



*"The MLC650 and MLC300 will be game changers in the crawler crane market."*

Joe Vaccarello, MAXIM Crane Works

*"The VPC technology is going to set a new standard in Ground Bearing Pressure standards and expectations."*

Paul Belcher, Mountain Crane Service

*"The VPC technology reduces ground prep, which is an immediate savings for our customers."*

Rick Mikut, ALL Erection & Crane Rental Corp.

MLC300 / MLC650

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**Manitowoc**



# All quiet but getting bigger

The past 12 months have generally been quiet for new product launches in the heavy lift sector, which is probably still catching up from the burst of activity and new equipment and concepts unveiled in 2012/3. Despite this the general trend for crane rental companies is to increase capacity when replacing older units with more and more dipping their toes into the 500 tonne plus sector. Indeed there is a healthy market in the 750 - 1000 tonne capacity primarily driven by the wind turbine sector.

In the All Terrain market the demand has been satisfied with the launch of both the 750 tonne Liebherr LTM 1750 and Terex's long awaited AC1000.

On the crawler crane front both Liebherr and Terex (with its new Superlift 3800) are once again well represented in the 600 to 1,000 tonnes range while Manitowoc is preparing to ship its new 650 tonne MLC 650 with variable position

counterweight, which looks set to revolutionise the market. With several 3,000 tonne plus lifting machines now available, it would look like crane capacities have caught up with the increasingly heavier module sizes in the oil, petrochemical and wind turbine sectors - at least for now. The following pages cover a few recent heavy lifts that presented a range of challenges to both client and crane company alike.

C&A

heavy lifting



## Manitowoc completes MLC650 testing

Manitowoc has completed maximum load testing for its new 650 tonne MLC650 crawler crane with Variable Position Counterweight (VPC) system. The maximum load moment test was carried out over one corner of the crane in order to apply the maximum level of stress through the structure.

## 200 tonne bridge girder

Heavy lift contractor Integrated Logistics Company used its Terex AC 1000 and AC 500-2 All Terrain cranes to complete the 200 tonne tandem lift of a bridge beam in Kuwait City.

The project includes a number of bridges and interchanges, one of which required the installation of the 56 metre long beam.



The nine axle AC 1000 was rigged with 228 tonnes of counterweight, 25.8 metres of main boom and a 250 tonne hook block working initially at a nine metre radius to raise the four metre high by two

metre wide beam - It then took its 102.2 tonne share of the load to a height of eight metres and a radius of 17 metres, at which the crane was working at less than 73 percent of its capacity.

Equipped with 160 tonnes of counterweight and 24 metres of main boom, the 500 tonne AC 500-2 began the lift at a 7.5 metre radius, taking it out to 12.5 metres - around 82 percent of its rated capacity.





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## ALE in Rio shipyard

Heavy lift specialist ALE used its AL.SK190 for three lifts, including installing an accommodation module weighing 1,538 tonnes and service module of 702 tonnes onto the Petrobras P-74 FPSO (floating production, storage and offloading vessel) at its Rio de Janeiro shipyard.

The AL.SK190 has a load moment of 196,000 tonne metres and can lift up to 4,300 tonnes with a maximum boom height of almost 200 metres. For both lifts the crane was rigged with a 118.5 metre main boom and placed to reach the modules without repositioning. The three lifts were then completed over a 10 day period

"Using the AL.SK190 crane saved up to two months in downtime as our customer did not have to take the FPSO out of the dock," said ALE's sales manager Giovanni Alders. "The actual lifting time to install the two modules was reduced to two weeks and modifications on the FPSO could still go ahead whilst the crane was being assembled and disassembled."

## Raising the roof



Crane companies MSG Krandienst and Wiesbauer recently supplied two new 750 tonne Liebherr LTM 1750-9.1 All Terrain cranes to install a new glass roof at the Erding thermal water world complex near Munich, Germany. The total roof structure area of 2,600 square metres was hoisted into position in two segments. The heaviest load totalled 203 tonnes including hooks and cross beams. The cranes were rigged with Y guy attachment and full counterweigh to lift the roof into position at a height of 20 metres.





## Overhead crane removal

Hanover-based Fricke-Schmidbauer Schwerlast used a 400 tonne Terex CC 2400-1 crawler crane to remove two 400 tonne capacity overhead cranes from the Salzgitter Flachstahl steel mill in Germany.

The dismantled cranes comprised 10 large and 20 small components weighing between 25 and 105 tonnes at a height of 38 metres. The biggest challenge was space, with just 15 by 22 metres available for the crane to set up and work. The lifts also had to be done quickly to minimise disruption. The CC 2400-1 was rigged with a 36 metre main boom, 36 metre fly jib, 160-tonnes of main counterweight and 160 tonnes of superlift ballast, working at a radius of 34 metres.

Smaller components were lifted through a nine metre square opening in the roof, while the larger 105 tonne components had to be lifted down onto the floor where they were further dismantled and loaded onto trucks. "We had to do this with the larger components, even if the opening in the roof had been bigger, since the limited space made it impossible to slew the CC 2400-1 with its suspended Superlift counterweight," said project manager Dirk Zocher.



## Euro debut for LR 13000

The European premier of the largest conventional crawler crane - the 3,000 tonne Liebherr LR 13000 owned by Mammoet - took place in the Lloyd Werft shipyard in Bremerhaven. Four, 87 metre long platform legs, each weighing 940 tonnes were installed on Van Oord's new wind turbine installation vessel, the 140 metre long Aeolus, one of the largest jack-up vessels in the world.

The LR 13000 was erected over 12 days and included the first use of its heavy duty 'P' PowerBoom. The crane was rigged with full PDB configuration, providing a hook height of 132 metres, more than enough to lift the legs well clear of their sockets.

The first lift - technically the most challenging - installed the leg through the structure of the heavy-load crane on the vessel. The LR 13000 had to lift the 940 tonne steel leg off its transport barge to a height of 125 metres to position it vertically and then slew to the installation position. With hook block and rigging, the total load was over 1,000 tonnes at a radius of 23 metres. Using deck winches the Aeolus was slowly shifted until the jack-up leg was located directly above the opening and using large pulley blocks, it was then turned into the correct position whilst being lowered before threading it into the structure.

Mammoet also designed, fabricated and delivered tailor-made top lifting tools and a tailing frame for the job, in order to ensure that the legs - which have no lifting points - could be lifted securely. In addition to the platform legs, Mammoet also installed four spudcans (huge feet under the legs each weighing 180 tonnes) by placing them onto the seabed, then positioning the vessel above them and securing the legs to the feet with the help of divers.



## Submerged dragline recovery

Florida-based Crane Rental Corporation recently recovered a customer's Manitowoc 4600 dragline that had slipped off a bank into 21 metres of water. The company supplied a 450 tonne Manitowoc 2250 crawler crane with MAX-ER attachment and a 500 tonne Terex AC 500-2 for the

220 tonne tandem lift. Divers surveyed the machine before cutting the boom and mast free. In order for them to do this safely engineers had to predict the components' stored energy to ensure the divers would not be struck as the crane shifted.





# Keeping it in the family

After nearly 90 years in business, Collett - one of the UK's leading heavy transport companies - is in expansion mode. The family business started by Richard Collett is now in its fourth generation with current managing director David Collett - grandson of the founder and current ESTA president - intent on growing the business and investing heavily in new equipment. Cranes & Access travelled north to find out more.

In 1928 farmer Richard Collett began a milk transport business from his farm in Sutton, near Keighley using a horse and cart. As business grew he invested in his first wagon and was employed by the Milk Marketing Board to collect milk (in churns) from the surrounding farms to be delivered to the dairies. This continued for more than 30 years until son, Richard, moved into a farm in Wainstalls, near Halifax followed by the formation of R Collett & Son, by which time the fleet had increased to 14 trucks.

In the 1970s the company expanded into general haulage and heavy transport and towards the end of the decade five grandsons - Richard, David, Lincoln, Mark and Michael - had joined the company in various roles. Today David is managing director, Richard is in charge of fleet engineering, Lincoln is technical director, Mark is operations director and Michael the company secretary. Further growth through the 1980s led to the acquisition of a new site in Keighley, with a further expansion of the heavy transport business. Both were consolidated into the current five acre site at Victoria Terminal, Halifax about 16 years



David Collett

ago. The company also expanded into heavy lifting market - with a particularly focus on wind turbines - as well as launching a consultancy business. Further premises added in 2008 included a 10 acre site in Goole which is now the heart of the marine division and earlier this year a depot in Grangemouth, providing a strategic dockside location.

Today the company employs more than 100 people and runs a fleet of 60 plus trucks and 100 trailers as well as a host of related equipment. Although there are four distinct divisions - consulting, marine, heavy lift and transportation - they operate as one company, with specific skills deployed in each division.



Transporting Tunnel Boring Machine Janice at Hastings Beach

Depending on the project they can either carry out the work on an individual basis or work together. All four add up to a 'one stop shop' for the oil and gas, power generation, heavy engineering, renewables and infrastructure markets, transporting and moving difficult loads throughout Europe and further afield.

## New equipment

The recent equipment additions include, Europe's largest capacity girder bridge trailer and the biggest knuckle boom crane - a 205 tonne /metre Effer 2055. The new Scheuerle STB 550 girder bridge unit has a payload of 550 tonnes and features a 5.2 ratio/factor 6.6 between payload and deadweight as well as having flexible modular combinations.

"We have been able to carry 550 tonnes for about 15 years, but to actually put it into a designed structure to do a specific task, there is nothing bigger in Europe," says David Collett. "Latest trends indicate

that the UK is running the risk of electricity 'brown-outs' if there is a severe winter, because it is now down to the five percent safety margin on power generation. For us the power generation industry is a stable market with a demand that needs to be fulfilled."

"In connection with the STB 550's main beam, the load is placed on the top boom with brackets. However the load can also be supported with additional load suspension gear with cross beams or be coupled directly to the supporting tips without the main beam. The side girder bridge can also lower the cargo without cranes, with a vertical lift height of up to 1.65 metres. Length can be altered from 29.2 to 34.2 metres to suit the number of axle lines and the size of the load, while the loading width can be set from 3.45 up to 7.4 metres."

"At the moment no-one has built a 550 tonne transformer but with this investment we are challenging

An early Collett milk wagon



The new 550 tonne Scheuerle STB 550 girder bridge unit

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# LIEBHERR

The Group





Unloading wind turbine blades at one of its marine facilities

the industry to produce larger equipment. The trailer is also modular, allowing us to adapt the specification and axle loadings to suit most European countries. Girder frame trailers are more popular in the UK than Europe primarily due their capability of moving large loads via a more advanced and developed water transport network."

The UK Highways Agency has a water first policy for loads over 150 tonnes GVW. However the lack of a viable inland water network forces most loads onto the road.

"An enormous amount of work goes into the planning and clearing of oversailed and swept path areas along the road routes when moving large loads with girder sets. For example the well-travelled high/heavy load road route from Stafford to Ellesmere Port has been well documented with all adjustments made to the road such as easily removable street furniture and kerbs that have been flattened so you can drive straight across roundabouts etc etc."

Getting the load onto the trailer is usually done by Collett, often by skidding or jacking. When these are not possible a mobile crane may be used. Collett does not own any mobile cranes, but works closely with the major crane rental companies hiring in equipment as and when it is needed. However all the staff needed for the job - from completing risk assessments and method statements to APs and banksmen - are all in-house.

**Europe's biggest**

Collett has however operated a fleet of loader cranes from a variety of manufacturers including Fassi and Palfinger for more than 30 years. Its latest addition, the first Effer in the fleet, dwarfs its previous largest - a 110 tonne/metre Fassi. The Effer 2055 is mounted on an 8x4 Mercedes 4155 tractor unit and is currently the largest of its kind in Europe and the biggest ever supplied by local dealer Atlas Cranes UK. The six section boom gives a maximum lift capacity of 30 tonnes at 4.51 metres and 8.55 tonnes at 15.25 metres. When folded the crane sits across the chassis, behind the cab and the rig has maximum axle loads of 16.5 tonnes and 150 tonne GVW.

"The Effer 2055 is a huge leap forward," says Collett. "This was the first crane of this capacity off the Effer production line in Bologna, Italy and it is already turning heads within the industry. We were thinking that the next step for us would be a 150 tonne/metre crane but because we wanted the biggest and this one became available we went with a 205 tonne/metre unit. It is the only sizeable crane that was mounted across the chassis rather than longitudinally which takes up the whole 8x4 tractor unit."

"It has taken 12 months to deliver the crane, since we first registered an interest and as it was the first, it was mounted at the Effer factory. Our unit does not have a front outrigger jack as the lifting duties



Collett has software to help plan tricky road movements



One of its loader cranes - a Fassi F1100XP - lifting turbine blades

we wanted are covered by the side outriggers. The advantages of this crane over a 40 to 45 tonne All Terrain are that the tractor unit can also tow a trailer and can lift the load onto the trailer itself. It is also quick to set up and fantastic in confined spaces. It gives us much more flexibility, allowing us to be fully in control of the lift and rather than having to rely on an external crane company. Having the largest loader crane just puts us in a position to carry out a wider variety of lifts - rather than it being bought for a specific contract."

**ESTA developments**

Collett is also the current president of ESTA, the European crane and heavy transport association, and

is also a committee member of the Heavy Transport Association.

"ESTA is sponsoring the European Crane Operator License (ECOL) - so that operators all over Europe can work throughout the region with one recognised license. Around nine countries have already signed up to adopt the license, funding is available and a qualification has been designed - no mean feat but it will allow crane operators to work unhindered throughout the European Community. The association is also working on best practice guidelines for SPMTs (Self Propelled Modular Transport units), in order to reduce the number of incidents that occur with this type of equipment," he said, "which should be available sometime in the New Year."



The new 205 tonne/metre Effer 2055



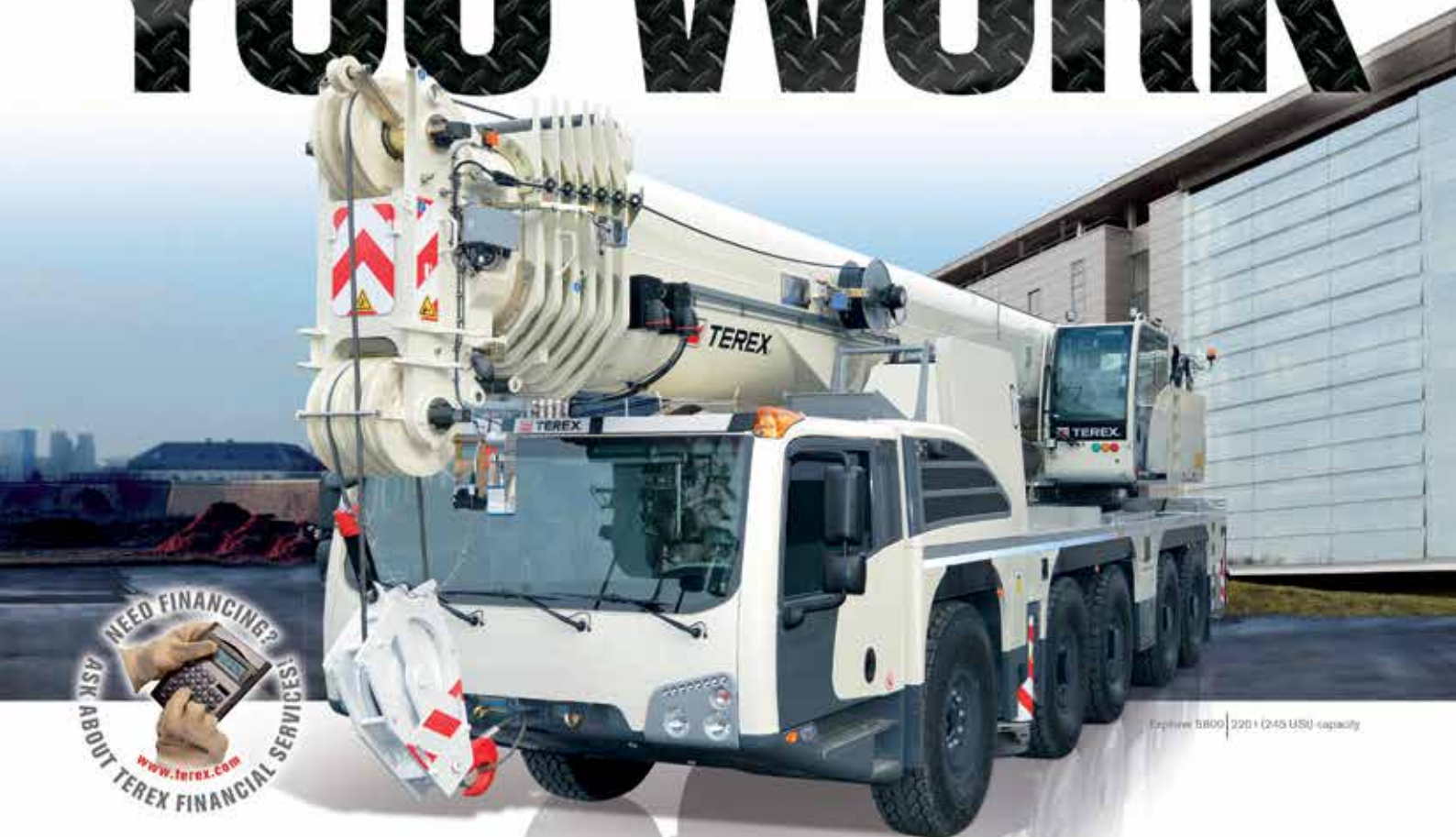
The Power Boost can adapt any standard dumb axle modules to offer SPMT capabilities



Collett can project manage large movements



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