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# Mastclimber movements

For many years now the mastclimber market - particularly in those countries where usage is already significant such as the Netherlands, Scandinavia, the UK and Eastern Europe, as well as North America and Australia - has been steady. However, there appears to have been a recent surge in activity which may indicate changes are afoot that might shake-up the sector.

Mastclimbers may be the 'best kept secret' in the working at height market, but is this about to change? The high-profile Grenfell Tower fire disaster in London last June and the subsequent, on-going, investigation into 'combustible cladding' which is likely to require its replacement on hundreds or even thousands of buildings may just catapult the mastclimber into the forefront of public awareness.

The mastclimber is almost certainly the most cost-effective equipment for carrying out work on the façades of tall tower blocks with numerous advantages such as speed and safety over traditional scaffolding especially when working above four or five storeys high.

### What is a mastclimber?

Put simply a mastclimber is a long platform that climbs a modular mast, to move men and materials to the work area - most commonly up the external elevation of a building. Depending on the length of the deck or the platform capacity required it will use one or two masts. In Europe most are AC electric powered rack

and pinion drive, while in North America the heavier duty models tend to be more popular, with gas or diesel power packs and latch or ratchet-type climbing mechanisms. As most older buildings are regular shaped with straight facades and vertical elevations, they are ideal for the basic mastclimber, however they can be adapted to work around all manner of corners, balconies, curves and round structures. They can also be inclined at a variety of angles or even curved for applications such as cooling towers.

### Who makes them?

Mastclimbers are now produced all over the world with manufacturers - including Alimak Hek, Maber, Alba, Electroelsa, Camac, Geda, Stros, Böcker and Scanclimber in Europe, Klimmer, Fraco and Hydro Mobile in North America and GJJ, Dingli and TDT (Wuxi Huake Machinery Equipment) and others in China. A few years ago GJJ - with the help of the Chinese government - invested in a new factory with the capacity to produce around 5,000 mastclimbers a year. Chairman Wang Hua Long forecast that the mastclimbing market in China could reach the eye-watering total of 200,000 units! Adastra Access in the UK is one of the few European companies so far to purchase GJJ and TDT machines and says that it has been impressed with the quality and reliability of the units. (See Adastra profile on page 20)

### Mastclimber vs scaffolding?

Because each building contract is different, it is difficult to have hard and fast rules on whether to use a mastclimber or a particular type of scaffolding. The general consensus is that the higher you go the greater



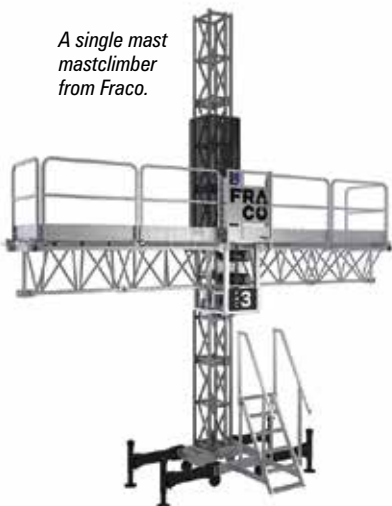
A twin masted, twin platform mastclimber



the benefit of using a mastclimber, with five storeys about the break point. A twin masted mastclimber typically has a maximum deck length of almost 50 metres and single masts up to 20 metres. Construction time is also a factor with contracts of more than 20 weeks tilting the economics back towards traditional scaffolding. But it should be remembered that higher scaffolds require a hoist and operator to move people and materials to various levels, and this needs factoring into the costings as well as a method of distributing materials once delivered to the correct floor.

The building's aesthetics or security may also be a consideration, with the more discrete mastclimber often preferred, particularly when refurbishing residential blocks or historic buildings. When not in use the platforms can be parked out of sight and the slim vertical masts often difficult to see against the elevations. One of the major advantages however is the reduced number of anchor points required, saving on remedial work at the end of the job. And if space on the ground is limited the mastclimber can be mounted on a cantilevered gallows bracket on an upper floor.

A single mast mastclimber from Fraco.



The higher you go the greater the benefits of using a mastclimber





Passenger goods hoists at The Scalpel in London

**The downsides**

As with any product there are some negatives, but they are few. One argument is that the number of levels for simultaneous work is limited compared to a large façade scaffold, while another is that should a drive motor fail, work comes to a standstill. And finally there is the price/cost. There are however powerful arguments such as the efficiency benefits more than offsetting the inability to have tradesmen working at multiple heights, while split platforms, multiple masts and double deck mastclimbers can also offset this apparent disadvantage. The motor breakdown argument also applies to the hoists that feed a scaffold, which also require regular modifications and changes as the work progresses - all of which depends on good service from the supplier.

As to the cost consideration, pressure on rental rates - due in many cases to the direct competition with traditional tube and fitting scaffolding - has kept prices very keen in most markets, and a quick calculation will usually show that a mastclimber is actually cheaper on many jobs.

**New standard**

A new mastclimber British Standard - BS 7981 - has been published, updating the previous 10 year old standard. The new version covers risk assessments, rescue plans and familiarisation and includes example inspection, maintenance and thorough examination checklists, a simplification of the terms and responsibilities relating to Mast Climbing Work Platform operations and specific training requirements.

**Market movements and acquisitions**

It is likely that demand for mastclimbers and hoists - helped

by the need to carry out the replacement of 'fire risk' cladding on high rise tower blocks - has been at the heart of increased interest and activity in the sector. Last November private equity firm Equistone Partners Europe acquired a majority stake in UK mastclimber rental company BFT Mastclimbing. Founded in 1997 as a façade scaffold contractor under the name Boards, Fittings & Tubes, the company started switching to mastclimbers in 2005 and now runs a fleet of more than 650 mastclimbing work platforms - most of them from Spanish manufacturer Alba with capacities up to 5,000kg.

Earlier this year Luxembourg-based suspended access company Tractel acquired Finnish mastclimber manufacturer Scanclimber which manufactures in Poland and employs 225. As well as acquiring Scanclimber's rack and pinion technology and mastclimber products, Tractel will benefit from Scanclimber's Nordic customer/dealer base and a local management team. Tractel was itself acquired by private equity firm Cinven in October 2015 and previously added safety product company Knot to the business.

"Scanclimber represents a strategic and synergistic move for Tractel. The transaction offers the opportunity to grow in the attractive mastclimbing work platform and the rack and pinion hoist segments," said Tractel chief executive Philippe Gastineau.

**New Scanclimber platform**

Just prior to the acquisition Scanclimber unveiled its new 10 tonne SC10000 Centum heavy duty mastclimber. On a single mast the Centum has a maximum capacity of 5,900kg with a platform length of 4.1 metres, a 24 percent increase from the company's previously big capacity platform, the SC8000.



The Scanclimber SC8000 has been eclipsed by the 10 tonne SC10000 Centum.

Maximum platform length on a single mast is 20 metres. In twin platform configuration the Centum can lift its maximum 10 tonne capacity with a platform length of up to 15.8 metres - up 20 percent on the SC8000. Maximum platform length in this configuration is 48.6 metres and the twin motor lift speed is seven metres a minute.

The new platform is aimed at heavy duty façade work such as brick laying and façade and window element installation for high rise construction projects. If necessary, the platform can be weather protected and equipped with wide range of extensions and lifting arms.

**Alimak into Australia and Denmark**

Tractel's acquisition of Scanclimber follows mastclimber and hoist specialist Alimak's move into the suspended and permanent platform installation market last year, when it acquired Australian permanent façade access company Façade Access and Denmark's Avanti Wind Systems. Avanti Wind is a leading provider of rack and pinion and ladder type service elevators,

ladders and fall arrest equipment for wind turbines with more than 30,000 units installed. Founded as a ladder manufacturer in 1885, it operates in nine countries with six production facilities in Denmark, Spain, China, US and Brazil.

**Next Generation Alimak Hek MC450**

Alimak Hek has also launched its 'next generation' MC 450 mastclimber to run on its 450 mast section. The new MC 450 uses a Direct On Line (DOL) control system, rather than the more costly Variable Frequency Control (VFC) which feeds power to the motor slowly for a soft start and soft stop, while saving power during start stop operation with high power motors.

The 450 mast section can be used for the MCM mastclimber and TPM transport platform system to a height of 200 metres. The masts can also be used for the Alimak single and twin passenger hoist range with cars from two to 3.2 metres with up to 2,000kg. Alimak claims to have sold more than 400 MC 450 units around the world since its original launch last year.



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A typical single mast mastclimber application

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# Heavy duty pays off

Around seven years ago we profiled Walsall, UK-based mastclimber company Adastra Access (C&A 13.8). In order to gauge developments in the market since then, Mark Darwin paid a follow-up visit to the company, meeting with managing director Stephen McCaw.

Adastra was founded in 2000 by Peter Hoar who ran the business for several years before he was joined by 'mastclimber guru' Ken Goundrey and Kevin Hayes who left Sovereign Access after it was acquired by Harsco (SGB) in 2008. Hoar left the company a few years ago, leaving Goundrey and Hayes to run the business.

In 2010 they joined forces with Stephen McCaw - who had been working for Mastclimbers since the late 1990s - to set up and run a depot in Glasgow, Scotland.

"In the beginning, we had one installer and a subbie (subcontractor) squad," says McCaw. "Now in the Glasgow depot, we have 16 installers, two service engineers, a fabricator, a couple of contracts managers, a quantity surveyor, a sales director plus yard and admin staff. The business grew in the first few years by winning a lot of local authority work such as tower block refurbishments which had funding available during the recession."

"When we opened, the company fleet of around 250 units was split between head office and Glasgow, which was initially just a storage



Stephen McCaw

yard with no facility to service the machines. The drive units had to be sent to Walsall for servicing and modification. However, as the business grew to more than 400 units, the facilities improved and we now look after and modify the fleet in both depots, saving a huge amount in transport."

After running Glasgow for four years, McCaw became a director and took over as managing director from Goundrey in October 2016. Goundrey is now an executive director and is still actively involved full time in the business, splitting his time between head office and his home office. McCaw lives in Scotland working between Glasgow,



At One Bank Street, Canary Wharf, London Adastra is installing a mastclimber at an initial incline of 63 degrees

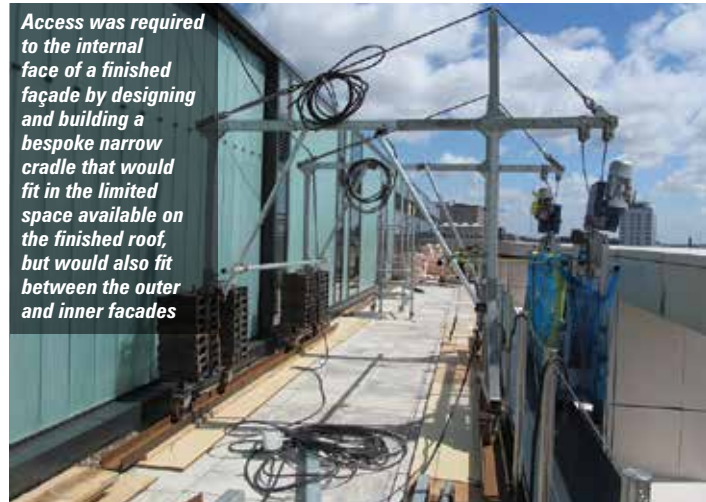
Ireland and Walsall depending on contracts and workload.

"Ken is very active in the business and it's great to have someone of his experience on hand with advice," said McCaw. "He visits China on a regular basis, ensuring fabrication quality is up to standard whilst progressing several other current projects, such as a system to remove the trailing platform cables which get snagged on the base units as this is one of the biggest complaints from customers. I still get onto site as much as I possibly can to meet the clients. This relationship building - coupled

with machine reliability, H&S awareness, attention to detail and the quality of our service - is the way we built up the business and results in a considerable amount of repeat business from satisfied clients."

The Glasgow depot covers as far south as Middlesbrough, England, as well as Northern Ireland, where it shares a yard with NI Scaffolding in Belfast. The remainder of the UK is serviced directly from Walsall.

The mastclimber fleet has grown to more than 400 units and has been joined by a fleet of 100 suspended platforms. Adastra has also created



Access was required to the internal face of a finished façade by designing and building a bespoke narrow cradle that would fit in the limited space available on the finished roof, but would also fit between the outer and inner facades



Glass Solutions used a mix of Adastra's standard mastclimbers and brand new narrow width machines for the Capitol Cinema project in Aberdeen



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The monorail system attached to mastclimbers on the Graphene building in Manchester

a specialist access division offering modified cradles, special lifting arms and monorail lifting systems which are very popular, particularly in London. "The unitised building system means that no access is required on the external face of the façade but takes up a considerable amount of crane time. Installing a monorail system to the building allows our clients to be self-sufficient."

"The Graphene building in Manchester is a good example of our monorail system in action but in this contract the monorails are attached to our mastclimbers rather than the building. This allowed the materials to be moved around site with no craneage. It was an incredibly tight site with no other means of access. Although not a unitised building it is a great example of materials being moved using the monorail and then fitted into position from the mastclimber with the monorail assisting."

**Passenger hoists**

At the end of last year Adastra Access was indirectly connected with the acquisition of Huddersfield-based Yorkshire Hoist when chairman and owner Eric Jones acquired the business. McCaw is quick to point out that it is a separate company. "Yorkshire Hoist is only related to us through

our chairman and operates as an independent business."

**Changes over the years**

"The actual mastclimber has changed little over the years, however awareness of the product and its capabilities has grown enormously. The Health & Safety Executive has been active in this area, issuing bulletins particularly to bricklayers, stating that the mastclimber is the best equipment as they can always work at the correct height without bending or reaching too much."

"There is also more competition with a couple of new companies entering the market. However, starting a mastclimber rental company from scratch requires a lot of outlay. But even more daunting is finding installers, as there are not enough of them in the sector."

Adastra has a training centre at its Walsall base and trains its own employees. Newly trained staff do not immediately become installers, it requires up to two years on-the-job experience and follow up training modules to achieve installer status, and the company never puts a team out without at least one member having a full installer card.

**Training**

"As far as I am aware there is only one other company in the UK that



Charles Henshaw & Son used Adastra Access mastclimbers to install the external façade on the Science Central Building in Newcastle however due to the size and weight it also used a monorail system



Adastra Access' Specialist Access Group designed this large corner cradle for the FK Group on a recent project in Manchester

has an in-house training instructor while we have two - director Kevin Hayes and now Mark Leonard who has been in the industry for 20 years. There can be problems with companies sending out inadequately trained people. User training involves a 20-minute induction on how to press the buttons to move the platform, but, in addition to this and the one day Demonstrator course, IPAF has introduced an Operator's course. This is a half day course and the successful personnel are issued with IPAF Operator's cards. We offer the course to all clients. All our direct employees who have contact with mastclimbers on site are trained to Demonstrator level (trainee installers). They then have on the job training, working with a full installer. Once they have adequate experience, they sit a final exam with an IPAF instructor who determines if they are up to the required level."

"Most mastclimber rental companies have two man installation teams, but we have introduced three man squads - an installer and two trainees - which is labour heavy and expensive in the short term but allows us to train twice the amount of people. If the work is straightforward then a demonstrator card may

be adequate, but more training or experience is needed for more complicated contracts and these are becoming more common. We also have three structural engineers and one draughtsman who design and check all aspects of the installation."

**Chinese products**

"There have been comments in the sector about the quality of Chinese mastclimbers, but we have carried out metallurgical tests and, in many instances, they are superior to European-built machines. The Mediterranean manufacturers' products tend to be lightweight and are not designed for the rigours of UK construction, neither can they handle the UK winters."

"Over the past few years we have invested heavily in new equipment and will be adding more in the next few months. Our fleet includes mainly GJJ machines, but also a mixture of Malmquist, Hek, Mastclimber Solutions AC13000 range, SAE and TDT. We made a decision a long time ago to go for heavy duty, higher quality machines and this appears to be paying off."



The monorail allowed materials to be moved around the Graphene building with no craneage



One Bank Street, Canary Wharf, London is a challenging project with platforms starting at level 4 and extending up to level 10, with the façade at an incline of 63 degrees then changing to 75 degrees



# Brogan continues to expand

UK specialist mastclimber and contract scaffolding company Brogan group has added more new equipment including two Stros Colossus passenger/goods hoists - claimed to be the largest hoist of its kind - and Gargantower common user tower systems for the construction of the Madison Tower in Canary Wharf, London. The first time these products have been used together.

The company says that demand for hoists and mastclimbers is increasing following years of slow uptake. The equipment - and hoists in particular - has helped boost revenues, with powered access volumes up 27 percent and an 11 percent increase from IPAF accredited training courses.

In 2017, Brogan rented out 217 hoists, erecting on average more than four a week. The company also purchased 44 new hoists, including the Colossus which is five metres long, 3.1 metres wide and 3.1 metres high. The unit can carry up to 40 passengers or 4,000kg, to a height of 350 metres at a lift speed of 40 metres a minute, ideal for larger high rise construction projects.

The hoist is currently being used with common user towers on the 53 storey Madison Tower project allowing contractors to transport large amounts of materials and personnel to various working heights. The combined system of common user towers and hoists for high-rise construction allows for faster and more efficient builds as lower floors can be fitted out, while the upper floors are still under construction.

Brogan has also expanded its service and fabrication facility near Cambridge, adding a further two acres, allowing for a mini factory 'production line' system of servicing machines as well as the fabrication of bespoke elements for hoists and mastclimbers designed in-house to meet the challenges of complex buildings.



*Brogan has added more equipment including two Stros Colossus passenger/goods hoists - claimed to be the largest hoist of its kind*



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