

# cranes & access

## MOBILE ACCESS TOWERS

### SUPPLEMENT

AN IN-DEPTH LOOK AT THE MOBILE ACCESS TOWER SECTOR BY CRANES & ACCESS IN COLLABORATION WITH PASMA

Choosing  
and using  
mobile towers

Tower  
training  
- what's  
involved?

Tower trends  
& developments

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# So what is PASMA?

Celebrating its 35th anniversary this year, PASMA, the Prefabricated Access Suppliers' and Manufacturers' Association, is the only trade body in the UK and Ireland dedicated exclusively to the mobile access tower industry.

Recognised and respected as the **natural authority and focus for towers**, it works closely with the HSE and other trade bodies and is the **premier provider of knowledge and information on tower safety, standards and best practice.**

When first founded in 1974 as the Prefabricated Aluminium Scaffold Manufacturers' Association, membership was limited to the major alloy tower manufacturers of the day, with the simple objective of promoting safe use and the interests of its members to the regulatory authorities. Then, in the early 1980s, the association developed and introduced its standard training course to help make the use of towers as safe and productive as possible.



In the late 1990s more stringent procedures for the PASMA standard training course were formalised and an audit regime introduced for training centres. The association also changed its name to better reflect its representation of manufacturers of both aluminium and fibreglass towers and new categories of membership such as hirer/dealers and training organisations. The wider membership base ensured that PASMA represented all sectors of the mobile access tower industry.

## Rapid growth and development

Now one of the most progressive and successful trade organisations in the access sector, PASMA has enjoyed significant growth in recent years through the knowledgeable and enthusiastic involvement of its 300 plus members. With an increasing

number of towers in daily use, PASMA is ensuring that industry standards rise in line with growing demand.

## PASMA training

Its professional training courses, both at standard and advanced levels, are now universally acknowledged as the industry yardstick. As a result, health and safety professionals increasingly specify the PASMA certificate of competence and training identity card as the only acceptable proof of competence as required by the Work at Height Regulations. PASMA trained 50,000 delegates in 2008 and that number looks certain to be exceeded this year.

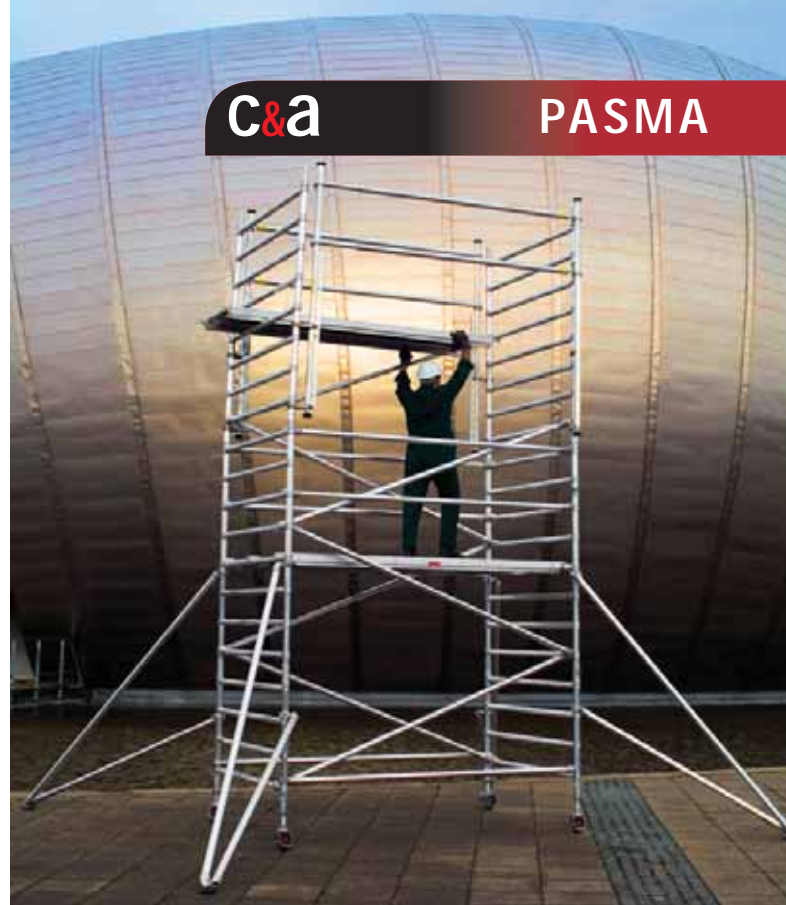


## Safety-related publications

The association's publications provide a wealth of information and guidance on all aspects of tower use. Produced by experts - people who know and understand towers and speak the language - they range from pocket cards and posters to DVD's, tower inspection records and technical/safety guidance notes. PASMA also publishes the Operator's Code of Practice, the bible of the industry, and its website [www.pasma.co.uk](http://www.pasma.co.uk) is an important focal point and resource for anyone connected with towers.

## Developing standards

A national and international contributor to the development and updating of standards for tower construction and use, PASMA's specialist committees meet regularly to advance tower techniques, technology and training for the benefit of users everywhere. As a founder member of the Access Industry Forum (AIF), the association



c&a

PASMA

is also actively involved in promoting best practice through conferences, exhibitions, seminars and workshops.

## Manufacturing members:

Companies who are licensed to manufacture mobile access towers to BS/EN 1004:2004 and which carry the current British Kitemark or equivalent, such as TUV, NF Mark, etc.

## Hirer dealers:

Members of the association who have, as a requirement of their membership, to use mobile access towers which carry the same approval marks and meet the same standards.

## Training members:

Full members of the association who have been audited and approved to deliver PASMA training courses.

## Associate members:

Managers, supervisors and health and safety professionals who wish to be

kept abreast of the latest tower news, trends and developments.

A new category of membership, hire/assembly, is currently being developed and is scheduled for launch shortly.

PASMA's open and inclusive membership policy is intended to encourage companies, both large and small, from every corner of the industry, to become members and help advance its agenda for better training, standards and best practice - thus promoting safe and efficient work at height.

## The products

PASMA members produce, rent or provide training on a wide range of products from the traditional aluminium mobile tower, to fibreglass and fully insulated towers, podium steps, bridges and modular walkways, to custom built access solutions often based on standard tower components.



PASMA members at 2009 AGM

# Choosing & Using Towers

When it comes to selecting equipment for work at height, employers are required to follow the hierarchy set out in the Work at Height Regulations 2005.

This begins with avoiding the need to work at height wherever and whenever possible, using appropriate equipment and safeguards where such work cannot be avoided and, where the possibility of a fall cannot be eliminated, using all possible means to minimise the distance and its consequences.

As more employers appreciate the productivity and safety benefits that mobile access towers can bring, the more familiar a sight they become in construction, building maintenance and facilities management as a means of providing an effective and safe means of access to work at height.

However, as with all types of access equipment, users must be satisfied that a tower is the most suitable piece of equipment for the job, that the right type of tower is selected and that it is assembled and used correctly.

There are a number of factors that must be taken into account when using mobile access towers. These include:

- The height to be reached.
- Any access restrictions such as width and headroom.
- The type of work activity, its duration and the time between tower movements.
- The climatic conditions.
- The condition and evenness of the ground.
- The shape and weight of any objects to be carried to the platform.
- The risk to people and vehicles in the immediate vicinity.
- The frequency that users will need to ascend/descend the tower.
- Any obstacles that might need to be bridged or overcome.

**Key choices to be made include:**

**Width** - is there space for a wide, double width tower or does

the work area require a narrow, single width tower? A wide tower can be built to a greater height before outriggers or counterweights are required and offers a larger work platform, while a narrow tower is ideal for working in confined areas such as stairwells and aisles.



*A narrow tower is ideal for confined areas*

**The frequency of movement** - if a tower is to be moved frequently it might pay to look at larger castors and possibly rolling outriggers.

**Ground conditions and levelling ability** - if the ground is uneven, adjustable legs are essential (and extra long ones if using on steps or slopes) and possibly a special levelling frame



for staircases. If the floor is poor, larger castors will help when moving the tower.

**Platform access** - towers are offered either with ladder spaced rungs (300mm spacings) popular in continental Europe, with built-in or clip-in vertical or inclined ladders or with stairs. If the work involves frequent ascent and descent to and from the platform, particularly with tools and equipment, a built-in staircase should be considered or perhaps a special stairway tower. In the UK most standard span towers incorporate built-in vertical ladders which are fine for most applications. Tools and equipment should then be raised to the platform using a

rope or other suitable method.

**Type of work** - if the tower is to be used for electrical work, fibreglass towers are available and these are now widely obtainable to buy or hire.

On specialised contracts where higher voltages may be present, a highly specialised fully insulated tower is available.

**Overcoming obstacles** - One major advantage of mobile towers over other access equipment is their versatility and modular nature. Most manufacturers and many specialist rental companies offer a range of attachments and accessories that allow towers to be easily adapted



*A modern fibreglass tower for Zone 1*



All manner of attachments are available to add to a tower's versatility



Bridging two towers can not only leave a clear passage underneath, but also provide a larger platform

to work over obstacles or to bridge voids to create custom work platforms. Any such applications require specialist knowledge and training.

### Using mobile access towers

#### Don't overlook the instructions

While a wide variety of towers are now available, all manufacturers and suppliers have a duty to provide an instruction manual that explains how to assemble and dismantle the tower, including any bracing requirements. If the tower has been rented, the rental company has a duty to provide this information and this must be passed on to the person erecting the tower.

The requirements of the Work at Height Regulations give priority to collective fall prevention measures which means that there are only two methods currently approved by the Health & Safety Executive (HSE) and PASMA for assembling, dismantling and altering mobile access towers. They are designed to eliminate the need to stand on an unprotected platform.

#### 3T: Through the Trap

This entails the tower erector working through the open trap door to position guardrails on the platform above before moving up onto the platform to continue the assembly process.

### Advanced Guardrail

The advanced guardrail method involves the use of advance guardrail units installed on a new platform from the level below so that when the erector climbs up on to the platform, the guardrail is already in position.

For more information on advance guardrails see page 40



Installing the guardrails above through the trap door

Before starting to assemble any mobile access tower the following points must be addressed:

1. Use physical barriers to set up a danger or exclusion zone to protect passers-by from the risk of falling objects.
2. Consult and follow the manufacturer's instruction manual. If a copy is not available, the latest edition can be downloaded from the PASMA website.
3. Check the safe working height - a tower should never be erected to heights above those recommended by the manufacturer.
4. Set out all the components on



Advanced guardrails are fitted from below.

the ground and make sure none are missing or damaged. If they are, get a replacement before starting work.

If the ground is not level, use the adjustable legs to level the tower and check it vertically and horizontally using a spirit level. If the ground is not solid, use mats, sole boards or spreader plates to spread the load. Make sure the castors are locked and the castors or base plates are positioned centrally on any boards/plates. Having assembled the first module, install the stabilisers or outriggers before progressing the build, checking first with the instruction manual. Then continue using the 3T or advanced guardrail method.

Always make sure the frames are locked together and that access and egress to the working platform are continuous and, very importantly, inside the tower. Also make certain the platform wind lock devices are secured, the

guardrails are in position and the toe-boards installed.

### Tower inspection

Finally, the Work at Height Regulations stipulate that any tower must be inspected by a competent person - someone with the experience, knowledge and appropriate qualifications to enable him or her to identify any risks that are present

and decide upon the measures needed to control those risks.

Towers must be inspected:

- After assembly and before use in any position;
- After any event likely to have affected its strength and stability; and
- At intervals not exceeding seven days.

Whilst a distinction is made for smaller towers in construction, PASMA recommends the application of the same inspection requirements regardless of height or industry to avoid confusion and to foster best practice. On a construction site, these records must be retained on site until the project is completed and thereafter at an office for three months in the UK and five years in Ireland.

PASMA offers a complete range of safety-related products providing guidance and advice on all aspects of tower use and inspection. Please see PASMA advertisement for more details.

### POTENTIAL TOWER HAZARDS

**Electrocution:** Check for overhead power lines and keep your distance

**Slips:** Take extra care when working in rain, snow or frosty weather and always wear suitable footwear

**Vehicles:** Pay due regard to vehicles if working on or near a public highway, or a forklift route in industrial premises

**Falling objects:** Be careful to safeguard against falling tools, components and materials

**Instability:** Watch out, amongst other things, for the effects of high winds, side loads, eccentric vertical loads, etc

**Falls from height:** Avoid stretching out, over-reaching or climbing on guardrails. This list is by no means exhaustive. There may be hazards that occur with a particular type of work or site conditions. Be safe, not sorry!

# Building towers safely - the options

Don Aers, technical manager at the Youngman Group, discusses the pros and cons of the various methods approved for the safe erection of mobile access towers.

Mobile working towers must be built in a way which ensures the person assembling or dismantling the tower is never in an exposed and dangerous position on an unprotected platform.

HSE guidance document CIS 10 lists the two currently recommended methods that were developed in consultation between the HSE and PASMA, they are: 3T (Through The Trap) and AGR (Advance Guard Rail). So don't listen to any of the hype or rumours that may be circulating regarding one or the other, as both methods may be used according to the experts at the HSE and PASMA. Most companies offer both systems and either is effective in the hands of a competent tower builder.



The guardrails for the next level are installed through the trap door before climbing onto the platform.

- The 3T method uses components that are readily available from all hire companies and the majority of tower users are currently employing this very safe and efficient method.
- Advanced Guardrail systems (AGR) are now available from several manufacturers for use with their individual tower designs. AGR systems can be in the form of :
  - (1) Side protection positioning tools
  - (2) Temporary side frames/guardrails
  - (3) Permanent side frames/guardrails

(1) Side protection positioning tools are generally poles which can be temporarily fixed to the side protection components/guardrail frames and then used to lift them up and fit them into position in advance of climbing to the platform above. They are used when dismantling the tower. Side protection positioning tools can be tricky to operate, the tools are an additional component and the method is slower and less efficient than 3T or permanent side frames.

(2) Temporary side frame AGRs are positioned and removed from the safety of the platform below. They normally have a mechanism which can be operated from the lower platform to connect and disconnect it from the end frames of the tower. Once a pair of temporary side frames has been fitted to the level above, the builder can move to the upper platform and fit permanent side protection. The temporary guardrails are then advanced to the next level and the process repeated until the tower is fully erected. The advancing side frames can then be left in position at the top of the tower or replaced with permanent guardrails, freeing up the temporary frames for use

erecting other towers on site. Dismantling the tower is a reversal of the procedure but if the temporary side frames have been removed for use elsewhere then they must be refitted at the top of the tower before the process can begin. Temporary side frame AGRs are an additional component and the method is slower and less efficient than 3T or permanent side frame AGRs. They are generally quite expensive and less robust than permanent side frames because of their more complex mechanisms and can also be more prone to damage.

(3) Permanent side frame AGRs operate in a similar way to the temporary type but they remain in place at each platform level to form the permanent side protection, thus reducing the component count. The AGR frames are positioned and removed from the safety of the platform below.

In addition to requiring fewer horizontal braces, towers built with the AGR frames can be constructed with fewer diagonals than standard towers. Towers built with a combination of AGR frames and an



A temporary AGR, note that the guardrails are in place prior to the platform.



With 3T the erector works from a fully guardrailed platform

appropriate number of diagonals make a very rigid structure. AGR towers without any diagonals can be much less rigid and in some cases will not meet the requirements of EN1004. Standing on the top of a flexing tower at six metres is a less than pleasant experience!

I also recommend that double width towers should be double decked at every platform level. Although this requires more platforms, it puts the AGR side frames at the extremities of the tower structure, increasing both lateral and rotational stiffness, but also preventing the need to over reach dangerously when fitting the AGR frames, which PASMA training strictly prohibits.



A permanent AGR/advanced guardrail - side frame

# Stay safe with HSS Training

## PASMA Mobile Access Towers and Supervisors Inspection Course



HSS Training is an accredited member of PASMA and offers a wide range of courses relating to mobile access equipment.

The PASMA Mobile Access Tower courses include classroom tuition, practical sessions and assessment on the safe erection, dismantling and use of alloy and fibreglass access towers.

The Supervisors Access Tower Inspection course is designed to enable delegates to understand current safety legislation, inspect erected towers for faults, accurately check components against the manufacturer's instruction manual and generally to be more aware of potential risks and hazards.

All delegates will receive PASMA certificates on completion of the courses.

Prices from £150



## A small selection of other HSS Training courses

### Mobile Elevated Work Platforms (MEWP)

HSS Training is an accredited member of the International Powered Access Federation (IPAF) and we offer a range of MEWP courses specifically designed by IPAF for the industry.

Prices from £175

### Occupational Safety & Health – IOSH

Enables managers and supervisors to communicate more effectively their Health & Safety responsibilities to the organisation and to those they manage. Each course is tailored to the delegate's level within the organisation.

Prices from £195

### Confined Space Awareness

These courses have just got even better with the introduction of a 'state of the art' custom built confined space tank and City & Guilds accreditation. The courses are specifically designed for delegate's who require knowledge of safe working practices in confined spaces.

Prices from £165



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To order your brochure or to book a course today call **08457 66 77 99** (ROI **1850 92 43 81**) or visit **www.hsstraining.com**

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# PASMA training

Although there has been an enormous growth in the use of powered access in recent years, the number of mobile access towers has also posted similar but less visible growth levels. Current estimates suggest that there are around 2 million towers in the UK and Ireland alone.

The Work At Height Regulations 2005 coupled with growing fines for employers when they get it wrong means that there is strong demand for proper training. In the UK, most of those requiring training on towers choose a PASMA certified course. The trade association offers a range of courses including its Standard training course in the erection and use of alloy towers. Mark Darwin recently visited a training centre in Northampton in a bid to qualify for a PASMA card.

PASMA courses are only available from authorised and audited training centres. The courses, available nationally, provide successful delegates who pass the written and practical test with a competency certificate and photo card that allows the holder to build indoor towers up to 12 metres.

So early one Thursday morning I travelled the 10 miles to the manufacturing and training facilities of Euro Towers' in Round Spinney on the outskirts of Northampton. There I joined 11 other trainees for the one-day course. Most of the others were also local, although two

had driven more than 80 miles from a company in East London.

The day is split into two, with a 9 am start for the morning session in the training room covering the information needed to pass the written test and then the afternoon practical putting up a tower.

Subjects covered in the morning include: what is working at height, duties and legal responsibilities, tower inspection, the different equipment available including single and double width towers, guardrail heights, toe boards and rail spacing, castors, legs and braces, the two assembly methods - 3T and advance guardrail, moving a tower and stability, erection and dismantling procedures and much more - everything in fact to be aware of when assembling, using and dismantling a tower. For those unfamiliar with towers, this can be quite daunting, however the trainer explained everything very clearly and a good PASMA slide presentation illustrated each point.

At the end of this session a written test has to be completed without notes or help. To pass, trainees must achieve a pass mark of 80 per cent,



otherwise he or she has to return at a future date and retake the course.

The afternoon session is the practical (assuming you have passed in the morning session), where candidates have to assemble a tower to the satisfaction of the training instructor.

It soon became clear that we all had very different work backgrounds - from tower rental to maintenance and events contractors - but we all shared a lack of knowledge and experience when it came to alloy towers. Several of the companies had just purchased a tower - most up to four metres high - and were taking the course before using it. However, our very experienced instructor, Jason Woods, soon got the grey matter working, testing our knowledge (or lack of it) and explaining the principals behind the correct answers.

Even the answer to the obvious question 'what is work at height' revealed a variety of answers, with several 'older' trainees mentioning working above two metres, while it is at any height where there is a risk of injury from a fall and includes trenches.

Essential points to note - the main guardrail must be not less than 950mm with no gaps of more than 470mm and 150mm toe boards must be fitted to working or storage platforms. If carrying materials to the top of the platform, this should

only be done with a stairway tower.

With all other towers the materials should be hauled up using a rope, bearing in mind the maximum allowable side load is just 20kg.

PASMA's written, 'multiple choice' test covers all aspects of safety and best practice, and while answers to some of the questions were obvious (particularly as Jason's training had covered everything on the paper), there were enough to trip up those who had not been concentrating.

All passed and so after lunch we proceeded to the demonstration area where we were split into two groups each with a tower to practice on and to iron out any teething problems before the actual practical test. Just three mistakes are allowed, any more and it's an automatic fail.

With so many not having built a tower before, the practice session got off to a faltering start, but by working as a team we soon got the hang of it and successfully completed the tower assembly test.

As always, the information learnt should be mixed in with a generous dose of common sense and if you're unsure, ask someone who knows. Overall, the course is a very interesting and informative one which everyone who uses or supplies a tower should take. But, don't expect to just turn up and pass.



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# Trends and developments in alloy scaffold towers

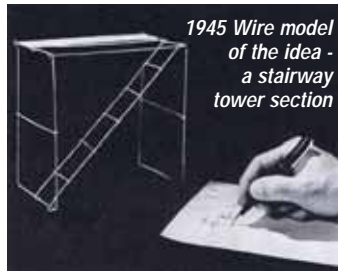
The mobile aluminium access tower was conceived in 1945, when an American inventor, the late Wally Johnson, came up with the idea of a modular, easy to assemble scaffold tower made from the high strength alloys that had been developed during the war. In 1946 he founded UpRight Inc in Berkley, California to commercialise the idea, producing the first tower in February 1947. His company, now based in Ireland, remains one of the leading manufacturers of mobile access towers to this day.



*Wally Johnson the originator of the alloy tower*

Much has changed since that first tower, with some significant developments and steady evolution. In spite of 60 years of progress, even the most modern towers still share the majority of their features with those early towers, a true testimony to the purity of the original design and concept. The chief executive of what is now Instant-UpRight, John Nevin, takes a look at current trends and future developments in alloy tower design, construction and usage.

The major changes in mobile tower usage in recent years are related to the influence of European Standard EN1004 and associated directives have had in increasing the focus on safety. This effect extends well beyond Europe. A prime example is the Middle East where major international contractors are working to the most stringent safety regulations, in line with their global policy, even though these may be of a far higher standard than the local regulations require.



*1945 Wire model of the idea of a stairway tower section*

EN 1004 and the associated focus on safety has initiated two specific outcomes. The first moves the emphasis to the safe assembly of towers, where the previous focus was mainly on the users themselves. In the UK, the Health and Safety Executive is correctly pursuing an elimination of risks for all persons when building and using mobile towers. This has had a significant impact on the way in which towers are built and on the components required. This work is ongoing and will drive further innovation.



*New rules are increasing the focus on safety*



*The first production tower - 1947*

The second is that it has helped create a far larger market for safe and efficient access equipment including mobile towers, as major rental companies look to exploit the growth potential on the back of the new regulations. At the same time the market is becoming increasingly competitive, obliging producers to continually invest in new technology such as robotics, faster assembly tables, increased automation and smarter manufacturing techniques such as Kazan and 5s as well as improved purchasing techniques, in order to meet customer demands while maintaining a satisfactory return.

**But how are these trends likely to influence the development of towers and what new features can buyers expect? Will the towers they currently own become obsolete?**

Along with the increased focus on safety and enforcement comes the introduction of new ways in which existing towers are built to comply with the new standards, and at the same time many countries are introducing their own additions and embellishments that require further development. Finland, for example, has recently modified its rules, making it mandatory for steps or stairs to replace the more usual 'built-in ladder frame'. This may well be one of those trends that will eventually spread to the rest of Europe as regulators become less



*Stairs are making a comeback in some markets*

comfortable about the climbing of vertical ladders.

The varying level of enforcement is also obliging manufacturers to develop new solutions to meet local demands. For example, working with our partner in France we have developed a number of new designs to make assembly of the tower safer according to local ideas. Some of these could have international potential. The way in which various tower manufacturers respond to these pressures and how they deal with the backward compatibility issues will certainly influence the purchasing decisions of large regional buyers.

The most significant challenge for manufacturers, however, is to provide products that enable users to comply with the increasing safety demands, while ensuring the mobile towers are a practical, cost effective and versatile access option.

## When buying a new tower system what should you look out for?

The key factors for those buying a tower system have to be safety, efficiency and competitiveness. Thus the balance between initial cost, tower assembly and safety performance needs to be carefully considered. A good example of this is a tower which includes an advanced guard rail as an integral part of the tower - not only does it provide a safer assembly method, but it also reduces the number of parts in the tower, making it faster and easier to assemble. The most important factor though is to find a supplier that is committed to keeping pace with the changing requirements.

## What should users expect when renting a tower?

Simple, safe and efficient tower erection is critical to those renting a tower, along with fewer parts and easy instructions. A major cost to both the users and rental companies is lost and damaged components, so fewer, larger and more robust components can help reduce this cost as well as making the tower easier to stock and build. Another recent trend that helps with this is the customised coloured frame and components, which not only helps prevent theft by making the parts easy to recognise, but also promotes a company's corporate identity.

There will be other developments over the coming year in terms of tracking capability with workable resilient bar code and chip systems, giving the end user greater control and transparency over the asset.



Damage resistant chips or bar codes will become essential management tools.

## How will towers stack up against powered access or ladders going forward?

For those working at height, one consideration is which equipment is best to use for the job, with mobile towers often pitched against powered access. Both types of equipment have their place in offering a safe platform for working at height and certainly some applications either suit one or the other. For general work, mobile towers offer more versatility, greater portability and a lower cost, providing a faster payback period compared to machines.

Mobile towers, powered access and ladders all have their own defined market space and while there is some convergence and competitive pressures by one on the other, overall we believe all three markets will grow on the back of an increased focus on safety and efficiency and using the right tool for the job.

In recent years we have seen new opportunities open up for customised solutions based on mobile tower systems to provide working platforms for specific applications. This has been the strongest growth area over the past two years, while sales of regular towers have been affected by the global downturn. We see this trend continuing as working at height requirements are considered earlier on in the project's life rather than as an afterthought.

Innovation will be an increasingly critical factor in the coming years and we are excited about the possibilities that increasing safety regulation, focus on ergonomics and changing work practices will bring to the tower industry.



New applications for towers are still being found.

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## TRAINING IDENTITY CARD

The bearer has passed both the written and the practical PASMA course examination and is considered competent to perform the tasks as listed overleaf in respect of towers certified to the BS/EN Standard and is awarded the PASMA Certification of Competence.

Certificate No: 234123

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# Low Level Work at Height - Problem Solved!

Low level access products, such as podium steps, have been an increasingly popular item in recent years.

**PASMA managing director, Peter Bennett, discusses their use and abuse and their impact on safety and best practice.**

Low level access products such as podium or pulpit steps and folding room scaffolds are not a particularly new phenomenon, but tower manufacturers were rather taken by surprise when a product range which had largely been sold in the odd one or two, suddenly became the new must-have and in some cases began to outstrip conventional tower sales as rental companies geared up to meet a seemingly insatiable demand. And what was the reason for this sudden upsurge in popularity? You've guessed it - the Work at Height Regulations of 2005!

Since 2004, industry estimates are that something in the order of 50,000 of these versatile work at height tools been sold in the UK and Ireland alone and nowhere more so than in the construction industry, where battalions of them can be seen in use by a multitude of finishing trades as they invade projects for the final fit out work.



Peter Bennett

It all started with the very strong urge to consider safer methods of working at height, particularly at low heights (below two metres), which is of course no great surprise, since it has long been highlighted that a very unhealthy number of falls from height occur in this area. Provisional statistics for 2007/8 for all workers for falls up to two metres and for falls where the height has not been stated - the premise being that reports of falls



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from heights above two metres accurately report the height of fall - show 15 fatalities, 2,779 major incidents and 3,597 lost time accidents (three days or more) .

The podiums, pulpits and folding room scaffolds seem to fit the bill since they provide a compact, lightweight and, most importantly, a protected working platform, that is, one which prevents the operative from falling by having a guardrail system installed as standard.

So, problem solved then? No, sorry, nothing's ever that easy. As the figures above show, despite the substantial uptake of safer low level access equipment, the accident rate, and the Shattered Lives which inevitably accompany such figures, remain stubbornly and unacceptably high.

In much the same way as mobile access towers, when they were first introduced seemed to be so simple to assemble that it was generally perceived to be child's play and that anyone could do it simply by following the step by step guide, so too has the perception permeated user groups with low level access equipment.

Yes, they are very simple to use. Yes, they are very simple to put together. BUT, and it is a big but, they are just as dangerous in

untrained hands as their larger tower counterparts and have many similar potentially harmful misuses which users have an uncanny knack of unconsciously finding. AND, there are some particular misuses and abuses to which low level access units are especially susceptible.

We'll start by taking some obvious examples. Most, if not all, low level access units have a locking device of some sort which locks out the base to become a rigid unit on



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which you can safely stand and work, and yes, we know it is being a little simplistic, but these have to be locked and should be checked on a regular basis to make sure they are still engaged, otherwise you will have a very shaky unit and possibly an untimely and unexpected crash.

A prerequisite for all units is, not surprisingly, a platform on which to stand comfortably and work safely. In pulpit and podium steps access to the platform is pretty straightforward, you climb the steps or rungs which lead up to the (usually gated) access point and there you are.

However, as we have said before, things are rarely that easy, although it should be. For reasons best known to themselves some users seem to prefer a bit of a challenge and want to climb up the other side - the difficult side - obliging them to climb over the guardrail onto the platform. Quite apart from the fact that this does seem an awful lot of additional, and pointless effort, it is also decidedly dangerous since it applies a quite dramatic dynamic load where it is not supposed to be which can easily overturn the unit with potentially lethal consequences.

As you would rightly expect, reputable manufacturers go to considerable lengths to ensure their products are as safe as possible, including in many cases the provision of gate access to the platform. Unfortunately, all too often, users see these as a hindrance to their work and go to extraordinary and ever more ingenious lengths to prevent them from closing by, for instance, wedging them open strapping them open with the ever useful tie wrap to make doubly sure that the gate cannot do what it is

designed to do - prevent the user from falling!

As we frequently hear, necessity is the mother of invention, and there are none so necessitous and consequently inventful than those anxious to get a job done, so even when they have not succumbed to the temptation to remove fall prevention devices, there are some users out there who feel that the designers have missed a trick and for whom those mid guardrails are ideally placed to position another step / platform to reach that previously unreachable fitting, fixing or such like.

Little do they realise that in so doing they have in fact increased the risk to themselves because the half metre guardrail that remains will not only fail to prevent them from falling, but is also likely to act as a pivot point conveniently ensuring that the falling body is flipped so as to inflict the maximum damage to the most vulnerable part of the body - the head.

These are some of the more determined, you might say, organised, misuses we encounter on a regular basis. Equally concerning however are the daily, spur of the moment misuses which are just as effective in negating the built in safety of these otherwise safer work at height tools. Climbing onto the mid guardrail is about as dangerous as placing a step or platform there, you still have the pivot point but you now add some dynamic and eccentric loads as the tradesman tries to maintain balance by wedging his upper leg against the top guardrail.

These units are generally and primarily intended for internal use and not designed for all terrain





their limitations and, like any other work at height equipment, employers have a statutory obligation to ensure that anyone who uses them is competent and aware of the factors which can affect their safe use.

This can only be effectively achieved through training which is why PASMA has devised an additional module in its widely recognised training scheme devoted solely to low level access. This is

applications, so they tend not to perform too well on sloping, uneven or undulating ground.

A couple of other favourites are of course the popular manoeuvring from the platform technique, countering the designer's job slowing device of brakes on the castors which have to be applied and released from ground level, which over the course of a day's work can cost whole minutes in an already tight schedule. Let's also not forget the most common misuse of all - over-reaching. This represents the very epitome of displacement

available through the associations network of over 300 approved training centres and is soon to be supported by a 'best practice' low level access DVD. More details can be found at [www.pasma.co.uk](http://www.pasma.co.uk)

The second is the need for a set of minimum product standards for low level access equipment. Unfortunately, wherever there is high demand for a product, there is inevitably an opportunity for some companies to offer cheap, inferior products which, in the absence of a minimum standard, can be distributed with impunity, exacerbating the already concerning accident statistics for low level work at height. PASMA's technical committee is therefore working with the British Standards Institute (BSI) to draft a publicly available specification.

*A fibreglass folding room scaffold.*



of risk. Where, in the past, tradesmen had a healthy respect for and were largely accustomed to the limitations of stepladders and would certainly think twice about over stretching. Nowadays because they have a protective guardrail around them they are all too often lulled into a false sense of security, and are more inclined to stretch that extra inch, in the belief that the guardrail has miraculous powers to suspend the laws of physics whilst they are in the protective cocoon of the low level access unit.

There are two major issues which must be addressed if we are to seriously influence the statistics in respect of falls from height at low level. The first is that everyone must accept that podiums, pulpits and folding room scaffolds have

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