Staying Alive:
Preventing Serious Injury and Fatalities while Working at Height

All-Party Parliamentary Group on Working at Height

Inquiry report

February 2019

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This report was researched and compiled by GK Strategy.

Contents

Foreword

When we established the All-Party Parliamentary Group on Working at Height (APPG) in October 2017, and launched this inquiry a couple of months later, the officers of the Group and I could not have anticipated the enormous interest from such a diverse range of stakeholders.

From big industry names and trade associations to SMEs and contractors, all have shown a willingness to engage constructively to provide practical solutions to reduce the number of fatalities and serious injuries from falls while working at height.

From the early days of the APPG to the publication of this report, it is clear that serious injuries[1] and fatalities from falls at height are still too prevalent. In the past year alone, 35 families in the UK have been devastated by the loss of loved ones and many more will have had to deal with life-changing injuries.

These figures are too high. There should be no question or doubt over workers' ability to return home safely to their families each evening. I hope that this report and the future work of the APPG, alongside government and industry, will help to bring about action to see these numbers drastically reduced, and ultimately brought down to zero.

The APPG has spent the past year investigating the causes of falls from height, to understand the effect they have on workers' lives and to make recommendations as to how best to mitigate falls in the future. The fantastic public and industry response to this inquiry has served to highlight the significance and enduring nature of this issue. Big industry names like Balfour Beatty, the City of London Corporation and the National Farmers' Union joined the voices of individuals who have been victims of falls to share their desire to see improvements across all sectors working at height.

We welcome the practical measures that work at height industries are already implementing to reduce the number of injuries and fatalities. The use of new technologies and innovations, such as Augmented Reality and the effective use of drones, is now a reality.

Our inquiry and report marks the beginning of the APPG's work. Working with industry and government, we hope to make recommendations that will create a safer environment for the millions who work at height every day.

Alison Thewliss MP
Chair of the APPG on Working at Height

Executive summary

The Work at Height Regulations 2005 apply to all work where there might be a risk of a fall liable to cause personal injury.[2]

Since the introduction of the regulations, the UK has consistently had some of the lowest workplace fatality and serious injury rates in the European Union. In 2014, the UK had 0.55 fatalities per 100,000 employees, compared to similar industrial countries like France (3.14) and Germany (0.81).[3]

However, data from the Health and Safety Executive (HSE) finds that 18% of those who died at work did so as a result of a fall from height.[4] For those who experience non-fatal accidents, a fall can lead to life-changing injuries and affect not just the victim but also their family, friends and colleagues.

In January 2018, the APPG on Working at Height launched an inquiry to investigate why workers fall from height, leading to death and serious injury, and to come up with a set of recommendations to reduce the overall number of falls.

The inquiry received over 60 responses from diverse sectors of the UK economy. The majority of the respondents believed that the principle of the Work at Height Regulations 2005 was broadly fit-for-purpose, however the interpretation and application of the legislation was varied.

In response to the submissions received and to the oral evidence sessions held in March and July 2018, the APPG has developed a set of recommendations that we hope will foster genuine improvements to the work at height sector. Given the crucial human aspect of this issue and the overwhelming response from stakeholders across the work at height industry, we have split our suggestions into two distinct categories: recommendations and areas we would like to consult further on.

“In 2014, the UK had 0.55 fatalities per 100,000 employees, compared to similar industrial countries like France (3.14) and Germany (0.81).”

Recommendations

1. The introduction of enhanced reporting without an additional burden, through RIDDOR, which at a minimum, records the scale of a fall, the method used and the circumstances of the fall.

2. The appointment of an independent body that allows confidential, enhanced and digital reporting of all near misses and accidents that do not qualify for RIDDOR reporting. The data collected by this independent body will be shared with government and industry to inform health and safety policy.

3. The extension of the Working Well Together – Working Well at Height safety campaigns to industries outside of the construction sector.

4. An equivalent system to Scotland’s Fatal Accident Inquiry process to be extended to the rest of the UK.

An opportunity for further consultation

5. The creation of a digital technology strategy, to include a new tax relief for small, micro and sole traders, to enable them to invest in new technology.

6. A major review of work at height culture. This should include an investigation into the suitability of legally binding financial penalties in health and safety, funds which could be used towards raising awareness and training, particularly in hard to reach sectors.

Regulatory context

Regulatory context

Health & Safety at Work Act 1974

The Health and Safety at Work Act 1974 is the primary legislation covering occupational health and safety in the United Kingdom. The Health and Safety Executive (HSE), with local authorities (and other enforcing authorities), is responsible for enforcing the Act and a number of other Acts and Statutory Instruments relevant to the working environment.

Work at Height Regulations 2005

The Work at Height Regulations 2005 came into force on 6th April 2005. The regulations define work at height as work in any place, including a place at or below ground level or obtaining access or egress from such place while at work, except by a staircase in a permanent workplace where, if measures required by the regulations were not taken, a person could fall a distance liable to cause personal injury.

The regulations place duties on employers, the self-employed, and any person who may contract individuals to work at height, including building owners, facilities managers or householders. In 2014, over a million UK businesses and 10 million workers were estimated to carry out work involving some form of work at height every year.

The Work at Height Regulations, along with the work of the HSE, have resulted in an overall reduction in the number of falls from working at height. Nonetheless, there are still too many people killed (18% of those who die at work) or seriously injured due to a fall from height.

Competence

Regulation 5 requires that every employer should ensure that no person engages in any activity, including organisation, planning and supervision, in relation to work at height or use equipment for such work, unless they are competent to do so or, if being trained, is being supervised by a competent person.

Hierarchy of measures

The 2005 regulations introduced a hierarchy of measures that must be considered during the work at height process. One of the main aims of the regulations was to encourage the avoidance of work at height if possible. Where it cannot be avoided, there are requirements to use the best practicable means of ensuring the safety of those working at height.

> "In 2014, over a million UK businesses and 10 million workers were estimated to carry out work involving some form of work at height every year."

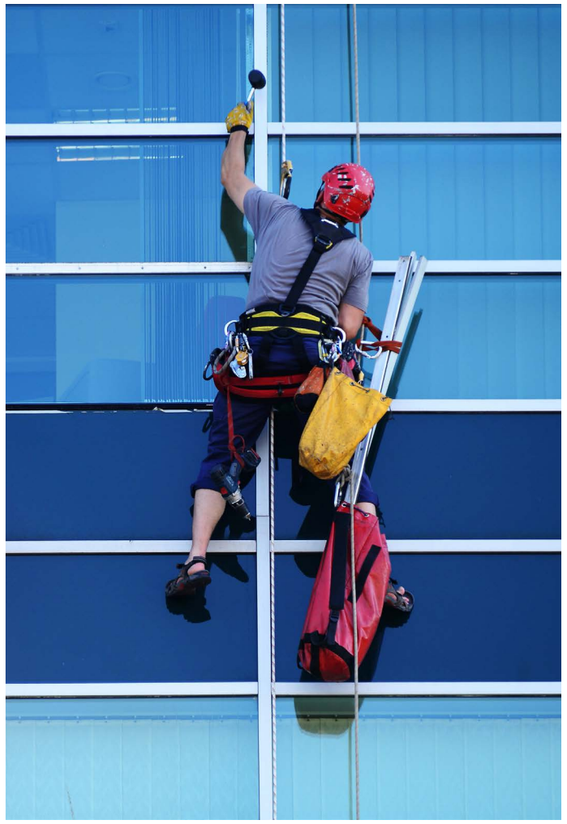

Figure 1 The Work at Height Hierarchy of measures – INDG 401 – Short Guide to Work at Height, HSE

Can you AVOID working at height in the first place? If NO, go to PREVENT

Do as much work as possible from the ground.

Some practical examples include:

- Using extendable tools from ground level to remove the need to climb a ladder
- Installing cables at ground level
- Lowering a lighting mast to the ground level
- Ground level assembly of edge protection

Can you PREVENT a fall from occurring? If NO, go to MINIMISE

You can do this by:

- Using an existing place of work that is already safe e.g. a non-fragile roof with a permanent perimeter guard rail or, if not;
- using work equipment to prevent people from falling

Some practical examples of collective protection when using an existing place of work:

- a concrete flat roof with the existing edge protection, or guarded mezzanine floor, or plant or machinery with fixed guard rails around it

Some practical examples of collective protection using work equipment to prevent a fall:

- Mobile elevating work platforms (MEWPs) such as scissor lifts
- Tower scaffolds
- Scaffolds

An example of personal protection using working equipment to prevent a fall:

- Using a work restraint (travel restriction) system that prevents a worker from getting into a fall position

Can you MINIMISE the distance and/or consequence of a fall?

If the risk of a person falling remains, you must take sufficient measures to minimise the distance and/or consequences of a fall.

Practical examples of collective protection, using work equipment to minimise the distance and consequence of a fall:

- Safety nets and soft landing systems, e.g. air bags, installed close to the level of the work

An example of personal protection used to minimise the distance and consequences of a fall:

- Industrial rope access, e.g. working on a building façade
- Fall-arrest systems using a high anchor point

Using ladders and stepladders

For tasks of low risk and short duration, ladders and stepladders can be a sensible and practical option.

If your risk assessments determine it is correct to use a ladder, you should further MINIMISE the risk by ensuring workers:

- Use the right type of ladder for the job
- Are competent (you can provide adequate training and/or supervision to help)
- Use the equipment provided safely and follow a safe system of work
- Are fully aware of the risks and measures to help control them

For each step, consider what is reasonably practicable and use 'collective protection' before 'personal protection'

Current environment

The majority of those who responded to the APPG's call for evidence stated that they believed the current work at height regulations were fit for purpose and acknowledged the work in simplifying guidance, but noted the need for clearer messaging and understanding in some sectors. For example, The Building Engineering Services Association spoke of the need for more diagrams to prevent misinformation and misinterpretation.

Fatal Accident Inquiries (FAIs)

In Scotland, Ministers are required under section 29 of the Inquiries into Fatal Accidents and Sudden Deaths (Scotland) Act 2016 to report on fatalities. Fatal Accident Inquiries (FAIs) are the legal mechanism through which deaths in the workplace are investigated. FAIs are mandatory for deaths occurring in the workplace, as well as those in custody, or in circumstances deemed to be in the public interest, and are usually held in the sheriff court. The outcome of all FAIs since 1999 are publicly available and can be accessed online via the Scottish Courts and Tribunals Service.

The APPG is calling for an equivalent system to be introduced in the rest of the UK, to ensure employers are held to account for fatal injuries occurring as a result of workers falling from height, and that incidents are reported with sufficient information.

Brexit: new challenges and opportunities

The biggest regulatory unknown to the work at height sector is how the UK's decision to leave the European Union (EU) will impact the UK's health and safety landscape. Industry and health and safety stakeholder groups alike lack clarity on what the regulatory environment will look like after 29th March 2019.

There is consensus within industry that the current health and safety landscape should be maintained when EU regulations are adopted into UK law. 97% of businesses surveyed by manufacturers' association EEF, stated that they want no immediate change in regulations post Brexit. However, just over half of those surveyed were in favour of a review in future.

The Government has published the draft Health and Safety (Amendment) (EU Exit) Regulations, designed to ensure that all European Union-derived health and safety protections will be incorporated into domestic law after the UK leaves the EU. However, how and when this legislation will be implemented in practice remains unclear.

To ensure that existing regulation will continue to operate effectively, the Government will make amends to eleven sets of regulations. The amendments will include changes to the Control of Major Accident Hazards Regulations 2015; the Control of Substances Hazardous to Health Regulations 2002; the Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015; and the Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995.

Significantly, the Government has proposed amending regulation 26(3), which places a duty on the competent authority to provide the European Commission information about major accidents, including falls from height. The Government proposes that this requirement should be removed, arguing that under the UK's membership of the OECD and as a party to the UNECE TEA Convention, the UK would share information on lessons learned and international best practice purposes using the European Commission's database. This presents opportunities for the UK to continue to be a leader in health and safety standards, and to share international best practice with other nations.

The APPG is calling on the Government to ensure that no individual working at height will be any less safe as a result of Brexit.

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Current environment

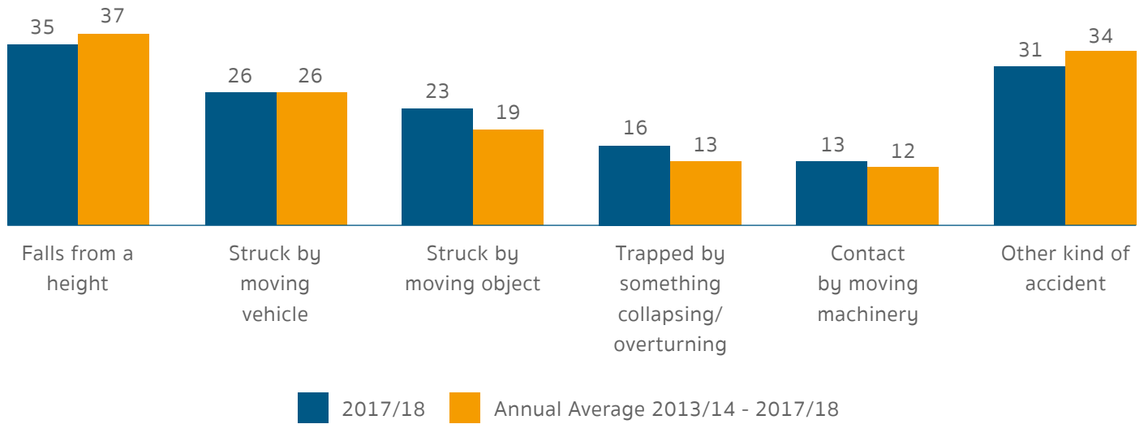


Figure 2 Number of fatal injuries to workers by accident kind, 2017/18 and annual average for 2013/14

2017/18 saw 35 fatalities as a result of falls from height, with the figure rising to 186 in the last five years.

Causes and consequences of a fall

There are several reasons for falls from height within workplaces. The APPG found that alongside the practical reasons for falls – for example, in the food industry, ladders are the most commonly cited example of equipment used when falls from height are recorded - there were a number of complex and multi-faceted reasons based on culture, behaviour and competence.

Culture

The Work at Height Regulations 2005 have been crucial in raising health and safety standards across all sectors that undertake work at height. However, compliance and enforcement of the regulations have not sufficiently changed behaviour to ensure workers avoid fatalities and serious accidents.

The majority of responses the inquiry received noted that culture plays a crucial role in whether a fall will occur. The stronger the safety culture within a company, the safer the place of work and the less likely it is that workers will experience a fall from height.

There are a number of factors that influence culture:

- Performance of a regular task – those carrying out a regular task can become complacent and inured to the risk and potential consequences of a fall
- 'It will never happen to me' – belief that accidents will not happen to that individual
- The fear of prosecution or protracted legal issues

The APPG believes that the most effective way to improve the culture of those working at height is to enhance the reporting of accidents and 'near misses' and to investigate the introduction of civil enforcement.

Prosecution remains the main way that those found to have committed serious breaches of health and safety are held to account. In 2016/17, 79 firms and individuals were prosecuted under the Work at Height Regulations 2005, resulting in large fines and custodial sentences for five individuals.

We heard from respondents that while it is important for those found to be in serious breach to be prosecuted to the full extent of the law, fear of prosecution, protracted legal action and costly insurance claims have led to the under-reporting of incidents.

Agencies such as the Environment Agency and Natural Resources Wales have access to powers that permit them to apply legally-binding civil penalties for certain offences. Companies suspected of an offence proactively approach the regulator to offer enforcement, take responsibility and propose action. Acceptance of the enforcement undertaking is at the discretion of the regulator.

We believe a similar system for the work at height sector would lead to faster enforcement of regulations and lead to an improved culture of reporting incidents that may fall below the statutory requirements.

Case Study: HSE – Helping GB Work Well Strategy

The HSE has published a six-part strategy aimed at managing risk, supporting innovation and increasing productivity. The strategy focuses on acting together, tackling ill health, managing risk well, supporting small employers, keeping pace with change and sharing success. It is to be applauded for concentrating activities around continuing to improve the UK's health and safety record.

Case Study: HSE and Working Well Together

The HSE part-funds a network of seventeen regional 'Working Well Together' Groups with Industry. With the objective of improving health and safety in construction, particularly among smaller construction companies, the groups deliver a range of free and low-cost events to educate and inform small, micro and sole employee companies on the benefits of working safely. The events regularly involve practical demonstrations from industry bodies and trade associations.

Lack of planning

Lack of planning during all stages of a project is a significant cause of falls from height. Insufficient planning can manifest in a number of ways: inadequate information being provided at tender process leading to under-resourced quotes being provided and accepted; reliance on generic risk assessments and methods which lack details for specific projects; and poor design considerations for construction and resulting impact on working practices.

While legal requirements exist for different stages of a project, the APPG heard that awareness of these responsibilities and duties was at times low. For example, the Construction (Design and Management) Regulations 2015, Regulation 9 states duties for designers which include, so far as is reasonably practicable, mitigating foreseeable risks to the health or safety of any person involved in; the construction work, maintaining or cleaning a structure, or those using the structure as a workplace. However, the APPG heard that more must be done to educate designers on the role they play in mitigating future risk of falls from height, with some respondents calling for better enforcement of legislation.

Identifying potential risks as early as the design and project planning stages significantly reduces the likelihood of a fall.

Lack of training

In his report, **Reclaiming health and safety for all: an independent review of health and safety legislation,** Professor Ragnar E Löfstedt noted that 'a small number of managers were able to correctly define working at height and very few actually understood the regulatory requirements.'

Alongside shortcomings in the technical and regulatory training currently being provided to managers, respondents also raised concerns about the lack of training in 'soft skills', such as how to communicate effectively. This leads to poor supervision of workers and inevitably creates environments where a fall from height is more likely to occur.

The role of the client

Clients wield significant power yet do not fully understand the crucial role they play in ensuring contractors are working in the safest environments possible. Tight and changing deadlines, along with even tighter budgets can lead to the need to 'cut corners', thus increasing the likelihood of a fall from height.

A significant number of businesses and workers involved in work at height are operating in very competitive markets, with clients seeking services from the most inexpensive option. Compromising on health and safety can often help traders win business. For example, a micro-trader might be able to win business to re-tile a roof by using a ladder, whereas his competitors quote a price based on the use of scaffolding, which while safer for certain height structures, costs significantly more. Thus, the need to beat competitors may lead to riskier practices that have the potential to cause serious injury or death. Linked to this, the general public rarely question the health and safety practices of an operator or how this has been incorporated into a quote. This could be based on a client making the assumption that when a contractor tenders for work they are fully compliant with the legal requirements of how that should be conducted. For instance, roofers should be aware of the guidance for working safely on roofs, but the law also places an obligation on the client to ensure that the work is done safely.

In reality, a client cannot fully rely on the experience or knowledge of a contractor so must check in detail what services they have been offered. Consequently, there is a serious need for greater transparency in quotes to raise awareness of the unique role clients play and to encourage better scrutiny of health and safety.

Human stories

Paul Blanchard

In 2010, Paul Blanchard suffered a fall from a roof at the age of 55. He broke his back in the fall and spent three months in hospital in a coma. His family were twice told he may not survive and, if he did, he was likely to have brain damage. The life-changing consequences of Paul's fall were endured by his family every day he was in the hospital. Paul Explains: "I took my eye off the ball. I miss my independence – it is now a challenge every day".

Paul now devotes his life to talking to groups about his experiences, helping to educate people about the life-changing consequences that occur following a fall from height. In recognition of his work, in 2015 Paul was awarded the coveted RoSPA Archangel Award.

Jason Anker MBE

Jason Anker's life-changing injuries were the result of a fall from an untied ladder. "I went on a building site and fell off a ladder that was not secured," he said. Jason considers himself 'one of the lucky ones'. As a well-known and accomplished presenter, Jason speaks to groups on a regular basis – his mission is to change behaviours, and change the mindset of people to work safely. Jason considers his work as part of his rehabilitation and supports other fall victims in presenting to groups.

Jason's work now focuses on encouraging people to speak up if they are concerned about safety "it is about doing things the safest way possible every single day", explains Jason.

For his services to Health and Safety in the Construction Industry, Jason was awarded an MBE in 2015.

What is working well: improvements to date

What is working well: improvements to date

It is clear that many in industry have already sought to take a lead on improving the conditions for those working at height. The use of cutting edge technology and a focus on best practice is helping to ensure that improvements can be made and that employees are safe while working at height.

All respondents to the inquiry showed a desire to continually improve and share their experiences with colleagues.

The APPG welcomes the innovation shown to help make a difference.

Case study: City of London Corporation

The City of London Corporation has created and provided online videos targeted at those contracting out and potentially managing certain types of work at height. The online videos help to simplify and increase awareness of the responsibilities in this field. This is not a group of professionals typically included within work at height training, as they do not require technical skill sets. Facilities and building managers should not aim to understand the technical aspects of complex work at height but should be familiar with the broad principles and role they can play in its control. The City of London Corporation has limited influence, but they are linked from the HSE window cleaning microsite and, through their promotion and use by Facilities Management companies within the Square Mile, have noted a change in approach by relevant organisations.

Case Study: Balfour Beatty

Balfour Beatty uses its six Civil Aviation Authority licensed drone pilots to undertake inspection and maintenance work at height using drones, thus removing the risk of falls from height. For example, Balfour Beatty Living Places, in partnership with West Sussex County Council, is trialing the use of drones to inspect bridges across the county. Using drones in this way allows the safe assessment of the work required while dramatically reducing any potential hazards faced by the workforce who would traditionally carry out work such as bridge inspections at height. It also reduces disruption to the public and road users by removing the need for traffic management or road closures which would usually be put in place during bridge inspections.

Improvements made to work at height are welcome and have made conditions safer for workers. However, despite the enormous work done by industry and the HSE, there are still too many fatalities and serious injuries resulting from falls from height.

Technology has made working at height safer and industries should seek to take advantage of this to enhance safety, improve understanding, and where possible, avoid work at height altogether. One area where technology can play a vital part in improving health and safety is through the sharing of best practice across sectors undertaking work at height. A formal channel for the dissemination of vital information and guidance would be welcomed to raise the profile of these improvements.

Enhanced reporting

One measure in particular that would assist industry attempts to improve practice would be enhanced inspection and reporting. There was broad consensus among respondents that this measure would help instruct, direct and encourage improvements in working at height.

There is a concern that enhancements in safety are hampered by a lack of empirical data, knowledge and understanding of the root causes of falls from height. Having comprehensive information and data can inform the policies of government and businesses, the guidance issued by associations, and the regulations developed by regulators.

A brief history of enhanced reporting

Industry background

Reporting of Injuries, Diseases and Dangerous Occurrences Regulation 1995 (RIDDOR) replaced earlier reporting requirements under Notification of Accidents and Dangerous Occurrences Regulations 1980 (NADOR).

As part of their response to the 2011 Löfstedt report, the HSE amended RIDDOR in 2013 to reduce the reporting burden on industry. An unfortunate consequence of the reduction in reporting requirements was an end to detailed data collection including the heights from which people fell.

Domestic environment

Between 1978 and 2002, the Departments of Trade and Industry and Business, Innovation & Skills (predecessors to the Department for Business, Energy and Industrial Strategy) collated accident data via the Home Accident Surveillance System (HASS) and the Leisure Accident Surveillance System (LASS), two linked databases holding details of home and leisure accidents that caused a serious enough injury to warrant a visit to A&E. In 2003, the Government announced it would no longer fund the collection and publication of HASS and LASS data.

HASS and LASS data provided detail on the type of accident that had occured and whether any equipment was involved. The APPG was told that while hospitals continue to collect data relating to accidents, it is a concern that data on falls from height is not shared with industry. The APPG was also told that the opening up of this data would provide crucial insights that could further reduce falls from height.

Many respondents made strong arguments in favour of enhanced reporting and the value that it would add.

Case Study: National Farmers' Union

The National Farmers' Union (NFU) stated that additional information would be useful in better understanding the circumstances and factors that lead to a fall from height, as well as aid in the effective targeting of guidance and interventions.

The NFU considers that information on falls from height on an all industry basis should also be collated and made available in one central location in order to:

A) Better understand all industry accident circumstances and to allow easy identification of any overarching issues.
B) Allow industry comparisons. This will help in the identification of sectors performing well with the potential to help identify best practice and transfer it to other poorer performing sectors.

Case Study: The CHIRP Charitable Trust - UK Confidential Reporting Programme for Aviation and Maritime

The CHIRP Trust is an independent, voluntary confidential reporting programme for the aviation and maritime industries and receives 1,500 confidential reports of unsafe workplace practices a month. CHIRP's mission is to improve the safety of the travelling public and that of individuals employed within or associated with aviation and maritime operations.

Underpinning CHIRP are core principles of confidential reporting:

- Reporter's trust in confidentiality
- Independence from regulator, industry and unions
- Ease of reporting
- Profile of reporting programme
- Dialogue with reporter
- Closure.

The APPG heard evidence from CHIRP's Ian Dugmore in July 2018, who stressed the importance of strong links with industry when implementing a confidential reporting system. Industry must see these systems as a safety-net rather than a competitor in order to foster a culture of reporting. The Trust's varied and expert panel of Trustees, including the Head of Air Accidents Investigation Branch and the Head of Marine Accident Investigation Branch, further distances it from industry and encourages reporting.

Rather than making formal recommendations, the Trust instead produces informal guidelines for improving practice. In one instance, CHIRP identified engineers who felt under pressure from maintenance procedures and told industries that people felt overworked, leading to one airline changing maintenance procedures to reflect this.

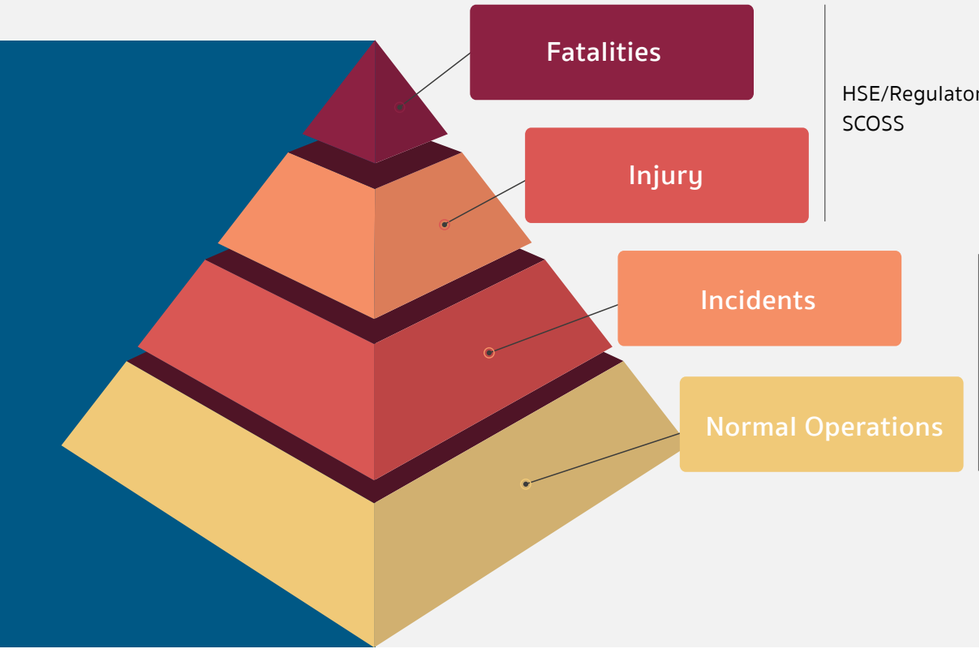
Case Study: CROSS – Confidential Reporting on Structural Safety

CROSS was set up to monitor precursor incidents, these are identified as incidents of bad safety procedure that are too minor to cause injury or harm but are nonetheless valuable. The APPG heard from Paul Mcnulty at CROSS in July 2018, who stressed the value of learning from precursors to mistakes rather than just mistakes themselves. The CROSS Pyramid of Risk (see below) illustrates where precursors sit in the hierarchy of risk.

CROSS has reported on incidents including: stability of steel frame buildings, construction of schools in Edinburgh and fire in a multi-storey car park. In response to the Indiana stage collapse of 2011, which caused 6 fatalities, CROSS began investigating temporary structures, uncovering multiple instances of poor stability and poor anchorage.

CROSS issued an ensuing alert on these structures. Their findings and guidance influenced temporary structures at the 2012 Olympics.

Pyramid of Risk



The future: education, culture and innovation

The future: education, culture and innovation

As this report has shown, improvements are already being made to ensure workers are safe. But what does the future hold?

There is huge potential for ever-evolving digital technology to make work at height safer. While some of these technologies are already in use, the APPG believes that the proliferation of these technologies would further enhance workplace safety and reduce the number of falls from height.

However, we acknowledge that the businesses and individuals involved in work at height are diverse in size. Larger companies and traders are more likely to invest in new technology; whereas, small, micro and sole traders might not have the resources to do the same. The proliferation of technologies aimed at reducing the risks associated with working at height can only occur with a wider technology strategy, which includes bespoke interventions for different sized companies.

Drones

Individuals who work at height use drones before or instead of climbing. Remote inspection of buildings, quarry faces or wind turbines can reduce or eliminate the need for human access, and solve the "all places must be inspected before use" ambiguity in the 2005 Work at Height Regulations.

Drones have been important in removing risk to workers and making work at height safer. Remote inspection and maintenance of work at height with the use of drones removes the risk of falls from height.

Virtual and augmented reality

The introduction of virtual and augmented reality has allowed individuals to experience the work at height process without the associated risks. The APPG heard that much of this immersive technology is being used

in the training and education space, with workers being transported to potentially dangerous site environments from the safety of a training room.

A New Reality: Immersive Learning in Construction

In September 2017, CITB published a report on the use of immersive technologies in the construction industry and the opportunities for the sector going forward.

The report highlighted the benefits of using immersive technology in work at height, especially in relation to safety, physical impact and ensuring individuals are more 'workready.'

It also highlighted that while immersive learning cannot directly replicate all the hazards inherent in a construction environment, it can provide a safe opportunity to experience riskier tools and environments.

This sentiment was shared by some respondents to the APPG's inquiry. For instance, Arco said that "the basics of working at height training cannot be completely replaced by technologies such as simulation. In order to be properly trained to work at height, people have to expose themselves to genuine peril, in order to train themselves to work safely and competently. The high-stakes element of training is absolutely essential to delivering appropriate industry skills. In the future, a range of technologies can contribute to rigorous training for working at height, including virtual reality and simulation. However, real-life peril will always be a foundational part of training for working at height."

Prefabrication and off-site modularisation

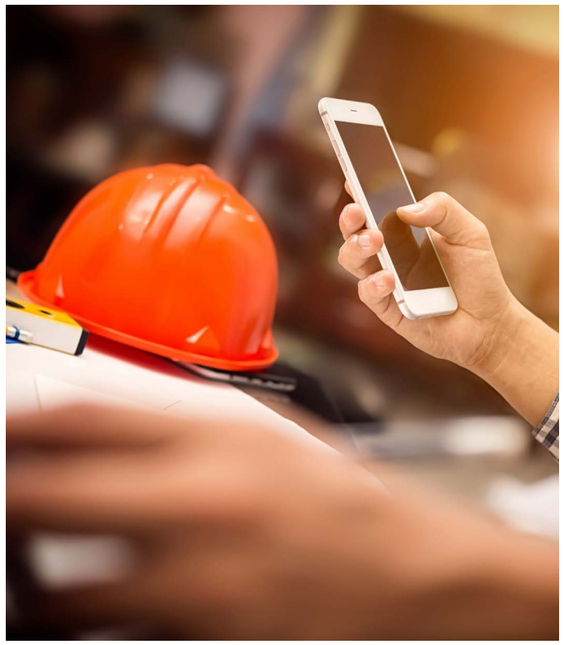
Prefabrication and off-site modularisation produces a number of key benefits including faster delivery of projects, reducing building life cycle carbon emissions and lower costs. It also significantly reduces the need for work at height. Some companies are leading on the increased use of prefabrication and off-site modularisation. For instance, Balfour Beatty has committed to reducing onsite activity by 25% by 2025.

Apps

We heard from stakeholders that they were interested in an app - an application downloaded onto a users' mobile device - that could help with enhanced inspection and reporting. An app would support a more collaborative system of sharing best practice and support enhanced reporting of 'near misses'.

As noted earlier in this report, companies are often reluctant to report workplace accidents which do not qualify for RIDDOR reporting, for fear of legal or reputational risk. A cross-sector app accessible to all those working at height, would allow enhanced reporting of near misses and in an open manner, improving culture and ultimately reducing the number of falls from height.

"The introduction of virtual and augmented reality has allowed individuals to experience the work at height process without the associated risks."



Conclusion

We have seen significant progress since the introduction of the 2005 Work at Height Regulations, however, it is clear from our findings that more must be done by policymakers, regulators and industry leaders to reduce the number of falls from height.

Our inquiry highlighted new initiatives and innovations already adopted by the work at height sector to ensure the safety of their employees, from targeted training programmes to innovative approaches to inspections.

To ensure these high standards are reflected across all organisations, we have recommended the appointment of an independent body to allow confidential, enhanced and digital reporting, as well as a major review of work at height culture. New technology has the potential to improve reporting and monitoring systems, but we can only ensure effective engagement with these systems by driving long-term cultural change. The Government has pledged to protect European Union-derived health and safety protections immediately after Brexit, but the longer-term effects of the UK's exit from the EU remain unclear.

In this fast-changing regulatory environment, this report marks just the beginning of the APPG' s work to ensure the 10 million people in the UK who work at height continue to do so without unnecessary risk of injury.

Acknowledgments

The APPG would like to thank the following organisations and individuals for submitting written evidence to this inquiry

- Access Testing
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- Arco Professional Safety Services
- Astute Safety Solutions Ltd.
- ATLAS
- Balfour Beatty
- Building Engineering Services Association
- Bratts Ladders
- CAN Structures Ltd
- CDMM UK Ltd.
- Certas Energy
- Chartered Institute of Environmental Health
- City of London Corporation
- Clarke Health and Safety Consultants Limited
- Concept Life Sciences
- Construction Industry Advisory Network
- DAEL Group
- Davenport Safety Services Limited
- Electrical Contractors Association
- Engineering Construction Industry Association
- Fall Arrest Safety Equipment Training
- Federation of Petroleum Suppliers
- Freedom Group
- Galliford Try
- Glass and Glazing Federation
- Handybatch Ltd.
- Harrow Council
- Heightsayfe
- Institution of Occupational Safety and Health
- International Powered Access Federation
- Joanne (no further details provided)
- Kee Safety Group
- Ladder Association
- Ladder Systems Manufacturers Association
- Lakeside Industries
- Lavendon Group
- Mark Bowman
- L&Q Construction
- Mast & Tower Safety Group
- National Farmers Union
- National Federation of Roofing Contractors
- Never Let Go
- No Falls Foundation
- Peter Gotch
- Prefabricated Access Suppliers' and Manufacturers' Association
- PTSG Access & Safety Ltd
- Purcell
- Ramsay Ladders
- Royal Society for the Prevention of Accidents
- Safety Guard
- Safety Up
- Scaffolding Association
- Service Testing Association
- Skaftray
- Skanska
- Skipton Scaffolds
- Source Testing Association
- SRM
- Steelboard Ltd.
- Stephen Sidgwick
- The Northern Trailer Company Ltd.
- Varitech Systems
- Vehicle Edge Protection System
- Veritas Consulting
- Virtua
- VP Plc.
- Work at Height UK Ltd.
- Xytec Services

The following stakeholders provided oral evidence at a session held in Parliament on Wednesday 28th March 2018:

Witness	Organisation
Paul Blanchard	
Jason Anker MBE	
Toby Thorp	City of London Corporation
David Thomas	Heightsayfe
Clive Johnson	Construction Industry Advisory Network
Gary Walpole	National Federation of Roofing Contractors
Adam Grinsell	The Royal Society for the Prevention of Accidents
Stuart Roberts	National Farmers' Union
Heather Bryant	Balfour Beatty
Peter Bennett	Access Industry Forum
Mike Allen	Arco Professional Safety Services

The following stakeholders provided oral evidence at a session held in Parliament on Tuesday 17 July 2018:

Witness	Organisation
Peter Bennett	No Falls Foundation
Ian Dugmore	Aviation and Maritime Confidential Incident Reporting
Paul McNulty	Confidential Reporting on Structural Safety

References

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About the All-Party Parliamentary Group on Working at Height

Falls from height still remain the single biggest cause of fatalities on site and in the workplace. The All-Party Parliamentary Group (APPG) on Working at Height seeks to understand the root causes of falls from height and propose effective, practical measures to reduce the number of serious injuries and fatalities as a result of a fall from height.

You can find out more about our work here:

www.workingatheight.info

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GK Strategy is the secretariat for the
All-Party Parliamentary Group on Working at Height.

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