

CraneSTAR

Increase efficiency and profits



Manitowoc's new CraneSTAR asset management system allows you to monitor crane data regardless of location. CraneSTAR tracks data through the Internet to protect your investment, recognize trends and make more informed decisions about your business. Plus CraneSTAR works with your existing business systems to reduce costs and improve profitability.

CraneSTAR. Built by crane professionals — for crane professionals.

Europeans take the lead

With the North American developments in mega capacity cranes literally collapsing, two European-based international heavy lift and installation companies - Abnormal Load Engineering (ALE) and Mammoet - are making a strong move to become global leaders in the design and manufacture of land based cranes with capacities of more than 3,000 tonnes.

The need for crane manufacturers to keep up with the increasing demand to lift and place larger and heavier capacity components has resulted in a major split in the market. Mainline manufacturers such as Terex, Manitowoc and Liebherr have gradually introduced larger capacity models into their ranges. But even after their latest offerings have been introduced, the sector will top out at a maximum capacity of 3,200 tonnes with the Terex Demag CC8800-1 Twin.

Following the tragic collapse of two of the largest 'bespoke' cranes in North America last year - the VersaCrane TC36000 owned by Deep South Crane and Rigging of Baton Rouge, Louisiana and a Lampson Translift working at the Black Thunder Mine in Wyoming - the initiative in the large capacity,



Manitowoc Model 31000

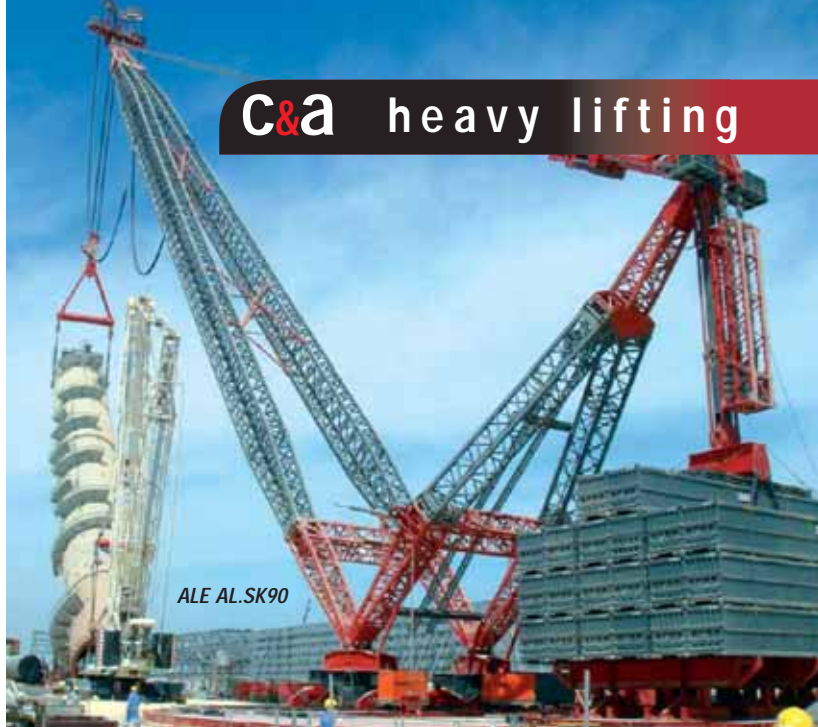


The AL.SK90 is capable of lifting 4,300 tonnes

alternative crane sector is clearly moving into the hands of ALE and Mammoet.

A few months ago Liebherr announced brief details of its new 'conventional' single boom, 3,000 tonne LR 13000 which may see the light of day mid next year at the earliest. Perhaps bowing to increased global capacity demands, this crane has a far larger capacity than many expected - a 2,000 tonner was on the cards which would have been a sizeable step up from its current flagship, the 1,350 tonne LR11350.

Manitowoc has followed up its radical 'telescopic tower topped with a 60 metres telescopic jib', the GTK1100, with a slightly more familiar looking 2,300 tonne Model 31000 (see page 23 for more details) although it does have plenty of innovative, interesting and unique features. Terex already has its 3,200 tonne CC8800-1 Twin launched late 2007 and also added the 1,600 tonne capacity CC9800 crawler crane at the beginning of this year.



C&a heavy lifting

ALE AL.SK90

The CC9800 is an adaptation of the CC8800-1 using the same, basic components with a wider boom which boosts its maximum load moment rating to 27,000 tonne/metres when configured with 800 tonnes of Superlift counterweight at a 30 metre radius. The maximum boom length is 156 metres in SSL/LSL configuration while the longest luffing jib is 120 metres, with a maximum combination of 108 metres plus 120 metres, resulting in a maximum tip height of 230 metres - ideal for the petrochemical and energy sectors.

The Chinese manufacturers have steadily and quietly been building larger and larger crawler cranes with Sany in particular appearing to lead the way with a 1,000 tonner that is already in production and possibly a 1,600 tonner or larger on the drawing board.

However, when it comes to the really mega capacity machines, all

eyes are now on the Dutch. Mammoet has been developing big lifting machines in partnership with offshore crane specialist Huisman since 1997. The last of its PTC ringer cranes was delivered in 2007. With the increasing demand for cranes to handle larger components, ALE Heavy Lift kicked off a new spurt in development unveiling its first machine - the



The 1,600 tonne capacity Demag CC 9800

AL.SK90. Capable of lifting loads up to 4,300 tonnes the unit was designed specifically for a petrochemical contract in Saudi Arabia. The crane completed its first of several major lifts at the plant in Jubail - a 69 metre long depropaniser column weighing 755 tonnes - early this year. Working at 84 metres radius, the AL.SK90 allowed engineers to complete foundations and pipe racks in advance of the column installation.

With a little modification - basically widening the base - the crane's capacity can be increased to 5,000 tonnes, making it an AL.SK120. The



Currently Liebherr's largest - LR11350

crane can also be equipped with a standard hoist system for lifts up to 600 tonnes, while strand jacking is employed for the heavier loads.

ALE began the design in December 2006 after the major crane companies showed no interest in such a crane. By the end of 2007 fabrication work involving 65 companies from around the world had begun with the launch less than a year later when it was lifting 3,000 tonnes at 31.5 metre radius on a 130 metre main boom. Other tests to be completed included 1,500 tonnes at 69 metres and 540 tonnes at 114 metres radius.

Earlier this summer, Mammoet also unveiled plans for new mega lift cranes, this time a 100,000 tonne/metre plus version of its Platform ringer Twin boom Containerised (PTC) crane - the PTC120DS. A month or two later it followed it



Preliminary drawings of the new Mammoet PTC120



An older Mammoet PTCIII in a typical application

up with plans for a larger 160,000 tonne/metre version, the PTC160DS. The two cranes have the same boom and jib configuration, the same counterweight and the same winches. However the main difference is the footprint - the PTC160DS will have a 54.5 metre diameter ring, almost 10 metres larger than the 120. Maximum main boom is 130 metres plus a 43 metre jib.

The new PTC cranes are designed fully to mobile crane standards with regular heavy duty hoists and 360 degree slew in normal configuration. This differs from the ALE and Mammoet's own MSG cranes which use strand jacks and are considerably slower.

The hoist speeds on the PTC 120 are two metres a minute for the largest winch which can cope with up to 3,200 tonnes and five metres a minute on the smaller 'runner' hoist which can cope with loads of up to 250 tonnes.

Slewing is via normal crane type rollers with 360 degrees taking 30 minutes - fast for its size. It can also be rigged to run on straight tracks.

The crane which is still at the design stage can self erect its own boom and lower it in the case of severe winds - the 60 metre back mast which requires a 300 tonne crawler crane to erect, is said to be able to withstand 150mph out of service speeds.

Although similar looking, comparing the ALE and Mammoet cranes is difficult given the fact that the ALE machines do not have a traditional slew ring, the company uses outreach - the distance from the heel pin of the boom - rather than radius as the principle measure in its load charts. However taking the centre point of rotation, maximum counterweight and maximum main boom as the key parameters provides a reasonably accurate comparison.



Huisman's Offshore wind turbine installation crane concept.

Huisman reaches 80

Huisman is celebrating its 80th anniversary this year, having been founded in 1929 to build ship cranes and derricks. Current chief executive Joop Roodenburg spent part of his career working for BigLift - which later became Mammoet - hence the initial connection that led to the current partnership on the PTC cranes. The company began to develop a reputation for building large floating cranes including the well-known 3,000 tonne Rambiz. More recently it has been working on a 5,000 tonne offshore crane and is developing a new type of heavy lift crane for the installation of offshore wind turbines, which the company presented at the recent European Offshore Wind 2009 Conference and Exhibition.

Radius m	Mammoet PTC 120	Mammoet PTC160	ALE SK90	ALE SK120
40	2,600t	3,200	2,686 t	2,800 t
60	1,450t	2,200	1,828t	2,377t
100	600	980	860t	1,243
120	500	700	532t	826

A breath of fresh air

East Yorkshire-based Collett Specialist Transport was recently involved in moving a 299 tonne steel press component from Sheffield, via its new import and export heavy lift, handling and storage facility MISTRAL (Major International Shipping And Logistics) - to Goole Docks for shipment to Germany.

Collett used its 21 axle Scheuerle modular trailer with two, MAN 8 x 4 tractor units in a push/pull combination to collect the huge item from Sheffield and then transport and deliver it to Goole, Humberside.

from milk churn transporter to Yorkshire's farming communities in the 1960's to one of the United Kingdom's leading providers of specialist transport and industrial services to shippers, manufacturers and construction companies. Today, despite the economic downturn, it continues to expand. The company currently operates 60 vehicles and 70 trailers and has a substantial fleet of modular axles, beam sets, wafer and low beds, turntables, SPMT, as well as specialist lifting equipment. Collett opened the MISTRAL facility - its first remote operation - last August, on the five acre derelict site and former home of Carlsberg import and distribution in Goole after having spent £3 million redeveloping it. The company is currently renovating the 25,000 square metre warehouse for use as an engineering hub and storage facility.

Richard Platts senior projects manager said: "We have recently taken delivery of a number of new items of specialist lifting and handling equipment, including a bespoke design 110 tonne capacity Wise RTG/Straddle Carrier, a 400

The component was then transferred by means of its hydraulic trailer jacking systems from the 21 axle trailer to its newly delivered Scheuerle 10 axle SPMT, which was then able to self position the load directly alongside the side of the ship thus reducing the lift radius for Ainscough's 1,000 tonne Liebherr LTM 11000, which lifted it off the trailer and onto the ship.

Collett has been in the general haulage and heavy transport industry for more than 40 years, during which time it has evolved

Reloading a 40 tonne wind turbine component



After transporting the 299 tonne steel casting from Sheffield, Colletts used its SPMT to reposition the casting alongside the ship destined for Germany.

Collett's MAN 6x4 tractor unit with a Fassi 110 tonne metre cab mounted crane undergoing testing.



The company has recently taken delivery of a bespoke design Wise RTG/straddle carrier with a lift capacity of 110 tonnes.



Collett currently has three wind farm contracts on the go

Collett also works regularly with international shipping companies and forwarders providing transport to and from heavy lift ships.



tonne Scheuerle SMPT (Self Propelled Modular Transporter) and a further MAN 6x4 heavy duty tractor unit with a Fassi 110 tonne/metre cab mounted crane. The MISTRAL terminal regularly handles and stores wind turbine components - we currently have

three wind farm contracts on the go - as well as power station components and heavy steel products the largest to date being 315 tonnes."

Collett provides all port/ship handling operations at the port of Goole to load/discharge the ships as well as managing the cranes.

Big BOC Lift

Sarens UK has recently completed a series of lifts to install a new air separation facility at BOC Scunthorpe. Working for client Linde, Sarens used its 600 tonne truck lattice boom Demag TC2800 mobile crane as the main crane with a smaller seven axle, 400 tonne capacity Liebherr LTM 1400 telescopic mobile as the tailing crane.

Rigged with 90 metres main boom, its maximum 160 tonnes standard counterweight, 150 tonnes of Superlift ballast (300 tonnes maximum) and 10 metre by 10 metre outriggers, the Demag TC2800's first lifts involved lifting 56 tonne boxes. The more difficult lift involved the Liebherr LTM 1400 with 56.6 metre main boom and 100 tonnes of counterweight lifting columns weighing 71.83 tonnes onto the roof of the air separation building. The Demag TC2800 is Terex's only lattice boom truck crane and has the advantage of a reduced number of transport units compared to a similarly sized lattice boomed crawler crane. The basic crane with all drums and A frame is roadable within 12 tonne axle loads. Its outrigger base of up to 14 metres gives good lifting capacities and maximum boom length up to 180 metres.



Sarens Demag TC2800 and Liebherr LTM 1400 work together to stand up the 72 tonne columns



The Demag places the columns on top of the air separation facility



Each circular coal depot is 125 metres in diameter, 58 metres high and has eight, 55 metre long, 40 tonne roof segments

A major supporting role

In August, Maintal-based German crane and engineering group Eisele supplied a total of seven mobile cranes and two aerial lifts to install the roofs of two new enclosed coal bunkers at the Staudinger power station in Grosskrotzenburg. Up to now, coal for the Staudinger power plant has been stored in the open and moved to the storage point by wheel loaders. The new fully automated enclosed storage system will substantially reduce dust as well as cutting down on the noise from the depot.

Each circular coal bunker is 125 metres in diameter and 58 metres high with a capacity for 220,000 tonnes of coal. The complicated roof structure consists of a total of eight segments, each of which is 55 metres long and weighs 40 tonnes. Because the structure is unstable until fully erected and unable to bear any loads, the company's new 1,200 tonne capacity Liebherr LTM 11200-9.1 was positioned in such a way that it could support the entire structure in the centre so that once all the segments had been installed, the weight could be distributed equally onto the outer ring beam. The other six cranes - operating in two groups of three - worked at assembling and installing two roof

segments at a time directly opposite to each other. This contract was one of the first jobs for Eisele's LTM11200-9.1, following its delivery in July. Claus Eisele says the crane has already proved its real worth in the assembly and installation of wind farm power systems. "Among the deciding factors when choosing the LTM 11200-9.1 was the 100 metre telescopic boom and the enormous lifting capacity," he said. "We also see the chemical sector and the assembly of large tower cranes in the Frankfurt area as being important operational possibilities for the 1200 tonne capacity crane."

Don't Miss

Vertikal days

Haydock Park June 16th & 17th 2010

www.vertikaldays.net

The Power Behind Performance



The 'Heads-up' winner.
Simply outperforming our competition in head to head tests over and over again...

We put more into our Deep Cycle Batteries

Thicker and Heavier plates, combined with heavy strap and inter-cell connections is the 'Crown' signature.

Manufactured to exact standards to deliver the longest runtime and battery life.



A full range of 6v, 8v and 12v deep cycle batteries available...



Nobody builds them like Crown...

SHIELD

Head Office
Bishops Stortford: 01279 652 067
info@shieldbatteries.co.uk

Other Locations
Leicester: 0116 274 1400
Manchester: 0161 834 8589

POWERING THE FUTURE SINCE 1918



MAT & TIMBER SERVICES



- CRANE MATS**
- OUTRIGGER MATS**
- TEMPORARY ACCESS ROADS**
- RAMPS**

For all types of cranes under any application - Nationwide and Overseas



TEL: +44 (0) 1264 811005
FAX: +44 (0) 1264 810600

e-mail: info@sarumhardwood.co.uk

web site: www.sarumhardwood.co.uk

Two bridges in one

The success of many contracts depends not only on the final heavy lift, but on the transportation of the equipment from the manufacturing facility to the construction site. Routes can be examined and carefully planned, but sometimes there is a major problem which requires an innovative solution.

Earlier this year, Austrian-based heavy transport and lifting specialist, Felbermayr was asked to move 16 sections of ore crushing equipment about 300km from Magdeburg to the North Sea port of Hamburg for onward shipment to Brazil. The major problem was a railway crossing near Magdeburg.

"We were able to transport the eight smaller sections each weighing up to 23.2 tonnes directly by road. The remaining sections measuring 8.7 metres in diameter by 4.6 metres high and weighing more than 100 tonnes were too big and had to go by barge down the Elbe river," said Karin Cordes of Felbermayr's location in Verden, near Bremen.

Felbermayr had originally looked into a route from the Elbe port of Aken which would have avoided the time and cost-intensive railway crossing. "There were too many transport control issues between Magdeburg and Aken and the route was not approved so we had no option but to take the big components via the 16 kilometre route to the Elbe port of Schönbeck and face the challenge of crossing the railway line," said Cordes. "The problem was that the bridge could not carry the 173 tonnes total weight."

To solve the problem, a special bridge crossing system was designed and developed.

"We began the five month long preparations in early April," says Cordes. "Although it was only 16 km, the route was far from easy and

nearly half of the journey time was taken up with crossing the railway.

"We could not erect a temporary crossing to avoid the bridge as it would have blocked the mainline for too long. This meant the bridge was our only option."

But how would this be possibly if the bridge could not take the load?

The solution was to build a bridge over the existing bridge with the temporary structure fully spanning the existing crossing and taking all the weight. This temporary structure was pre-assembled at the company facility in Hilden and tested using a loaded tractor unit and trailer.

"We did not want to rely on mathematical calculations alone. After all, the 'flyover' would have to span a distance of 48 metres and take a load of 173 tonnes just as a 200 kph high-speed train might thunder along beneath us," said Cordes. "We needed to be sure it worked."

Positive test results convinced the Felbermayr team and work began on the bridge near Magdeburg in mid-August. Three days later, everything was ready and the first crossing began. Slowly the tractor unit with 150 tonnes in tow rolled onto and up the 300mm high ramp at the bridge head. The design ensured that the existing bridge carried absolutely no load. Each of the four trucks and 16 axle trailers took about an hour to cross the bridge. After discharging their loads at Schönebeck harbour, the vehicles returned to Magdeburg to load the remaining components and repeat the bridge crossing.





Manitowoc 31000 makes its first appearance

The largest crane ever built by Manitowoc is a step closer to completion with the base of the crane being shown off at a recent open day at its Wisconsin plant.



The Manitowoc 31000 has an unusual structure

The 2,300 tonne capacity crane will be rigged for the first time at the end of this year, prior to beginning an almost year-long testing programme and then being shipped to its launch customer, Bulldog Erectors.

The crane which was first announced at Conexpo last year, incorporates a number of unique features including a variable counterweight system that can constantly adjust the counterweight effort in order to maintain the load centre over the cranes four trunnion mounted track units. The hydraulic arm adjusts the counterweight radius from 8.4 metres to its maximum of just less than 29 metres.

Maximum main boom length is 105 metres and luffing jib 102 metres. The longest combination is a 90 metre main boom plus the 102 metre jib for a tip height approaching 200 metres.

Manitowoc says that by keeping the load centre within the 17 by 20 metre footprint of its four tracks it will allow it to pick & carry its full rated chart as well as helping reduce the ground preparation required.



The Manitowoc 31000 is 17 metres wide



ORMIG 1949 2009

PICK and CARRY 60° ormig

Agent UK

Crowland Cranes Ltd.

The Complete Crane Company

Crease Drive - Crowland - Peterborough - United Kingdom - PE6 0BN
Tel: 01733 210561 (3 lines) - Hires: 01733 211722 - Fax: 01733 211269



ORMIG S.p.A. PIAZZALE ORMIG
P.O. BOX 63 - 15076 OVADA (AL) ITALY
TEL. (+39) 0143.80051 r.a. - FAX (+39) 0143.86568
E-mail: mktg@ormigspa.com - sales@ormigspa.com
www.ormig.com - www.pickandcarry.com

RINA

Plastic fantastic

One of the largest mobile cranes operating in Asia - a 1,600 tonne Terex Demag CC8800-1 crawler crane - was brought in to install a 407 tonne polythene reactor at China's largest ethylene plant, being built in Dagang.

The two day lift began early in the morning at Xingang Port, with the loading of the massive, 47 metre long, eight metre diameter reactor onto a trailer. Then with a police escort, it began its walking pace journey to the new plant being built by The Fourth Construction Company of Sinopec, 25 miles inland. When operational the plant will have an annual output of a million tonnes. Because of the reactors size, every overhead power line on the route had to be removed so that the oversize load could pass without hindrance.

By early afternoon, the reactor arrived at the site where the CC 8800-1 was waiting, rigged in the SSL108 configuration with 108 metre main boom and back mast, the maximum main counterweight of 295 tonnes, plus 60 tonnes of carbody ballast and 640 tonnes of Superlift counterweight fully extended to 30 metres.

A 450 tonne capacity Terex Demag CC2500 crawler crane was used to tail-in the massive vessel which was lifted the following day.

Du Xuewu, chief engineer of Lifting & Transportation at Fourth Construction said: "The quick set-up and dismantling of the crane saved time which is very important to a project such as this."

The China Petroleum and Chemical Corporation (Sinopec Corp) activities



include exploration, production and trading of petroleum and natural gas. Its crude oil production exceeds 41 million tonnes and it is the third largest oil refiner in the world and ranked fifth in terms of ethylene capacity.



Italian heavy duty modular and self-propelled transporter manufacturer Cometto recently supplied five MSPE units to move a dock crane at the Civitavecchia port about 50 miles north west of Rome.

Weighing 1,600 tonnes, the crane was supported and moved by positioning three lines of 18 axle Cometto MSPE and 2 lines of 10 axle Cometto MSPE self-propelled transporters in order to get the correct stability.

Approved spreader for Oz

UK-based spreader beam company Modulift has obtained Det Norske Veritas (DNV) approval for a bespoke 400 tonne spreader system which is being used on the A\$12 billion Pluto Liquefied Natural Gas (LNG) project in Western Australia.

The project is set to become the fastest developed LNG project from discovery of the gas field in 2005 to first gas in late 2010. The plant will process gas from the Pluto and Xena gas fields, located in the Carnarvon Basin about 190 km north-west of Karratha, Western Australia.

Modulift also offers a spreader system manufactured to a design approved by DNV and witnessed by DNV surveyors throughout the fabrication process and proof load testing.



The DNV Approved 400 tonne Spreader System

