

# Popular but still unknown

Given the growing numbers of spider and small tracked cranes in Europe, and particularly the UK, you would have thought that most potential users would be aware of them and their benefits. However, many in the sector compare its development with the powered access market of 20 years ago, very much in its infancy.

The spider crane market worldwide is dominated by two Japanese manufacturers - Maeda and Unic - and although others such as Italian company Jekko are working hard to win a slice, the main two still dominate.

Perhaps mini crane development will mirror mini excavators? Throughout the 1980s, Kubota was the dominant player (with more than 70 percent of the market for many years) before every manufacturer and his dog decided to build a mini and prices tumbled as unit sales increased dramatically. Mini cranes will never be as popular as mini excavators of course, but there is a similar driving force behind their increasing numbers - manual handling. The growth of the mini excavator was based on increased speed and reduced costs. One small machine could easily replace a gang of men with spades, providing huge time and cost savings.

The Manual Handling regulations - coupled with employers' liability and the UK's tick-box mentality - are starting to force companies into looking at mechanised lifting solutions in the same way that the Working At Height Regulations are driving the smaller, push around lifts and access platforms.

Everyone knows that to lift a 10 tonne load there is no option but to hire in a sizeable mobile crane. Perhaps this is why mobile crane rental companies tend to 'sit back' and wait for the phone to ring -

there is no alternative and it is all about being the first choice over others. But what about smaller lifts such as glazing, installing escalators or erecting steelwork inside a building? Manual handling and the use of a traditional 'block and tackle' used to the norm, but are becoming more frowned upon as safety and efficiency move to the fore. However many contractors still employ the time consuming and risky manual method or use a large crane from a distance. Why? Probably because they are still unaware or wary of the alternatives, the mini - spider, tracked or pick and carry - crane.

Mini cranes have only just scratched the surface outside of Japan and there is still huge potential as more and more realise the benefits that can be had in terms of speed, safety and cost. And because of this, rental companies still have to spend time and effort to sell the concept to convince a customer and get the hire. The better access companies have been selling on this basis since the start and will continue to do so for many more years to come. The crane guys don't - everyone knows you need a crane to lift a heavy load that is not on a pallet.

The choice of equipment available to lift small or light loads is growing all the time. The major spider crane manufacturers offer machines with overall widths of just 600mm, that are capable of lifting a tonne or more with a boom length of 5.5 metres and more. At the other end

C&a spider cranes



of the scale a six tonne model on a 1.8 metre wide crane can boast more than 19 metres of boom. Their compact dimensions and gradeability means that they are often able to gain access to the tightest areas upstairs or down to carry out the lift, reducing disruption, congestion and the costs and road closures associated with larger AT cranes. Mini crawler cranes offer a useful pick & carry option and although not as compact as the spiders when travelling, their lack of stabilisers results in a much smaller working footprint.

The growing awareness of small cranes has also given a boost to the smaller pick and carry crane which is certainly enjoying a revival, particularly in the two tonne capacity sector.

The other major benefit of the mini crane to a rental company is that the returns remain good - especially when compared to run of the mill access equipment. Whether this continues depends on the business sense and attitude of the increasing number of suppliers in the market. The mini excavator model is not one to follow. Thankfully mini cranes tend to work inside or in places where they cannot be seen from the road so the worst type of salesmanship... the stop off and 'I can do it cheaper syndrome' is less prevalent. Add to this the incredible cost savings that a contractor can achieve over conventional cranes and it is still a win win situation.



# Testing, testing...

For almost 30 years, JT Crane Services has kept a low profile carrying out crane testing and repair service largely working for major hirers and manufacturers. Since starting its spider crane hire fleet in 2006, it has changed its ways but has continued to make use of its specialist lifting experience and knowledge.

John Taylor started the family company in 1981 working as a subcontractor to major manufacturers such as Demag, Liebherr and Grove. He and his wife Penny ran the business with son Russell joining in 1987 straight from school and daughter Julie in 2001. Penny passed away in 2003 and John is still active in the major repair business, while Russell gradually took over the running of the company as he gained more and more crane experience from his father. The company is based in sizeable premises on the outskirts of Great Grandsden in Bedfordshire.

"A major part of the business is still testing mobile cranes, carrying out F96 four yearly and proof testing after major repairs etc," says Russell. "We have 650 tonnes of calibrated weights and the only 650 tonne test cradle in the UK, allowing us to test pretty much anything even 1,000 tonners. We have contracts with the major hirers and still do a small amount for manufacturers."

The subcontract work decreased significantly when its major client, Demag, was acquired by Terex in

2002 and stopped using independents. While this caused some difficulties one benefit was that it could work directly for end customers without the 'manufacturer's mark-up'.

"It is funny - we have always been involved with large All Terrain and crawler cranes - yet with the spiders we are at the opposite end of the size spectrum. I saw their potential in 2005 when we were looking for an income stream that wasn't so 'hands on' and with the introduction of the manual handling regulations the lifting market was set to change."

"Russell knows cranes inside out and has an eye for innovative ideas and equipment," adds Julie. "We looked into taking on the agency for an Italian crane but with more research decided the best machines were Meada and Unic."

The first cranes, purchased in 2006, were two Unic 295s and the fleet now includes 295s, 376s, four 506 and a 706.

"I will not have the 094 (or the Maeda 074) in the fleet, because I think all cranes - even those with less than one tonne capacity - should be fitted with an SLI,



Julie and Russell Taylor

This Unic 706 was able to track along the footpath to access the lock gates.



particularly if it is for hire," says Russell. "In my opinion, there is nothing to compete with the Unic 295 at the moment - the Maeda 285 is good but being 150mm wider, access is just a little more difficult. The Unic 376 and Maeda 305 are similar; the Unic 506 competes with the Maeda 405 which is a better, stronger machine. We bought the 506s because the Maeda wasn't available at the time but it will be a Maeda 405 next time."

"Our speciality is on the lifting side," says Julie. "We therefore haven't got into glass handling, but concentrate on solving difficult lifts. One job at the Addenbrooke Hospital, Cambridge required a machine in an enclosed courtyard. The contractor was going to block the main road and use a fully rigged 500 tonne mobile crane to lift a couple of tonnes over the building," says Russell. "I went to see the job and managed to get a 506 and 706 through a tunnel and then used the 706 to lift the 506 onto a lower roof which then serviced the project without any disruption as well as saving a lot of money."

"In the early days competition for jobs and rates was limited, with more mini cranes available the rates are now coming under pressure. Many new rental companies have little crane or lifting expertise and can only use rates to win business," said Russell. "The 706 is a very popular, it cost us around £80,000 when we bought it but now with

the exchange rate, a new one is 50 percent more, yet the rates are probably 25 percent lower! The business has been hit by the recession, although the crane repair and testing business is still good."

"All our spiders go out with a set of outrigger mats and tested crane specific chains," says Russell. "We also see the importance of environmental issues and have designed and developed a catalytic converter that is a straight swap for the standard exhaust. All of our Unics have the cat and a baffle to reduce the noise and over the next few months, it will be offered to other Unic users. With the cat and particulate filter you can run the machine in an enclosed space."



Two mini cranes at Addenbrooke Hospital

Most of our cranes have the AC option but the cat satisfies the paperwork required to get cranes on site - main contractors like to know it is 'green'."

"We are currently looking to develop new premises and streamline the business, but will continue to grow steadily by specialising in difficult jobs that need lifting experience and knowledge."





# The one and only...

There is nothing more frustrating than needing a machine for a specific task but finding out that one doesn't exist. Mark Stevens managing director of Devon-based agricultural and plant hire services company Cropmech was in that position - but is now a happy man. Mark Darwin visited the company to take a look at its new addition - the Giraf Track - in action.

The requirements were simple - a machine that can travel over bad terrain, has a platform that can lift several men and tools but can also lift objects weighing several tonnes. But does such a machine exist? Now it does with the introduction of the Giraf Track crawler mounted boom lift - a combination of a Caterpillar excavator undercarriage and a Merlo telehandler boom.

"I regularly scanned the internet looking for a machine that satisfied our needs, several met two of the three requirements but there was absolutely nothing that exactly fitted the bill," says Stevens.

Stevens founded Cropmech as a general agricultural contractor, mainly drilling and spraying, in 1987. This work led to an opportunity to take on a share farm and he now runs a 1,300 acre farm which is also the base for his expanding contracting and plant hire business.

With several Merlo telehandlers in its hire fleet, Cropmech started working for Western Power carrying out work on the larger power line



Mark Stevens

poles located in areas inaccessible to its own equipment - across a few fields, in woods or on the side of a hill.

"I saw an opportunity for quite a bit of work with Western Power but a telehandler cannot be used legally with a man-basket unless it has controls in the basket, so we purchased a Merlo fold-out, rotating man-basket and it was an immediate success. The fact that we can wrap the basket around the back of the pole makes access and repair quicker and easier. The Merlo and basket is a great bit of kit and we now have four baskets and four 16 and 17 metre Merlo telehandlers which are generally busy."



Cropmech used the Giraf Track to erect the roof of this building at one of its yards



C&a spider cranes

With a four tonne lift, the telehandlers are used as both crane and platform on the same job. Initially the two tonne 'H' poles are assembled on the ground before being lifted using a short jib attachment and carried to their final location. Once the structure is fixed, a platform replaces the jib and the installation is finished with the re-fitting of the cables.

When Cropmech is called out to replace a pole it is often an emergency situation and has to be done as quickly as possible. Not getting to the pole because of the terrain or weather is not an option. However when the ground is very soft or terrain very difficult the 12 tonne telehandlers struggle to reach some poles. They also make a lot of mess cutting up the site or they have to be dragged or winched in and out.

"If the ground conditions are good and not too steep, the telehandler is used but the poor weather and inaccessible poles can be a problem," says Stevens. "There have been times when Western Power had to rent a temporary tracked road (around £14k) to provide access across two fields yet we were only on the job a few hours."

"The logical step was to put tracks on a telehandler but I was unable to find anything suitable on the market. I then spotted an article (in C&A) about a prototype machine built in Belgium - the Giraf Track - by TDL (Testcentrum De Lille) so I rang them, to be told that it was just starting to build a unit. We needed the unit with rubber pads, a cab and a blade which is used to level up the machine on steep ground, so a few modifications were needed to their original design."

The Giraf Track can work on slopes of up to 10 degrees, (while a telehandler is usually limited to five degrees) and then is able to level a further 14 degrees using the blade. It can lift 3.8 tonnes and its 18 tonne weight makes it a very stable machine and can easily handle lifting the larger H poles and even the 3.5 tonne concrete panels used in agricultural buildings."

Cropmech has an 800kg capacity and a 300kg capacity basket as well as a basket on a short parallel arm jib that gives it up to 20 metres reach which is useful for pylon work. Other attachments which are all interchangeable with the Merlo telehandlers include pallet forks, bucket, a long truss jib, a short standard jib with swivel hook for heavier loads and a winch.

The cab, made specifically for this machine, is fitted with a heater that is independent of the engine, keeping the operator warm on jobs which can last though the night.







The remote control locks into a cradle to drive the machine

Cropmech also wanted full remote control to operate the machine from the basket, the same control unit locks into a cradle in the cab to provide the all the lower controls. An electric auxiliary power unit provides emergency power.

Cropmech took delivery of the machine last December, but unfortunately the designated and trained operator was taken ill and will be unable to work for at least six months, so the company has had to employ another operator who is now fully trained. "Initially classifying the machine was a bit of a problem from a training point of view," said Stevens. "However as it has a cab it has been accepted as a Roto telehandler with tracks."

"The general feedback is fantastic,"

he said, "from a recent one day demonstration/hire we obtained a three week contract. It is all very positive. Rates are £500 a day, £2,500 per week. There is the possibility of an eight month contract for the machine and if this materialises, we will buy another immediately."

The unit is currently working throughout the South West up to Bristol, although Western Power has work for it in Wales and there are enquires from as far away as Oxfordshire.

"Overall I am very happy with the quality and performance of the machine. The only slightly disappointing feature is its forward speed which should have been 4.5kph but this was less than 2kph when delivered. Although it has been improved to 2.6kph it still could do with being a bit quicker," he says. "Because of the narrow roads in Cornwall and Devon we often have to unload the machine a fair distance from the work site so travel speed is important."

"If there are any other additions to the range, I would like something a bit lighter that we could transport on a rigid lorry rather than needing an artic. A longer boomed machine would also be useful but TDL has said that the unit would have to be totally redesigned so we may have to wait a while before this is launched."



The Giraf Track has a maximum working height of 20 metres



Giraf Track with 7 metre to 13 metre 'giga-basket' being used for horizontal panel installation.

## Some additional attachments

### Giga basket

Four basket options are currently available including the seven metre long extending to 13 metre 'giga' basket - developed to improve the safety, speed and efficiency of erecting fast-track industrial buildings in Europe. This is more than double the length of Merlo's longest basket and made possible by the stability of the Giraf Track carrier. Despite its length, the basket weighs 1,100kg, giving 500kg capacity for carrying sheet materials, plus 250kg 'mobile' load for personnel and tools.

The platform can be rotated a full 180 degrees, reducing the machine width to just under three metres, allowing it for example, to be driven down the typical four metre corridor width between container stacks in dockyards.



A switch to the 4.5 metre basket to install sandwich insulation prior to installing exterior vertical panels with the help of a 500kg winch.

### Extending 4.5m basket with winch

Developed to complement the 13 metre basket for lightweight panel building applications, the 2.3 metre extending to 4.5 metre basket (a 2.5 metre fixed option also available) has a 500kg capacity, removable overhead winch as well as providing 300kg payload for equipment and personnel.

The payload and extended length provide good capacity for carrying bulky but relatively light loads (such as insulation), while the winch can be used to hoist items such as external vertical cladding panels into position.

## Other attachments

A fixed 200kg capacity, 2.5 metre long platform fitted with a 550kg capacity Palfinger loader crane, is aimed at glass and heavy panel installation. The unit is also useful for earth anchoring applications on railways and motorways.

The Giraf Track also gets more out of the Merlo 9 and 11 metre Space boom work platform attachment. Conventional telehandlers need to have their outriggers deployed to provide the required stability. In contrast, the Giraf Track can operate stabiliser-free saving the time of repeatedly resetting outriggers for each new work position.



Glass panes and other heavy materials can be lifted by the 550kg telescopic overhead Palfinger lorry crane on this 2.5 metre long Giraf Track basket.



Attaching to short standard jib.



The Giraf Track can lift up to 3.8 tonnes.



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# London A-Z

Coppard Plant Hire has an unusual and diverse range of equipment from Access to Zero tail swing excavators with everything in between. The recent expansion of its crane and glass lifting division created one of largest spider crane fleets in the country and has put the company firmly on the 'crane' map. Mark Darwin spoke to Joby Coppard and John Wilding about cranes, access and training.

Very few rental companies have a product portfolio as diverse as Coppard Plant Hire. Formed 35 years ago by David Coppard (who still runs the business) the company has grown from the original Landrover, compressor and small tools 'one man band' based in Crowborough, East Sussex (now head office) into a multi-million company with some 6,000 items of equipment along with 49 staff in three main divisions - concrete, civil engineering and plant hire.

David's son, Joby, is plant manager. "The two main divisions - civil engineering and plant hire - each account for about 40 percent of our turnover with the concrete division - started six years ago - making up the rest," says Coppard. "Acquisitions over recent years

included an aggregate and haulage company Jules Sands in 1995 (the premises also housing Coppard's Godstone depot) and more recently the small tool company Ree-Even in Brighton. Coverage for the civil engineering and concrete divisions is primarily in the South East, but for the mini cranes and glass lifters we cover the whole country."

It was about six years ago that the Coppards, looking to expand the company, bought its first mini crane - a Unic 295. The good returns (Coppard does not measure utilisation - just the return on each item of equipment) obtained resulted in further purchases with a large expansion in the last three and a half years. Current mini crane numbers include more than 20 Unics (from the 094 through to the 095, 376, 506



and the largest spider crane, the six tonne 706) a couple of Maedas (MC104 and MC285) and three Valla 20E pick and carry cranes.

### Specialist lifting machines

Coppard also runs several specialist 'lifting machines' that it had built including two Marooka tracked dumper-based 'cranes' - one a Marooka MST 1000 fitted with a Hiab 071 loader crane capable of lifting 7.5 tonnes at a metre, the other a larger MST2200 fitted with an Amco VR30 telescopic boom which has a maximum lift capacity of 31 tonnes. It also has two crawler-based, 10 metre working height platforms.

Only last month Coppard entered into a tie-up with Valla distributor Peter Hird - which has the largest Valla rental fleet in the UK - to rent its cranes in the South East. As well as its own 20E cranes, it now has a 'floating stock' of six 20E machines in its yard from Hird for use in the region.

"The main problem with renting this type of crane at a distance is the transport costs," says Alan Hemmings, managing director of Peter Hird. "By forming this reciprocal arrangement we can offer cost effective rentals throughout the South East through Coppard. So if a customer rings Hird for a machine in the London area, Coppard will deliver to site as a subcontractor for Hird and vice versa, it makes the whole process much more efficient."

"We are looking at this type of arrangement with other companies around the UK," adds Hemmings. "It is far more difficult to purchase equipment at the moment, so this will make the hire of Valla cranes

more cost effective and hopefully more appealing."

Peter Hird, the Valla distributor for the UK, only entered the hire market after ordering 12 cranes for a company working on the Canary Wharf project in London which began in the late 1980's. With the company (HSS) only taking one machine and the rest already in the UK, Hird was 'forced' into entering



Coppard's 10 metre platform on a Hitachi tracked chassis



Lifting in a spider platform at the Westfield Shopping Centre, Shepherds Bush

the hire market. Now its fleet includes pick and carry cranes up to 25 tonnes as well as a fleet of six Jekko mini cranes.

"We purchased two Valla 20E cranes from Peter Hird at the end of last year following a request from an existing customer for a specific contract and the relationship grew from there. This arrangement has already produced three hires and we see it as a benefit to both companies."



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"There are a lot of companies that hire spider cranes, a few that hire glass lifters and many more with access platforms but few companies do it all. The diverse range of equipment we have makes us a true 'one stop shop' for all access and lifting needs. So if you

and then a 19 metre Hinowa. The general access fleet now numbers 45 units and includes several 13 metre CTE spiders and a 23 metre Teupen along with a number of Niftylift Height Rider booms and some scissors.



Just a few of Coppard's lifting equipment at its Godstone depot

are an architectural/structural glazier for example, nine times out of ten you will need a scissor lift, boomlift, mini crane and glass lifter - the whole package can be done through us - either under CPA or contract lift conditions - and because we run our own transport we can put the platform, crane and glass lifter all on one truck, which means reduced transport costs, one purchase order and one invoice, saving on back office costs as well. We also run forklifts and telehandlers from the Manitou Bugiscope up to the 17 metre MT1740."

Coppard does not own mobile or larger crawler cranes but it does have a tie up with a local company - Preston Crane Hire - for All Terrains up to 50 tonnes. It also has a 32 metre Comedil self erecting tower crane. On the access side it has offered spider lifts for almost 10 years starting with an Octopussy

"Our aim is to satisfy customer needs and stop them going elsewhere," says Coppard. "If you do it all, they stay with you. Our current customer-base totals about 6,000 from the multi-national to the one-man-band down the road."



Joby Coppard

Glass handling equipment grew out of the spider crane expansion and ranges from the vacuum '4 in line' and the MRT range up to 600kg units, a 250kg capacity Geko glass and window handling robot, Genie Superlift SLK25 and a Glasboy GK500 lifter.

"The mini cranes are finding new markets and uses on site every day, for example the cranes are much quicker, more efficient and safer than struggling with block and tackle to erect low level steelwork," says Coppard.

"We have always tried to be totally self-sufficient and we own all our

Working at Kings Cross for Balfour Beatty



equipment and depots. We are a buying company rather than a cross hirer and we do have the cash to buy whatever is needed."

The Group spent around £1.5 million on new equipment last year and has no specific renewal policy but most general equipment is replaced after four or five years. Specialist equipment such as the mini cranes should last a little longer.

"The oldest mini is now about 5 years old and will go on a few more years but we are looking at like for like replacements," says Coppard. "We have decided to buy Unic cranes which is a combination of customer demand and familiarity - our engineers have worked on them for several

years. Although we do have a very varied fleet, it makes life easier with one brand of equipment. In the pick and carry market we have chosen Valla and customers want the machines with the Tirfor Minifor TR50 winches which we wire into the SLI system."

### Rental rates?

"Surprisingly the hire rates for spider cranes and glasslifters are good and have held up as have the rates for the Genie Superlift and Glasboy," says Coppard. "We have our hire rates and a set strategy on what we want to achieve. Whilst we would not have achieved the level of success without being competitive, we are not giving our cranes away - far from it."

Vacuum lifters working at the Cross Harbour Project in the Isle of Dogs





Coppard Plant Hire's desire to be self sufficient in all that it does has led to another recent development - training.

"When putting our operators through the A66 training we met trainer Ian Morphew who also has a contract lifting and training business IM Contract Lifting and Training Solutions. One thing led to another and Ian came onboard doing all our method statements and managing our contract lifts. One of the contracts he looked after was the tricky King Cross job for Balfour Beatty and the relationship blossomed from there to the point that a new training company has been formed by Ian and his wife Michaela - MI Construction Training - that is based at our Godstone depot with access to all the

equipment in the yard."

MI recently achieved its CPCSA accreditation and is just waiting for the final red tape to be completed before it is fully up and running offering a wide variety of courses including A66 A to D as well as training on other cranes including mobiles, tower and self erectors. The company works very closely with Coppard providing all its in-house training as well as offering training to those hiring the equipment.

"These latest developments - the mini cranes, tie up with Valla and the association with IM Lifting and Training - all help us expand the scope of the company," said Coppard. "By keeping more in-house and within our control, we can provide a better, more cost-effective service to customers."



Micaela Morphew



Alan Hemmings (L) with John Wilding



## Houston - we don't have a problem

A Maeda MC405-C spider crane has been getting into tight spots on top of the 30 storey Discovery tower office construction project in Houston, Texas, erecting a three storey, steel turbine structure. Inman Texas Co supplied the crane to specialist ornamental metalwork contractor Milestone Metals to erect the steel structure which will house turbines providing electricity for the building. The 81,000 square metre office building should be ready for occupancy in the second quarter of 2010.

The crane was lifted on to the roof by a tower crane and then tracked into position. Duties included lifting beams and other materials while erecting structures on the roof. The Maeda was able to erect the steel frame without using the tower crane which saves both idle time and man hours to complete this part of the project.

"Using the Maeda means we were able to have more crews installing

steel," said Bob Macey, vice president of Milestone Metals.

"We have one crew using a tower crane while the Maeda can do the infill pieces, which speeds up productivity."

With a maximum capacity of 3.83 tonnes, the MC405-C has lifted most of the smaller, one to 1.5 tonne, loads, while the tower crane takes care of the heavier lifts. The spider crane has a maximum lift height of 16.8 metres and 360 degree slew.

"It's been real easy for us to move the crane around the rooftop," says Macey. "You get into places that you can't with the larger crane and the operator is in direct view and contact with the riggers and steel workers which also adds to the overall safety. The crane has two travel speeds and an electric motor option so it also can be used for indoor applications."

As with all Maeda cranes the MC405 is ASME B30.5 compliant, as required by OSHA, and has EPA compliant engine.