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Crane or load - which comes first?

C&A

heavy cranes

Given the reliance of many industries on large cranes, it is perhaps surprising that the choice in certain capacity ranges is distinctly sparse. We take a brief look at the lack of crawler and mobile cranes in the 900-1,000 tonne sector.

The age old conundrum of which came first - the chicken or the egg - has often raised its head with large cranes - the result of increasingly large and heavy loads. Are these larger cranes built to specifically lift larger existing loads or are the loads getting larger to take advantage of bigger cranes?

Our interview with Weldex International - one of the largest crawler crane rental companies in the world - would suggest that the designers of large infrastructure projects are pushing load modularisation to the limits and if there are cranes in the market capable of lifting the huge items in one go, then it is preferable because it is the quickest, easiest and safest means of construction. Should modules be too large or heavy then a tandem lift might suit, or their design allows them to be reduced to more manageable proportions.

Maximum lifting capacities have risen steadily in recent years, at the smaller end of the scale, mobiles up to 200 tonnes are a now familiar

sight on the roads and a 500 tonne crawler crane is no longer a rare beast. However the larger the crane you are looking for, the larger the capacity gaps become. For telescopic cranes there is plenty of choice up to 450 tonnes but then it starts to thin and if a Terex AC700 is too small the jump until recently was all the way to the 1,200 tonne Liebherr LTM 11200. Liebherr has now launched its 750 tonne LTM 1750 and Terex has finally started shipping its '1,200 tonne capacity class' AC1000 but the gap still remains significant. When we look at lattice crawlers the gap and choice is even wider.

There has been numerous introductions in the 2,300 tonnes and over market from Manitowoc, Terex, Liebherr, ALE, Mammoet, Sarens and Bigge but these are primarily aimed at the large industrial, petro-chemical and nuclear sectors. Manufacturers appear to have missed/ignored the cranes aimed at the large civil engineering, wind and smaller infrastructure projects needing capacities around the 1,000 tonnes. In fact, there is not only a dearth of

cranes but there is even more of a distinct lack of manufacturers in this sector. For European and North American crawler crane purchasers there is currently only one 1,000 tonner available - the Terex CC5800 which was launched in 2005. While there are a few rumours suggesting that this model was due to be updated and reintroduced at Bauma, Terex says that this will not be the case although we may see a slight 'upgrade'? There will be improvements to the 1,250 tonne CC6800 - but more on that at a later date.

Possibly with an eye on this gap and the increasing demand for this size of crane, Liebherr has confirmed that it is launching a new 1,000 tonne crawler - the LR 11000? - at Bauma which will help fill this gap in its range between the 750 tonne LR 1750 and the 1,350 tonne LR 11350. Full details will be available in April however we can reveal that the crane will be very versatile due to a wide range of boom systems - including those specifically for wind power. The PowerBoom concept will also be made available for the new crane at a later date. The other

international supplier, Manitowoc has an even greater issue, with nothing between its 756 tonne Model 21000 and its top of the range 2,300 tonne Model 31000.

The problem is that development time and cost for these big lattice crawler cranes is massive and the number of buyers limited making this a high risk investment. The Chinese producers however seem to be able to churn out big crawlers at a breakneck pace, which rings alarm bells for experienced buyers. For those prepared to buy something different, several Chinese manufacturers have cranes in this sector including two Zoomlion's - an 881 tonne and 1,100 tonne - an 800 tonne Fuwa and a 1,000 tonne XCMG.

With the three big western crane producers keeping a close eye on the Chinese manufacturers you can be sure that there will be increased focus on the 850 to 1,000 tonne market both for telescopic and lattice boomed cranes. Watch out for Bauma 2016!



Terex AC1000



Terex CC5800 at its launch in 2005



Liebherr LTM 1750-9.1

Rental companies need strength

LR 11350
working on the
Thames cable
car link in
London

In spite of being one of Europe's largest crawler crane rental companies, Inverness-based Weldex (International) Offshore Ltd keeps a relatively low profile. Founded by chief executive Dougie McGilvray in 1979, the company has grown organically and through acquisitions to be one of the world's leading crawler crane rental companies. Mark Darwin travelled to the Scottish Highlands to find out more about this international lifting company.



Dougie McGilvray

Weldex has always been top of the Cranes & Access Top 30 crawler crane rental companies. In fact in the early days of the survey when it was just the Top 10 (in 2001) the company had 183 crawlers in its fleet – the result of several acquisitions. For the past six years or so its fleet has stabilised at around the 120 mark. Picturesque Inverness seems an unusual place for the head office of a major international crane rental company – but is it?

"I am from a small village called Arrochar near Loch Lomond and my fiancé Kaye was from the Isle of

Lewis in the Western Isles, so Inverness - roughly in the middle - was a logical place for us to live in 1966," says McGilvray. "With a mechanical engineering background I worked for two local companies before going to work for Edmund Nuttal at the Foyers Hydro Electric Pump Storage Scheme as a plant foreman, from there I moved to Saudi Arabia as plant manager. On returning to the UK I was employed by Howard Doris as a plant foreman at Loch Kishorn on the Ninian Central Platform Construction. I then went on to work on various bridges in the North of Scotland such as the Cromarty Bridge and the Kessock Bridge in Inverness. After numerous



An LR 11350 with P Boom system in Holland

years of travel Kaye and I decided I would spend more time at home to be with our two children - Iain, now managing director and Margaret the company's finance director. So in 1979 when the civils work on the Kessock Bridge ended, I set up Weldex. In the early days we used to service and maintain equipment - mainly for companies like Hewden Stuart Crane Hire, Grayston White and Sparrow, Fairclough and Cleveland Bridge - because these companies didn't have back-up in the North of Scotland."

"Our first crane - a Priestman MC350 - was purchased in 1983 followed by a couple of 40 tonne Andes and a 120 tonne NCK Eiger. By 1990 the fleet had grown to around 25 units - all mechanical crawler cranes - and all working on contracts in Scotland."

A few years later this all changed following McGilvray's visit to Japan where he purchased five Sumitomo cranes, including three 60 tonners, one 50 tonner and a 150 tonner. The new hydraulic cranes were hired out to the fabrication yards such as McDermotts at Ardersier and really kick started the company's crane rental business. Towards the end of the 1990s/early 2000, Weldex acquired the crawler crane fleets of Lilley Construction, Hewden Stuart, Grayston White and Sparrow, Kvaerner and Tarmac although with them came certain problems.

"The majority of the cranes we acquired were old, mechanical units, but it was necessary to buy them and take them out of the system as they were being rented too cheaply compared to our new, modern hydraulic cranes," he says.



Lowering the 'Busy Lizzie' TBM on the Lee Tunnel, London



Lifting wind farm components at the Port of Mostyn

"Eventually we sold the older machines outside the UK and just last week we sold the last container load of Andes spares, so people are still running these very old cranes. Today, the average age of our crane fleet is five years, although the oldest crane is a Manitowoc M50 dating back to around 1990 which is being used as a yard crane - but that will also be sold soon outside the UK."

The original company was formed by McGilvray and his wife Kaye with 50 percent of the shares, while John Hillhouse (of John Hillhouse Plant) held the other 50 percent. Hillhouse was bought out by the McGilvrays in 1996, the same year as investment company NVM bought

into the business and Iain and Margaret McGilvray joined the company. This arrangement continued until the summer of 2010 when half of the shares owned by NVM and the McGilvray family were purchased by Dunedin private equity with the McGilvray family and NVM retaining the other half and the family running the company on a day to day basis. "NVM initially invested in the hope of a buyout," says McGilvray, "and it has achieved a good return as well as having a percentage of the current business going forward."

Iain and Margaret McGilvray now run the company but over the last 10 months two of its management team have been promoted - Simon

Massey to sales director and Eddie Campbell to Health & Safety director. "Both men have a great knowledge of the crane industry," says McGilvray. "Simon is a time served engineer having started his career with Demag and Eddie, who holds all necessary qualifications, was a rigging manager in the fabrication yards in the Moray Firth. We have a good management team at both depots with a wealth of experience in the crane industry."

Liebherr dominant

In recent years the company has had a strong preference for Liebherr cranes, but has also added Kobelco, Demag and Sennebogen telescopic crawlers. 10 years ago Manitowoc

was the dominant manufacturer. The fleet has also moved to larger units and includes three 1,350 tonne Liebherr LR11350's including one with the PowerBoom System. It also has a good sized fleet of LTR telescopic crawlers from 60 to 100 tonnes and will take delivery of the first two 220 tonne Liebherr LTR1220's early 2013, and depending on a specific contract start, one should be on display at Bauma. Weldex is also taking one of Liebherr's new 1,000 tonne crawler cranes, due to be launched at the show.

"The LTR 1220 is a bigger version of the existing 60 and 100 tonners that we already use. The LTR 1100 has



A CC2800 and LR11350 on a tandem lift in Barrow

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Tandem blade lift



been one of our most popular machines since we purchased the first four years ago. We now have eight and they haven't stopped working since we got them. Clients appreciate the reduced rigging times and mobilisation costs. Although we initially thought we would only get short term jobs we have had several long term contracts for them. They are very quick and easy to deliver to city centre sites and have the advantage of being able to lower the boom and travel under a structure to access confined areas. They are also able to pick and carry thus have an advantage over the LTM units. The larger telescopic crawler can do the same so we hope that it will turn out to be a very good addition to our rental fleet.

"We have been early adopters of several Liebherr crawlers but the crawler telescopic has never been a problem and it gives us a head start in a growing market. We have already lined up a six month contract for the two 220 tonne LTRs - a multi crane job with smaller and larger cranes ranging from 100 up to 1,350 tonnes. They were chosen for their compact size and small rig area. It is a compact construction site and the heaviest lift is around 300 tonnes, but the working radius is large - lifting from one side of the site to the other."

Weldex may also have its name on other cranes at Bauma - possibly a Kobelco. "We have taken delivery of eight Kobelco cranes over the past six months including some 80 and 100 tonners which are now working on the London Cross Rail project." All of the cranes are fitted with the tier 3 B engines as more and more

of our clients are asking for this. We are also in discussion with Terex regarding some new units."

No more Manitowoc

It was shortly after the purchase of GWS that Weldex decided to switch from Manitowoc to Liebherr. At the time it owned a lot of Manitowoc 222s, 777s, 888s, 999s and 2250s as well as Demag CC1800s and a CC2500. However with a lot of older cranes that needed replacing, a deal was done for 10 Liebherr LR 1100s, replacing some of the old cranes. Since then Weldex has purchased more than 80 Liebherr cranes, helping cut the fleet's average age.

"Many of the reasons to reduce the average age is client driven, with some sites now specifying that cranes are no more than three or four years old. We invest between £12 to 25 million a year and although we do not want to expand the fleet it does need to be kept up to date with larger and modern units."

"The average capacity is also increasing, we still have smaller cranes for piling contracts and construction sites, but there is a general move towards larger cranes," says McGilvray. "A few years ago the 600 tonne CC2800 and the LR1600 was considered a big machines now we have the 1,350 tonne LR 11350 with the P-boom. Clients would rather work on the ground than in the air due to work at height regulations and safety so modules are getting bigger and bigger. If a 300 tonne roof truss can be completed on the ground rather than lifting three 100 tonne components then that is preferred."

"In the wind industry nacelles are getting larger and heavier and due to blade lengths the towers are higher and clients want to install them in one piece hence the need for the P System. If this is not possible they can remove the generator or hub. On many of the large scale civils contracts the crane for the job is decided first and then the module size in order to reduce the number of high level lifts."

Specialist lifting machines?

"Yes we have looked at the 3,000 tonne Liebherr LR 13000 but currently there is not enough work to justify buying it," he says. "A few years ago we would have said why do you need an LR 11350 - now we have three. We have no real desire to have a 3,000 tonne crane today, but in a few years who knows? The three LR 11350s move around on both short term (three week) jobs - such as loading TBMs into shafts in London - and longer term contracts. An LR 13000 would need a major nuclear site or similar. However if we did go for a very big capacity crane it would be a conventional

crawler design - we have no desire to get into the specialist lifting machines."

Weldex has no mobile cranes, nor any desire to enter the market. It prefers to use the LTRs as support cranes, or on some sites clients will organise a mobile. "Often we will try to convince a client of the capabilities of a crawler telescopic rather than an All Terrain crane. We often send in an LTR 1100 - a machine that can telescope in and out and pick and carry a load from one end of the site to the other without outriggers."

The company also has three specialist reach stackers with capacities of 50 and 70 tonnes which have proved popular on wind farm sites used in tandem to lift blades or tower sections. Speed is the main advantage of the reach stacker especially when they are fitted with container handling devices or have a fixed single hook modification.

Rental rates are too low!

"Since forming the company in 1979 I have noticed a great deal of change within the crane rental industry," says McGilvray. "At that time the rental companies hired cranes out on a standard crane rental contract and the client managed everything from the commencement of the hire. Today, more and more of our clients are looking for risk assessments, method statements and engineering design and rightly so but someone has to pay for this. But if I compare competitor's hire rates for cranes below 120 tonnes today to those in 1990, they are exactly the same."

"In the 1990's the average age of crane hire fleets might have been 15 to 20 years - today I believe you are looking at five to six years. The cranes are more sophisticated and cost a lot more to purchase. On top of this we have engineering



Offshore wind construction Barrow

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departments and qualified operators that have to be trained on each unit. It is amazing how companies put cranes out at the same rates as 22 years ago and include everything that the client requires. I would warn the estimators at large companies to be very careful what rates they put in their tenders for work commencing in 2014/16 because the rates that they are being quoted today are not sustainable. The rates we are hearing being quoted for cranes that are only 5 to 8 years old by some companies are 0.5 to 0.8 of one percent per month of the cost of new equipment. Where are these companies going? Rates have recently slipped even further. We had a big contract for three years that came back for re-pricing and we lost it by a substantial amount we were not prepared to cut our rates and hold them fixed for a three year period. It is nice to have contracts like this but they must be to both companies advantage and be sustainable."

"Ultimately there will not be a crane rental industry for cranes under 120 tonnes capacity unless the rates improve. Unless rental companies look at the return on investment, there will simply not be the money to reinvest in equipment. We can get more for an operator than we can for a 50 or 80 tonne capacity crane. Apart from what we have currently on order, we won't be buying any more cranes before July or August next year, because I cannot see any big contracts - everything is slipping back. The Olympics was good for Weldex we had 32 cranes on the site. I am told that contracts like the Liverpool and Mersey Gateway and other large contracts are slipping back or being delayed. We have won some very

good contracts that start early in 2013 for large cranes and SPMT's that will also require smaller cranes for back up. But we do not see many contracts for the smaller units.

"We are buying more SPMTs - another 38 axles - with three LR 11350s we also need to be able to move very heavy loads, and it is more cost effective to have your own equipment. Currently we can move up to 3,000 tonnes. We may also be looking at some 80-100 tonne and 130-160 tonne crawlers for delivery late 2013."

Financial involvement

McGilvray is in no doubt that more financial investors will become involved in crane rental companies. "Sarens received around €100 million investment from Waterland Private Equity last year and Ainscough has been acquired by Goldman Sachs and TPG. I can see that there will be a reduction in the numbers of crane rental companies - through companies amalgamating and some ceasing to trade which in turn should improve the market and give contractors what they require in safety and engineering advice - which in turn will push the rates up. We are not in talks with anyone at the moment but have not closed our eyes completely to this. Ultimately it would be good for the industry."

"There is too much equipment at the smaller capacity end of the market - hirers have to stop cutting rates as they are not sustainable and this is not helping the market or allowing for further investment to be made. The manufacturers are not helping things by offering poor trade in prices for used equipment at times it seems that they have no faith in their product lasting more than 10 years. On the other hand there does



Belmarsh Prison, London



seem to be a demand from other end users. When I first bought the Sumitomos I stood them for about seven months because I was not getting the rates I wanted. Once one went out the rest followed as people saw the benefits."

"There has also been a shortage of new cranes between 600 and 1,200 tonnes. The 750 tonne LR1750 is not much better than a 600 tonner when looking at the load charts, so it's good to see a new Liebherr 1,000 tonner being launched at Bauma and I believe that Terex is also looking at reintroducing the CC5800 with the same capacity. An awful lot of contracts haven't got the space to set up a 1,200 tonner, the 900-1,000 tonner is what's required which is why we are asking the manufacturers for some new units of this capacity."

Weldex facilities

Although Weldex has global coverage it has its head office in Inverness with a depot in Alfreton, Derbyshire. The cranes were moved south from Scotland when the work in the oil yards ceased. Over the last 10 years or so the company has had little work in Scotland and it is only now that activity in the area is picking up, with contracts at Downreay, Shetland, Orkney, Nigg and the Forth Road Bridge and

others that it is changing.

"Company revenues in 2011 were around £28 million with an £8 million bottom line profit which was inline with expectations. Now the Olympics are over we are looking at renewable energy and infrastructure projects, such as power stations to replace stadium construction. I predict that there will be a lull in work up to 2013/2014 then four years of growth with renewable energy, power stations and decommissioning which will be massive. A lot of work that should have started last year in the UK has been put on the backburner perhaps starting in 2013/4/5."

The future...

"Getting young people into the industry is a must - unfortunately we are different to the mobile rental companies in that because our cranes are mainly out on sites it is more difficult to train operators. We are currently in discussion with the Enterprise company about setting up a training school which we will probably open in the Nigg Energy Park to train Crawler Crane, Reach Stacker, and SPMT Operators and Riggers. We recently put an advert in the Press for trainee operators and we had in excess of 300 applicants so this is very encouraging for the future."



An LR 11350 P Boom blade installation

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