-turning devices (gooseneck with bogie and trailing module), the new system has only one free-turning device, between the front dolly and the tower adapter. The rear tower adapter is mounted directly on the heavy duty module. Compared with a completely free-turning solution, this gives the entire vehicle more lateral stability for greater safety, even at high tilt angles.

Finally, launched in 2020, Goldhofer's self tracking semi-lowloaders offer haulage companies an efficient load securing system and a practical range of accessories, says the company. The latest version of Stepstar is available with one or two pairs of wheel recesses and the new Mega gooseneck.

Dutch international heavy lift and transportation specialist Mammoet also recently announced new clamps to transport



Ter Linden Transport has taken delivery of the first of three self-steering trailers with blade adapters from Faymonville

larger tower sections with fewer route modifications. The company says this equipment investment opens up more paths to the wind farm for increasingly large loads.

It has already purchased its first ultra-wide onshore wind tower clamp set and had three more in the first quarter of 2022.

Its additional flexibility means fewer modifications are necessary to verges, street furniture or bridges during onshore wind transport projects, says Mammoet. It allows new, larger designs of wind turbine generator on remote sites, where wind is strongest and most reliable.

### TOWERING HEIGHTS

As developers seek to make the most of wind farm locations, turbines have grown taller to reach stronger, uninterrupted winds. Consequently, the base tower sections of these turbines have widened, from around 4.5 metres just a few years ago to more than six metres today.

Therefore, the tower's centre of gravity during transport has risen, by as much as 1.5 metres above earlier models, says Mammoet. Beyond 4.5 metres, conventional trailers are considered not stable enough for the largest tower models. For these larger tower sections, the only alternative has been to transport them on top of a trailer with hydraulic suspension yet this combination requires crane loading and unloading, is far

less manoeuvrable and has a ride height 1.2 metres higher than a clamp solution. It is well within striking distance of bridges.

The new system fabricated by Greiner is installed on turntables between a mixture of an air suspension jeep-dolly and conventional multi-axle hydraulic trailers at the rear, forming a modular vehicle capable of completing narrow sequences of turns.

Like other clamp systems, the new one can receive tower sections directly from supports – no cranes are required at any stage. It will transport the lower, wider tower sections, while higher, thinner sections will be transported by existing clamp systems.

The new system is good up to 6.3 metre wide tower sections at lower overall height than conventional trailers. As the world transitions to more sustainable energy, Mammoet says it will continue to invest in equipment that makes this work safer and more efficient.

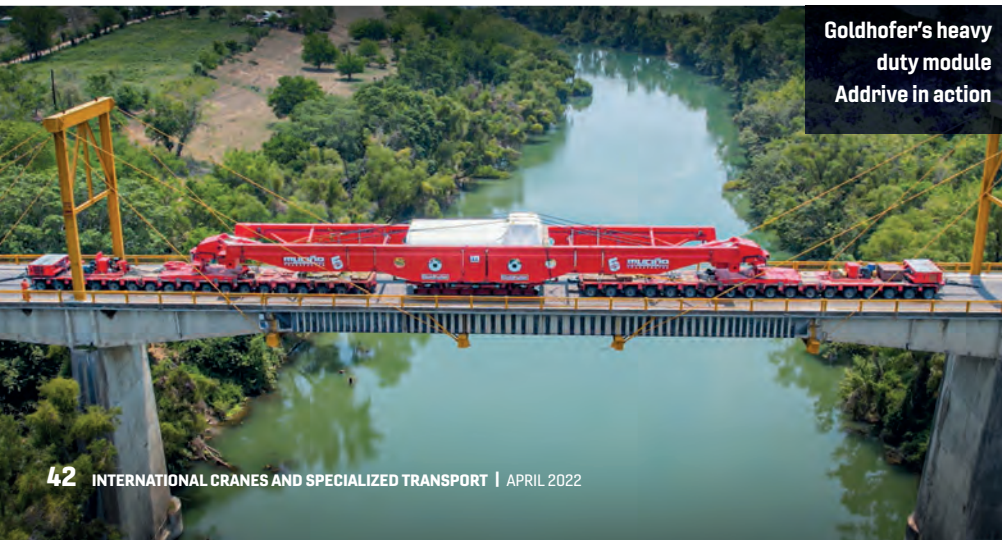
### INTERNATIONAL INTEREST

With its MWT-XL mega windmill trailer, Dutch manufacturer Nootboom mainly focuses on the transport of large diameter tower sections for onshore wind. Advantages of the MWT-XL, compared to alternatives using modular trailers, are lower maintenance cost, and a better price, says the company.

Ter Linden Transport from Doetinchem in the Netherlands was the first to receive the latest MWT-XL, consisting of a 4-axle jeep dolly with lift adapter and a 7-axle self-steering dolly with lift adapter.

Nootboom says there has been a lot of international interest in its new Mega Windmill Trailer XL. More than 10 units have already been sold to specialized transporters in Europe in the field of wind energy and several orders are expected shortly.

Moving towards sustainable solutions is welcomed by many, but actually moving the equipment to site requires specialist transport, and the industry, it seems, is meeting the challenge.



Goldhofer's heavy duty module Adrive in action



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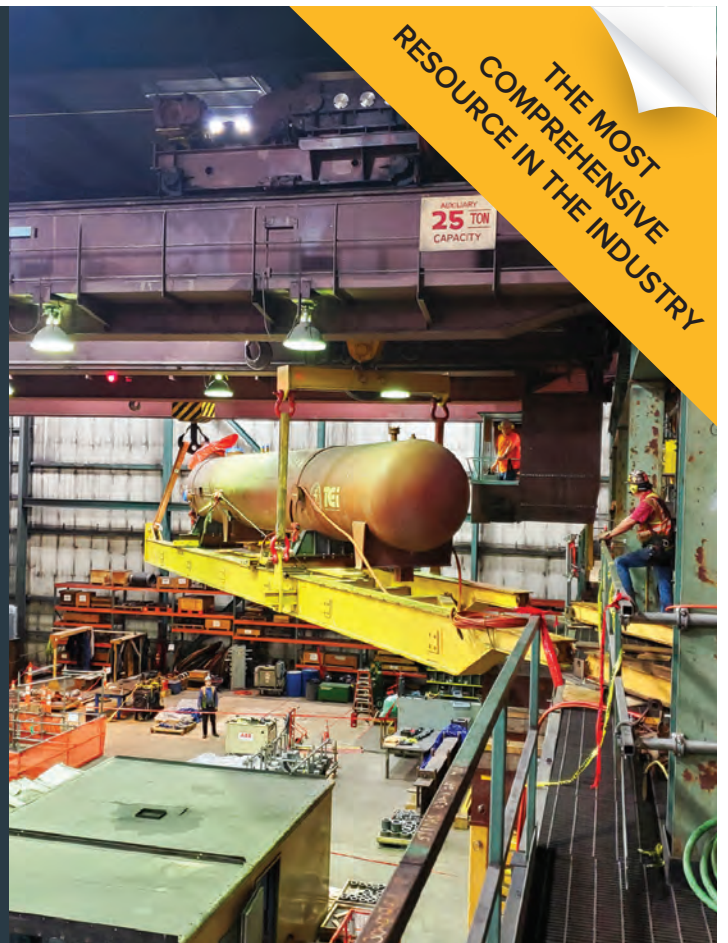
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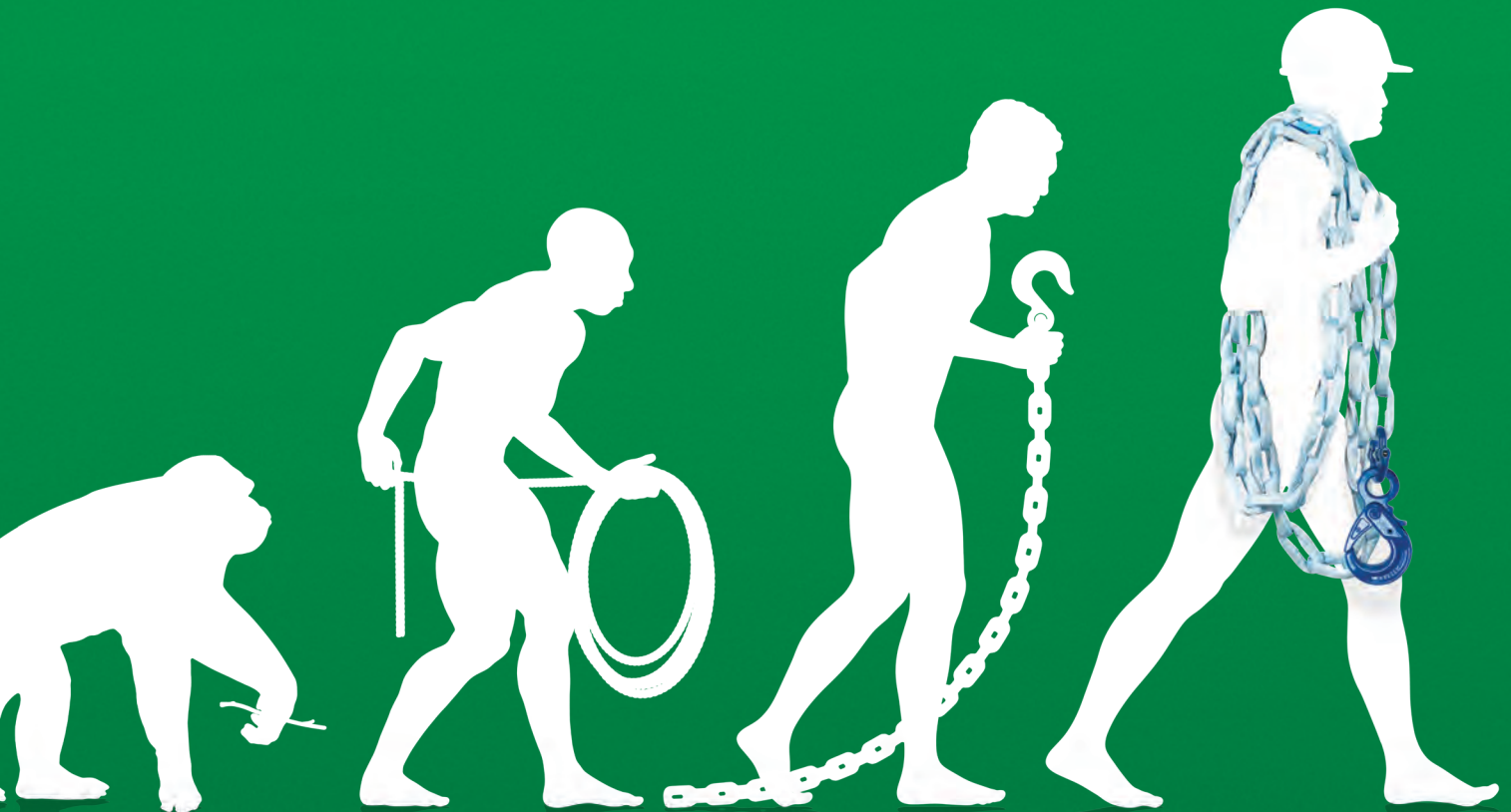
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# Construction and toxic metals is a bad mix

**M**any professions are exposed to toxic metals at work, but construction workers have a more difficult job implementing safe practices when leaving the worksite because of the type of transient outdoor environments where they work, and the lack of training on these topics.

As a result, construction workers may bring home more than a paycheck and sore muscles – instead, they could also be exposing their families to toxic metals.

The study was published online in the journal *Environmental Research* and highlights the need for improved measures to reduce take-home exposure among construction workers. Until now, the majority of research focusing on toxic contaminants unintentionally brought home from the workplace have concentrated on problems related to lead. Much less is known about take-home exposures to other harmful metals.

According to the “Harvard Take Home Study,” construction workers’ homes had higher levels of arsenic, chromium, copper, lead, manganese, nickel and tin when compared to janitorial and auto workers (also in the study). While lead is fairly well recognised, there

are no clear guidelines to gauge the safety levels of those other metals, even as dangerous as they are.

Exposure to metals such as arsenic occur near or in hazardous waste sites or areas with naturally high levels in soil, rocks and water. Other metals, like chromium, are used explicitly in construction – specifically, workers in welding, painting, cement and more can face occupational exposure.

It should go without saying, but high exposure to arsenic can cause death, while lower exposure for longer periods of time can cause discoloration of the skin and corns or warts. Likewise, metals like chromium are carcinogens, with long-lasting health effects potentially rising from extended exposure. But even as studies like this one reveal more about harmful chemicals and exposure to workers, not enough is known about prevention.

Given the lack of policies and trainings in place to stop this contamination in high-exposure workplaces like construction, it’s inevitable that these toxic metals will migrate to the homes, families and communities of exposed workers. Additionally, the realities of construction work make it harder to find and prevent issues like this.

Construction workers spend large amounts of time outside. They work on different projects, sometimes during the same day. As a result, it can be challenging to track and prevent the accidental spread of harmful dust.

Fortunately, simple practices – similar to the ones used to keep lead out of the home – can prevent workers from carrying home toxic dust. Within the research results, it was found that workers who have lockers to store their equipment and who don’t mix their home and work clothing or gear were less likely to bring home toxic metals.

Additionally, thoroughly washing hands and showering with soap and water can prevent the spread, as can regularly cleaning the inside of one’s car.

Now, if contractors or jobsites don’t provide those opportunities, there are still things workers can do to reduce risk. Storing tools, boots or outerwear outside is one way.

And for what it’s worth, the pandemic has given many people a better understanding for how minute particles can spread. Being aware when those harmful metals are on site and regularly cleaning up, taking more precautions or wearing PPE when around those areas, or exposure to certain contaminants is high, can at least mitigate risks.

Ultimately, given the complexity of these issues, the construction industry needs to consider interventions on all fronts connected to worker safety in this regard. And if policies, resources and basic education are slow in coming, then it’s on both employers and employees to know the dangers and manage their risks accordingly. Proactivity, in this case, could save lives. ■

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# Continental

**B**ack in February 2022 at the SC&RA Specialized Transportation Symposium, Isabelle Perron, at Canada's Transport Bellemare, and Ernesto Gaytan Junior, with STI (Super Transport International Mexico-USA), delivered a presentation highlighting how best to prepare for doing business across North America.

The presentation examined changes in trade relations, supply chain crunches, cultural barriers and harmonisation regulations for international companies exploring opportunities across the continent. Perron and Gaytan Junior elaborated on some of the highlights from the presentation, recognising a virtual checklist of items companies should pay close attention to when crossing into both Canada and-or Mexico.

High on Isabelle Perron's list for companies transporting cargo through Canada is bridge validation. "A lot of carriers can make mistakes in weight and height with oversize loads, especially on the Ontario border," she said. "Validation of the bridge and border crossing you will cross is a must-do – before you even send your quote to your customer."

Pre-planning, she added, is of utmost importance. "For example, going back to 1999 I believe, there were over three hundred different configurations just to get into Canada. We're actually not far from that right now, so you have to validate for each province which type of equipment you'll need for certain loads."

## NO HARMONISATION

As for harmonisation, Canada shares plenty of similarities with the USA, explained Perron. "You really have to read your permit(s) – there is no harmonisation. There are various vehicle equipment registrations and requirements, weight limits, permit conditions and driver qualifications, as well as time of travel restrictions and a lack of a designated national OS/DW corridor."

Beneath the banner of the aforementioned "pre-planning," Perron emphasised additional considerations for carriers. "Pilot cars are a bit tricky per your location," she said. "For example, while there are similarities with pilot car requirements within Quebec, New

Tips on navigating your North American moves across the USA, Canada and Mexico. **MIKE CHALMERS** reports



Isabelle Perron, at Transport Bellemare in Canada



Brunswick and Nova Scotia, Ontario is pretty much their own thing. I strongly suggest using both a local permitting agency and pilot car company.

"Additionally, the seasons can play a huge role in the success or failure of a load. Be prepared and understand your environment. Summer is peak construction season – you'll likely have to validate your route a lot. As for winter, equipment should be in tip-top condition, carriers should have extra parts and equipment and drivers should be able to fix things themselves. You see a lot of carriers during winter or the thaw season [December through March] running into problems because they didn't plan ahead."

Scheduling police also requires an assertive approach, said Perron. "You have to schedule carefully because if you're not able to move because of say, weather, then the police may not be ready for you next time because they're booked elsewhere. Depending on the province, the weather is hard to predict – so you really need to either have a deal with your customer, or plan the extra days and make sure you have good communication with the company. Checking the forecast is an everyday thing."

As for superloads, maintained Perron,

"Surveys are a good thing – try and secure them. A surveyor will provide you a good route but also the regions within which you need to order various permits. And again, use a local permitting agency – but also plan several months in advance – especially in British Columbia, Newfoundland and Quebec."

## PAYING ATTENTION

South of the US border, Gaytan explained harmonisation isn't the problem. "Harmonisation is very different in Mexico than the US. Primarily, as long you're not super heavy or high or tall, then it's pretty simple. So, if you're pretty regular oversize, the process is pretty simple, the permit doesn't cost very much and a federal permit gives you access to all of the federal roads in Mexico."

But he added that companies crossing into Mexico can't go into it blind. "It's probably a good idea to go with a transportation company familiar with navigating through Mexico. The laws in Mexico are different than the US. You have to make sure customs is aware, so they have ample time to let you in, or make enough space on an OS load.

"Sometimes we move a big crane, which is, say, sixty loads, and you have to cross everything at the same time, once the



# crossing

While there are many similarities between the USA and Canada on transportation there is no harmonisation so pre-planning is vital before crossing the border



manifest is open, so there is limited time to cross. Compared to Canada, Mexico could be easier in that regard, and we hope to improve upon that in the future."

Once a load is inside the country, confirmed Gaytan, pilot cars are required to be owned by the trucking company hauling OS loads. "This is a fixed cost for the Mexican carrier of OS freight," he said, "And while most freight only requires the one federal permit, there are, however, a lack of rest areas for this type of cargo. And if the freight exceeds ninety metric tons, then a special permit is

requested, which can take from two to six weeks to acquire."

## ADDITIONAL CHALLENGES

While harmonisation isn't quite the challenge in Mexico that it is within its northern neighbours, the country still presents some additionally unique challenges carriers cannot ignore.

"Coming into Mexico with a US trailer, you'll need a Mexican company to register the trailers to the Mexican tax authority," explained Rafael de

los Santos, a spokesperson for Tradelossa. "It's not a matter of operational, or a permit challenge, it's more of a legal requirement."

He also pointed out that Mexican infrastructure can present additional challenges. "In terms of what type of equipment you bring into Mexico – thirteen axles or more, it's going to be harder and harder to move in the system. Lowboys, step decks, flatbeds, they travel no problem, but the more sophisticated the equipment, the greater the likelihood you'll have to change, and not because of permits, but because of infrastructure. The type of trailer, type of equipment you bring into Mexico, has to be robust to handle the type of roads we have."

Then there is the matter of security, noted De los Santos. "It's a problem that evolves and sometimes grows. I definitely recommend people to have some sort of protection – not only in terms of insurance, but also GPS tracking. At Tradelossa, we're doing more than I ever thought we'd need to in terms of security, in order to minimise our risks when going into specific areas."

## TRUSTED PARTNERS

"Confrontations in the cities also might require a transport to stop while the police sorts it out. You just have to be very knowledgeable and have up-to-date information. Definitely partner with someone you trust who has the knowledge about when and how you can move things around the country."

Relatedly, he indicated, Mexico's new waybill regulations are set to go into effect soon (the date has been bumped several times), adding more requirements and paperwork for anyone shipping goods across the country. The regulations from the Mexican Tax Authority (SAT) are aimed at reducing cargo theft and the movement of smuggled goods through Mexico.

"This documentation has become more and more sophisticated in Mexico, and has become a challenge. Moving forward, whenever I have to move cargo in Mexico, it goes directly to the tax authority and they provide me with electronic approval that all the information I've submitted is okay, and I can continue my move. But you can no longer print your own information; you now have to go into this system and electronically request an approval seal. If your information isn't correct, you won't get approval."

For us, it's a nightmare, so if you're coming from the US at this point, I don't know how you would do it without a Mexican partner. ■

Ernesto Gaytan, at STI (Super Transport International Mexico-USA)

STI (Super Transport International Mexico-USA) on the move in Mexico







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# Kito adds 1 tonne hand chain hoist to CX series

A new 1 tonne version tops out the Kito CX series of hand chain blocks typically used in assembly, repair and maintenance applications.

The new model joins 250 and 500 kg capacity versions already available. Small size, light weight, easy handling and precise load positioning are primary

**The CX005 is the 500 kg version of the new 1 tonne Kito chain hoist**

characteristics of the CX series, Kito said. The new one, the CX010, weighs 7.3 kg and is suitable for use indoors or out.

Helping to save weight is the aluminium housing which is mounted using flush head bolts so there is nothing to get caught up on. It has two stage gearing with cold forged gears set in a heat-treated steel frame and a cast chain sprocket. The Grade T, series V (G100) load chain, to the EN 818-7 standard, is nickel plated.

A new tool, the Twist Checker, is standard

equipment to identify if the load chain has any twists in it. Also standard is an overload limiter and the hooks are large enough to accommodate lifting slings.

■ **For more information see: [www.kito.net](http://www.kito.net)**



(Left to right) Markus Villinger, head of sales, strategy and product planning at Daimler Truck; Dr Lei Berners-Wu, VP global industrial at Rolls-Royce Power Systems; Jens Ennen, Tadano Germany CEO

## TADANO TO USE MORE MTU ENGINES FROM ROLLS ROYCE

Crane manufacturer Tadano plans to use more Rolls-Royce MTU engines for its mobile cranes built in Germany.

They are already used in the crawler cranes and will now be used in the all terrain cranes. Around 3,000 MTU engines and Daimler transmissions will have been supplied to Tadano by the end of 2025, Rolls-Royce said.

Most of Tadano's 26 crane models, on two to nine axle carriers and in capacities from 45 to 700 tonnes, are already powered by in-line MTU Series 1000, 1100, 1300 and 1500 engines. Power outputs are from 129 to 480 kW and they meet the range of EU emissions standards from Stage III through to Stage V.

Rolls-Royce business unit Power Systems is shifting from being an engine manufacturer to a "provider of integrated drive and power generation solutions." It aims to offer climate neutral solutions and most of the engines supplied to Tadano can be used with sustainable fuels.

■ **For more information see: [www.mtu-solutions.com](http://www.mtu-solutions.com)**



CM Labs Simulations has released its Boom Truck Simulator Training Pack

## CM Labs unveils boom truck simulator pack

A boom truck simulator training pack has been released by CM Labs Simulations for its Vortex training simulators.

CM Labs claims it as the only simulation-based product that accurately replicates machine instability and has the ability to deploy outriggers.

Boom trucks may be associated with training incidents because it is often the

first equipment inexperienced operators try to operate. Using a simulator is a safer alternative for initial training. It also saves on fuel costs, wear and potential damage often incurred by novice operators.

In the sim, outriggers can be deployed for levelling before operation and the swing effect of the load is simulated.

■ **For more information see: [www.cm-labs.com](http://www.cm-labs.com)**

## New planetary drives from Dana

Three new planetary drives are new from Dana for tracked and wheeled vehicles and for Brevini winches. Features include wide ratio ranges, better power density, and modular design, the company said.

Versions are available with output torque ratings from 80 to 130 kNm. They can be fitted with Brevini hydraulic motors or Dana TM4 electric motors.

Applications include electric crawler



cranes and other machines with tracked undercarriages. When fitted to winches the lifting applications include construction and offshore cranes.

■ **For more information see: [www.dana.com/off-highway/LargeDrive](http://www.dana.com/off-highway/LargeDrive)**



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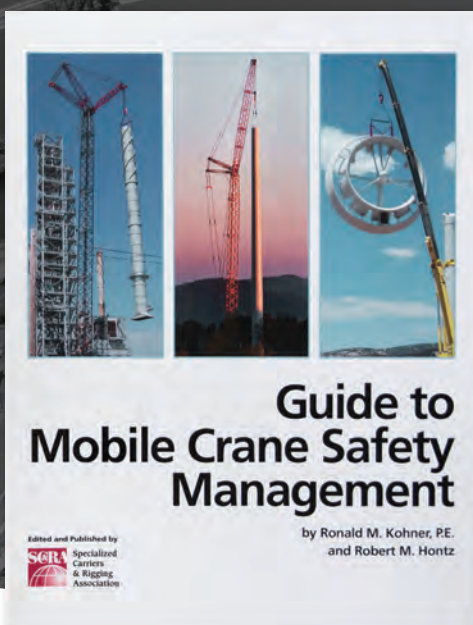
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**TOWER CRANES NORTH AMERICA**

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

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21 to 23 June 2022  
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www.scranet.org

**BAUMA 2022**

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■ 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 place, type of crane, owner and project, plus any other relevant information.



**HORSEPOWER:** Allelys executed the UK's first double girder frame convoy when it delivered a reactor and transformer to Ninfield substation. A reactor weighing 150 tonnes and a transformer weighing 195 tonnes were transported on specialist Goldhofer girder frames with a total combined transport weight of 667 tonnes travelling in tandem. The cargo was delivered in three parts: from Stafford to Ellesmere Port, next via sea to Shoreham Port and then overland to Ninfield. Photo by KHL marketing manager Izzy Crouch who, together with her horse, watched the cargo en route. See the full story in the transport news on page 30.

**EVENT NEWS**

The Cranes and Transport Middle East (CATME) conference took place in Dubai on 22 and 23 March 2022 with keynote speaker Paul van Gelder, Mammoet CEO, opening the conference. He used the speech to say that greater investment and a new approach to contracts is required for the renewables sector.

Speaking to more than 200 delegates at the Swissotel Al-Murooj, van Gelder said there is no such thing as cheap energy, "Squeezing the supply chain from top to bottom results in a drop in safety and quality standards and slows our progress towards sustainability goals that already look extremely challenging.

"It does not make sense for governments to celebrate ambitious climate targets at the same time as underfunding renewable energy projects taking place now... If we are genuinely committed to building value for the planet and the people on it, we must do that by adding value, not competing in a race to the bottom."

More than 200 delegates from across the Middle East and further afield attended the keynote speech.

Other speakers at the event

**Paul van Gelder, Mammoet CEO, giving the keynote at CATME 2022**

included representatives from Saudi Aramco, Sarens, Hareket, Gulf Test, Crosby-BlokCam, MyCrane and Wolffkran.

The event was organised by ICST magazine and its publisher KHL Group. Industry associations supporting CATME were SC&RA, ESTA and the UAE Contractors' Association.



**More than 200 delegates registered for CATME**



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# MARKETPLACE

International Cranes and Specialized Transport's Marketplace is designed to help readers find the products and services they need. The Marketplace is divided into colour coded sections to help you quickly find what you need.



## PRODUCTS, PARTS & ACCESSORIES

54

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.

## CRANES AND EQUIPMENT FOR SALE OR RENT

54

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

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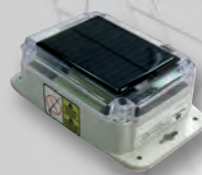
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## ALL TERRAIN-CRANES

Make / Type	y. o. m.	Drive	Boom / Fly Jib
35 t Liebherr LTM 1030-2.1	2008	4x4x4	30,00m + 15,00m
40 t Tadano Faun ATF 40G-2	2008	4x4x4	35,20m + 9,00m
40 t Demag AC 40-1	2002	6x6x6	31,20m + 13,00m + 1,20m
45 t Grove GCK 3045	2010	6x6x6	34,0m
55 t Terex-Demag AC 55 City	2006	6x6x6	40,00m + 1,30m
55 t Liebherr LTM 1055/1	2004	6x6x6	40,00m + 16,00m + 2,50m
55 t Liebherr LTM 1055-3.1	2006	6x6x6	40,00m + 16,00m
55 t Liebherr LTM 1055-3.1	2007	6x6x6	40,00m + 16,00m
60 t Tadano Faun ATF 60-3	2005	6x6x6	40,00m
65 t Tadano Faun ATF 65G-4	2007	8x6x8	44,00m + 16,00m
90 t Liebherr LTM 1090-4.1	2007	8x8x8	50,00m + 19,00m
100 t Grove GMK 4100	2015	8x6x8	52,00m + 17,00m
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
160 t Tadano Faun ATF 160G-5	2010	10x8x8	60,00m + 13,20m

## LATTICE-BOOM CRAWLER-CRANES

80 t Zoomlion QUY80	2012	58,00m
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1x 160 t	Tadano AC 5.160-1	NEW!
1x 250 t	Tadano AC 5.250-1	NEW!
1x 300 t	Grove GMK 6300L	2016
1x 450 t	Liebherr LTM 1450-8.1	2021

### CRAWLER CRANES

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	

### ROUGH TERRAIN CRANES

1x 100 t	Liebherr LRT 1100-2.1	NEW!
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### TELESCOPIC CRAWLER CRANES

1x 156 t	Tadano GTC 2000	NEW!
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**TADANO GR1200XL**, 120 TON, '18-'21, 184' BOOM, 58' JIB, SEVERAL IN OUR FLEET ..... **CALL**  
**TADANO GR1000XL**, 100 TON, '15-'22 154' BOOM, 58' JIB, SEVERAL IN OUR FLEET ..... **CALL**  
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**LIEBHERR LTR1100**, 110 TON, '19-'21 171' TELEBOOM, 62' JIB RENT/RENT TO OWN ..... **CALL**

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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	1998	16 x 8 x 12	50 / 61 / 84	direct
220 t	Tadano-Faun	ATF 220G-5	2012	10 x 8 x 10	68 / 13.2	direct
200 t	Liebherr	LTM 1200-5.1	2009	10 x 8 x 10	72 / 36	June
160 t	Tadano-Faun	ATF 160G-5	2010	10 x 8 x 8	60 / 18.2+run.	direct
160 t	Liebherr	LTM 1160/1	1992	12 x 6 x 10	52 / 46	April
130 t	Liebherr	LTM 1130-5.1	2013	10 x 8 x 10	60 / 19	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
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	Grove	GMK 4100	2015	8 x 6 x 8	52 / 17	direct
100 t	Terex-Demag	AC 100	2008	10 x 8 x 8	50.2 / 9.2+run.	direct
100 t	Liebherr	LTM 1100-4.1	2004	8 x 8 x 8	52 / 19	direct
100 t	Liebherr	LTM 1100/2	2002	10 x 6 x 8	52+14 / 19	direct
90 t	Tadano-Faun	ATF 90G-4	2009	8 x 8 x 8	51.2 / 1.6	direct
90 t	Liebherr	LTM 1090-4.1	2007	8 x 8 x 8	50 / 19+run.	direct
90 t	Liebherr	LTM 1090/2	1998	8 x 8 x 8	52 / 19	direct
75 t	P&H	S 75	1988	8 x 8 x 8	37 / 16	direct
70 t	Tadano-Faun	ATF 70G-4	2018	8 x 6 x 8	44 / 16	direct
70 t	Liebherr	LTM 1070-4.2	2009	8 x 4 x 8	50 / 16	direct
70 t	Liebherr	LTM 1070-4.1	2007	8 x 6 x 8	50 / 16	direct
70 t	Liebherr	LTM 1070-4.1	2005	8 x 6 x 8	50 / 16	direct
65 t	Tadano-Faun	ATF 65G-4	2007	8 x 6 x 8	44 / 16	direct
65 t	Tadano-Faun	ATF 65G-4	2007	8 x 6 x 8	44 / 16	direct
60 t	Faun	ATF 60-3	2006	6 x 6 x 6	40.2 / 16	direct
60 t	Faun	ATF 60-3	2005	6 x 6 x 6	40.2 / 16	direct
60 t	Faun	ATF 60-3	2005	6 x 6 x 6	40.2	direct
60 t	Faun	ATF 60-3	2005	6 x 6 x 6	40.2	direct
55 t	Liebherr	LTM 1055-3.2	2012	6 x 6 x 6	40 / 16	direct
55 t	Liebherr	LTM 1055-3.1	2007	6 x 6 x 6	40 / 16	April
55 t	Terex-Demag	AC 55 City	2006	6 x 6 x 6	40 / 1.3	direct
55 t	Grove	GMK 3055	2006	6 x 6 x 6	43 / 15	direct
55 t	Terex-PPM	AC 55 L	2005	6 x 6 x 6	44 / 15	May
55 t	Terex-PPM	AC 55 L	2005	6 x 6 x 6	44 / 15	May
55 t	Liebherr	LTM 1055-3.1	2005	6 x 6 x 6	40 / 16	direct
55 t	Liebherr	LTM 1055/1	2004	6 x 6 x 6	40 / 16+2.5+r.	direct
50 t	PPM	ATT 600/2	2002	6 x 6 x 6	40 / 15	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
40 t	Terex	AC 40-2 L	2010	4 x 4 x 4	37.4 / 8	April
40 t	Terex	AC 40-2 L	2009	4 x 4 x 4	37.4 / 8	April
40 t	Terex	AC 40-2 L	2008	4 x 4 x 4	37.4 / 8	direct
40 t	Terex-Demag	AC 40-1 City	2002	6 x 6 x 6	31.2 / 13+s.h.	direct
40 t	Demag	AC 95	1997	4 x 4 x 4	32.2	direct
35 t	PPM	ATT 400/3	2001	4 x 4 x 4	30.4 / 8	direct
30 t	Grove	AT 635 B	1997	4 x 4 x 4	30 / 13.1	direct

### ROUGH TERRAIN CRANES

60 t	Liebherr	LTL 1060	1984	4 x 4 x 4	32	direct
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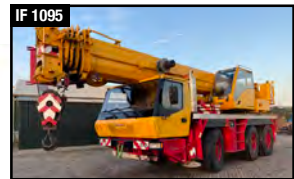
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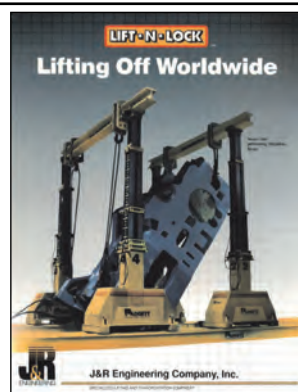


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- Max wind speed gust indicator
- Power off switch to conserve battery life
- D-cell high energy lithium battery
- Simple and easy field changeable battery

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- Range: 0-85mph

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