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# Proposals for Work at Height Regulations

This consultative document is issued by the Health and Safety Commission in compliance with its duty to consult, under sections 16(2) and 50(3) of the Health and Safety at Work etc. Act 1974, bodies which appear to it to be appropriate before submitting proposals for the making of Regulations and the issue of Approved Codes of Practice.

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to reach them no later than 02 April 2004

The Commission tries to make its consultation procedure as thorough and open as possible. Responses to this consultative document will be lodged with the Health and Safety Executive's Information Centres after the close of the consultation period where they can be inspected by members of the public or be copied to them on payment of the appropriate fee to cover costs.

Responses to this consultative document are invited on the basis that anyone submitting them agrees to their being dealt with in this way. Responses, or part of them, will be withheld from the Information Centres only at the express request of the person making them. In such cases, a note will be put in the index to the responses identifying those who have commented and have asked that their views, or part of them, be treated as confidential.

Many business e-mail systems now automatically append a paragraph stating the message is confidential. If you are responding to this CD by e-mail and you are content for your responses to be made publicly available, please make clear in the body of your response that you do not wish any standard confidentiality statement to apply.

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CONSULTATIVE  
DOCUMENT

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## **SUMMARY OF DOCUMENT**

This Consultative Document (CD) sets out the Health and Safety Commission's (HSC's) proposals for new Regulations and Guidance covering work at height in Great Britain. The Regulations will implement the Temporary Work at Height Directive (2001/45/EC).

The key elements of the HSC's approach to the Regulations are:

- To take this opportunity to bring together and clarify processes and procedures which will reduce the numbers of deaths and major injuries caused by falls from height in the workplace;
- To bring together all the current legal requirements for safe work at height, making a cohesive, single set of goal-setting Regulations which will be flexible enough to apply to all industries and allow for technical innovation;
- To ensure that the Regulations are practical and tackle high-risk areas whilst avoiding unworkable requirements;
- To adopt a risk-based approach, so that measures taken to comply with the Regulations are proportionate to the risks involved, and can build upon existing good practice in the various industries they will apply to and compliance with the current law.

The draft Regulations are based on a hierarchy whereby work at height should be avoided so far as is reasonably practicable; if work at height is necessary, safe systems of work should be established, proper planning and organisation should take place and appropriate equipment should be chosen and used correctly.

The HSC hopes that the draft Regulations and Guidance achieve the objectives of practicality and proportionality. If they do not, or if there are problems of practical application that have not been identified, the HSC would like to hear from you in response to this consultation exercise.

The draft Work at Height Regulations, which will apply to all sectors of industry, bring together the relevant parts of the Construction (Health, Safety and Welfare) Regulations 1996 (CHSWR), the Workplace Regulations 1992 and certain other current legislation relating to work at height, whilst reiterating some parts of the Provision and Use of Work Equipment Regulations 1998 (PUWER 98).

Included in the CD are a number of key questions, on which we seek your comments. These questions include: should we have a transitional period before the Regulations come into force? Is the definition of work at height appropriate? Should competence be defined? Has an acceptable approach been taken concerning fragile surfaces and the duties of persons at work? Have we got the details right on the use of particular equipment such as ropes and ladders?

You can access the electronic version of the questionnaire via the HSE website or request a copy of the questionnaire via e-mail. This, along with other forms of electronic responses, will facilitate analysis. In whatever way you choose to reply, however, your comments should reach us by 2 April 2004.

All responses will be acknowledged, and a summary of the main issues raised will be produced once the consultation period has been completed.

## **HSE Statement on Openness**

The Commission tries to make its consultation procedure as thorough and open as possible. Responses to this consultation document will be lodged in the Health and Safety Executive's Information Centres after the close of the consultation period where they can be inspected by members of the public or may be copied to them on payment of the appropriate fee to cover costs.

Responses to this consultation document are invited on the basis that anyone submitting them agrees to their being dealt with in this way. Responses, or part of them, will be withheld from the Information Centres only at the express request of the person making them (Under the Code of Practice on Access to Government Information; Environmental Information Regulations 1992 and the Data Protection Act 1998). In such cases a note will be put in the index to the responses identifying those who have commented and have asked that their views, or part of them, be treated as confidential.

Many business e-mail systems now automatically append a paragraph stating the message is confidential. If you are responding to this Consultative Document/Discussion Document (CD/DD) by e-mail and you are content for your responses to be made publicly available, please make clear in the body of your response that you do not wish any standard confidentiality statement to apply.

## INTRODUCTION

This Consultative Document (CD) sets out the Health and Safety Commission's (HSC's) proposals for new Regulations (and supporting Guidance) covering the risks from work at height in Great Britain. They will be called the Work at Height Regulations (WAHR). The proposed Regulations are at [Annex A](#). The HSC would value your opinions and comments on these proposals.

### The HSC's approach

The proposed Regulations will implement the EC Temporary Work at Height Directive (2001/45/EC) in Great Britain. The key elements in our approach to doing this have been:

- Falls from height are the biggest single cause of fatal injuries, and the second biggest cause of major injuries, caused by accidents at work – each year around 50-60 fatalities and 4000 major injuries are caused by falls at work. Reducing this toll is one of the HSC's Priority Programmes, which aims to reduce the incidence of fatal and major injuries by 10% over 10 years from 1999/2000. Implementing the Directive gives us an opportunity to make a substantial impact on the problem;
- This is also an opportunity for us to bring together for the first time in one place all the legal requirements for work at height. A single set of goal-setting Regulations, applying to all industries, should establish the key principles whilst allowing flexibility for those who work at height in the very wide range of jobs where this is done; and for technical innovation in the development of equipment for safe work at height;
- The UK negotiated hard to ensure that, as far as possible, the Directive was practical. In implementing it we are equally determined to ensure that the Regulations make sense, tackling the problems in high-risk areas whilst avoiding over-elaboration, inconsistencies or unworkable requirements;
- In order to be practical the Regulations should adopt a risk-based approach, ensuring that the measures taken to comply with the law are proportionate to the risk involved. We intend that, as far as possible, it will be sufficient to comply with the law if people follow existing 'good practice' as embodied in industries' own codes of practice or guidance. Risk assessments will then essentially consist of comparing what is being done with what is accepted as good practice. If the 'good practice' is being followed, that will normally be enough to comply with the law – if not, action should be taken to meet the standard. For those already doing what is necessary to comply fully with existing laws which apply to safe work at height – for example the Construction (Health, Safety and Welfare) Regulations, the Management Regulations, or the Workplace Regulations – the WAHR should require little more by way of compliance.

The fundamental principle is that work at height should be undertaken according to the staged process outlined in Regulation 6 – the ‘hierarchy’ – so that safe systems of work are established, proper planning and organisation takes place and appropriate equipment is chosen and used correctly. We hope that we have achieved our objectives of practicality and proportionality, and that our intention to do so is conveyed in the Regulations and Guidance. However, where there may be problems of practical application which we have **not** yet identified – or where there may be better ways to achieve safe working than those we **have** identified – we want you to tell us about it.

This consultation exercise is genuinely that – because of the wide application of the Regulations we need as much information and comment as possible to make them workable and relevant to the real risks of working at height. The proposals will affect every business in Great Britain as virtually all perform work at height in some fashion, from large construction projects to simple tasks such as climbing a ladder to replace a lightbulb. During the period in which these proposals have been drawn up, the HSE team responsible for this project has met a wide range of organisations from industries affected by the proposals. This process will continue throughout the consultation period, and will aim to identify, if possible, ways of resolving particular difficulties that have been drawn to our attention. In any case, it should be noted that the HSC has made a commitment that, in making these Regulations, it will maintain the existing legal standards on work at height that apply in the construction industry.

In the period leading up to this formal consultation there has been some public and media concern and misunderstandings about what the TWAH Directive, and these proposed Regulations, will require. In order that there should be an informed debate about the Regulations, we believe it is important to challenge any misconceptions and address the concerns. It is not true, for example, that the Directive or the Regulations set out to ‘ban ladders’, nor that we will be absolutely preventing anyone from performing a two-handed task from a step-ladder. We are also aware of concerns, for example from the outdoor activities sector, that these Regulations will prevent the use of a single rope in climbing. This is not the case, and we are working to address these issues. There may be other genuine difficulties that we are not yet aware of, and we want to hear about these in the responses to this document. In so doing we will, as we have said above, aim to introduce measures which are practical, reasonable and in line with common sense. Our aim is to encourage people to manage, not eliminate, risk.

## **BACKGROUND**

The WAHR implement the 2<sup>nd</sup> Amending Directive (2001/45/EC) to the Use of Work Equipment Directive (89/655/EEC). The 2<sup>nd</sup> amending Directive has become known as the Temporary Work at Heights Directive; the full text is attached at [Annex D](#). The original UWED was implemented in Great Britain by the Provision and Use of Work Equipment Regulations 1992 (PUWER). The first amending Directive (AUWED) was implemented in GB by PUWER 98 and the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER). There are, therefore, important links between these existing provisions and the WAHR, which are set out in the draft Guidance (see [Annex B](#)).



The Temporary Work at Height Directive was adopted by the European Council of Ministers on 14 June 2001, and a reference published in the *Official Journal of the European Communities* on 19 July 2001. Member States are required to implement the requirements of the Directive into national law by 19 July 2004 (although there is an optional additional transitional period of two years for the coming into force of any or all of the new requirements, particularly those which may affect small and medium sized enterprises).

As always, the UK negotiators made every effort to ensure that the provisions of the Directive could be implemented into UK law as smoothly as possible. This is not straightforward when such instruments have to be capable of application in many countries where different legal and enforcement systems apply. However, we believe that the Directive, although not ideal in every respect from the UK's point of view, generally adopts the right approach towards the important issue of safe working at height. During negotiations the UK secured some important improvements to the text, such as, for example, the flexibility to allow for single rope working under certain circumstances.

The Temporary Work at Height Directive sets out minimum requirements for the selection and use of work equipment for all work at height – the European Commission has made it clear that it has ‘the same scope of application as the Framework Directive, and therefore it applies to all sectors of activity where temporary work at height is carried out’. In particular, it contains requirements for scaffolding, ladders, rope access and positioning techniques. It adopts a hierarchical approach to the selection of equipment, giving collective protection measures priority over personal protection measures.

Many of the requirements of the WAHR are not new and reflect existing good practice in the construction and other industry sectors. Existing legislation to control the risks from working at height includes parts of the Construction (Health, Safety and Welfare) Regulations 1996 and the Workplace Regulations as well as parts of other industry-specific legislation. As such it is somewhat piecemeal, and the proposed WAHR will consolidate the existing requirements into one place, and make them more easily understandable to employers and workers. The WAHR will also extend several of the existing provisions beyond ‘construction’ work to a wider range of other sectors and activities, for example window cleaning, other industrial cleaning and maintenance, container top working in docks, working on the back of a lorry, erecting bill posters, arboricultural activities, etc.

The existing legal provisions which deal specifically with risks from work at height are principally:

**The Workplace (Health, Safety and Welfare) Regulations 1992;**  
**The Construction (Health, Safety and Welfare) Regulations 1996;**  
**The Ship Building and Ship Repairing Regulations 1960;**  
**The Loading and Unloading of Fishing Vessels Regulations 1988;**  
**The Offshore Installations and Wells (Design etc) Regulations 1995;**  
**The Docks Regulations 1988; and**  
**The Construction (Design and Management) Regulations 1994.**

The draft Regulations set out at Schedule 8 which parts of these instruments would be revoked by the WAHR. The HSC believe that the WAHR, alongside the general duties in the Health and Safety at Work, etc. Act 1974 and other legislation which applies across all sectors, will provide sufficient coverage to allow the repeal or amendment of existing sector specific law, whilst at the same time maintaining and improving existing legal standards of protection for people who work at height.

As noted above, it is one of the HSC's priorities to reduce the number of fatal and major injury accidents caused by falls from height. The Falls from Height Priority Programme aims to reduce the total by 10% over the ten years from 1999/2000. It includes research into the causes and means of prevention of falls accidents, and action projects, many involving industry groups or individual employers and trade unions, aimed at tackling particular problem areas. More information on the Programme is available on the HSE website at: [www.hse.gov.uk/falls/index.htm](http://www.hse.gov.uk/falls/index.htm), or from:

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### **What would we like you to do?**

Please let us have your comments by 2 April 2004. We have made an electronic version of the questionnaire available on the HSE website or you can e-mail us to request a copy of it. Alternatively, there is a copy of the questionnaire at the end of this document that you can fill in by hand. **We would encourage you to use the electronic form if at all possible (either via the HSE website or by requesting an e-mail copy of it).** Comments in electronic format, for example in an e-mail or as a MS Word or Lotus WordPro document, would also be acceptable. This will allow us to analyse your responses as accurately and as quickly as possible. However, do not worry if you cannot reply electronically – we are also happy to accept written comments posted to us in the traditional way using the form at the end of this document.

By whatever means you reply, please do not be constrained by the questionnaire; we would welcome any comment you wish to make, in whatever format. For example, you may have queries on the cost and benefits set out in the Regulatory Impact Assessment (see [Annex C](#)). **Please remember that it would be helpful if you could structure any comments so that it is clear which Regulations or part of the Guidance you are commenting on.**

We will acknowledge all responses, and give full consideration to the substance of arguments in the development of proposals; we may also contact you again if, for example, we have a query. We are expecting a very large number of responses to the consultation exercise. It may not, therefore, be possible to respond to each of you individually in detail. However, we will respond with a summary of the main questions raised and the proposed changes/solutions. In addition, depending on time available, members of HSE team responsible for this project may be able to talk through the proposals at meetings of trade organisations, etc. In the first place you should contact the officials whose names appear on the cover of this Consultative Document.



## **OUTLINE OF THE PROPOSALS FOR THE WORK AT HEIGHT REGULATIONS**

1. This section sets out the background to the main proposals in the WAHR and seeks your views on our proposals. The questions are reproduced under each section, but are only a guide. **A full questionnaire for you to complete is at page 150, but we would prefer you to fill in the questionnaire electronically either on the HSE website or by requesting a copy of it by e-mailing us.**

### ***Transitional Requirements***

2. The Directive, under Article 2, gives Member States the right to make use of a transitional period (of no longer than two years from the date of coming into force of the implementing Regulations) in order to ease the introduction and implementation of the Regulations. The Directive suggests that this would be particularly relevant to small and medium sized enterprises, who could use the period to implement the requirements relevant to them whilst spreading the associated costs over time. We have not had any specific suggestions as to industries or groups that would benefit from these transitional arrangements, but it may be felt that some requirements would need time to be put into effect, for example (if it is believed to be necessary) extra training, or technical changes such as the height of guardrails.

**Q1. Should any industries, groups or provisions relating to specific items of work equipment be subject to these transitional arrangements?**

### ***Interpretation (Regulation 2)***

3. The Temporary Work at Height Directive does not include any definitions. There is, therefore, a risk in defining terms in the implementing Regulations. The main risk is of under implementing the Directive by not fully meeting its intent. The HSC's approach, therefore, is to use existing terminology (both in existing Directives and harmonised European Standards), include definitions where we believe they are necessary and provide supporting guidance to flesh out aspects where industry might find such guidance useful.

### ***'Work at Height'***

4. We have, for example, provided a definition of 'work at height' even though the Directive does not define it ('temporary' has not been defined; ultimately all work at height must be 'temporary'). We have also explained the relationship with 'slips and trips' in the Guidance, but felt that it would cause confusion if this was included in the Regulations themselves - because we do not wish these Regulations to cover slips and trips 'on the level', yet many falls from height are initiated by a slip or trip. We understand that the intent of the Directive is that all work at height is covered, regardless of where or at what height it is performed. While traditionally in GB work at height has been defined as any work above 2 metres (based on the requirements in the CHSWR), research carried out in support of the Falls from Height Priority Programme has shown that around 60% of all major injuries are caused by falls from

heights below 2m. We propose, therefore, to cover all work at height where there is a risk of personal injury. The extent of what is required to address the risks will depend on the dutyholder's risk assessment (see para. 15 below).

**Q2. Is the definition of 'work at height' clear?**

***'Working platform'***

5. Working platforms are defined in these Regulations to include certain items of work equipment used for work positioning whilst working at height. Working platforms include scaffolds, cradles, platforms temporarily attached to fork lift trucks, mast climbing work platforms and Mobile Elevating Work Platforms (MEWPs) such as self propelled booms and scissor lifts. A ladder is not seen as a working platform.

**Q3. Are the definitions about 'working platforms' set out in the Work at Height Regulations a) clear and b) workable?**

***'Fragile surfaces'***

6. The CHSWR currently contain provisions to deal with the risks of working on or near and passing across or near fragile materials. Whilst we wish to retain these requirements, we propose to change the term 'fragile material' to 'fragile surface'. This is because there can be doubt as to when a material becomes fragile. For example, materials for roofing may be sufficiently strong when installed but with the effects of weather corrosion or prolonged exposure to sunlight may become fragile over time. Similarly, for example in the case of a roof light, the material may not be fragile but the casing or fixings may be, or may deteriorate to the extent that they may not be able to support the actual material. The existing definition of 'fragile materials' does also not address the risk of dynamic loads (e.g. persons or objects falling onto the material). We therefore also propose to cover this in the definition of fragile surface.

7. The aim of the legal provisions should be to ensure that the risk of someone falling through a surface on which he/she is standing is minimised. We therefore propose to adopt the term 'fragile surface' which will encompass all aspects of the surface on which the person may come into contact with.

**Q4. Do you agree that we have adopted the right approach to fragile surfaces?**

***'Personal Fall Protection Systems'***

8. Current provisions in the CHSWR define equipment for rope access and work positioning techniques as 'personal suspension equipment'. The CHSWR came into effect in 1996, but since then the state of the art and industry-recognised terminology have moved on, particularly with the introduction of **BS 7985:2002 'Code of practice for the use of rope access methods for industrial purposes'**. We therefore propose to

adopt the terminology in the standard for the provisions that deal with rope access and positioning techniques.

**Q5. Do you agree that we have adopted the right approach to Personal Fall Protection Systems?**

*Application (Regulation 3)*

9. As noted above, the Directive applies to all work at height. The requirements of AUWED (as implemented by PUWER 98 and LOLER) were applied to employers, the self-employed and persons with control to any extent to the extent of their control. The CHSWR has a similar application. Therefore, Regulations 3(2) and (3) have been drafted to maintain these existing duties as they reflect the way work equipment is used and work is performed in industry where there may not necessarily be a direct 'employment' relationship between the user and the person who controls the equipment, e.g. in sub-contract arrangements on a large building site. We have attempted to explain the application of the Regulations in these circumstances in the Guidance.

10. The proposed Work at Height Regulations would apply offshore to the same extent as the Health and Safety at Work etc Act 1974. This includes offshore installations, wells, pipelines, pipeline works and connected activities within the territorial waters of Great Britain, or in designated areas of the United Kingdom Continental Shelf, plus certain other activities within territorial waters.

11. Applying the Work at Height Regulations offshore would have the effect of implementing the TWAH Directive offshore. It would also extend offshore some specific provisions concerning work at height or related hazards that are not part of the Directive. The intention of the HSC is to ensure that all requirements for safe work at height are consolidated in the same set of Regulations and that a similar standard of good practice is applied across all industries, including offshore. However, we must ensure that this is achieved in a way that maintains or improves current standards and good practice concerning health and safety offshore and is without prejudice to other provisions that apply offshore.

12. The specific provisions to be extended offshore (outside of those in the TWAH Directive) are:

- Draft Regulations 9 on Fragile Surfaces and 10 on Falling Objects
- Draft Schedule 2 concerning requirements for Guard-rails etc. This and other draft Schedules (1 through 6) carry over general requirements from the Construction (Health Safety and Welfare) Regulations that are for the most part similar to those of the TWAH Directive, some parts of these are outside the Directive, but they are too closely integrated to separate easily.

13. In addition, draft Regulation 11 on Danger Areas overlaps with similar requirements in Schedule 1 paragraph 36 of the Offshore Installations and Wells (Design and Construction, etc) Regulations 1996 (DCR), which implements a specific provision of the Extractive Industries (Boreholes) Directive 92/91/EEC. In this instance it is proposed not to apply Regulation 11 offshore where the DCR apply.

**Q6. We would welcome your comments on the appropriateness of the dutyholder application – particularly in relation to any situations which you feel may not be covered by these proposals or where further guidance might be required.**

**Q7. Do you agree that the WAHR should be applied offshore in the way proposed?**

#### ***Organisation and Planning (Regulation 4)***

14. The majority of falls from height result from failures of organisation or planning, for example in selecting inappropriate and poorly maintained work equipment. It is, therefore, essential that work at height is properly planned, organised and supervised by competent people.

15. The starting point for any work at height must be an assessment of the risks (as required by Regulation 3 of the Management of Health, Safety and Welfare Regulations 1999). This should take into account a number of factors including the “frequency of passage, the height to be negotiated and the duration of use” (Article 4.1.1 of the Directive). It must also permit “evacuation in the event of imminent danger” (Article 4.1.1). For example, if a fall is arrested by a security line in rope access the worker may need to be rescued within a very short period of time to avoid the risk of suspension trauma.

16. There are clear links here with the existing requirements of UWED, for example in the use of mobile elevating work platforms and other work equipment for lifting people and loads, and the requirement in Regulation 8 of LOLER (which implemented the lifting aspects of AUWED) for lifts to be properly planned.

**Q8. We would welcome your views on the requirements in the WAHR to organise and plan work at height.**

**Q9. We aim to encourage dutyholders to assess the ‘overall’ risk involved in working at height, for example by considering the risk of installing equipment for work at height as well as the risks of using it, by taking full account of the nature and duration of the work, by taking account of emergency and rescue situations and by taking a full range of technical solutions: a) are our aims understood? and b) could they be made clearer?**

#### ***Health and medical issues***

17. It is likely that the physical health of workers will need to be taken into consideration for some types of work at height. This would apply, for example, to the physical stamina of operators of large cranes, who need to gain safe access to their work positions situated at a considerable height above the ground; or the agility of arboriculturalists, who need freedom of movement whilst working at height from ropes.

18. However, it is important not to discriminate through unnecessary and overly strict criteria, or place inappropriate restrictions on low risk operations. It is also important



to respect individuals' privacy and confidentiality regarding their health and medical issues.

**Q10. Should we say any more in the Guidance about a person's physical capability for working at height?**

**Q11. Have we a) achieved a reasonable balance and b) gone into the right amount of detail on health and medical issues?**

### *Appropriate supervision*

19. Supervision is closely linked to the planning and risk assessment stages of a job, and should be appropriate to the findings of the risk assessment, with special consideration given to the experience and capability of the people carrying out the work. This reflects existing duties in the Health and Safety at Work etc. Act 1974 (HSWA).

20. The Regulations in this case concentrate on supervision, and do not mention the management of the work and those carrying out the work.

**Q12. Should we say more about management of workers and the work process in the Guidance?**

### *Weather conditions*

21. It is essential that the effects of the weather are taken into consideration when considering work at height outdoors. For example, ice, rain, snow, sun and wind would all have an impact on working conditions and surfaces, and would present risks that would need to be addressed. The wording in the Regulations is derived from the Directive (Article 4.1.6), which gives us limited scope for flexibility.

**Q13. Have we given enough explanation about weather conditions and the effect they can have in the Guidance?**

### *Competence (Regulation 5)*

22. HSC/E's general approach is not to set out competences for individual tasks or professions. Instead it is expected that dutyholders should make assessment of their needs for the particular job and then ensure that those with the relevant skills, knowledge and experience are employed in performing those tasks. The Regulations, therefore, do not contain a definition of competence; however, further guidance is contained in paragraph 45 of the supporting Guidance. (See [Annex B](#)).

23. Some of those who have been informally consulted thus far have suggested that a more complete definition of competence should be used. This approach, however, runs the risk of specifying an unnecessary degree of competence, which would not be appropriate or relevant in all cases.

**Q14. Can or should we attempt to define ‘competence’ in the Regulations?**

**Q15. Is the Guidance clear in its definition of ‘competence’?**

**Q16. To what extent, if at all, should the definition of competence encompass consideration of a person’s training and qualifications?**

***The hierarchy of avoiding and controlling risks from work at height (Regulation 6)***

24. The guiding principle behind the WAHR is that work at height, if it is necessary, should be performed from a safe place of work. This can be achieved by working from a place of work at height which complies with certain safety criteria or by selecting suitable work equipment. The heart of the WAHR is therefore a hierarchy of principles for avoiding and controlling risks from, and the selection of work equipment for, work at height. Regulation 6 aims to make it clear that the key point is that the dutyholder must so far as is reasonably practicable prevent anyone from falling a distance liable to cause personal injury.

25. We believe that the hierarchy of protection measures in the Directive (Articles 4.1.1) is flawed. It omits elimination of the hazard, which should be at the top of any health and safety hierarchy, e.g. it may be possible to design out the need to work at height, such as installing a lighting system that does not rely on ladder work to replace light bulbs. The Directive also fails to distinguish between fall prevention and fall arrest. We believe that fall prevention measures, such as guard rails and toe boards, should be placed above fall arrest measures, such as safety nets, in the hierarchy.

26. While ensuring that we implement the requirements in the Directive we have, therefore, gone beyond its minimum requirements in requiring that so far as is reasonably practicable work at height should be eliminated and providing the distinction between fall prevention and fall arrest. Regulation 6, therefore, sets out the principles that should be adopted in planning work at height and selecting and using equipment for work at height i.e.:

- **Avoid work at height (if you don’t have to go up there then don’t);**
- **Prevent falls (work safely if it is possible to do so from an existing place of work at height: adopt the most suitable method of working and select most suitable equipment for work at height); and then;**
- **Mitigate the consequences of a fall (have measures in place to arrest a fall should one occur).**

27. Article 4.1.1 of the Directive requires that: “Collective protection measures must be given priority over personal protection measures.” We therefore propose that at each step in Regulation 6 collective measures must take priority over personal protective measures, e.g. where reasonably practicable guard rails must take priority over personal fall protection systems and in mitigating the consequences of falls nets, which will provide collective fall protection, must take priority over individual fall arrest, such as lanyards (Reg. 6 (5) (b)).

28. This hierarchy is a key part of the overall risk assessment that should be carried out before any work at height is performed. It aims to give flexibility in the choice of work equipment or other methods to protect against falls, or to mitigate the effects of falls. At the same time it should not be so open-ended that dutyholders could too easily justify the use of equipment at the lower end of the ‘hierarchy’.

**Q17. Do you agree with the principles set out in the hierarchy in Reg. 6 – e.g. is there sufficient clarity on what is required of dutyholders?**

**Q18. In the hierarchy is the meaning of a safe place of work for work at height, as defined in Schedule 1, clearly defined?**

**Q19. Do we need to say more – without being over-prescriptive – about the type of equipment that should be used to meet each step of the hierarchy?**

*The principles for selection of work equipment for performing work at height (Regulation 7)*

29. We recognise, as does the Directive, that work at height can be performed safely in a number of ways, depending on the circumstances of the particular task. For example, for simple domestic window cleaning the use of a MEWP would usually be safer than using a ladder, but it is not reasonably practicable to use a MEWP in all such work. Similarly, we recognise that technical innovation may improve the safe performance of work at height.

30. The hierarchy in the WAHR recognises these factors. However, it does not negate the need for dutyholders to perform work at height safely. In selecting suitable work equipment dutyholders must assess the risks of the job (including the ‘overall risk’ e.g. risks from site conditions, erection, dismantling, etc.) and select the most suitable equipment for the particular task.

31. Any equipment selected must as a minimum also comply with the requirements set out in Articles 4.2, 4.3 and 4.4 of the Directive. These requirements, along with modified requirements of the CHSWR, are reflected in the relevant Schedules of WAHR (see paragraphs 41-51 below).

**Q20. We would welcome your views on the proposed selection criteria (Regulations and Guidance), in particular:**

- a) Will it ensure that the safest and most effective measures will be selected to perform work at height?**
- b) Is it clear where differing types of work equipment come into play when considering the hierarchy?**
- c) Does it address the practicalities of performing work at height in all cases?**
- d) Does the supporting Guidance illustrate adequately the various issues to consider when choosing different work equipment?**

### ***Fragile Surfaces (Regulation 9)***

32. As noted in the Introduction above we aim to maintain existing standards and spread good practice where possible. The Directive does not contain requirements for working on or near fragile materials/surfaces. However, falls through fragile materials account for a considerable number of deaths and injuries each year. We therefore propose, subject to the changes highlighted in paragraphs 6-7, to carry forward, and apply, the existing requirements of the CHSWR to address these risks for all work at height. We have added a duty to ensure that dutyholders should avoid working on or near a fragile surface if it would be reasonably practicable to carry out the task in some other way, for example by approaching the surface from below.

33. However, we must be careful to ensure that the Regulations are not too restrictive in this respect. We understand that in some circumstances it is difficult to provide adequate covering of the surface or other protective measures, and that workers will have to cross fragile surfaces as best they can using suitable fall arrest equipment. We need to consider whether we can allow for this, by qualifying the duties with ‘so far as is reasonably practicable’ (SFAIRP), without weakening the existing provisions of the CHSWR which aim to prevent all passage over fragile materials without supporting structures to prevent falls.

<b>Q21. Are the Regulations too restrictive in insisting on coverings and other protective measures for fragile surfaces?</b>
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<b>Q22. Should duties concerning fragile surfaces be qualified by SFAIRP?</b>
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### ***Inspection (Regulation 12)***

34. AUWED contains specific requirements for inspection and thorough examination of certain work equipment. These requirements are set out in Reg. 6 of PUWER and Reg. 9 of LOLER. CHSWR Reg. 29 also requires inspections of certain work equipment. The draft Regulations repeat these provisions (which already apply to all equipment for use in work at height and do not change), save that they include the specific provisions in the CHSWR which relate to inspection of scaffolding. However, they exclude the requirements from the CHSWR for the recording and keeping (for 3 months) of records on inspections of scaffolding, as we believe that the other provisions in Reg. 12 about keeping records of inspection are sufficient.

35. We believe that repeating the PUWER provisions here is the simplest way of making clear what the inspection requirements are. We are also keen to make it clear that the WAHR will not require any extra bureaucracy in terms of inspections and record keeping beyond what is already required. We have, on the basis of advice received, excluded general working platforms (including MEWPs) and personal fall protection systems from the requirement for 7-day inspections in order to reduce bureaucracy which, it is suggested, is not necessary to maintain standards of safety.

36. The provisions governing the inspection, maintenance and use of rope access equipment for the lifting of people are currently covered by LOLER. This has presented some practical difficulties for implementation, including the identification

of safe working loads. It would be possible to overcome these problems by disapplying LOLER to rope access and positioning techniques and equipment, which would mean that this equipment was covered by the provisions of the WAHR only. Consultees are invited to give views on this.

**Q23. Have we succeeded in making it clear what needs to be inspected and when in the Regulations and the Guidance?**

**Q24. Is it right that we drop the requirement in CHSWR for records of inspection of scaffolding to be kept for 3 months?**

**Q25. Is it right that only scaffolding, and not other working platforms such as MEWPs, should be subject to the requirement to be inspected every 7 days (as currently required in the Construction (Health, Safety and Welfare) Regulations 1996)?**

**Q26. Should the provisions governing the lifting of people using rope access and positioning equipment be removed from LOLER and placed in the WAHR?**

#### *Inspection of places of work at height (Regulation 13)*

37. We believe that it is vital that at least a visual check of the surface and other basic features of every place of work at height is made before work starts there, given the importance of the integrity of the surface and other items (such as parapets) to safety, and the likelihood that their condition will deteriorate over time. This duty would be new to legislation.

**Q27. Do you agree that a duty to inspect visually the surface before work at height commences should be included in the Regulations? Is it practicable?**

#### *Duties on persons at work (Regulation 14)*

38. Duties are placed on employees in Section 7 and 8 of the Health and Safety at Work etc Act 1974. These are to take reasonable care of themselves and others, to cooperate with their employer in managing health and safety at work and not intentionally or recklessly to misuse equipment, etc. provided to protect health and safety.

39. Work at height can be a high risk activity and the accident data (see Introduction, above) emphasises this. It is, therefore, vitally important that all people at work cooperate to achieve safety in performing work at height. For this reason we have introduced explicit requirements here, which may be said to duplicate the relevant provisions of the CHSWR and the Management Regulations. Our informal consultations to date have revealed a strong view that persons at work, including employees, should have specific duties in relation to equipment for use in work at height because of the severe consequences of any failure to use such equipment properly.

**Q28. Is the proposed approach to the duties on persons at work acceptable?**

**Q29. Is it right that we place specific duties in the WAHR, rather than relying on the duties as stated in other legislation?**

*Exemption by the Health and Safety Executive (Regulation 15)*

40. The draft Regulations contain a standard form of words allowing exemptions to be made from the WAHR which may apply to any group or to any of the requirements of the Regulations in certain specified circumstances. Any such exemption would have to be made with regard to the need to show that the Directive had been implemented fully, in accordance with European law.

**Q30. Should any group of people, type of premises, type of work equipment or class of activities be exempted from these Regulations?**

*Schedule 1: Requirements for Places of Work at Height*

41. This Schedule sets out the criteria which should be met by any place of work at height if it is to be considered 'safe' – if a place of work at height meets these criteria, the dutyholder need take no further action in terms of selection and use of work equipment to make it safe. The requirements of this Schedule would replace the Workplace Regulation 13 and associated Approved Code of Practice (ACoP) as they apply to permanent structures.

**Q31. Are these requirements a) clear and b) appropriate as they apply to a safe place of work at height?**

*Schedule 2: Requirements for Guard-rails, etc.*

42. The requirements set out in Schedule 2 are drawn from the CHSWR. However, the minimum height for guard-rails has been altered from at least 910mm to at least 950mm. This would recognise the fact that the height of the average person has increased since the figure of 910mm was originally set in legislation, and would align more closely with the heights specified in the Building Regulations, European Standards and the Workplace Regulations Approved Code of Practice (which the WAHR would supersede). Also, it is worth noting that we have retained the CHSWR minimum height of 150mm for toe-boards, although the Standard for the height of toe-boards on MEWPs is 100mm. We would like to know whether this presents a problem.

**Q32. Is it right that we should increase the minimum height of guard-rails to at least 950mm?**

**Q33. Are the other specific measurements in this Schedule a) necessary and b) appropriate?**

### ***Schedule 3, Part 2: Scaffolding***

43. Schedule 3, Part 2 of the Regulations provide for specific requirements for scaffolds. We intend the Regulations to apply to scaffolding used, for example, to construct a grandstand for concerts or other performances.

**Q34. What would be the impact of having specific requirements for scaffolds?**

**Q35. Should we define ‘scaffolding’ in order to make it clear that this is meant to be covered?**

44. The WAHR also require specific plans to be produced for example where scaffolding is erected outside the standard configurations as covered by BS 5973 or the manufacturer’s instructions (see para. 2 of Schedule 1 of the WAHR).

**Q36. Does the Guidance explain fully enough what is required in a scaffolding plan and when a plan is necessary?**

### ***Schedule 4: Collective Fall Protection Systems***

45. In current legislation there is no provision explicitly allowing the use of such systems – nets, airbags, mats or similar devices – or establishing standards for them. It is now our intention to do so, in a way that sets goal-setting requirements which can apply to any future technical innovation in this field.

**Q37. In the requirements for ‘collective safeguards for arresting falls’, do we need to include any more technical detail on these, in the Regulations or the Guidance? If so, what detail should we include?**

### ***Schedule 5: Personal Fall Protection Systems***

46. In Article 4.4 the Directive sets out requirements for ‘rope access and positioning techniques’. Our view is that these requirements apply to positioning techniques only in so far as they are *rope access* positioning techniques. Article 4.4 does not, therefore, apply to all *work* positioning techniques, e.g. work restraints, as these are not performed using two ropes or in all cases used for ascent or descent. However, we must ensure that work at height using work positioning is performed safely and to the highest standards. We have therefore applied the relevant aspects of Article 4.4 to work positioning techniques; these are set out in Schedule 5, Parts 2 and 3 of the draft Regulations.

**Q38. We would welcome your views on the applicability of the requirements of Schedule 5, Parts 2 and 3 to all work positioning systems in various industries such as outdoor activities or arboriculture.**

**Q39. We have – in close consultation with industry trade associations - considerably expanded on what the Directive says about ‘rope access’. We have done this in the interests of accuracy and relevance. We would like to know if**

**these sections (Schedule 5 and the related Guidance) are accurate and comprehensible. Should the Guidance give more examples to illustrate the systems that are referred to?**

47. Schedule 5 Part 3 paragraph 3 (following the Directive, Article 4.4) makes provision for single rope working subject to a risk assessment having shown that the use of a second line would be more dangerous, and where appropriate measures had been taken to ensure safety. We know that there are concerns about the application of this part of the Regulation to some activities, notably the outdoor activities sector. We have discussed this issue with representatives of the sector, and others likely to be affected, such as theatre technicians, the emergency services and the arboriculture industry. HSE is committed to working with them and any others affected in order to find practical ways of making this part of the Regulations apply in a sensible manner. This might, for example, involve developing generic risk assessments in order to clarify further the circumstances in which use of a single rope would be considered acceptable, an approach we are currently exploring with the outdoor activities sector. We acknowledge that there may be other areas where the nature of the specialist work undertaken could mean that this provision would create difficulties, so we would particularly like to know what its effect would be, as currently drafted.

**Q40. We would welcome your views on the use of single ropes in circumstances where use of two ropes would be more dangerous, and in particular on any other activities where the use of single rope working may be justified under the terms of Schedule 5, Part 3 of the WAHR.**

### *Schedule 6: Ladders*

48. Around 13 people are killed and more than 1500 people are seriously injured each year whilst using ladders at work. Ladders are used in almost all employment sectors – sometimes for purposes other than those they were designed for. Their popularity often means that people underestimate the risks of using a ladder.

49. HSE believes that ladders should only be used as work equipment for access, egress or as a place to work from if a risk assessment has shown that the use of other, more suitable, work equipment is not necessary because of low risk, short duration tasks or topography of the work location. However, we must accept the practicalities of the use of ladders for work at height, and the fact that they are commonly used in a wide variety of situations.

50. Recent research carried out for HSE into the effectiveness of anti-slip devices and other ladder stability devices is likely to inform what is said in the Guidance about them; the key point will be to ensure that they are effective in meeting their purpose.

51. We have applied Schedule 6 to all types of ladders, including stepladders and fixed ladders. There is a conflict between the requirement in the CHSWR, repeated in the WAHR, for ladders to have, where reasonably practicable, rest platforms every nine metres, and that in the Workplace Regulations ACoP for fixed ladders to have a rest platform every six metres. The Workplace Regulations ACoP also contains material about ladder hoops which we have not included in the WAHR or Guidance;



it is expected that current HSE research on the safety of ladder hoops will enable us to update what is said about these.

**Q41. Have we struck the right balance between deterring inappropriate use of ladders and accepting their practicalities and the fact that they are commonly used in a wide variety of situations?**

**Q42. Regarding the Guidance, should we say more about when it is appropriate to use, and the usefulness of, ladder stabilisation and ladder anti slip devices?**

**Q43. Is Schedule 6 of the Regulations appropriate for all types of ladders, including stepladders and fixed ladders?**

**Q44. Are the requirements for rest platforms on portable and fixed ladders still appropriate?**

52. If you have any further comments, about any aspect of the Consultation, please make them in the space provided below.

**Q45. Please make any other comments in the space provided. These could be about the Regulations, Guidance, Directive or the Regulatory Impact Assessment.**

**Returning your response to us:**

In this consultation exercise, we would much prefer your responses in electronic format. This will make the analysis of all responses more accurate and responsive, and also allow us to process all returns in a shorter time period. However, we do not wish to constrain people, and are aware that some may not have access to a computer, and so responses in any format will be gratefully received. Nonetheless, the preferred methods of response are:

- Electronically using the separately provided electronic questionnaire either on the HSE website or requesting a copy of it by e-mailing us; or
- In writing by filling in the hard copy of the questionnaire at the end of this Consultation Document and posting it back to us.

**CONTACTS FOR YOUR RESPONSES FURTHER ENQUIRIES ABOUT OUR PROPOSALS AND THIS CONSULTATION**

Please e-mail your consultation response to:

[Work.at.height.consultation@hse.gsi.gov.uk](mailto:Work.at.height.consultation@hse.gsi.gov.uk)

If you wish to respond in writing, or have any other questions, please contact:

**David King or Jason Cole**

**Health and Safety Executive,  
Work at Height & Machinery Safety Policy Branch,  
Hazards and Technical Policy Directorate,  
5NW Rose Court,  
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**Tel: 020 7717 6349 (David King) or 020 7717 6329 (Jason Cole)**

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**E mail: [david.king@hse.gsi.gov.uk](mailto:david.king@hse.gsi.gov.uk) or [jason.cole@hse.gsi.gov.uk](mailto:jason.cole@hse.gsi.gov.uk)**



## **STATEMENT OF CONFIDENTIALITY.**

If you reply to this consultation document in a personal capacity, rather than as a post holder of an organisation, you should be aware that information you provide may constitute “personal data” in the terms of the Data Protection Act 1998. For the purposes of this Act, HSE is the “data controller” and will process the data for health, safety and environmental purposes. HSE may disclose this data to any person or organisation for the purposes for which it was collected, or where the Act allows disclosure. You have the right to ask for a copy of the data and to ask for inaccurate data to be corrected.

**IF YOU ARE UNSATISFIED WITH THE WAY THIS CONSULTATION HAS BEEN RUN**

If you are not satisfied with the way in which this consultation exercise has been conducted you can complain by contacting the line manager of the persons named in the CD to whom comments on the proposals are to be sent. In this instance, the person to contact is:

**Robert Vaughan,  
Head of Work At Height and Machinery Safety Branch,  
Hazards and Technical Policy Division,  
Health and Safety Executive,  
5NW Rose Court,  
2 Southwark Bridge,  
London,  
SE1 9HS.**

**Tel: 020 7717 6991**

**E-mail: [robert.vaughan@hse.gsi.gov.uk](mailto:robert.vaughan@hse.gsi.gov.uk)**

We aim to reply to all complaints within 10 working days. If you are not satisfied with the outcome of your complaint, you can raise the matter with the Director-General of HSE - Timothy Walker, at the same address. You can also write to ask your MP to take up the case with us. Your MP may refer the matter to the Parliamentary Commissioner for Administration (the Ombudsman) who will investigate your complaint.



## ANNEX A

The draft Regulations in full:

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### STATUTORY INSTRUMENTS

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**2004 No.**

## **HEALTH AND SAFETY**

### The Work at Height Regulations 2004

<i>Made</i> - - - -	<i>2004</i>
<i>Laid before Parliament</i>	<i>2004</i>
<i>Coming into force</i> - -	<i>2004</i>

### ARRANGEMENT OF REGULATIONS

1. Citation and commencement
2. Interpretation
3. Application
4. Organisation and planning
5. Competence
6. Avoidance of risks from work at height
7. General principles for selection of work equipment for work at height
8. Requirements for particular work equipment
9. Fragile surfaces
10. Falling objects
11. Danger areas
12. Inspection of work equipment
13. Inspection of places of work at height
14. Duties of persons at work

15. Exemption by the Health and Safety Executive
16. Exemption for the armed forces
17. Amendment of the Provision and Use of Work Equipment Regulations 1998
18. Repeal of section 24 of the Factories Act 1961
19. Revocation of instruments

SCHEDULE 1

Regulation 6(3)(a)

REQUIREMENTS FOR EXISTING PLACES OF WORK AND MEANS OF  
ACCESS OR EGRESS AT HEIGHT

SCHEDULE 2 Regulation 8(a)

REQUIREMENTS FOR GUARD-RAILS ETC.

SCHEDULE 3 Regulation 8(b)

REQUIREMENTS FOR WORKING PLATFORMS

PART 1

REQUIREMENTS FOR ALL WORKING PLATFORMS

1. Interpretation
2. Condition of surfaces
3. Stability of supporting structure
4. Stability of working platforms
5. Safety on working platforms
6. Loading

PART 2

ADDITIONAL REQUIREMENTS FOR SCAFFOLDING

7. Additional requirements for scaffolding

SCHEDULE 4

Regulation 8(c)

REQUIREMENTS FOR COLLECTIVE SAFEGUARDS FOR ARRESTING FALLS

SCHEDULE 5

Regulation 8(d) to (h)

REQUIREMENTS FOR PERSONAL FALL PROTECTION SYSTEMS

PART 1

REQUIREMENTS FOR ALL PERSONAL FALL PROTECTION SYSTEMS

PART 2

ADDITIONAL REQUIREMENTS FOR WORK POSITIONING SYSTEMS

PART 3

ADDITIONAL REQUIREMENTS FOR ROPE ACCESS AND POSITIONING  
TECHNIQUES

PART 4



ADDITIONAL REQUIREMENTS FOR FALL ARREST SYSTEMS  
PART 5  
REQUIREMENTS FOR WORK RESTRAINT SYSTEMS

SCHEDULE 6 Regulation 8(i)

REQUIREMENTS FOR LADDERS

SCHEDULE 7 Regulation 12(7)

PARTICULARS TO BE INCLUDED IN A REPORT OF INSPECTION

SCHEDULE 8 Regulation 19

REVOCAION OF INSTRUMENTS

The Secretary of State, in the exercise of the powers conferred on him by sections 15(1), (2), (3)(a), (5)(b), (6)(a) and 82(3)(a) of, and paragraphs 1(1), (2) and (3), 9, 11, 14, 15(1) and 16 of Schedule 3 to, the Health and Safety at Work etc. Act 1974(1) (“the 1974 Act”) and for the purpose of giving effect without modifications to proposals submitted to him by the Health and Safety Commission under section 11(2)(d) of the 1974 Act, after the carrying out by the said Commission of consultations in accordance with section 50(3) of that Act, hereby makes the following Regulations:

**Citation and commencement**

1. These Regulations may be cited as the Work at Height Regulations 2004 and shall come into force on 2004.

**Interpretation**

2.—(1) In these Regulations, unless the context otherwise requires—

“the 1974 Act” means the Health and Safety at Work etc. Act 1974;

“access” and “egress” include ascent and descent;

“fragile surface” means a surface which would be liable to fail if any reasonably foreseeable loading were to be applied to it;

“ladder” includes a fixed ladder and a stepladder;

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(1) 1974 c.37. Sections 15 and 50 were amended by the Employment protection Act 1975 (c.71) Schedule 15, paragraphs 6 and 16 respectively. The general purposes of Part I of the 1974 Act were extended by section 1(1) of the Offshore Safety Act 1992 (c.15). Section 51A was inserted by section 1, and sections 52 and 53 were amended by sections 2 and 6 respectively, of the Police (Health and Safety) Act 1997 (c.42).

“line” includes rope, chain or webbing;

“the Management Regulations” means the Management of Health and Safety at Work Regulations 1999(2);

“personal fall protection system” means—

(a) a fall prevention, work restraint, work positioning, fall arrest or rescue system, other than a system in which the only safeguards are collective safeguards; or

(b) rope access and positioning techniques;

“suitable” means suitable in any respect which it is reasonably foreseeable will affect the safety of any person;

“work at height” means work in any place, including a place—

(c) in the course of obtaining access to or egress from any place except by a staircase in a permanent workplace;

(d) at or below ground level,

from which, if measures required by these Regulations were not taken, a person could fall a distance liable to cause personal injury; and any reference to carrying out work at height includes obtaining access to or egress from such place while at work.

“work equipment” means any machinery, appliance, apparatus, tool or installation for use at work (whether exclusively or not) and includes anything to which regulation 8 and Schedules 2 to 6 apply;

“working platform”—

(e) means any platform used as a place of work or as a means of access to or egress from a place of work;

(f) includes any scaffold, suspended scaffold, cradle, mobile platform, trestle, gangway, gantry and stairway which is so used;

(g) does not include a building or other permanent structure.

(2) Any reference in these Regulations to the keeping of a copy plan shall include reference to its being kept in a form—

(a) in which it is capable of being reproduced as a printed copy when required;

(b) which is secure from loss or unauthorised interference.

## **Application**

**3.—**(1) These Regulations shall apply—

(a) in Great Britain; and

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(2) S.I. 1999/3242.

(b) outside Great Britain as sections 1 to 59 and 80 to 82 of the 1974 Act apply by virtue of the Health and Safety at Work etc. Act 1974 (Application outside Great Britain) Order 2001<sup>(3)</sup> (“the 2001 Order”).

(2) The requirements imposed by these Regulations on an employer shall apply in relation to work—

(a) by an employee of his; or

(b) by any other person under his control, to the extent of his control.

(3) The requirements imposed by these Regulations on an employer shall also apply to—

(a) a self-employed person, in relation to work—

(i) by him; or

(ii) by a person under his control, to the extent of his control; and

(b) to any person other than a self-employed person, in relation to work by a person under his control, to the extent of his control.

(4) Regulations 4 to 16 of these Regulations shall not apply to or in relation to—

(a) the master and crew of a ship, or to the employer of such persons, in respect of the normal ship-board activities of a ship’s crew which—

(i) are carried out solely by the crew under the direction of the master; and

(ii) are not liable to expose persons other than the master and crew to a risk to their safety;

(b) a place specified in regulation 7(6) of the Docks Regulations 1988<sup>(4)</sup> where persons are engaged in dock operations; or

(c) a place specified in regulation 5(3) of the Loading and Unloading of Fishing Vessels Regulations 1988<sup>(5)</sup> where persons are engaged in fish loading processes.

(5) Regulation 11 of these Regulations shall not apply to an installation while regulation 12 of the Offshore Installations and Wells (Design and Construction, etc) Regulations 1996<sup>(6)</sup> apply to it.

(6) In this regulation “ship” includes every description of vessel used in navigation, other than a ship belonging to Her Majesty which forms part of Her Majesty’s Navy.

### **Organisation and planning**

4.—(1) Every employer shall ensure that work at height is—

(a) properly planned;

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<sup>(3)</sup> S.I. 2001/2127.

<sup>(4)</sup> S.I. 1988/1655, to which there are amendments not relevant to these Regulations.

<sup>(5)</sup> S.I. 1988/1656.

- (b) appropriately supervised; and
- (c) carried out in a manner which is so far as is reasonably practicable safe,

and that its planning includes the selection of work equipment in accordance with regulation 7.

(2) Reference in paragraph (1) to planning of work includes planning for emergencies and rescue.

(3) Every employer shall ensure that work at height is carried out only when the weather conditions do not jeopardise the health or safety of persons involved in the work.

### **Competence**

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

### **Avoidance of risks from work at height**

6.—(1) Every employer shall ensure that work is not carried out at height where it is reasonably practicable to carry out the work safely otherwise than at height.

(2) Where work is carried out at height, every employer shall take suitable and sufficient measures to prevent, so far as is reasonably practicable, any person falling a distance liable to cause personal injury.

(3) The measures required by paragraph (2) shall include—

(a) his ensuring that the work is carried out—

(i) from an existing place of work; or

(ii) (in the case of obtaining access or egress) using an existing means,

in compliance with Schedule 1, where it is reasonably practicable to do so safely and under appropriate ergonomic conditions; and

(b) in other cases, the selection of work equipment in accordance with regulation 7.

(4) Every employer shall take suitable and sufficient measures to minimise the distance and consequences of a fall described in paragraph (2), to the extent that it is not prevented by the measures described in paragraphs (2) and (3).

(5) The measures required by paragraph (4) shall include the selection of work equipment in accordance with regulation 7.

(6) In identifying the measures required by this regulation, every employer shall—

(a) take account of a risk assessment under regulation 3 of the Management Regulations; and

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(6) S.I.1996/913.

(b) without prejudice to paragraph (3)(a), giving separate consideration to the measures required to prevent a person falling, and those required to minimise the distance and consequences of a fall, give collective measures priority over personal protection measures.

### **General principles for selection of work equipment for work at height**

7.—(1) Every employer, in selecting work equipment for use in work at height, shall—

- (a) take account of—
  - (i) the working conditions and to the risks to the safety of persons at the place where the work equipment is to be used;
  - (ii) in the case of work equipment for access and egress, the distance to be negotiated;
  - (iii) the distance and consequences of a potential fall;
  - (iv) the duration and frequency of use;
  - (v) the need for easy and timely evacuation and rescue in an emergency;
  - (vi) any additional risk posed by the use, installation or removal of that work equipment or by evacuation and rescue from it; and
  - (vii) the later provisions of these Regulations; and
- (b) give collective protection measures priority over personal protection measures.

(2) An employer shall select work equipment for work at height which—

- (a) has characteristics including dimensions which—
  - (i) are appropriate to the nature of the work to be performed and the foreseeable loadings; and
  - (ii) allow passage without risk; and
- (b) is in other respects the most suitable work equipment, having regard in particular to the purposes specified in regulation 6.

### **Requirements for particular work equipment**

8. Every employer shall ensure that, in the case of—

- (a) a guard-rail, toe-board, barrier or similar means of protection, Schedule 2 is complied with;
- (b) a working platform—
  - (i) Part 1 of Schedule 3 is complied with; and

- (ii) where scaffolding is provided, Part 2 of Schedule 3 is also complied with;
- (c) a net, airbag or other collective safeguard for arresting falls which is not part of a personal fall protection system, Schedule 4 is complied with;
- (d) any personal fall protection system, Part 1 of Schedule 5 is complied with;
- (e) a work positioning system, Part 2 of Schedule 5 is also complied with;
- (f) rope access and positioning techniques, Part 3 of Schedule 5 is also complied with;
- (g) a fall arrest system, Part 4 of Schedule 5 is also complied with;
- (h) a work restraint system, Part 5 of Schedule 5 is complied with; and
- (i) a ladder, Schedule 6 is complied with.

### **Fragile surfaces**

9.—(1) Every employer shall take suitable and sufficient steps to prevent any person at work from falling through any fragile surface.

(2) Without prejudice to the generality of paragraph (1), every employer shall ensure that—

- (a) no person at work passes across, or works on or from, a fragile surface where it is reasonably practicable to carry out work safely and under appropriate ergonomic conditions without their doing so;
- (b) no person at work passes across, or works on or from, a fragile surface unless suitable and sufficient platforms, coverings or other similar means of support are provided and used so that any foreseeable loading is supported by such supports;
- (c) no person at work passes or works near a fragile surface unless there are provided suitable and sufficient guard-rails, coverings or other similar means for preventing, so far as is reasonably practicable, a person from falling through the material; and
- (d) where any person at work may pass across or near or work on or near a fragile surface, prominent warning notices are so far as is reasonably practicable affixed at the approach to the place where the fragile surface is situated.

(3) Where a risk of a person at work falling remains despite the means provided under paragraph (1), every employer shall provide suitable and sufficient means for arresting his fall, so far as is reasonably practicable.

### **Falling objects**

10.—(1) Every employer shall, where necessary to prevent injury to any person, take suitable and sufficient steps to prevent, so far as is reasonably practicable, the fall of any material or object.

(2) Where it is not reasonably practicable to comply with the requirements of paragraph (1) or where it is otherwise necessary in the interests of safety, every employer shall take suitable and sufficient steps to prevent any person being struck by any falling material or object which is liable to cause injury.

(3) Every employer shall ensure that no material or object is thrown or tipped from height in circumstances where it is liable to cause injury to any person.

(4) Every employer shall ensure that materials and objects are stored in such a way as to prevent risk to any person arising from the collapse, overturning or unintended movement of such materials or objects.

### **Danger areas**

11. Without prejudice to the preceding requirements of these Regulations, every employer shall ensure that—

(a) where a workplace contains an area in which, owing to the nature of the work, there is a risk of any person at work—

- (i) falling a distance; or
- (ii) being struck by a falling object,

which is liable to cause personal injury, the workplace is so far as is reasonably practicable equipped with devices preventing unauthorised persons from entering such area; and

(b) such area is clearly indicated.

### **Inspection of work equipment**

12.—(1) This regulation applies only to work equipment to which regulation 8 and Schedules 2 to 6 apply.

(2) Every employer shall ensure that, where the safety of work equipment (including work equipment to which paragraph (3) applies) depends on how it is installed or assembled, it is not used after installation or assembly in any position unless it has been inspected in that position.

(3) Without prejudice to paragraphs (2) and (4), every employer shall ensure that work equipment is inspected—

- (a) at suitable intervals; and

(b) each time that exceptional circumstances which are liable to jeopardise the safety of the work equipment have occurred.

(4) Without prejudice to paragraph (2), every employer shall ensure that scaffolding from which a person could fall more than 2 metres is not used in any position unless it has been inspected in that position within the previous 7 days.

(5) Every employer shall ensure that no work equipment, other than lifting equipment to which the requirement in regulation 9(4) of the Lifting Equipment and Lifting Operations Regulations 1998(7) (“LOLER”) applies—

(a) leaves his undertaking; or

(b) if obtained from the undertaking of another person, is used in his undertaking,

unless it is accompanied by physical evidence that the last inspection required to be carried out under this regulation has been carried out.

(6) Every employer shall ensure that the result of an inspection under this regulation is recorded and kept until the next inspection under this regulation is recorded.

(7) A person carrying out an inspection of work equipment to which paragraph (4) applies shall—

(a) before the end of the working period within which the inspection is completed, prepare a report containing the particulars set out in Schedule 7; and

(b) within 24 hours of completing the inspection, provide the report or a copy thereof, which he may do by electronic means, to the person on whose behalf the inspection was carried out.

(8) In this regulation “inspection”, subject to paragraph (9)—

(a) means such visual or more rigorous inspection by a competent person as is appropriate for safety purposes;

(b) includes any testing appropriate for those purposes.

(9) Where a thorough examination has been made of lifting equipment under regulation 9 of LOLER—

(a) it shall for the purposes of this regulation, other than paragraph (7), be treated as an inspection of the lifting equipment; and

(b) the making under regulation 10 of LOLER of a report of such examination shall for the purposes of paragraph (6) of this regulation be treated as the recording of the inspection.

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(7) S.I.1998/2307, to which there are amendments not relevant to these Regulations.



### **Inspection of places of work at height**

13. Every employer shall ensure that the surface and every parapet, permanent rail or other such fall protection measure of every place of work at height are inspected visually on each occasion before the place is used.

### **Duties of persons at work**

14.—(1) Every person shall, where working under the control of another person, report to that person any activity or defect relating to work at height which he knows is likely to endanger the safety of himself or another person.

(2) Every person shall use any work equipment or safety device provided to him for work at height by his employer, or by a person under whose control he works, in accordance with—

- (a) any training in the use of the work equipment or device concerned which have been received by him; and
- (b) the instructions respecting that use which have been provided to him by that employer or person in compliance with the requirements and prohibitions imposed upon that employer or person by or under the relevant statutory provisions.

### **Exemption by the Health and Safety Executive**

15.—(1) [Subject to Community law] Subject to paragraph (2), the Health and Safety Executive (“the Executive”) may, by a certificate in writing, exempt—

- (a) any person or class of persons;
- (b) any premises or class of premises;
- (c) any work equipment; or
- (d) any work activity,

from any requirement or prohibition imposed by these Regulations and any such exemption may be granted subject to conditions and to a limit of time and may be revoked at any time by a certificate in writing.

(2) The Executive shall not grant any such exemption unless, having regard to the circumstances of the case and in particular to—

- (a) the conditions, if any, which it proposes to attach to the exemption; and
- (b) any other requirements imposed by or under any enactments which apply to the case,

it is satisfied that the health and safety of persons who are likely to be affected by the exemption will not be prejudiced in consequence of it.

### **Exemption for the armed forces**

**16.**—(1) The Secretary of State for Defence may, in the interests of national security, by a certificate in writing exempt any of Her Majesty’s Forces, any visiting force or any headquarters from any requirement or prohibition imposed by these Regulations and any such exemption may be granted subject to conditions and may be revoked by the Secretary of State by a certificate in writing at any time.

(2) In this regulation—

- (a) “Her Majesty’s Forces” means any of the naval, military or air forces of the Crown, whether raised inside or outside the United Kingdom and whether any such force is a regular, auxiliary or reserve force;
- (b) “headquarters” means a headquarters for the time being specified in Schedule 2 to the Visiting Forces and International Headquarters (Application of Law) Order 1999(8); and
- (c) “visiting force” has the same meaning as it has for the purposes of any provision of Part I of the Visiting Forces Act 1952(9).

### **Amendment of the Provision and Use of Work Equipment Regulations 1998**

**17.** For regulation 6(5)(c) of the Provision and Use of Work Equipment Regulations 1998(10) there shall be substituted the following sub-paragraph—

“(c) work equipment to which regulation 12 of the Work at Height Regulations 2003 applies”.

### **Repeal of section 24 of the Factories Act 1961**

**18.** Section 24 of the Factories Act 1961(11) is repealed.

### **Revocation of instruments**

**19.** The instruments specified in column 1 of Schedule 8 are revoked to the extent specified in column 3 of that Schedule.

Signed by authority of the Secretary of State

*Name*

Minister of State,

Department for Work and Pensions

2004

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(8) S.I. 1999/1736.

(9) 1952 c.67.

(10) S.I. 1998/2306, to which there are amendments not relevant to these Regulations.

(11) 1961 c.34.

**REQUIREMENTS FOR EXISTING PLACES OF WORK AND  
MEANS OF ACCESS OR EGRESS AT HEIGHT**

Every existing place of work or means of access or egress at height shall—

- (a) be stable and of sufficient strength and rigidity for the purpose for which it is intended to be or is being used;
- (b) where applicable, rest on a stable, sufficiently strong surface;
- (c) be of sufficient dimensions to permit the safe passage of persons and the safe use of any plant or materials required to be used and to provide a safe working area having regard to the work to be carried out there;
- (d) be provided with suitable and sufficient edge protection;
- (e) possess a surface which has no gap—
  - (i) through which any material or object could fall and injure a person, unless measures have been taken to ensure that no person could be so injured; or
  - (ii) giving rise to other risk of injury to any person,and which is otherwise suitable;
- (f) be so constructed and used, and maintained in such condition, as to prevent, so far as is reasonably practicable—
  - (i) the risk of slipping or tripping; or
  - (ii) any person being caught between it and any adjacent structure;
- (g) where it has moving parts, be prevented by appropriate devices from moving inadvertently during work at height.

## REQUIREMENTS FOR GUARD-RAILS ETC.

1. Unless the context otherwise requires, any reference in this Schedule to means of protection is to a guard-rail, toe-board, barrier or similar means of protection.

2. Means of protection shall—

(a) be suitable and of sufficient strength and rigidity for the purpose [or purposes] for which they are being used;

(b) be so placed, secured and used as to ensure, so far as is reasonably practicable, that they do not become accidentally displaced; and

(c) in the case of toe-boards or similar means of protection, shall be not less than 150 millimetres high.

3. Any structure or part of a structure which supports a means of protection or to which a means of protection are attached shall be of sufficient strength and suitable for the purpose of such support or attachment.

4. Means of protection shall be so placed as to prevent, so far as is practicable, the fall of any person, or of any material or object, from any place of work.

5. The top guard-rail or other similar means of protection shall be at least 950 millimetres above the edge from which any person is liable to fall.

6.—(1) Subject to paragraph (2), there shall not be a lateral gap in means of protection save at a point of access to a ladder or stairway where a gap is necessary.

(2) There shall not be an unprotected vertical gap exceeding 470 millimetres in means of protection, or between means of protection and a work surface and, in the case of any gap between a toe-board and a work surface, the gap shall be as small as is reasonably practicable.

(3) Means of protection shall be removed only for the time and to the extent necessary to gain access or egress or for the performance of a particular task and shall be replaced as soon as practicable.

The task shall not be performed while means of protection are removed unless effective compensatory safety measures are in place.

## REQUIREMENTS FOR WORKING PLATFORMS

## PART 1

## REQUIREMENTS FOR ALL WORKING PLATFORMS

**Interpretation**

1. In this Schedule, “supporting structure” means any structure used for the purpose of supporting a working platform and includes any plant used for that purpose.

**Condition of surfaces**

2. Any surface upon which any supporting structure rests shall be stable, of sufficient strength and of suitable composition safely to support the supporting structure, the working platform and any loading intended to be placed on the working platform.

**Stability of supporting structure**

3. Any supporting structure shall—

- (a) be suitable and of sufficient strength and rigidity for the purpose for which it is being used;
- (b) in the case of a wheeled structure, be prevented by appropriate devices from moving inadvertently during work at height;
- (c) in other cases, be prevented from slipping by secure attachment to the bearing surface or to another structure, provision of an effective anti-slip device or by other means of equivalent effectiveness;
- (d) be stable while being erected, used and dismantled; and
- (e) when altered or modified, be so altered or modified as to ensure that it remains stable.

**Stability of working platforms**

4. A working platform shall—

- (a) be suitable and of sufficient strength and rigidity for the purpose or purposes for which it is intended to be used or is being used;

- (b) be so erected and used as to ensure that its components do not become accidentally displaced so as to endanger any person;
- (c) when altered or modified, be so altered or modified as to ensure that it remains stable; and
- (d) be dismantled in such a way as to prevent accidental displacement.

### **Safety on working platforms**

#### **5. A working platform shall—**

- (a) be of sufficient dimensions to permit the safe passage of persons and the safe use of any plant or materials required to be used and to provide a safe working area having regard to the work being carried out there;
- (b) possess a suitable surface and, in particular, be so constructed that the surface of the working platform has no gap—
  - (i) through which any material or object could fall and injure a person, unless measures have been taken to ensure that no person could be so injured; or
  - (ii) giving rise to other risk of injury to any person; and
- (c) be so erected and used, and maintained in such condition, as to prevent, so far as is reasonably practicable—
  - (i) the risk of slipping or tripping; or
  - (ii) any person being caught between the working platform and any adjacent structure.

### **Loading**

- 6. A working platform and any supporting structure shall not be loaded so as to give rise to a risk of collapse or to any deformation which could affect its safe use.**

## **PART 2**

### **ADDITIONAL REQUIREMENTS FOR SCAFFOLDING**

#### **Additional requirements for scaffolding**

- 1. Strength and stability calculations for scaffolding shall be carried out unless—**
  - (a) a note of the calculations, covering the structural arrangements contemplated, is available; or

(b) it is assembled in conformity with a generally recognised standard configuration.

2. Depending on the complexity of the scaffolding selected, an assembly, use and dismantling plan shall be drawn up by a competent person. This may be in the form of a standard plan, supplemented by items relating to specific details of the scaffolding in question.

3. A copy of the plan, including any instructions it may contain, shall be kept available for the use of persons concerned in the assembly, use, dismantling or alteration of scaffolding until it has been dismantled.

4. The dimensions, form and layout of scaffolding decks shall be appropriate to the nature of the work to be performed and suitable for the loads to be carried and permit work and passage in safety.

5. While a scaffold is not available for use, including during its assembly, dismantling or alteration, it shall be marked with general warning signs in accordance with the Health and Safety (Safety Signs and Signals) Regulations 1996(12) and be suitably delineated by physical means preventing access to the danger zone.

6. Scaffolding may be assembled, dismantled or significantly altered only under the supervision of a competent person and by persons who have received appropriate and specific training in the operations envisaged which addresses specific risks which the operations may entail and precautions to be taken, and more particularly in—

- i. understanding of the plan for the assembly, dismantling or alteration of the scaffolding concerned;
- ii. safety during the assembly, dismantling or alteration of the scaffolding concerned;
- iii. measures to prevent the risk of persons, materials or objects falling;
- iv. safety measures in the event of changing weather conditions which could adversely affect the safety of the scaffolding concerned;
- v. permissible loadings;
- vi. any other risks which the assembly, dismantling or alteration of the scaffolding may entail.

REQUIREMENTS FOR COLLECTIVE SAFEGUARDS FOR  
ARRESTING FALLS

1. Any reference in this Schedule to a safeguard is to a collective safeguard for arresting falls.
2. A safeguard shall be suitable and of sufficient strength to arrest safely the fall of any person who is liable to fall.
3. A safeguard shall—
  - (a) in the case of a safeguard which is designed to be attached, be securely attached to all the required anchors, and the anchors and the means of attachment thereto shall be suitable and of sufficient strength and stability for the purpose of safely supporting the foreseeable loading in arresting any fall and during any subsequent rescue.
  - (b) in the case of an airbag, landing mat or similar safeguard, be stable.
4. Suitable and sufficient steps shall be taken to ensure, so far as practicable, that in the event of a fall by any person the safeguard does not itself cause injury to that person.



## REQUIREMENTS FOR PERSONAL FALL PROTECTION SYSTEMS

## PART 1

## REQUIREMENTS FOR ALL PERSONAL FALL PROTECTION SYSTEMS

1. A personal fall protection system shall be used only if—
  - (a) a risk assessment has demonstrated that the work can so far as is reasonably practicable be performed safely while using that system;
  - (b) the use of other, safer work equipment is not justified; and
  - (c) the user and a sufficient number of available persons have received adequate training specific to the operations envisaged, including rescue problems.
2. A personal fall protection system shall —
  - (a) be suitable and of sufficient strength for the purposes for which it is being used having regard to the work being carried out and any foreseeable loading
  - (b) fit the user
  - (c) be correctly fitted;
  - (d) be adjusted to minimise injury to the user, should a fall occur.
3. A personal fall protection system designed for use with an anchor shall be securely attached to at least one anchor, and each anchor and the means of attachment thereto shall be suitable and of sufficient strength and stability for the purpose of supporting any foreseeable loading.
4. Suitable and sufficient steps shall be taken to prevent any person falling or slipping from a personal fall protection system.
5. A personal fall protection system shall be installed and used in such a way as to prevent unplanned or uncontrolled movement of the user.
6. Suitable and sufficient steps shall be taken to ensure, so far as is practicable, that in the event of a fall by any person an injury from the personal fall protection system is minimised.

## PART 2

### ADDITIONAL REQUIREMENTS FOR WORK POSITIONING SYSTEMS

A work positioning system shall be used only if—

- (a) the system includes a suitable backup system for preventing or arresting a fall; and
- (b) where the system includes a line as a backup system, the user is connected to it.

## PART 3

### ADDITIONAL REQUIREMENTS FOR ROPE ACCESS AND POSITIONING TECHNIQUES

1. A rope access or positioning technique shall be used only if—
  - (a) subject to paragraph (3), it involves a system comprising at least two separately anchored lines, of which one (“the working line”) is used as a means of access, egress and support and the other is the safety line;
  - (b) the user is provided with a suitable harness and is connected by it to the working line and the safety line;
  - (c) the working line is equipped with safe means of ascent and descent and has a self-locking system to prevent the user falling [should he lose control of his movements]; and
  - (d) the safety line is equipped with a mobile fall protection system which is connected to and travels with the user of the system.
2. Taking the risk assessment into account and depending in particular on the duration of the job and the ergonomic constraints, provision must be made for a seat with appropriate accessories.
3. The system may comprise a single rope where—
  - (a) a risk assessment has demonstrated that the use of a second line would entail higher risk to persons; and
  - (b) appropriate measures have been taken to ensure safety.

## PART 4

### ADDITIONAL REQUIREMENTS FOR FALL ARREST SYSTEMS

1. A fall arrest system shall incorporate a suitable shock absorber or other suitable means of limiting the force applied to the user’s body.

2. A fall arrest system shall not be used in a manner—
- (a) which involves the risk of a line being cut; or
  - (b) where its safe use requires a clear zone (allowing for any pendulum effect), which does not afford such zone,
- or which otherwise inhibits its performance or renders its use unsafe.

## PART 5

### REQUIREMENTS FOR WORK RESTRAINT SYSTEMS

A work restraint system shall—

- (a) be so designed that, if used correctly, it prevents the user from getting into a position in which a fall can occur; and
- (b) be used correctly.

## REQUIREMENTS FOR LADDERS

1. Every employer shall ensure that a ladder is used for work at height only if a risk assessment under regulation 3 of the Management Regulations has demonstrated that the use of more suitable work equipment is not justified because of the low risk and—
  - (a) the short duration of use; or
  - (b) existing features on site which he cannot alter.
2. Any surface upon which a ladder rests shall be stable, firm, of sufficient strength and of suitable composition safely to support the ladder so that its rungs or steps remain horizontal, and any loading intended to be placed on it.
3. A ladder shall be so positioned as to ensure its stability during use.
4. A suspended ladder shall be attached in a secure manner and so that, with the exception of a flexible ladder, it cannot be displaced and swinging is prevented.
5. The feet of a portable ladder shall be prevented from slipping during use by—
  - (a) securing the stiles at or near their upper or lower ends; or
  - (b) effective anti-slip or other effective stability devices; or
  - (c) any other arrangements of equivalent effectiveness.
6. A ladder used for access shall be long enough to protrude sufficiently above the place of landing to which it provides access, unless other measures have been taken to ensure a firm handhold.
7. No interlocking or extension ladder shall be used unless its sections are prevented from moving relative to each other while in use.
8. A mobile ladder shall be prevented from moving before it is stepped on.
9. Where a ladder or run of ladders rises a vertical distance of 9 metres or more above its base, there shall, where reasonably practicable, be provided at suitable intervals sufficient safe landing areas or rest platforms.
10. Every ladder shall be used in such a way that—
  - (a) a secure handhold and secure support are always available to the user; and

(b) the user can maintain a safe handhold when carrying a load.

**PARTICULARS TO BE INCLUDED IN A REPORT OF INSPECTION**

1. The name and address of the person for whom the inspection was carried out.
2. The location of the work equipment inspected.
3. A description of the work equipment inspected.
4. The date and time of the inspection.
5. Details of any matter identified that could give rise to a risk to the health or safety of any person.
6. Details of any action taken as a result of any matter identified in paragraph 5.
7. Details of any further action considered necessary.
8. The name and position of the person making the report.

## SCHEDULE 8

Regulation 19

### REVOCATION OF INSTRUMENTS

<i>(1)</i> <i>Description of instrument</i>	<i>(2)</i> <i>Reference</i>	<i>(3)</i> <i>Extent of revocation</i>
The Shipbuilding and Ship-repairing Regulations 1960	S.I. 1960, amended by S.I. 1983/644 and 1998/2307	Regulations 7 to 10 and 12 to 30
The Docks, Shipbuilding etc. (Metrication) Regulations 1983	S.I. 1983/644	In the Schedule the entries relating to regulations 9(1) and 17 to 28(c)
The Docks Regulations 1988	S.I. 1988/1655	Regulation 7(4) and (5); in regulation 7(6) the words “and (c) any other place not being a quay or jetty where any person working or passing might fall a distance of more than 2 metres”
The Loading and Unloading of Fishing Vessels Regulations 1988	S.I. 1988/1656	In regulation 5(3) the words “and (c) any other place not being a quay where any person working or passing might fall a distance of more than two metres”
The Workplace (Health, Safety and Welfare) Regulations 1992	S.I. 1992/3004	Regulation 13(1) to (4)
The Construction (Health, Safety and Welfare) Regulations 1996	S.I. 1996/1592	In regulation 2(1), the definitions of “fragile material”, “personal suspension equipment” and “working platform”; regulations 6 to 8; in regulation 29(2) the word “scaffold” in both instances; regulation 30(5) and (6)(a); Schedules 1 to 5; and the entry first mentioned in columns 1 and 2 of Schedule 7





## **ANNEX B**

Draft Guidance

### **Safe Work at Height:**

#### **Guidance on the Work at Height Regulations**

[This section outlines the requirements of the Regulations and the steps required to manage work at height safely]

#### ***Introduction***

1. This document provides guidance on the Work at Height Regulations 200X (WAHR). It was prepared by the Health and Safety Executive (HSE) for the Health and Safety Commission (HSC) after consultation with industry. It explains how employers, employees and other duty holders should manage work at a height and how work equipment used for this should be selected, used and maintained.

#### **Aims of the Work at Height Regulations**

2. HSC/E's main goal in producing Regulations on work at height is to reduce deaths and injuries caused by falls from height. These account for about 50-60 fatalities - more deaths than any other workplace activity - and 4,000 injuries every year.

3. The WAHR bring together all current requirements on work at height into one goal based set of Regulations. In addition, the Regulations implement the requirements of the second amendment to the Use of Work Equipment Directive 89/955/EEC which sets out minimum safety and health requirements for the use of work equipment for working at height (The Temporary Work at Height Directive 2001/45/EC).

4. This approach gives an opportunity to establish the basic principles for safe work at height in one set of Regulations, for all sectors of the economy and provides a fundamental framework for safe working at height, based on risk assessment, and applicable to the wide range of work activities carried out at height.

## **Purpose of this Guidance**

5. This Guidance:

- Sets out the key requirements for safe working at height;
- Provides guidance on the main types of work equipment available for work at height;
- Provides case studies on planning, organising and carrying out work at height.

6. This Guidance is for anyone directly or indirectly involved in work at height: employers, employees, supervisors, the self-employed, those in control of work premises, those involved in inspecting work equipment or sites and those who hire out work equipment need to be aware of the Regulations.

## **Requirements of the Work at Height Regulations**

7. The WAHR require you to carry out a risk assessment for all work conducted at height and to put in place arrangements for:

- Eliminating or minimising risks from working at height;
- Safe systems of work for organising and performing work at height;
- Safe systems for selecting suitable work equipment to perform work at height;
- Safe systems for protecting people from the consequences of work at height.

8. Your risk assessment and the action you take should be proportionate to the harm that could occur if no action was taken. It should include a careful examination of what harm could be caused from working at height with a view to taking the necessary steps to reduce the likelihood of this harm occurring, either through avoiding the activity or, where this is not reasonably practicable, through carrying it out in a safe manner using the appropriate work equipment.

## **What is meant by "work at height"?**

9. The WAHR have no minimum height requirement for work at height. They include all work activities where there is a need to control a risk of falling a distance liable to cause personal injury. This is regardless of the work equipment being used, the duration the person is at a height, or the height at which the work is performed. It includes access to and egress from a place of work. It would, for example, include:

- Working on a scaffold or from a mobile elevated work platform (MEWP);
- Working on the back of a lorry, e.g. sheeting a load;
- Container top working in docks, on a ship or in a freight yard;
- Arboriculture and forestry work performed in trees;
- Using cradles or ropes to gain access to parts of a building, or a ship under repair in a dry dock;
- Climbing permanent structures, such as gantries or telegraph poles;
- Working close to an excavation area or a cellar opening, where someone could fall into it and injure themselves or others;
- Painting, pasting or erecting bill posters at height;
- Work on staging or trestles, for example at a concert or for filming;
- Using a ladder/step ladder or kick stool for shelf filling, window cleaning, shop fitting or other maintenance tasks (e.g. changing a light bulb);
- Using manriding harnesses on offshore installations;
- Working in a mine-shaft.

10. The risk assessment and action required to control risks from using a kick stool to collect books from a shelf should be simple (e.g. not overloading yourself, not overstretching, etc.). However, the action required for a complex construction project would involve significantly greater considerations and assessment of

risk. Further guidance on Risk assessment is provided in paragraphs 26 - 32.

11. Activities that are **not** considered to be work at height include:

- Slips and trips on the level;
- Falls on permanent stairs if there is no structural or maintenance work being undertaken;
- Work in, for example, an office on the upper floors of a multi story building where there is no risk of falling (except activities within the workplace which do involve a risk of falling, e.g. from a stepladder).

12. Other activities that might be work at height but are not covered by these Regulations include:

- Activity that is carried out by private individuals, for example in their own homes, even if the equipment has been acquired at work and is being used at height. However anyone employed to do work by a private householder, e.g. trimming hedges, will be subject to these Regulations; and
- Work on ships by the crew under the supervision of the master unless it endangers other people.

### **Duties under the Work at Height Regulations**

13. **Employers and self-employed persons** must ensure that:

- Any work at height performed in your undertaking or by your workers on any other site or premises, and the equipment provided for such work, complies with the requirements of the WAHR and does not put others at risk, e.g. members of the public.
- If you send workers to another site, that they are not at risk from working at height on that site. You and the site employer must co-operate to make sure workers are not asked to do tasks where there is inadequate protection.
- You consult your employees (or if you an offshore duty holder, your workforce) on matters relating to

health and safety with respect to work at height and, where required, you involve trade union representatives in the development of risk assessments for work at height.

14. Regulation 3(2)(b) of the WAHR covers circumstances in which work is performed where there may not be a direct 'employment' relationship between the person carrying out the work, or using the equipment, and those in control of the work (for example sheeting of lorries in a quarry or a port, or inspecting signalling systems above a railway track). Wherever there are multiple contractors, a written formalised way of proceeding should be agreed so it is clear who is responsible for which aspects of the work at height. Every contractor involved with the site will have duties under health and safety law, but the extent of the responsibilities will depend on the circumstances and are best agreed in writing before the work commences. Further guidance can be obtained from '*Use of contractors - a joint responsibility*' (INDG368).

15. If you provide equipment for use at work but do not control its use or the premises where it will be used, you should still ensure that the work equipment complies with the WAHR to the extent that your control allows. The WAHR require that all the risks of the work be managed by the relevant people to ensure safety. It is vital that this is communicated to all those involved on multi-occupied sites. For example, where a scaffolding hire company delivers the equipment to a site and erects it on behalf of the user it must ensure that it has been erected in accordance with the requirements of the WAHR, but the ongoing maintenance, inspection and recording requirements might fall to the employer in control of those using the scaffold.

16. **Employee duties:** Regulation 14 of the WAHR places specific duties on persons at work. These parallel those on employees in Regulation 14 of the Management of Health and Safety at Work Regulations.

17. Under the Health and Safety at Work Act 1974 (HSWA) all employees must take reasonable care for the health and safety of themselves and of others who may be affected by what they do or fail to do at work. Anyone who is at work should:

- Co-operate with their employer or others to enable them to carry out their duties;

- Take positive steps to understand the hazards in the workplace and comply with safety rules and procedures;
- Ensure that their employer is notified of any medical conditions which may affect working at height safety;
- Use the equipment provided by their employer safely in accordance with any instructions and training given and not tamper with or modify the equipment;
- Report things which they consider likely to lead to a dangerous occurrence; and
- Not act in a reckless and/or careless way.

18. **Employees using their own equipment for work at height:** the WAHR applies to personally owned equipment used for work at height. Employers need to ensure that such equipment is checked and assessed as being suitable. This is particularly important where an employee brings his own tools on to the site; and where the employee chooses to use his own equipment for work at height (e.g. safety harnesses). The employer needs to establish who will be using such equipment (especially where it might be shared) and that the users are clear as to how to use it. The employer should also ensure that safe loading is adhered to and that is compatible with other safety equipment, such as anchor points. An employer should ensure that any personally owned tools are appropriate for the task, are in good condition and can comply with the health and safety management controls identified in any risk assessment. The responsibility for the safe application and use of personally owned tools and equipment cannot be derogated to those people carrying out the work.

#### **Application to Marine activities**

19. Normal shipboard activity carried out solely by the ship's crew under the control of a master is not covered by these Regulations unless it is liable to affect the health and safety of third parties, whether on the ship or on the quay side. For example, if a crewmember is using equipment at height that could cause an injury to a person on the quay then these Regulations will apply. Particular attention needs to be given to any area such

as docks, shipyards or bunkering points where other people can be affected.

### **Application to Offshore activities**

20. Apart from Regulation 11, the WAHR apply offshore to the same extent as the Health and Safety at Work etc Act 1974. This includes offshore installations, wells, pipelines, pipeline works and connected activities within the territorial waters of Great Britain, or in designated areas of the United Kingdom Continental Shelf, plus certain other activities within territorial waters. Regulation 11 (concerning Dangerous Areas) does not apply to an installation in the circumstances described in Regulation 12(1) and 12(2) of the Offshore Installations and Wells (Design and Construction, etc) Regulations 1996 (DCR). This is because the more specific requirements of Schedule 1, Paragraph 36 of DCR would apply.

### **Effect of the WAHR on older legislation and summary of new requirements**

21. The WAHR repeal Section 24 of the Factories Act and revoke parts of the CHSWR, the Docks Regulations, the Loading and Unloading of Fishing Vessels Regulations, the Shipbuilding and Ship-repairing Regulations 1960 and the Workplace Regulations. A full list is given in Schedule 8 of the WAHR.

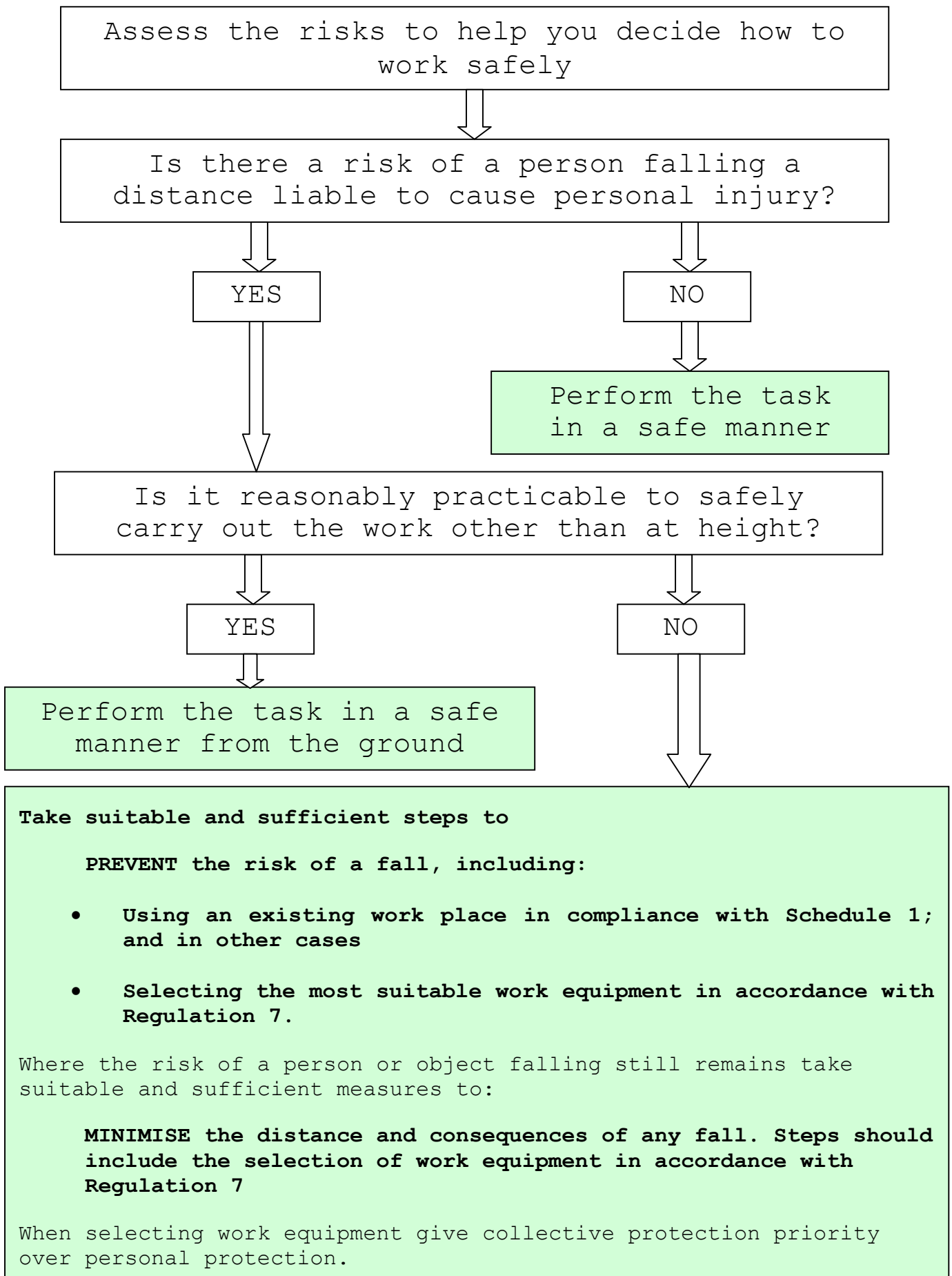
22. The major new requirements of the WAHR are:

- The extension of legislation specific to work at height from the construction industry (under the CHSWR) to all sectors of the economy;
- The requirement in the CHSWR that some measures need only be taken in respect of work above 2 metres will disappear;
- The increase in the height of guard rails as specified in the CHSWR from at least 910mm to at least 950mm to take into account the European Standard of 1000mm on all guard rails, plus or minus 50mm;

- The use of the term 'fragile surface' rather than 'fragile material' in the CHSWR;
- Specific requirements on scaffolding (ref. Part 2, Schedule 3);
- Specific provision for the use of 'collective fall arrest' equipment (ref. Schedule 4);
- More detailed requirements for personal fall protection systems (ref. Schedule 5).



## WORK AT HEIGHT FLOW CHART



## **Part 1 – Requirements for safe work at height:**

23. Regulation 6 of the WAHR sets out the hierarchy of measures you should follow when performing work at height. Following your risk assessment this hierarchy should allow you to select the most appropriate methods for work at height. The overriding principle is to prevent, so far as is reasonably practicable, any person falling a distance liable to cause personal injury.

### **Hierarchy for safe work at height**

1. **AVOID** the risk by not working at height - where it is reasonably practicable to carry out the work safely other than at a height do so.
2. **PREVENT** falls - where it is not reasonably practicable to avoid work at height, you should assess the risks and take measures to allow the work to be done whilst preventing so far as is reasonably practicable people or objects falling. This might include ensuring the work is carried out safely from an existing place of work; or choosing the right work equipment to prevent falls.
3. **MITIGATE** the consequences of a fall - where the risk of people or objects falling still remains you should take steps to minimise the distance and consequences of such falls. This also involves the selection and use of work equipment.
4. At all stages give collective protective measures (e.g. guardrails, nets, airbags, etc.) precedence over personal protective measures (e.g. safety harnesses)

24. Within this framework the WAHR require you to:

1. Assess the risk to help you decide how to work safely;
2. Follow the hierarchy for safe work at height - avoid, prevent, mitigate; and give collective measures priority;
3. Plan and organise your work properly taking account of weather conditions and the possibility of emergencies;

4. Make sure those working at height are competent;
  5. Make use of appropriate work equipment;
  6. Manage the risks from working on or around fragile surfaces and from falling objects;
  7. Inspect and maintain the work equipment to be used and inspect the place where the work will be carried out (including access and egress).
25. This part gives further guidance on what is required for each of the above steps.

### **1. Assess the risks to help you decide how to work safely**

26. Before working at height you must assess the risks. You must then take whatever steps the assessment shows are necessary to work safely. A person - either you or one of your employees - who is sufficiently experienced to be able to identify competently the health and safety risks arising out of the work should carry out the assessment.

27. Work at height is an activity that has generally well-established procedures of good practice and in nearly all cases you should be able to follow these to carry out work safely. Risk assessment for the purposes of the WAHR will require you to compare what you do with what is accepted as good practice. If you are doing what good practice suggests, then that will normally be enough to comply with the law. If not, then you will need to take action to bring yourself up to the standard.

28. You can think of good practice as a "generic" risk assessment for a particular kind of work at height. You can use it as your own risk assessment if the circumstances of your work fall wholly within the scope of the good practice. However, there may be occasions when a more specific assessment is called for (e.g. when trainees are involved). You may also need to reassess the risks and, if necessary introduce other protection methods if circumstances change.

29. There should only be a small number of circumstances where there is no established good practice or what there is does not wholly apply to your work. For those instances where the good practice available is limited or applies only partly to your task you should follow that so far as it is relevant and assess any residual risks. In those few instances where good practice does not exist

you should start from first principles of risk assessment using the HSE guide *Five Steps to Risk Assessment* and calling upon expert judgement as necessary.

30. Whatever action you take to control the risk, it should be proportionate to the risk of harm and reflect what is reasonably practicable, but remember serious injuries can be caused by falls from relatively low heights (injury statistics show that falls from below two metres account for two thirds of falls major accidents); don't assume that little or nothing need be done to prevent them.

31. The health of workers may need to be taken into consideration for some types of work at height. Particular attention will need to be paid to the risk assessment and its review, where necessary getting expert advice and discussing issues with the workers. For example, drivers of straddle carriers and operators of large cranes might require a high level of physical stamina and agility to gain safe access to their work positions, which may be a considerable height above ground.

32. Each assessment should be proportionate to the risks involved, but some of the factors you will need to consider will include:

- The environment and conditions of the site: this would include: its location; access and egress to and from the site; weather and ground conditions on the site; and the risks relating to other activities on the site or surrounding area;
- The task to be performed: this would include: the extent of the task; its complexity; its duration; and the frequency with which the task needs to be performed;
- The people involved: this would include: the numbers involved in the work; the degree of their exposure to the risk; the competence of the workers involved; and the levels of supervision required. You should also consider risks to or presented by those not directly involved in the work;
- The work equipment and/or other structures to be used: this would include: the suitability of existing structures for work at height (including the existence of fragile surfaces); the selection of work equipment to be used; and any risks arising from pre and post use of the work equipment (for

example installing and dismantling scaffolding or using a mobile elevated platform or ladder on a busy road).

**2. Follow the safe work at height hierarchy - Avoid, Prevent, Mitigate and give collective measures priority**

**Avoid work at height so far as reasonably practicable**

33. **If it is not necessary to work at height, don't.** For example, it may be possible to assemble a structure on the ground and then lift it into place using the appropriate lifting equipment; or pole-cleaning systems may be used for cleaning windows so that the work can be carried out from the ground. Under the Construction (Design & Management) Regulations 1994 designers need to consider those carrying out construction work and others who could be affected by it, for example members of the public. They should plan to allow for those constructing and maintaining a structure to work safely and to avoid the need for work at height where reasonably practicable. Further guidance can be obtained from *HSG 224 - Managing Health and Safety in Construction*.

34. In making an assessment of the risks of working at height you must also consider the risks of alternative methods of working. In some circumstances the risk assessment may justify the use of a safe work at height system rather than a more risky ground-based system. For example, an excess of water from a window cleaning system could be dangerous if it fell on a pavement in icy weather. This needs to be considered in the overall risk assessment.

**Prevent a fall, so far as reasonably practicable**

35. Where it is not reasonably practicable to avoid carrying out work at height you must take suitable and sufficient measures, including the choice of appropriate work equipment, to enable the work to be carried out in a way which, so far as is reasonably practicable, prevents a person from falling a distance liable to cause personal injury.

36. Suitable and sufficient measures are measures to prevent all reasonably foreseeable fall accidents. For example, a scaffold properly erected with guard-rails, toe boards and all other appropriate safety measures in place would not normally require a safety net around it as it would be reasonable to expect that the scaffolding would prevent a fall. If that scaffolding gave access to

a fragile surface then it would be reasonable to expect further measures to prevent a fall. Some 'measures' may not solely relate to the choice of work equipment - they could for example include proper route selection and group management of climbing activities.

37. One way of meeting the duty to prevent falls is to ensure that it is done safely, under appropriate ergonomic conditions, from an existing workplace that meets the criteria set out in Schedule 1. This Schedule specifies that it must have sufficient edge protection; this could include balustrades, guardrails and toeboards, or other barriers that would prevent a fall. Thus, the place of work, which could be a permanent structure such as a building or an industrial plant, the top of a piece of machinery or a vehicle or an item of work equipment, such as a scaffold or a MEWP, must be safe i.e. there is no foreseeable risk of a person falling from it. A place of work that required edge protection, for example, to make it safe would not meet the conditions of this paragraph and so would require the dutyholder to use the appropriate work equipment to make it safe. Safe access and egress also has to be considered at this stage.

38. 'Ergonomic conditions' relate to factors such as the physical strain of using the tools provided; the suitability of the working space for the task to be performed properly; or the space for passage of loads and people, including adequate provision for loading and unloading. Employees should not be expected to exert undue force or stretch or reach beyond their normal strength or physical reach limitations to work safely. The effects of temperature/moisture should also be taken into account.

39. Once the duty holder has taken measures to avoid/prevent injury from a fall, for example by providing a properly constructed scaffold with guardrails, there is no need to take further action, e.g. by providing nets. However, if a guardrail has been temporarily removed, introducing a residual risk of falling through the temporary gap, this would need to be addressed. Further action may also be required, for example, when working on a mobile elevated platform on a travel route, where there may be a high risk of collision. The resulting unexpected violent movement may make it unlikely that guardrails would prevent a person from being thrown out and injured.

### **Mitigate the consequence of any remaining fall risks**

40. Despite the method of work chosen, if it is not reasonably practicable to avoid or prevent a fall you should ensure that both the distance of the fall and its consequences are minimised. For example, nets, air bags or other soft landing systems can be used as a safety measure. The equipment chosen to arrest a fall should minimise injury to the person concerned, but it is necessary to consider the whole site where the work is being performed - for example, trailing lanyards can cause a significant tripping hazard and are rarely suitable at a height below four metres. The consequences of falls will include the effects on the fall protection equipment used. Someone whose fall has been arrested by a personal fall arrest system may suffer injury caused by deceleration and from hanging motionless in his harness after the fall (see paragraph 107). The distance of the fall will also be critical.

### **Give collective measures priority**

41. As well as taking account of the risk assessment in identifying the 'suitable and sufficient' measures, at each stage collective prevention and arrest measures should take precedence over personal measures. In principle this means that equipment such as MEWPs, scaffolding and cradles should be used in preference to personal fall protection systems. However, it does not prohibit the use of the latter type of equipment if these are the most appropriate in the light of the overall plan and risk assessment, and the nature of the work to be carried out.

<h3><b>3. Plan and organise your work properly taking account of weather conditions and the possibility of emergencies</b></h3>
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42. Regulation 4 of the WAHR requires you to plan your work properly; to ensure it is appropriately supervised and that it is carried out in a safe manner. Planning includes the selection of work equipment and preparing for emergencies. Regulation 4 also requires you to ensure that work at height is carried out "only when the weather conditions do not jeopardise the health and safety of persons involved in the work."

43. Make sure you:

- Plan the work and use suitable work equipment;

- Involve trade unions and worker representatives wherever possible. Consulting the workforce will encourage them to be more aware of risks from work at height and their duties under health and safety law. It will also help you to comply with your duties;
- Provide supervision proportionate to the findings of the risk assessment and the experience and capability of the people involved in the work. A worker may be trained to a nationally accredited standard, but he will still need to be acquainted with the layout and the peculiarities of the site and have the task(s) required of him carefully explained;
- Make sure those affected understand the risk assessment and what they must do to comply with it. This may be a briefing session to make sure workers are aware of hazards and when they should ask for further assistance. Information may have to be made more widely available as the conduct of others in the workplace may be very important to those working at height above or near them; and
- Plan for emergencies and rescue. Where necessary have a rescue plan in place before the work starts. You should assess this plan throughout the lifetime of the project and update it if there are any substantial changes to the work being carried out. The plan needs to take account of possible risks to rescuers. You should not assume that the emergency services will be able to effect a rescue in all situations; especially within the necessary time (see paragraph 107 on suspension trauma).

44. The risk assessment and planning arrangements should take into account the effects that the weather can have on outdoor work at height. The Provision of Work Equipment Regulations 1998 (PUWER 98) require that work equipment be suitable for the conditions intended and suitable and sufficient lighting is be provided at any place where work equipment is in use. Lightning, wind, rain, snow, ice, temperature and sun will change the working conditions during the job and may increase the risks that need to be addressed. Protective gloves, sun block or non-slip footwear may help, but your risk assessment should consider wider aspects such as whether bulky clothing could get caught up in machinery or make access more dangerous. The build-up of mud on ladders, for example, will make them less safe, as would placing



them on a surface that may have become slippery. Extreme heat can make people exhausted more quickly and may increase human error. Regular work breaks may reduce the risk of an accident occurring.

#### **4. Make sure those working at height are competent**

45. Regulation 5 of the WAHR requires that any person undertaking work at height should be competent to do it or, if being trained, is supervised by a competent person. Competence is a combination of appropriate practical and theoretical knowledge, training and experience, which collectively should enable a person to:

- Undertake safely their specified activity at their level of responsibility;
- Understand fully any potential risks related to the work activity (tasks and equipment) in which they are engaged; and
- Detect any defects or omissions and recognise any implications for health and safety with the aim of specifying appropriate remedial actions that may be required in relation to their particular work activity. This could include refusing to do a particular task if the potential risk is assessed as being too great.

#### **5. Make use of appropriate work equipment**

46. The WAHR recognise that work at height can be performed safely in a number of different ways, using a wide range of work equipment. The choice of equipment will depend on the risk assessment - different types of equipment will have advantages and disadvantages depending on the task and the environment in which the work is to be performed. Whatever equipment is selected it should be of sound construction in suitable material, be of adequate strength and be free from obvious defects. It must also meet any specific requirements set out in the WAHR Schedules. General guidance on selecting work equipment is provided below; further guidance on specific work equipment is given in Part 2 of this Guidance.

## **Choosing the right equipment for the task**

47. The choice of equipment involves "reasonable practicability" and must comply with Regulation 6(3) to prevent a person falling or, to the extent that cannot be achieved, mitigate the distance and consequences of such falls. Choices should be thought through. A ladder may reach the workplace but if workers need to climb it for long durations or with heavy or bulky equipment, scaffolding is likely to be more appropriate. On the other hand, the risks of installing scaffolding should be considered, especially for work of short duration, where a MEWP might be more appropriate.

### **Selecting the right equipment for access and egress:**

48. Selecting equipment for access or egress will depend on the particular use envisaged. For frequent access, you should consider more permanent arrangements. For example, if a scaffold is to be in place for some time, the erection of a staircase with handrails would be more appropriate than a ladder tied in place, especially if bulky loads are being carried up a long flight. You should also consider the use of hoists or other methods if this will reduce the risks of falls.

49. Systems of work or means of access should be designed so that workers do not have to climb over guardrails. If frequent access is required it may be appropriate to use gates, which will allow access when required and also protect those working on the scaffold by providing a barrier. For work on high-rise buildings, which may take considerable periods of time to complete, the use of mast climbing work platforms or suspended platforms may be appropriate. These should only be erected, altered, operated or dismantled by those with the necessary competence and in accordance with the manufacturer's instructions.

50. MEWPs should not generally be used as a means of access to or from another structure or surface - climbing out of MEWPs in these circumstances has injured several people. However, MEWPs may be used for this purpose if they have been specifically designed for it, or as part of a properly planned operation where, in exceptional circumstances, this is the safest way to gain access to a place of work at height. In such cases suitable fall protection should be worn and correctly anchored.

51. Ladders, including fixed ladders and stepladders, are commonplace and used in most employment sectors. However, people often seriously underestimate the risks

involved in using them. Around a dozen people are killed and more than 1500 seriously injured each year while using ladders at work.

52. Ladders should only be used as work equipment, either for access and egress or as a place from which to work, where a risk assessment shows that the use of other work equipment is not justified because of the low risk and the short duration of the job or unalterable features of the work site. The risk assessment is essential and should consider not only those using the ladder but others who could be affected, such as passers-by. The safety of sole workers who use ladders, such as window-cleaners, depends significantly on their correct use, and adequate training is essential. Safety should not be compromised by haste to complete the job. All ladders need to be used in accordance with the manufacturers' instructions.

53. If ladders are to be used to work from, and not just for access or egress, make sure:

- A secure handhold and secure support are available at all times;
- The work can be reached without stretching;
- The ladder can be secured to prevent slipping.

54. It is tempting to try and ensure that all the work is completed without having to go down the ladder and move it, but overreaching while working from a ladder is a major cause of falls even for experienced workers.

55. The choice of equipment for work at height must comply with the relevant Schedules of the WAHR. Further guidance on the selection and use of work equipment is given in Part 2 to this Guidance.

## **6. Manage the risks from fragile surfaces, falling objects and danger areas**

56. **Fragile Surfaces:** Regulation 9 of the WAHR requires you to manage the risks from fragile surfaces. By this we mean surfaces where there is a risk of a person or object falling through. These surfaces may be either close to or part of the structure on which work is to be done and will include vertical or inclined surfaces. In 2001/02 fragile surfaces (including fragile roofs, ceilings and skylights) accounted for 10 fatalities and 150 major and over three day injuries at work.

57. Any surface from which work at height is carried out must be strong and stable enough so that any foreseeable loads placed on it will not lead to its collapse. Dutyholders should consider whether work on a fragile surface could be done in a way which does not expose workers to risk by having to stand on or near the surface, e.g. can the work be done from below? Dutyholders should consider the whole installation, including the fixings of the surface material, and remember that while the surface may support a person's weight, it may prove fragile once the weight of a load being carried is taken into account. It is also vital to consider the dynamic forces of the person falling from height onto the surface, and the effect of ageing on the surface material and the deterioration caused by weather, environment, impact and any structural alterations. Roof lights in non-fragile roofs can be difficult to see - they may have been painted over and in bright sunshine they can blend in with the surrounding sheets. Remember that fragile surfaces can also be vertical, or nearly so, as well as horizontal. For example some, mainly older, skylights may have large vertical glass sections which people can fall through.

58. If the work requires regular or occasional access where there is a fragile surface, permanent fencing, guards or other measures to prevent falls should be in place. Where a risk of falls remains, fall arrest equipment is required, so far as is reasonably practicable.

59. **Falling Objects:** Regulation 10(1) requires that if a falling object could injure someone, steps be taken to ensure that this is prevented. The effectiveness of any measures will depend on the material and tools that are being used, and the effect that winds or other factors may have in creating a more widespread hazard. The risk of falling materials causing injury should be minimised by keeping workplaces at height clear of loose materials. Ways of preventing objects rolling or being kicked off the edge might include toe boards or solid barriers, or attaching them to people or fixed structures. Any guards used (including brick guards) must be robust and would usually require a mid rail. Personal items, such as mobile phones, can cause serious injury if they hit someone. High visibility netting may be one way of dealing with this risk, another might be to ensure personal items or other equipment not necessary for the task are left in a safe place before working at height.

60. Rubbish chutes used to dispose of materials from height need to be properly managed so that the debris

does not hit anyone either as it goes down the structure or when it hits the skip or pile at the bottom. It is also important to impress on workers the risk of injury to people by using hoists, other ropes or hand-to-hand methods to move work equipment or other goods such as scaffold clips. Loads and equipment need to be stored correctly so they do not collapse or fall at any time and cause injury. The logistics of storing material on work surfaces may need to be reviewed so that the workers can access smaller amounts kept at a height and that surpluses are stored on the ground. These issues require special thought in relation to the duty of any person under an employer's control, to the extent of their control.

61. **Danger Areas:** Regulation 11 requires that where workers are adjacent to an area where there is a danger of falling (for example near to fragile surfaces) or being struck by an object, the employer needs to make sure, so far as reasonably practicable, that people whose presence is not necessary are prevented from entering the area. It also requires that clear indication of this area is given, for example through notices. This will alert those who may need to access the site to recover objects or carry out maintenance work to take suitable precautions, such as attaching themselves to fall protection systems or wearing head protection.

<p><b>7. Inspect and maintain the work equipment to be used and inspect the place where the work is to be carried out (including access and egress)</b></p>
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62. **Inspection:** Equipment for work at height requires regular inspection to ensure that it is safe to use. Marking the equipment may be required to ensure that it is obvious when the next inspection is due. Formal inspection, as required by this Regulation, should not be a substitute for any pre-use checks or routine maintenance. Inspection does not normally include the checks that are a part of the maintenance activity although certain aspects may be common. Nor does inspection include a pre-use check that an operator may make before using work equipment for work at height. Also, while inspections need to be recorded, such checks do not.

63. The WAHR require that, where the risk assessment under Regulation 3 of the Management of Health and Safety at Work Regulations 1999 identifies a 'significant risk,' suitable inspections should be carried out. A significant

risk is one that could foreseeably result in a major injury or worse, which is likely for most falls from height.

64. The purpose of an inspection is to identify whether the equipment is fit for purpose and can be used safely and that any deterioration is detected and remedied before it results in unacceptable risks. An inspection can vary from a simple visual or tactile check, to a detailed comprehensive inspection, which may include some dismantling/testing. A competent person should determine the nature, frequency and extent of any inspection taking account of such factors as the type of equipment, how and where it is used, its likelihood to deteriorate, etc. For example, if equipment is to be used in onerous outdoor conditions it may need more regular inspections than similar equipment used indoors. Periods between inspections should be chosen on the basis of risk assessment, and should be reviewed in the light of experience.

65. Further information is available in INDG 367 for rope positioning systems that require inspection before use. Lifting equipment covered by the Lifting Operations and Lifting Equipment Regulations (LOLER) will also be subject to thorough examination (see *Lifting Operations and Lifting Equipment Regulations, ACoP and Guidance*).

66. Regulation 12 (4) requires that a weekly inspection is carried out for scaffolding, as previously required by the Construction (Health, Safety and Welfare) Regulations (CHSWR). This is not required on a MEWP, or other types of work platform.

67. Where work equipment is hired to the user, it is important that both parties agree, in writing, exactly what inspection has been carried out and that information is available and can be passed to the workers. Further details on inspection of work equipment are in Regulation 6 of *Provision and Use of Work Equipment Regulations, ACoP and Guidance*.

68. **Maintenance:** Inspection and thorough examination are not a substitute for properly maintaining equipment. The information gained in the maintenance process, inspection and more technical thorough examinations should inform one another; the processes should be complementary. If a maintenance log exists make sure it is kept up to date and accessible to the competent person performing the inspection or thorough examination. The maintenance process also needs proper management:

- Planned preventive maintenance involves replacing parts or making necessary adjustments at pre-set intervals so that risks do not occur as a result of the deterioration or failure of the equipment; and
- Condition-based maintenance involves monitoring the condition of safety-critical parts and carrying out maintenance whenever necessary to avoid hazards which could otherwise occur. This would include, for example, hydraulic systems in a MEWP or safety critical parts of window cleaning cradles.

69. Frequency of maintenance will depend on the equipment, the conditions in which it is used and the manufacturer's instructions. Most equipment for performing work at height should be checked prior to use, for example through a visual check. This will identify any fault, such as a frayed safety line, which could lead to a significant failure.

70. Where work equipment is hired to the user, it is important that both the hire company and the person responsible for hiring the equipment establish which party will carry out safety-related inspection and maintenance. This is particularly important for equipment on long-term hire and the terms of the agreement between the hirer and the user should record this responsibility. Both parties should agree, in writing, exactly what they are responsible for and that information should be passed to the workers.

71. All those performing maintenance work should be competent to do so. They should have the skills, experience and knowledge of the relevant equipment, e.g. they should be able to identify potential defects, be aware of their significance and know what action to take as a result.

72. **Record Keeping:** Regulation 12(6) requires employers to record inspections that relate to the site safety or to the work equipment so that in the event of an accident they can provide useful information. Legally they must be made available to a health and safety inspector and that is why they have to be stored in a way that is accessible and is protected from being tampered with. Records may be kept electronically if they are secure and capable of being printed out.

73. **Thorough examination under LOLER:** Lifting equipment used for people or loads, which is subject to Regulation 9 of LOLER, requires a more detailed comprehensive inspection - called a through examination - which may

include some dismantling and/or testing. If this is done it should avoid the need for a more frequent inspection unless the equipment's effectiveness depends on how it has been installed or assembled and there have been exceptional occurrences, which might jeopardise its effectiveness. However it is important to remember that some items of equipment for work at height, for example a mast climbing platform, will have some parts which are subject to thorough examination under LOLER, but also others such as floors and guardrails which will not be subject to LOLER and may need to be inspected more often.

**74. Inspection for Work at Height:** Regulation 13 requires that the surface conditions and other permanent features where work at height will be taking place are checked each time before work starts in order to identify whether there are any obvious defects. For example, this would include checking the ground surface on which a tower scaffold or a portable ladder was to be placed. An employer may not be able to do this himself, but should ensure that a competent worker carries out the necessary checks. The results of such checks do not have to be recorded.



## **Part 2 - Selecting The Right Work Equipment For Safe Work At Height:**

[This section outlines the requirements of each Schedule to the Work At Height Regulations. It will include illustrations on the different types of work equipment covered in the Schedules and the key requirements for each, along with any other relevant information. Consultees are invited to comment on the content provided below and offer suggestions for further guidance as appropriate.]

### **Schedule 1 - Requirements for Places of Work at Height**

75. This Schedule sets out the criteria by which you should judge whether a place of work at height is safe. If it meets these criteria, work may be carried out from there without the need for you to use work equipment to make it safe. This might be, for example, work on a permanent structure which had a strong, level surface and parapets of sufficient height to prevent falls, or on a piece of industrial plant which has permanent guardrails and other built-in features to prevent falls.

76. The place of work must have a 'suitable surface'. The 'surface' is the specific site on or from which the worker performs their tasks. There will be conditions which will make a fall from any work surface more likely, for example if the working surface is not level, there are obstructions, or it is slippery or greasy, special thought needs to be given to worker safety. The surface must not be fragile, i.e. it must be able to take the weight of people or materials passing across it and be able to sustain the impact of people or materials liable to fall on to it. It is important to note that this should take account of deterioration caused by weather, climatic conditions, age, impacts and other relevant factors. It must not be possible to fall off the edge or through a hole in the surface.

### **Schedule 2 - Guard rails etc**

77. Guard rails may be required to make a work platform or other place of work safe by preventing falls. The criteria set out in this Schedule apply to all guard rails whether permanent structures or work equipment, and the principles that lie behind the criteria are that

whenever a person is working at height, in a place that is protected by guard rails, the rails should not allow the person to fall over, under or between them. To the extent that any permanent rails do not prevent this from happening, there will need to be temporary measures, such as the erection of scaffolding, to ensure that falls are prevented.

78. The WAHR set the minimum height for guardrails to be at least 950mm. This is an increase from the CHSWR height of at least 910mm, and reflects the increased height of the average person.

79. See HSG 150 for further information on guard rails (and working platforms) in construction.

80. It may be necessary, in certain circumstances, to remove guard rails, fencing and other means of protection for short periods. This requirement does not apply to docks (except for dry docks) and on ships where the Docks Regulations and merchant shipping legislation, which implement specific provisions, already provide for fencing at dangerous parts of a quayside, or a ship's hold, unless work is taking place that would make fencing impracticable. This Regulation makes it clear that this can only occur:

- To the time and extent necessary for the job, then the barrier is replaced; and
- Such that guards are not removed while workers are at height unless there is some other safeguard, e.g. a safety net.

81. Measures to protect workers while the task is carried out could include safe systems of work (or permit to work systems where appropriate) including the provision of a fall protection system, limiting access to specified people and ensuring that those performing the task are provided with adequate information, training and supervision.

82. If regular access or egress is required it may be more appropriate to provide gates on scaffolds. In all cases the gap in the protection should be minimised and the gate closed immediately after the operation has finished.

### **Schedule 3 - Working Platforms**

#### **Part 1 - All Working Platforms**

83. Working platforms are defined in Regulation 2 as 'any platform used as a place of work or as a means of access to or egress from a place of work.' In considering whether a platform is suitable for work at height you need to ensure that it is:

- Of sufficient dimensions to allow safe passage and safe use of equipment and materials;
- Free of hazards that could cause trips, or allow people's feet to pass through the flooring;
- Constructed to prevent feet and objects passing over the edge, i.e. toe boards or edge protection are in place;
- Kept clean and tidy, e.g. do not allow mud and debris to build up on platforms; and
- Secure.

84. 'Sufficient dimensions to allow safe passage' means that runs, ramps, walkways and other 'platforms' of this type should be wide enough to allow a person at shoulder width to pass along them easily. This width would normally be considered to be at least 600mm although there are circumstances in which a narrower platform may have safety advantages, such as towers on stairs being used for light work, or other situations where wider boards would be more difficult to use at height because of their weight. Platforms should be wider than 600mm if they are used for storage, for example, as well as access.

#### **Mobile Elevated Work Platforms (MEWPs)**

85. MEWPs can provide a safe means of working at height if used properly in accordance with their instructions. Employers and others responsible for the use of MEWPs should assess the risks of users falling from or being thrown from the basket, and take precautions to eliminate or control those risks. The precautions for safe work from a MEWP include:

- A guard rail and a mid rail round the edge of the basket to stop the user falling;
- A slip-resistant floor;
- Toe-boards round the edge of the platform;
- Deadman controls clearly marked to show their method of operation;
- Use of stability devices, e.g. outriggers, provided to make the machine stable, which are interlocked such that the MEWP will not operate unless they are fully extended; and
- Locking-out controls (other than those in the basket) to prevent inadvertent operation.

86. A safe system of work should be in place that includes:

- Making sure that the MEWP selected is suitable for the task;
- Consideration of access to and exit from where the work is being carried out;
- Planning the job to address the risks from overhead hazards and passing traffic, including precautions to prevent collision;
- Use of trained/experienced operator(s);
- Use of harnesses;
- Instructions to the workers about safety issues;
- Instructions in emergency procedures, such as evacuation, should the power be lost.

87. MEWPs are also lifting equipment for lifting people as defined by LOLER. You should, therefore, ensure that a MEWP has a thorough examination by a competent person at least every 6 months, or in accordance with an examination scheme drawn up by a competent person. You should also ensure that routine maintenance is performed in accordance with the manufacturer's instructions and advice from a competent person.

88. In addition to purpose built access equipment such as a MEWP, access to work at height may also be achieved by the use of working platforms fitted to counter-balanced fork lift trucks (FLT), very narrow aisle trucks

(VNAT) and/or telehandlers. There are two types of working platform - the occasional working platform and the integrated working platform. Occasional working platforms are simply a platform and an enclosure fitted to the forks of a counter-balanced FLT or VNAT. Integrated working platforms contain controls within the platform that are integrated into the controls of the truck/telehandler.

89. FLT are not specifically designed to carry people. This means that the use of a working platform on a forklift truck is restricted to exceptional use only. Trucks/telehandlers fitted with integrated working platforms, which have been designed to carry people, may be used for routine access to work at height. The design must relate to the combination of the truck/telehandler and the working platform, not simply to the working platform in isolation.

90. It is accepted that in particular industries, for example agriculture, the use of existing telehandlers fitted with suitable occasional working platforms could provide a safer alternative to other means of access (such as a ladder). Where agricultural businesses have access only to telehandlers that are not designed for use with integrated working platforms, these machines may be used, in conjunction with a safe system of work, for short duration tasks, e.g. cleaning gutters, changing light fittings, etc. They should not be used for extensive work, e.g. re-roofing buildings. If an agricultural business is obtaining a new or replacement telehandler, and there is an intention to use the machine in conjunction with a working platform for regular and / or routine operations, then a suitable telehandler designed for use with an integrated working platform should be obtained.

91. For more information on working platforms for use on FLT and telehandlers, see HSE's Guidance Note PM 28.

## **Part 2 - Scaffolds**

92. Part 2 of Schedule 3 covers specific requirements for scaffolds. Scaffolds should be designed, erected, altered and dismantled by competent people. A competent person(s) should also supervise the work. System scaffolds should be installed in accordance with the manufacturer's instructions.

93. Scaffolds must be based on a stable foundation that is firm and level in order to support the loads to be

placed upon it. If necessary, extra support should be provided. If the scaffolding needs to take heavy-duty loads, proper consideration will be needed to make sure it is designed and erected to suitable specification.

94. Workers erecting any scaffold must look out for voids such as basements or drains, or patches of soft ground, which could give way when loads are placed upon them. This should be considered regardless of loading.

95. Scaffolds should be correctly braced and tied onto a permanent structure or otherwise stabilised. If a tie is removed to allow work to proceed, an equivalent tie should be provided nearby to maintain stability. This work must be undertaken under the supervision of a competent person. The Construction (Design & Management) Regulations 1994 places duties on clients, designers and principal contractors to eliminate/reduce the risks to workers during the construction phase. As part of this duty they should take reasonable steps to ensure that suitable anchorage points are provided within the building/structure.

96. "Depending on the complexity of the scaffolding selected" means that plans are needed for special or unusual designs where structural members could be overloaded or the scaffolding could become unstable if not reinforced or erected in a particular way. Guidance on the safe design, installation and erection of scaffolds is contained in *BS 5973 1993 'Code of Practice for Access and Working Scaffolds and Special Scaffold Structures in Steel'* and *BS 5974 1990 'Code of practice for temporarily installed suspended scaffolds and access equipment'*.

97. Tower scaffolds can provide quick, easy and safe access. However, like any scaffold they should be erected, used, maintained, and dismantled in accordance with the manufacturer's instructions. If you are hiring a tower scaffold you should ensure that you are provided with the manufacturer's manual or instructions. Similarly, they must be secure when in use so any wheels are locked and stabilisers in place. In certain circumstances, e.g. if over the manufacturer's recommended base to height ratio or if being used to carry out grit blasting or water jetting, they will also need to be tied to the structure.

98. While moving a tower scaffold you should ensure that no one is on it; beware of any overhead obstructions or power lines; check there are no unsecured tools on the platform; and ensure that there are no depressions or

holes in the floor surface. Further guidance on tower scaffolds is contained in 'Tower scaffolds' Construction Information Sheet (CIS 10) revised.

#### **Schedule 4 - Requirements for Collective Safeguards for Arresting Falls**

99. Collective safeguards for arresting falls include nets, mats and inflated devices that are designed to catch a falling person. They may be anchored to prevent movement, but the manufacturer's instructions will need to be followed. If there are gaps in the supports for collective safeguards, which could compromise safety, these should be filled or covered. Specific consideration should be given before the work starts to rescue procedures which may need to be carried out, and to the effects of landing.

100. Where a collective safeguard is designed to be suspended and requires a clear zone in which to deflect, that zone should be kept clear of obstructions to allow the safeguard to operate properly, i.e. so that a falling person would not come into contact with anything else if and when the safeguard is used.

101. Where the design of a collective safeguard requires an external power source (such as a pump for an airbag) or restraints (such as brickwork enclosing bags) to make it effective, these power sources or restraints must be sufficient to maintain the effectiveness of the equipment in the event of a fall and rescue.

#### **Schedule 5 - Requirements for Personal Fall Protection Systems**

##### **Part 1 - Requirements for all Personal Fall Protection Systems**

102. Personal fall protection systems are defined in Regulation 2 of the WAHR as a fall prevention, work restraint, work positioning, fall arrest or rescue system, other than a system in which the only safeguards are collective safeguards; or rope access and positioning techniques. The requirements set out in this Schedule apply to all rope-based activities for work at height including industrial rope systems, arboriculture and mountaineering, caving, etc. when carried out as a work activity. Most equipment for personal fall protection systems should have appropriate CE marking, normally in

accordance with the Personal Protective Equipment (PPE) Regulations. For PPE there are 3 categories - most fall protection equipment is classed as PPE category III, 'equipment for mortal danger' e.g. harnesses.

103. CE Marking does not necessarily mean that a piece of equipment is safe for the task. Check the manufacturer's instructions, for example, to consider whether the particular piece of equipment is compatible with others being used - this is equally important if workers have requested to use their own safety equipment. Some equipment may have a lifespan date given by the manufacturer and generally should be disposed of after this date.

104. All equipment used in the personal fall protection system should be strong enough to withstand any forces placed upon it and should include an adequate margin for safety above those forces. Check the equipment's safe working loads, working load limits or maximum (and sometimes minimum) rated loads. It is usual with much personal fall protection equipment to be supplied quoting a minimum static strength, rather than safe working loads. Check too that any accessories or other equipment meets those requirements.

105. Workers performing rope access work should be properly clothed. You should consider:

- Avoiding clothing with loose flaps that may become caught in any moving equipment;
- Suitable footwear to give protection and a good grip;
- Weather conditions, e.g. provision of gloves in the cold and sun block in hot conditions; and
- Provision of appropriate personal protective equipment such as head protection (for personal fall protection systems these should always have a chin-straps that prevent the hat from falling off during use).

106. Depending on the assessment of the risk, where work will take place for a reasonable time in one position rope access workers should be provided with a seat for comfort. A seat may not necessarily be a boatswain's chair. In work situations where support additional to that provided by the harness would be beneficial, a simple support board or strap may be sufficient, and be more appropriate and less risky to handle than a bulky



boatswain's chair. Consideration should also be given to rest periods.

107. The need for rapid and effective rescue is particularly important when using personal protective systems where a delay might have severe consequences, e.g. when someone is left hanging motionless in a harness after a fall. In a worst-case scenario loss of consciousness followed by death could occur in a few minutes. This phenomenon, known as suspension trauma, is caused by a number of factors, but is principally due to the disturbance of blood flow to the vital organs, especially the brain but also the heart and kidneys, which is an effect of hanging motionless and possibly of the restriction of blood flow to the limbs by the harness. It can be exacerbated by other factors such as shock or injury caused by the fall itself. The time before loss of consciousness depends both on the severity and the combination of these factors, and can vary from about 6 minutes to 2 hours.

### **Part 3 - Rope Access and Positioning Techniques**

108. Double Rope Working: To operate safely, rope access systems should comprise two separately anchored secured systems: the working line and the back up safety line. This principle should apply except where a risk assessment demonstrates that the use of two ropes would be more hazardous than a single rope (see Single Rope Working below). The safety line provides the protection against a fall should the working line fail. The worker must be provided with, and use, a harness which conforms to an appropriate standard, e.g. BS EN 361 for full body harnesses and BS EN 813 for seat harnesses. The harness should be attached to both the working and safety lines. It is important that the safety line is strong enough to withstand any forces placed upon it in the event of it coming into use.

109. The working line must also be equipped with a device or system to stop or slow an uncontrolled descent if a worker loses control. Similar devices to arrest the fall of a worker must also be in place on the safety line.

110. In all rope access work there should be a minimum of two workers, one of whom is competent to supervise. Contingency plans should be in place in the event of a rescue being required especially in circumstances where someone is left hanging motionless (see paragraph 107 above).

111. An effective communication system should be in place between all workers and, where necessary, third parties (e.g. a control room if working offshore). This system should ensure that all those involved in the task are visible to one another and in audible range. Where this is not possible or suitable, an alternative such as an extra banksman or a radio system should be in place, in accordance with the risk assessment.

112. Single Rope Working: Paragraph 3 of Part 3 of Schedule 5 to the WAHR states that single rope working is permitted where use of another line would entail higher risk, and where appropriate measures have been taken to ensure safety. This might apply, for example, to personnel 'flying' in a theatre, where use of a second line might risk entanglement and other measures to ensure safety are in place.

113. Further information is contained in BS 7985:2002 '*Code of Practice for the use of rope access methods for industrial purpose*', which gives guidance for those who commission or use rope access methods. It is appropriate where ropes are used as the primary means of access, egress or support. The standard is not applicable to the use of ropes in arboriculture, steeplejacks or use by the emergency services. Guidance is also contained in the Industrial Rope Access Trade Association's (IRATA) '*Guidelines on the use of rope access methods for industrial purposes*'.

**114. [HSE recognises that some industries (e.g. adventure activities providers) have genuine concerns about the application of single and double rope requirements. HSE is looking at what further guidance would be appropriate for these. If consultees are aware of other activities where this might be relevant please comment.]**

#### **Schedule 6 - Requirements for ladders**

115. There are many types and sizes of ladders; including portable, suspended, step, interlocking, extension, mobile and fixed ladders. They all, regardless of their use, need to meet the requirements of the WAHR. This would include, for example, a portable ladder that is tied in place for many months for access to an office on a building site. Ladders are work equipment as defined by PUWER 98 and must be suitable for the task. For example, they should be strong enough to take the loads placed upon them. New ladders are marked in accordance with their conditions and class of use. For example, anyone

using a ladder or stepladder for industrial work should ensure that it is marked: -

- Timber BS1129: 1990 Kite marked Class 1 Industrial;
- Aluminium BS2037: 1994 Kite Marked Class 1 Industrial;
- Glass Fibre BSEN131: 1993 Kite marked Industrial;  
and
- Step stools BS7377: 1994.

116. All dutyholders considering using a ladder to perform work at height, or as a means of access or egress, should carry out a risk assessment. The assessment should be proportionate to the risks involved - for example, a generic assessment may be quite suitable for simple, routine or repetitive tasks, but more complex work will need specific planning, and doing a written assessment will ensure that the risks are recorded. Such a risk assessment should cover factors such as the height to be negotiated, the site conditions (including weather), the duration and extent of the work, the frequency of access, etc. It is important to remember that:

- Ladders should only be used as a place to work when other, potentially safer, means such as tower scaffolds are not reasonably practicable;
- Ladders should only be used for access when putting in a permanent staircase is not reasonably practicable.

117. It is quite common for ladder users, particularly in the self-employed sector, to be lone workers. Many large companies who employ substantial numbers of lone workers have decided that providing ladder stabilisers or other non-slip devices are a viable solution to reduce the risk of falls. Research has indicated that the feet of a ladder are particularly susceptible to damage that can significantly reduce the grip, make them more vulnerable to movement and, as a result, increase the potential for falls. Almost all falls from ladders occur because the ladder moves unexpectedly during use, although this is very often caused by the user overstressing or overloading. Maintenance issues such as ensuring it is free from mud or paint and that the feet are still providing the same grip are also vitally important.

118. As well as being properly maintained, regular visual checks should be made for damage such as cracked/bent stiles or rungs, corrosion and defective or missing fittings. The surface on or against which a ladder is placed must be strong enough to support any loads placed upon it - for example plastic gutters and glass are unlikely to be able to support the weight of a ladder and worker. The surfaces on which ladders are leant onto must be flat unless special provision is made, such as the use of a levelling device. Weather and other factors will affect the surface, for example ice, rain and wet leaves will reduce the friction of the surface. Where a worker needs to gain access to a platform the stiles of the ladder should protrude sufficiently to enable a safe handhold, and if necessary have a handhold when working at the higher level. Even a stepladder should not be positioned where there is access to a doorway or where passing traffic is likely to strike it.

119. Portable ladders (not step-ladders) should always be placed at the correct angle, which is around 75 degrees, or roughly one metre out for every four metres up. The feet of portable ladders should be prevented from slipping during use, e.g. by:

- Tying them effectively to an existing structure - securing them at the top is the best method; securing at the bottom or middle is not very effective to prevent sideways slip unless it is done properly with equipment designed for the purpose;
- Using an appropriate ladder stabiliser or anti-slip devices;
- Having another worker "foot" the ladder. This is where someone stands on the bottom rung, and is only suitable when it is not practicable to secure the ladder in another way.

120. As well as the physical strength of the ladder, certain environments require additional thought. Workers close to electrical circuitry should be using non-conductive access equipment e.g. made of timber or glass fibre. However, if the electricity is isolated, workers on an aluminium tower scaffold will get far greater protection from falling than from being on a ladder. In "sterile" industries such as the manufacture of food, computer circuit boards or health products, glass fibre is the preferred material for access equipment. In the chemical and oil industries 100% glass fibre ladders are

suitable where the access equipment needs to be "spark free" as well as non-conductive.

121. It is also important that not only is the ladder standing on a firm level surface, but also that the rungs remain horizontal whilst in use. There are a number of devices that now help solve this problem allowing for safer working on uneven ground or sloping surfaces. However they should be carefully selected and used as directed by the manufacturer.

122. Other factors that can improve the safe use of ladders include facing the ladder at all times when climbing or dismounting and maintaining contact with both feet and at least one hand.

123. "A secure handhold should be available" means that the user can grasp an upper rung or handrail on the ladder or stepladder (if as recommended the user is not working from the topmost 2 or 3 rungs/steps this should be possible). It does not mean that the user is expected to be holding the rung or handrail at all times as this would clearly make it impossible to carry out many tasks for which two hands are needed.

124. The use of a stepladder in particular for such tasks should give consideration to, for example, its suitability for the site conditions and the task (e.g. is it of short duration and light duty). Other factors to consider would be the height of the task; whether the user can balance properly; whether the stepladder can be positioned close to the task to avoid overreaching; whether the task does not involve side loading that could cause the stepladder to fall over; and if it is sited on firm level ground.

125. Overreaching while working from a ladder is a major cause of falls. Always go down and move the ladder rather than be tempted to over reach.

126. Stepladders can be used sideways, but not for any work that puts a side loading on them of any significance. When it becomes significant depends on the height and the floor type. As a rule of thumb, cable pulling, drilling and sawing should not be undertaken sideways, but inspection work, painting and operating switches can be done with the stepladder sideways. There should never be more than one person on a stepladder and he/she should never try and stand or rest a foot on the top handrails to gain extra height.

127. When the job is done, a portable wooden ladder needs to be protected from the weather in a covered, ventilated

area. A ladder should not be hung by one of its rungs, as this could weaken it.

128. Fixed ladders should not be provided in circumstances where it would be practical to install a staircase.

### **Schedule 7 - Inspection**

129. The Schedule goes into some detail about the requirements for inspections, but that is only part of any successful regime that starts with the correct selection, use and care of equipment. The traceability of records relating to each aspect from purchasing or hiring of the equipment and checking that its certification meets the specific requirements of the task, through to marking it so employees can recognise its suitability and recognise appropriate storage, will retain the equipment in a useful state. Pre-use checks will identify other issues, such as possible causes of degradation, and it is important that issues relating to the longevity of equipment are raised in the inspection regime.

130. The WAHR are no more onerous than existing legislation in the CHSWR and PUWER. Their main aim is to establish a system that is robust enough to intervene before equipment gets into a dangerous state. Where that equipment might be a lifeline for a worker it is vital that the system is properly planned and written records kept.

### **Part 3 - Case Studies:**

[This section will include a selection of worked examples of planning organising and carrying out work at height safely including selecting the right work equipment, etc. A selection of case studies is provided below. Consultees are invited to comment on these and to suggest other situations for which case studies might be particularly helpful.]

#### **1. Gutter Cleaning**

**Problem:**

An employer owns a medium sized industrial unit employing 10 people. Plastic guttering at the roof edge had become blocked by loose leaves causing water to overflow and cause localised flooding within the yard. This in turn flowed into the factory causing damage to stock. The guttering is 5 metres above the floor and the asbestos cement roof is sloping and has skylights, all of which are fragile materials.

**Risk assessment/planning and organisation:**

When planning the work the employer considered the access equipment and the staff he had available and the conditions of the site. He had a ladder, a step ladder and a fork lift truck equipped with a working platform which was available for exceptional use only, i.e. for non-routine tasks. He had some 17 year old trainees and a couple of employees in their 30s who were more mature and experienced. The back of the unit had sloping ground which made access to the roof difficult. Parts of the external perimeter were used for storage and there were other obstructions such as a gas cylinder storage cage and a compressor shed.

The employer, while planning the work, asked himself whether the gutters could be cleaned without working at height.<sup>13</sup> The gutters were quite deep so obstructions could not be seen from ground level. This meant that access to height was needed, otherwise a long rake could have been used from ground level.

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<sup>13</sup> WAHR - Reg 6(1)

The employer asked himself if he could utilise an existing place of work?<sup>14</sup> There were no existing access routes to the roof. There was no access from inside the factory and no walkways on the edge of the roof with protective floor coverings or edge protection.

The owner decided how best he could carry out the work. If someone climbed onto the roof he could access all the guttering. Perhaps one of the 17 year old trainees would have been agile enough to climb onto the roof from a ladder. He immediately discounted this idea as there would be nothing to stop someone falling off the roof edge or through it.

He assessed the existing work equipment he had at his disposal. His step ladder was not high enough. Someone would have had to stand on the upper rungs and would have had no handholds.<sup>15</sup> His two stage ladder was high enough, but he was worried that if it was leaned against the gutter the gutter could break.<sup>16</sup> He was also worried that there would be a tendency by the user to lean from it to save relocating the ladder as often. The working platform for use with his fork lift truck would have provided safe access to about one third of the perimeter where there was good flat ground with no obstructions. This did not solve the problem with the sloping ground, the compressor shed or the cylinder store. Some pallets could have been removed, but this would have taken time and would have been disruptive to both deliveries and production.

#### **Solution:**

Having assessed the conditions and the equipment he had available he decided to hire a small cherry picker type Mobile Elevated Work Platform (MEWP), which could also be used for other work at height tasks within and around the unit. This overcame the sloping ground problem because it could be located on flat stable ground beyond the slope and its reach overcame the other obstructions. One of his more mature and experienced employees received instruction from the hirer<sup>17</sup> and safe access was provided from the basket for cleaning the gutters around the entire unit.

#### **How was this solution reached?**

1. The employer's risk assessment showed that the work needed to be carried out at height as the task could not be carried out from ground level.

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<sup>14</sup> WAHR - Reg 6(3) (a) (i)

<sup>15</sup> WAHR - Schedule 6(6) and (10) (a)

<sup>16</sup> WAHR - Schedule 6(2)

<sup>17</sup> WAHR - Reg 5



2. The roof was made of a fragile material and had no edge protection and so was not safe to work from. This meant that some kind of work equipment needed to be used.
3. The work equipment available to the employer was not suitable - it would not have been safe to work from either the step ladder or the two stage ladder and the fork lift truck and working platform could not cope with the sloping ground and obstructions around parts of the industrial unit.
4. The employer's risk assessment concluded that hiring a MEWP was the safest way of carrying out the job. This would not only be able to cope with the variety of surfaces in the area, but also provided a flat, level and stable surface from which to perform the task. The MEWP also had the added advantage of being able to perform other ad hoc tasks in and around the unit if necessary, thus reducing overall costs.

## **2. Goods Storage**

### **Problem:**

Following complaints from employee representatives about unsafe access methods to storage areas in a company, the employer reviewed the arrangements for such work. The company have a large warehouse containing racking where a variety of products from raw materials to finished goods are stored. A variety of tasks take place in the warehouse, including the addition and retrieval of goods, inspection and stock taking. Concern was expressed that ladders were being used to retrieve heavy and unwieldy goods from racking and this constituted a risk of falls.<sup>18</sup> Some employees had also been seen climbing racking to retrieve products.<sup>19</sup>

### **Risk assessment/planning and organisation:**

The employer reviewed warehouse tasks by asking first whether work at height could be avoided.<sup>20</sup> Fork lift trucks were used to add and retrieve stock from the store and it was found that, by keeping aisles clear, most lifting could be done mechanically so removing the need to use ladders or climb racking.<sup>21</sup>

The warehouse layout was reviewed so that frequently accessed smaller items were placed at low level so that they could be manually retrieved without the need to access height.<sup>22</sup> Such areas were placed away from fork

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<sup>18</sup> WAHR - Schedule 6(1)

<sup>19</sup> WAHR - Reg 6(2)

<sup>20</sup> WAHR - Reg 6(1)

<sup>21</sup> WAHR - Reg 6(2)

<sup>22</sup> WAHR - Reg 6(2)

lift truck areas so that segregation between vehicles and pedestrians was achieved.

Mobile step ladders equipped with a guard rail for the steps and working platform were designated suitable for use for inspection and stock taking. They could also be used for the removal of lighter goods that did not constitute a manual handling risk.

**Solution:**

In reviewing the arrangements for work at height in the warehouse, the employer was able to remove most of the need for individuals to work at height by making use of mechanical handling equipment and step ladders. Reorganising the warehouse layout had further reduced the need to access height (i.e. locating frequently accessed materials at low levels) and residual tasks such as inspection and stock take could be carried out using access equipment in the form of step ladders.

**How was this solution reached?**

1. The risk assessment showed that much of the work at height being carried out in the warehouse could be avoided by using a fork lift truck to retrieve goods mechanically.
2. At the same time, frequently accessed goods were placed at a lower level in order to avoid the need to work at height.
3. Step ladders (which had guard rails and working platforms) were considered suitable for inspection, stock taking and the removal of lighter goods at height due to the low risk and short duration of such tasks.

**3. Installation of Roof Fans**

**Problem:**

A large warehouse storing goods for a catalogue company has several roof fans which are in need of replacement. Temperatures in the summer become uncomfortable as a result of poor air circulation and in the winter heated air is not being circulated properly.

**Risk assessment/planning and organisation:**

The roof area is very large and has a gentle slope to edges 20 metres above the ground. It is made of non fragile material, but has several skylights which are fragile.<sup>23</sup> Fixed racking within the warehouse is situated beneath most of the fans.

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<sup>23</sup> WAHR - Reg 9(2)

The manager responsible considers that the work has to be done at height. The roof has no fixed access to its surface and there is no parapet or edge protection for the roof edges so an existing safe place of work cannot be utilised.<sup>24</sup> She has no equipment that would give safe access from the inside due to the height involved and obstructions from the racking. She quickly realises during this early planning stage that she does not have the necessary experienced staff or equipment for the job so she decides to employ a suitable contractor.<sup>25</sup>

**Solution:**

Following close liaison with the client company (which included meetings and the preparation of a risk assessment and a method statement) the contractor carried out the work using a tower scaffold to access the roof.<sup>26</sup> Walkways with barriers were provided on the roof from the tower scaffold to the work areas so that contractors were kept away from the roof edges and fragile skylights. Additional work equipment in the form of personal fall protection systems were used when the fans were being installed in the roof surface in order to minimise the distance and consequences of a potential fall through the temporary roof void.<sup>27</sup> A rescue plan was also put in place.<sup>28</sup>

**How was this solution reached?**

1. The manager's risk assessment showed that work at height was necessary in order to change the fans. However, the roof could not be used as a working platform as it contained fragile surfaces and did not have suitable edge protection. Similarly, it was not possible to use work equipment owned by the company due to the heights involved with the work and the obstructive racking which would hinder access.
2. The manager realised the company had neither the adequately skilled staff nor the correct work equipment for the job, and so called in a contractor. She would still have ultimate responsibility for the health and safety of the contractor, and so made sure the job was properly planned with a risk assessment and a method statement.
3. The contractor carried out the work using a tower scaffold. The scaffold, and all walkways, were

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24 WAHR - Reg 6(3) and Schedule 1

25 WAHR - Reg 3(2) (b) and Reg 5

26 WAHR - Reg 6(3) (b) and Schedule 3, Part 2

27 WAHR - Schedule 5

28 WAHR - Reg 4(2)

provided with suitable edge protection. This also prevented access to the fragile materials.

4. As an extra precaution, all workers used personal fall protection systems in order to minimise the distance and consequences of any fall were one to happen.

#### **4. Provision of Safety Barriers on a Mezzanine Floor**

##### **Problem:**

Following a review of a risk assessment an employer was concerned about the risk of falls from openings along the edge of a mezzanine floor when pallets were being placed and retrieved using a fork lift truck. Removable metal bars and chains were placed across the openings when they were not in use. This relied on the operators remembering to put the bars and chains back after use. The employer was also concerned that the chains would give inadequate protection if someone fell against them.<sup>29</sup>

##### **Risk assessment/planning and organisation:**

The employer considered the use of a harness system which, when worn, would prevent the operator from getting to an unguarded edge during loading. However, if a second person approached they would have nothing to stop them falling from the open edge.<sup>30</sup> In addition, there were time consuming issues and costs relating to training the user and inspecting the equipment.<sup>31</sup> There would also have been a danger that the trailing line used with the harness system would constitute a tripping hazard for other workers.

##### **Solution:**

The employer decided to install special pivoting safety barriers which would provide continuous edge protection for all employees and not just the person engaged in loading.<sup>32</sup> When a pallet is being landed from below, the barrier is arranged so that it provides a pallet sized opening at the mezzanine edge with the internal edges guarded. Once the pallet is landed, the barrier is pivoted forward so that the mezzanine edge is now guarded and the pallet can be accessed from the mezzanine platform without the risk of a fall.

The safety barrier provided collective protection for all employees and was therefore a better alternative to

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<sup>29</sup> WAHR - Schedule 1(d)

<sup>30</sup> WAHR - Reg 6(2)

<sup>31</sup> WAHR - Reg 5 and 12(3)

<sup>32</sup> WAHR - Reg 6(6) (b)

providing a harness which would only protect the wearer.<sup>33</sup> Employees also no longer had to remember to put the bars back in place and the unsatisfactory system of using chains was removed.

#### **How was this solution reached?**

1. The review of the risk assessment showed that people working on the mezzanine floor were in danger of falling from height. The bars and chains previously used were not sufficient to protect workers from these dangers.
2. The use of harnesses was discounted due to the inherent risks to anyone not wearing the equipment and the additional costs.
3. The employer decided that the best way to counteract the risk was to install a new system of pivoting safety barriers. This ensured that edges were guarded at all times. They also ensured that all employees, rather than just individuals who would have benefited from the use of harness systems, were given protection.

### **5. Rope Access**

#### **Problem:**

A wide range of structures required inspecting and testing within a chemical processing site to determine the condition of a variety of surfaces including those constructed of concrete and mortar, steel and aluminium. Determining the condition of some painted surfaces was also necessary.

#### **Risk assessment/planning and organisation:**

Many large and complex structures were present including tanks, silos, chimneys and pipelines. Many existing walkways and gangways could be utilised as they had adequate edge protection.<sup>34</sup> On site work equipment, such as MEWPs, could be utilised for other areas. However, access to a significant proportion of the work was not possible using MEWPs due to the heights involved and other access difficulties such as obstructions caused by pipework, etc.<sup>35</sup>

The inspection involved short duration work which needed to be carried out infrequently. The inspection required a visual examination, removal of loose debris and some Non Destructive Testing (NDT). There were several sites which required inspection. This meant that the cost of

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<sup>33</sup> WAHR - Reg 6(6) (b)

<sup>34</sup> WAHR - Schedule 2

<sup>35</sup> WAHR - Reg 6(3) (b)

providing temporary scaffolding at each site was prohibitive as the actual inspection task would take minimal time against the time and cost involved in providing complex scaffold systems to access the desired locations. There would also be risks associated with installing the scaffold systems.

**Solution:**

The engineer in charge of the project decided to contract the services of a specialist rope access company and an NDT company who was trained in rope access techniques. They were able to access the surfaces that were otherwise out of reach of other work equipment or would have been prohibitive in terms of cost measured against the duration and frequency of the work if temporary scaffolding had been used. A detailed report was prepared by the contractor and the engineer was able to plan remedial work, some of which justified the use of a temporary scaffold because the repair was of a longer duration e.g. re-cladding a process building.

**How was this solution reached?**

1. The risk assessment showed that using one type of work equipment would not allow all of the inspections and tests to be carried out safely due to the range of places to which access was required.
2. Existing walkways were safe to use for access to many surfaces, while MEWPs and other work equipment could be used for many of the more difficult to reach areas.
3. However, MEWPs were unable to reach some of the surfaces due to the heights involved and/or access problems. Scaffolding was not deemed suitable because of the prohibitive costs when measured against the duration and frequency of the work.
4. The engineer in charge of the project decided to contract in a specialist rope access company and an NDT company with experience in rope access as rope access techniques would allow safe and relatively easy access to the difficult to reach surfaces. Using rope access also meant that the cost of the job was more in line with the time taken to do it and the frequency with which it was necessary.

**6. Road Tankers**

**Problem:**

A road tanker haulage company has a large fleet of tankers of different ages and makes, which visit a variety of premises for collection and delivery. The

employer was concerned about the risk of persons falling from tankers as work at height is carried out routinely in activities such as operating venting systems and using dipsticks to measure contents. The company also has several of its own depots nationally where work at height is carried out during the cleaning, servicing and repairing of the vehicles. The employer wanted to ensure that a safe means of access and a safe place of work were provided for tanker tops if work at height was necessary.

**Risk assessment/planning and organisation:**

The employer reviewed what was already in place. Some of his depots and customer sites had fixed gantries which a tanker could draw up to. These provided a safe working platform with guardrails to enclose the tanker top.<sup>36</sup> Other locations did not have such fixed precautions, and reliance was placed on onboard ladders and steps to walkways along the top of the tanker barrels. These walkways had integral fencing which was raised prior to access. Some of the older vehicles in the fleet had no onboard precautions.<sup>37</sup> In reviewing his risk assessment the employer introduced various solutions, some of which were introduced following discussions and agreements with customers at delivery and collection points. His review also considered other factors such as the height at which work was taking place, the frequency of access, the nature of the tasks to be performed, exposure to the elements<sup>38</sup> and the experience, training and fitness of individuals involved.<sup>39</sup> Supervision was recognised as being important to ensure appropriate precautions were used.<sup>40</sup>

**Solution:**

Some routine access to tanker tops was avoided by introducing loading and discharge systems and venting systems which could be operated from ground level, together with measuring systems that could also be viewed from ground level.<sup>41</sup>

For cleaning, servicing and repair activities at depots under his control, he ensured fixed gantries were provided as the work was routinely carried out at height.<sup>42</sup> Some customer sites were urged to review their own risk assessments and fixed gantries were introduced after they realised that frequent tanker collection and

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36 WAHR - Schedule 3, Part 1

37 WAHR - Reg 6(2)

38 WAHR - Reg 4(3)

39 WAHR - Reg 5

40 WAHR - Reg 4(1)(b)

41 WAHR - Reg 6(1)

42 WAHR - Reg 6(2) and Schedule 3, Part 1

delivery movements from several companies meant such precautions were justified.<sup>43</sup>

In addition to utilising gantries, he ensured that each tanker in the fleet was fitted with its own integral ladders and working platforms so that if a site was visited that had no fixed precautions, the driver was still able to work at height safely.<sup>44</sup>

The employer found that by liaising closely with sites that were visited, other precautions could be agreed. Some sites were able to utilise purpose designed mobile steps with integral secure fencing at the top.

#### **How was this solution reached?**

1. The employer realised that he needed to re-assess his risk assessment in order to take account of the different scenarios in which work at height was taking place and the different levels of protection offered by different tankers - and the different sites they visited.
2. The employer discovered that many of the more routine work at height tasks could be avoided by altering working systems. In addition, he ensured that all tankers in the fleet were fitted with integral ladders and working platforms so that they could be worked from safely as/when necessary.
3. At all of his depots, the employer also arranged for fixed gantries to be built. These provided a safer surface to work from than the tanker top. He also persuaded many of the companies he dealt with to install either fixed gantries or mobile steps with integral secure fencing to protect his workers when they were on other sites.

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<sup>43</sup> WAHR - Reg 4 (1) (c)

<sup>44</sup> WAHR - Reg 6 (3) (b) and Reg 7



## **References and Further Information**

The following are available from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA. Tel: 01787 881165 Fax 01787 313995. Website [www.hsebooks.co.uk](http://www.hsebooks.co.uk)

### **Acts, Regulations and Directives**

Health and Safety at Work, etc. Act 1974 c.37

Disability Discrimination Act 1995

Construction (Health, Safety and Welfare) Regulations 1996 (CHSWR) (SI 1996/1592)

Construction (Design and Management) Regulations 1994 (CDM) (SI 1994/3140)

Provision and Use of Work Equipment Regulations 1998 (PUWER 98) (SI 1998/2306)

Workplace (Health, Safety and Welfare) Regulations 1992 (SI 1992/3004)

Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) (SI 1998/2307)

Management of Health and Safety Regulations 1999 (SI 1999/3242)

Personal Protective Equipment at Work Regulations 1992 (PPE Regulations) (SI 1992/2966)

Docks Regulations 1988 (SI 1988/1655)

Directive on Temporary Work at Height (2001/45/EC) ([www.hse.gov.uk/spd/ekdir.pdf](http://www.hse.gov.uk/spd/ekdir.pdf))

### **Guidance on Health and Safety and Risk assessment**

*Successful health and safety management* HSG 65 1997

*Managing health and safety: Five steps to success* INDG275 1998

*Five steps to risk assessment* HSG183 1998

*Five steps to risk assessment* INDG163 1998. Also available in Welsh INDG163(W)

*A Guide to risk assessment requirements. Common provisions in health and safety law* INDG218 1998.

*RIDDOR explained HSE31 (rev) 2000*

*Reducing error and influencing behaviour HSG48 1999*

*Working on Roofs INDG284 1999. Also available in Welsh INDG284 (W) 2000.*

*Workplace Transport Safety HS(G)136 1995*

*Protecting the Public - your next move HSG151 1997*

*Camera Operations on Location Guidance for managers and camera crews for work in news gathering, current affairs and factual programmes HS(G)169 1997*

*Working at Height in the Broadcasting and Entertainments Industries ETIS6 1998*

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*LOLER: How the Regulations apply to agriculture AIS 28 1998*

*LOLER: How the Regulations apply to arboriculture AIS 30 1998*

*Preventing falls from fragile roofs in agriculture AIS 32 1999. Also available in Welsh AIS 32(W)*

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Advisory Group* AFAG 401 2003

*Industrial rope access: Investigations into items of  
personal protective equipment (contract research report)*  
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## ANNEX C

RIA (pre consultation)

# Work at Height Regulations

## Regulatory Impact Assessment (PARTIAL)

### PURPOSE AND INTENDED EFFECT

#### Issue

1. The Work at Height Regulations address all aspects of work at height including the selection and use of work equipment and the way the work is planned, organised and managed. The Regulations are intended to minimise the risk of falls whilst working at height, which is one of the most common causes of fatalities and injuries at work. The Regulations implement the requirements of Directive 2001/45/EC amending council Directive 89/665/EC.

#### Risk assessment

2. This section outlines the risk to workers while working at height and gives historic accident data. Initially a total estimate of the risk of falls from height is given, and is then broken down into the risks when using particular items of work equipment.

#### *All falls from height*

3. Table 1 shows fatal accidents from falls as reported to all enforcing authorities. The vast majority of these falls are from a height of 2m or over, and almost half of these accidents occur in construction. The trend in fatal accidents does show some improvement over the period.

Table 1: GB Fatalities from falls whilst working at all heights, 1991/2 to 2001/02

	91/2	92/3	93/4	94/5	95/6	96/7	97/8	98/9	99/00	00/01	01/02
<i>Employees</i>	83	63	62	49	51	56	64	48	43	47	52
<i>Self-employed</i>	23	27	19	30	13	32	28	32	25	27	16
<i>Total</i>	106	90	81	79	64	88	92	80	68	74	68

4. There are also a large number of injuries caused by falls from a height, with around 4,300 non-fatal major injuries each year, though the true figure may be somewhat higher than this since the Reporting of Injuries, Diseases

and Dangerous Occurrences Regulations 1995 (RIDDOR) reports are subject to under-reporting. Also the reporting categories changed in 2001/02, which gives the false impression of a step reduction in major injuries. Research suggests that around 40% of these injuries are as a result of falls from over two metres.

### *Ladders*

5. Falling from ladders accounted for 19% of fatal injuries and 32% of major injuries due to workers falling from heights in 2001/02. Statistics indicate that there are around 10 fatalities and 1,100 major injuries reported to HSE each year due to falls from ladders. The construction industry accounts for around 40% of falls from ladders in the past five years, with a significant proportion also occurring in the service and manufacturing industries. Window cleaners account for around one third of the falls from ladders in the service sector. Statistics show that there are an average of 4 fatalities amongst window cleaners due to falls from height each year (the majority of these will involve ladders).

### *Scaffolding*

6. Over the past five years, total construction fatalities from falls have approximated 40 to 50 per year and 20% of all falls in the construction industry have been from scaffolding. In 2001/02 there were 11 fatalities to workers as a result of falls from scaffolding. Statistics show that half of these fatalities from scaffolds are caused by faulty platforms or access problems. There were also 222 major injuries to workers in 2001/02 as a result of falls from scaffolds.

### *Rope access*

7. Figures from the Industry Rope Access Trade Association (IRATA) annual survey 1999, which is based on a sample of its members, indicate that there were no fatal accidents, but around 450 injury accidents per 100,000 employees, while working using rope access. The latter compared to an all industry rate of 650, and 1000 relevant to the construction sector. Around half of these accidents occurred whilst using ropes. IRATA believes that its companies are comparable to the best performers in industry as a whole or any separate sector. If the average accident rate in the sector were similar to construction, then the overall injury rate would be 1000 per 100,000 employees, of which 500 would involve ropes. This would point to a total of around 75 injury accidents each year, of varying severity.

### **Objectives**

8. The Directive aims to reduce accidents caused by falls from a height by addressing all aspects of work at height, including the way the work is planned, organised and managed. The Work at Height Regulations will also address the selection and use of equipment and training requirements.

## **Options considered**

9. Community legislation has not yet dealt with the problem of falls from a height. The first Amending Directive to the Use of Work Equipment Directive (AUWED) was implemented by the Provision and Use of Work Equipment Regulations 1998 (PUWER 98) and the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) which deal with the use of work equipment. The Directive on Work at Height arose from the European Commission's undertaking to the European Parliament that separate proposals on means of access to workplaces, which had been excluded from AUWED, would be brought forward. The Directive was adopted by the European Council of Ministers and the European Parliament on 14 June 2001 and published in the *Official Journal of the European Communities* on 19 July 2001.

## **Options for implementation**

10. Three options were considered for implementation of the Directive. The option chosen by the HSC was a single set of self-standing regulations applying to work at height in all sectors of industry. The relevant sections of sector specific legislation such as the Construction (Health, Safety and Welfare) Regulations 1996 (CHSWR) would be revoked. This was seen as the simplest and most transparent route and, from a legal and enforcement point of view, the most straightforward option. It was also seen as the option that would place the least familiarisation burden on industry.

11. During the initial round of consultation, the construction industry expressed concerns that the chosen option would result in standards of safety in construction being weakened through lack of detail. HSC has given a commitment that legal standards will be maintained and/or improved.

12. Further options considered included an amending set of regulations to PUWER implementing the ladder and rope access requirements of the Directive, combined with amending the relevant parts of CHSWR relating to scaffolding and applying these to all industry sectors. The option of a set of regulations for work at height for all industries apart from construction, with-related amendments to CHSWR was also considered.

13. The first option was not chosen as experience has shown that merely amending regulations as opposed to issuing new ones greatly lessens the impact of the legislation - given the number of deaths and injuries caused by falls from height we want this legislation to have an impact. There was also concern from a legal standpoint that simply extending the scope of the existing CHSWR to all sectors would not give an accurate indication of the nature of the instrument. The second option was not chosen as the major difficulty with having separate sets of regulations for construction and other industries would be confusion on the part of duty holders as to which regulations applied to them (possibly both in some cases), and difficulty for enforcers (HSE and Local Authorities) in applying a complicated regime of legislation.

## **Background information and assumptions**

14. Information about the costs and benefits of the Work at Height Regulations has been obtained from representatives of the relevant industries and from within HSE. Information about earnings has been taken from the New Earnings Survey 2000 and from internal sources.

15. Some of the extra costs to organisations are opportunity costs that are reflected by the loss of output as a result of carrying out new duties. It is assumed that the loss of output is approximately equal to the time spent on carrying out the new duties multiplied by average earnings (adding 30% for costs from superannuation and employers' national insurance contributions). In economic terms it has been assumed that the marginal cost of labour is equal to its average cost.

16. Both Costs and Benefits have been discounted in line with treasury guidance. Costs have been discounted at a rate of 3.5% and health and safety benefits have been uprated by 2%, then discounted at 3.5%, giving an effective discount rate of 1.5%. Costs and benefits are calculated over a period of ten years and expressed in present value terms. All costs and benefits have been discounted back to a base year of 2000. The choice of base year does not affect the balance of costs and benefits, or the conclusions of this analysis.

## ***BENEFITS***

### **Health and Safety Benefits**

17. Since falls from a height are responsible for just over 19% of fatal injuries and 32% of major injuries in the workplace, the potential benefits of preventing these accidents are very significant. HSE research has shown that the total costs of workplace accidents are significantly higher than is usually apparent. The individual (or society more generally) faces costs in terms of pain, grief and suffering and loss of income. Employers face costs in terms of lost output, equipment damage and disruption. There are also resource costs to society in terms of medical treatment and social security administration (not counting social security payments or compensation payments - which are transfers, not resource costs).

18. Our research would suggest that given the proportion of injuries accounted for by falls from height, the costs of lost output to society from injuries (or deaths) sustained in falls would be in the region of £150 million each year<sup>45</sup>. Around half of this cost will fall on the employers themselves, and a quarter on the individual in terms of lost income. The cost of medical treatment, administration and recruitment, and investigations would add another £50 million. The total resource cost to society of falls from a height can therefore be estimated at £200 million each year.

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45. Based on figures in the "Costs to Britain of workplace accidents and work-related ill health in 1995/96" - apportioned by the percentage of reported accidents of the various severities accounted for by falls from height.



19. To this figure, we have added a cost for the pain grief and suffering of those affected, based on the Department for Transport estimate of the societal willingness to pay to avoid the risk from road traffic fatalities. This figure is equivalent to £1.15 million in 2000 values for each potential fatality prevented. However, to avoid double counting of lost output, we just use the human cost element (£750,000) and 80% of the lost output element (£315,000). This gives a value for a prevented fatality of approximately £1.06m. For each fatal injury there is a number of major and over 3-day injuries. Work done in the health and safety field suggests that preventing these large numbers of injuries associated with each potential fatality (at least 500 major and over 3-day injuries) would have a value equivalent to preventing a fatality; a further £1.06 million. The average number of the fatalities caused by falls from height over the last 10 years is approximately 80. Therefore the total cost in suffering from all falls from height would be around 80 fatalities \* £2.12 million = £170 million each year.

20. This suggests a total societal cost of around £370 million each year, which is equivalent to around £3.5 billion in present values over the period 2001 to 2010. The HSE research has also shown that the cost of equipment damage can be significant in some cases, but, due to their nature, we would expect these to be small with respect to falls from a height.

21. Not all falls from a height involve the incorrect selection and use of work equipment, despite the fact that the majority do. However, it should be noted that the Regulations are aimed at increasing safety in all aspects of working at height, since the Regulations require: "every employer, in selecting work equipment for use in work at height shall take account of the working conditions and to the risks to the safety of persons at the place where the work equipment is used".

22. The HSC's Falls from Height Priority Programme is aiming for a 10% reduction in falls from height over ten years from 1999 to 2010. If the introduction of the Regulations brought about a 5% reduction in the rate of accidents, the benefits would be approximately £18.5 million each year. The Net present value of these benefits over the ten-year appraisal period would be approximately £175 million.

## **COSTS**

23. Most of the requirements of the Regulations are not expected to have a major cost impact on an individual organisation basis, as organisations that are already employing best practice are unlikely to have to do anything additional to comply with the Regulations. Costs appear large because of the widespread coverage of the Regulations. Extra costs will include some equipment supply, familiarisation, additional training and the cost of using alternative means of access for those who use work equipment as a means to access at height. These costs are considered below.

## **Business sectors affected**

24. The proposed Regulations will affect all sectors where workers carry out work at height. The Regulations will specifically affect the self-employed and firms whose employees use ladders, scaffolding, and rope access equipment. Amongst others, the business sectors affected will mainly be those in construction and steeplejacks, window cleaning, arboriculture, agriculture, utilities, retail, ship building, manufacture and the occupational group of maintenance / industrial cleaning. Not all workers in these sectors will necessarily carry out work at height.

25. In the construction industry, firms employing a total of around 1.6 million workers may be affected by the Regulations. However, the Directive overlaps with existing GB regulations: specifically the Construction (Health, Safety and Welfare) Regulations 1996 (CHSWR). Consequently there should only be a limited impact on firms already complying with existing regulations as a result of this Directive. This conclusion also applies to the 500 steeplejacks operating in GB who are also covered by CHSWR. There is the possibility of additional costs and benefits if the Directive raises compliance with existing regulations, however this situation is expected to be unusual and so is not covered in the RIA.

26. The Labour Force Survey indicates that there are 35,000 window cleaners in GB, whereas the National Federation of Window Cleaners and General Cleaners estimates this number to be 185,000. We shall therefore assume there are 150,000 window cleaners in GB. Due to accessibility factors, most domestic window cleaners are unlikely to be able to improve their working practices but a lot are expected to have to purchase additional stabilisation equipment. Also, business could insist window cleaners use access equipment, especially in shopping centres and office complexes. This would mean some larger window cleaners would have significant equipment and training costs.

27. The Arboriculture Association has 1,850 members, but estimate that there are between 12,000 and 20,000 arboriculturists in GB. They believe, as long as the Guidance is interpreted correctly, i.e. to continue to follow good climbing practice, there should be no real additional costs.

28. There are approximately 390,000 people employed in agriculture in GB. Agriculture does not have specific Regulations covering work at height, so the new Regulations could potentially have a significant impact. However, key to what action is taken is the way in which the Regulations are interpreted. Given other considerations, it is unrealistic to consider that these Regulations will be the focus of the majority of farms and smallholder's attention. Therefore the Regulations will most likely result in a limited amount of training and new stabilisation equipment.

29. The telecommunication industry is served mainly by British Telecommunications (BT), who are already pursuing best practice with regards to ladders. The major costs to them will come from selecting safer methods for work at heights, i.e. the use of MEWPs (Mobile Elevated Work

Platforms). The utilities such as electricity and gas, which are more likely to be served by smaller companies, may have different costs such as training and some new stabilisation equipment.

30. There are 2.7 million people employed in retail. Most retail outlets, especially larger chains, are most likely to be already applying best practice, so will not change their behaviour a great amount as a result of the Regulations. However, there may be some additional training and the purchase of stabilisation equipment, also, like the telecommunications industry, there may be a move towards the use of MEWPs.

31. There are around 600,000 individuals employed as cleaners or domestics within GB. Only a relatively small proportion of these will be industrial cleaners. There will also be a similar number employed as maintenance workers. As a result of the Regulations there may be additional training and some purchasing of stabilisation equipment. Larger premises may insist on their maintenance and cleaning staff to use MEWPs for some work at height.

32. In order to estimate the total costs of the Regulations, the costs across all industries have to be calculated. As these Regulations could potentially impact on any industry if it contains a business carrying out work at height, it would be inaccurate to calculate the costs based solely on the specific industries mentioned above. Instead, the numbers working at height across all industries have been estimated, and assumptions made about changes in behaviour brought about by the Regulations have been made.

33. It can be assumed that the number of firms working with ladders is a good proxy for the number of firms where workers are required to carry out work at height. This is because it seems reasonable to assume that if a firm needs to carry out work at height, it will use a ladder for at least some of this work. It should be noted that it is extremely difficult to estimate the number of individuals working at height due to the large number of sectors where the work at height occurs in.

34. The British Association of Ladder Safety Equipment Manufacturers (BALSEM) estimate that there are around 10 million ladders in GB, and half of these are in industry. However, this figure does not indicate the number of people who use ladders as part of their job on a regular basis. The Ladder Stabiliser Manufacturing Association estimates the number of people employed in work where the use of ladders is an essential requirement at between 2-3 million and the British Ladder Manufacturing Association (BLMA) roughly estimated this figure to be between 2.5 and 3 million workers. It seems reasonable to suggest that the BLMA's estimate is more accurate, as it would mean that approximately 10-15% of the working population work in a job where the use of ladders is an essential requirement.

35. It should be noted that this figure includes the construction industry where it can be assumed most of the 1.6 million workers will work with ladders. Therefore, the number of people outside of construction that work with ladders, thus work at height, can be roughly estimated to be between 0.9

and 1.4 million. Barring familiarisation costs, the costs in the RIA relate to the numbers working at height outside of construction, as construction is already covered by CHSWR. Therefore, unless it is explicitly stated otherwise, the number of individuals working at height should be taken to be the number of individuals working at height outside of construction. This is taken to be between 0.9 and 1.4 million workers.

36. In addition to people working at height with ladders, there are also individuals working at height on ropes. According to figures from IRATA (Industrial Rope Access Trade Association) there are approximately 15,000 staff working in rope access in GB. These figures do not affect the total of number of people working at height by a large amount.

## **Total Compliance Costs to Businesses**

### **Familiarisation**

37. There will be a need for managers to familiarise themselves with the Regulations. The exact number of businesses where workers are required to carry out work at height is uncertain. Again we have assumed that the number of firms working with ladders is a good proxy for the number of firms where workers are required to carry out work at height.

38. All construction firms work at height and use ladders. However, as the construction industry is already covered by the CHSWR, we have assumed small firms will only take a nominal 15 minutes to familiarise themselves with the Regulations, whereas large firms will take a slightly longer 2 hours.

39. The costs of the construction industry familiarising themselves with the new Regulations are £3.5 million which occurs in the first year of the appraisal period. This is an implementation cost and the only cost to the construction sector of these Regulations.

40. There are between 0.9 and 1.4 million other workers using ladders. It is assumed that management will take an average of two days in large firms to familiarise themselves with the Regulations, one day in medium sized firms, a half day in small firms and one and a half hours in micro-sized firms. We also assume a nominal 30 minutes on average for the self-employed.

41. The costs of industries, other than the construction industry, that work at height familiarising themselves with the Regulations are between £2.2 and £3.5 million. These costs occur in the first year of the appraisal period and are implementation costs.

42. The total costs of familiarisation will be between £5.9 and £7.1 million. This will occur in the first year of the appraisal process only, and is an implementation cost.

## **Costs of modifications to work equipment**

### *Ladders*

43. The Regulations require ladders to be positioned to ensure they are stable and prevented from slipping. In practice, this may mean a greater use of ropes, braces, and ladder stabilising devices (LSDs). There may also be a move to alternative methods of conducting work at height. This is discussed in the section on the costs of using alternative means of access below.

44. The vast majority of sales of LSDs are to the service industry, in particular window cleaners, painters and decorators, telecom engineers, security system installers, council maintenance workers and gas and electricity supply engineers. Manufacturers of LSDs believe that these workers are the most at risk from falls from ladders, since many of these operations are 'one man-one job' in nature.

45. There are between 0.9 and 1.4 million people working at height using a ladder. If they all were supplied with a LSD or brace (both with a cost of £60), the total possible initial cost would be between £54 and £84 million.

46. Actual costs incurred will be much less than this for three reasons. First and foremost is that a proportion of ladders will already have adequate protection. Secondly, in some cases more than one person would work with one ladder, and thirdly, other means of securing ladders may be readily available (for example, bottom ropes or rubber footings - if these are suitable in the circumstances). It should be noted that, in practice, the degree of protection needed will be related to risk, which in turn will relate to the height at which work is taking place.

47. According to the National Federation of Master Window cleaners, a large proportion of window cleaners will have to purchase LSD as a result of the Regulations. Bearing in mind the points above and the fact that not all window cleaners will actually need to use ladders (they may have a ladder free system, e.g. poles), we assume that 70% of the 150,000 window cleaners will need to purchase a LSD. In addition to this, based on industry sources, we assume that 50% of all other workers working at height will have to purchase a LSD. This will result in costs of between £28.8 and £43.8 million that will occur in the first year of the appraisal period and are policy costs. The equipment will generally be long lasting, and any recurring costs would be relatively small. This is likely to be the main type of cost to the majority of firms.

48. The other method of ensuring ladder stability is for another person to 'foot' the ladder (i.e. keep their foot on the bottom rung in order to keep it stable). We have been advised that the majority of workers are likely to work on a one-person one-job basis. Footing is an option for those working in a group, however lost productivity on behalf of the second worker would be significant. We would, therefore, expect to see 'footing' used only on an occasional basis and we would not expect the costs of this alternative to be higher than using an LSD otherwise this latter method would be adopted.

49. Ladders are also used on vehicles to gain access to loads, etc. Recently HSE has been encouraging a move away from this means of access and towards the use of gantries and it is hoped that these Regulations will accelerate this move.

## **Training costs**

### *Ladders*

50. The Regulations do not require specific training, instead they require competence appropriate to whatever task or role is being undertaken. However, some employers could decide that their workers need training in order to reach the required level of competence. Industry estimates of the proportion of workers who have adequate training in the use of ladders vary greatly.

51. All of the 0.9 to 1.4 million workers who use ladders extensively would require formal training under the Regulations. Information from industry sources suggests that many of these workers will have received adequate training to meet the requirements of the proposed Regulations, since many of these workers will be employees of large firms who use ladders in many different situations (for example, telecom engineers). Self-employed workers or those from smaller firms are generally known to be less likely to have received adequate training. However, they may interpret their experience sufficient to meet the “competency” requirement.

52. If we assume, based on industry sources, that 5% of those using ladders have not already had training, but will do as a result of the Regulations, and that the cost of a training course is £100 per worker (including the costs of the training course and lost productivity), the initial cost of training would be between £4.4 and £6.9 million.

53. If we allow a recurring cost of 10% of this initial cost each year, to account for new personnel joining the industry, and refresher training if required. This suggests total training costs of between £7.8 and £12.1 million in present terms over ten years. This is a policy cost.

### *Rope access*

54. According to figures from IRATA there are approximately 15,000 staff working in rope access in GB. IRATA sources say most of the workers working in rope access will have received a level of training required by the Regulations. However, some workers (for example window cleaners) external to IRATA, but taking IRATA training courses, often opt for shorter training courses which are more suited to their training needs. This may mean that, under the Regulations, they may feel that they need to have regular assessments to prove their competence. Industry sources estimate the cost of conducting a one-day assessment of competence to be around £100, which would increase to £200 once the cost of the opportunity cost of the worker is taken into account. If we assume, based on IRATA’s information, that 10% of rope access workers opt for the shorter courses and so need an assessment

of competence under the Regulations, the initial cost of testing for competence would be £300,000. If a worker has to be reassessed every five years so 20% of the initial cost recurs each year, the present value of the costs over the appraisal period would be £0.75 million. This is an implementation cost.

### **Costs of using alternative means of access to heights**

55. The Regulations require that ladders be used only in situations where the use of other equipment (e.g. fixed platforms, mobile lifting equipment, scaffolds, etc.) is not justified because of the low level of risk, and either the short duration of work, or existing features on site that the employer cannot alter. Alternative means of access will generally be more costly.

56. It is difficult to judge the extent of the changes in practice that will be needed to meet the requirement to consider alternatives to ladders, as it will depend on how the Regulations are interpreted. For the purposes of this RIA, we have assumed, based on industry and HSE knowledge, that 5% of workers currently using ladders will now use alternative means of access as a result of the Regulations. It should be noted that recently there has been a trend away from ladders and towards alternative means of access. But this RIA is only concerned with changes that have come about as a result of these Regulations.

#### *Mobile Elevated Working Platforms (MEWPs)*

57. The International Powered Access Federation (IPAF) was contacted. They stated that there are currently around 50,000 MEWPs of all types at work in GB, but there has been an increasing move in recent years away from ladders and towards powered access. This trend is expected to continue with particular strength in the service industries. The cost of mobile elevated work platform (MEWP) that could be used as a substitute for a ladder is extremely variable. The typical type MEWP that would be used as would be in the range of £10,000 to £20,000. We shall assume that the average cost of purchasing a MEWP is the midpoint of these prices - £15,000. These MEWPs will also be available for hire for a fee at around £50 per day.

58. It has been assumed that half of the workers moving away from using ladders to conduct work at heights will switch to using MEWPs as a result of the Regulations. This will mean that between 22,000 and 35,000 workers will now use MEWPs for work at height. Larger organisations, and those carrying out a great deal of work at height are the most likely to switch.

59. According to industry sources, the cost of a dual training course for both the Boom and Scissors equipment costs between £150 and £180 per person and lasts a day. Often firms will train more than one worker at a time, so will be able to get lower "course rates". Therefore, we estimate the cost of the training course to be £150. Once the opportunity cost of the worker is added, the total cost of the course per person is about £250. The initial cost of training all the workers who will now use MEWPs is between £5.5 and £8.6 million. The certificate they receive is valid for five years, so we assume that

20% of the initial cost recurs each year, this is between £1.1 and £1.7 million. The present value of the training costs over the appraisal period is between £14 and £21.7 million. This is a policy cost.

60. As mentioned earlier, the average cost of purchasing a MEWP as a replacement for a ladder is £15,000. We assume, based on industry sources, that half of those switching to MEWPs will prefer to purchase them. This is for two reasons. Firstly, those choosing to use MEWPs instead of ladders are likely to carry out a great deal of work at height, so it is likely to be more economical for them to purchase a MEWP rather than hire it. Secondly, the firms deciding to replace ladders with MEWPs are likely to be larger firms, with the financial ability to purchase the MEWPs. We also assume that, on average, there are 4 employees using one MEWP. This assumption covers a large range, from two man teams to large teams. If the above assumptions hold, between 2,813 and 4,375 new MEWPs would be required – this represents an increase of between 5% and 10% of total MEWPs currently in use. The initial cost of this would be between £42 and £66 million. If we assume that 10% of the initial cost recurs each year, the present value of the costs over the appraisal period is between £74.3 and £115.6 million. This is a policy cost.

61. As also mentioned earlier, the cost of hiring a MEWP for a day is £50. As we have assumed 50% will choose to purchase, the remaining 50% will choose to hire. The general consensus from the hire industry is that people tend to rent for a matter of days as opposed to longer term leases. We know from the respective costs of each action that, for period over 30 days (per annum), it is cheaper to purchase a MEWP rather than hiring it. It seems reasonable to assume that the average hire period will be half of this maximum, i.e. 15 days. Assuming once more that there are 4 employees to a MEWP, between 2,813 and 4,375 MEWPs will be hired for 15 days at an annually recurring cost of between £2.1 and £3.3 million. The present value of cost over the appraisal period is between £18.2 and £28.2 million. This is a policy cost.

62. The total cost of moving to MEWPs will be between £106.4 and £165.5 million in present value terms over the appraisal period. This is a policy cost.

#### *Tower Scaffolding etc*

63. We assume that the remaining half of workers moving away from using ladders to work at height will now use tower scaffolds instead. This means that between 22,500 and 35,000 workers who were previously using ladders will now use tower scaffolding.

64. From industry sources, the average cost of a training course for tower scaffolds is around £130 and lasts for one day. Once the cost of lost productivity is added and the cost of the training course per person is £225. The initial cost of training all the workers who will now work with tower scaffolding is between £5.1 and £7.9 million. As the certificate awarded on completion of the course lasts for 5 years, we assume that 20% of the initial



cost repeats each year. The present value of the cost of training the workers over the appraisal period is between £12.8 and £20 million. This is a policy cost.

65. From industry sources, we know that the average cost of purchasing scaffold that could be used as a replacement for ladders is £2,000. Industry sources also said that the majority of firms deciding to use tower scaffolding are likely to hire them. This is because the firms that choose to use tower scaffolding rather than MEWPs are likely to be smaller, thus less likely to be able to afford the capital outlay of purchasing the equipment. Therefore, we assume that 20% of those switching to tower scaffolding will decide to purchase. As before, we shall assume that 4 workers use one tower scaffold, therefore between 1,125 and 1,750 tower scaffolds will be required. If the average cost of purchasing is £2,000, the initial cost will be between £2.3 and £3.5 million. As there are unlikely to be high maintenance costs associated with tower scaffolding, we assume that 5% of the costs recur each year. This means the present value of the costs over the appraisal period will be between £3.1 and £4.8 million.

66. From industry sources, we know that the average cost of hiring a 20ft tower scaffold that could be used as a replacement for ladders is £50 per week. If 20% will choose to purchase, then the remaining 80% will choose to hire. If, once again, there are four workers to a scaffold, then between 4,500 and 7,000 scaffolds will need to be hired. From the costs of each action, combined with the knowledge that, due to capital constraints, hirers will probably hire beyond the point where rationally it would be optimal to purchase, we can assume that the average time a person would hire for is twenty days. The cost of hiring, which would recur each year, is between £0.9 and £1.4 million. The present value of the cost of hiring would be between £7.8 and £12.1 million over the appraisal period.

67. The total cost of moving to tower scaffolding would be between £23.7 and £36.9 million in present value terms over the appraisal period.

#### *Nets and airbags etc.*

68. The use of nets and airbags are other alternatives, protecting workers from harm if they do fall from a height. It is impossible to predict the trend in the use of this option, but a general idea of the cost of a unit can be included.

69. Fall Arrest Safety Equipment Training (FASET) was contacted about the price of a net. They were keen to emphasise that the cost per square meter for a net varied according to who is purchasing it (i.e., contactor or client) and how much is required. They said that the main contractor rates for industrial sheds would range from £1 to £1.50 per square metre, and the main contractor rates for metal decking could range from £1.60 to £2.30 per square metre.

70. Industry sources were contacted to get an idea of the cost of installing an airbag. Again they were keen to stress that the cost would vary according to size, but they said the highest price would be £3.20 per square metre.

### **Costs to a typical business**

71. It should be noted that the costs to a typical business are very difficult to estimate due to the fact there is no “typical business”. Each business will probably react differently, depending on what they interpret the Regulations to require. Instead, we have estimated the costs to an “average” business, the total costs divided by the total number of businesses involved. While we appreciate that this probably will not reflect the position of a given firm (many will have no costs, while a few will have significant costs), it will give some indication of the costs per business.

72. As none of the costs (bar the familiarisation costs) occur in the construction sector, in this section we only consider businesses working at height outside of the construction sector. In this case, the average cost per business is around £115 annually, or £1,350 in present value terms over the appraisal period.

73. From this it can be shown that the costs per business are very small. However, as noted earlier, these costs are unlikely to represent the position of a given business.

### **Costs to HSE**

74. HSE inspectors will require training for familiarisation with the Regulations. For the 150 construction inspectors, this is estimated to only take half a day, as the Regulations are similar to the CHSWR. Taking a weighted average of different inspectors wages across the different bands, we estimate the cost of an inspector’s time to be £26.58 per hour. This leads to the initial familiarisation for construction inspectors being £15,000. The training for 450 other inspectors is expected to take a day, as many will be new to the issues covered by the Regulations. Assuming the same hourly cost, this leads to an initial cost of £100,000 making the total cost of familiarisation for all inspectors approximately £115,000. This is an implementation cost.

75. Once the proposed Regulations are in place it is expected to increase burdens on field operations from answering queries from industry. It is estimated that when the Regulations are first introduced, inspectors will spend the equivalent of two days of their time answering queries. For the 600 inspectors, the cost of this time is estimated at £260,000. It is estimated that for all the policy staff that could be involved (i.e. policy team, Infoline, etc.), 2,000 man hours would be spent answering queries in the first year. The cost of this time resource is estimated at around £56,000. The total costs of dealing with queries from industry are estimated at £310,000. We assume that the volume of enquiries will decrease substantially after the first year, so only 10% of the enquiry costs will repeat each year. The present value of

dealing with enquiries is £550,000 over the appraisal period in present value terms.

76. The Regulations bring in several new requirements that will have to be enforced by HSE and Local Authority. The additional costs of enforcement are not likely to be significant given that the Directive is making explicit in law what current best practice recommends. They are extremely difficult to estimate.

77. The total cost to HSE in the first year amounts to around £420,000 with ongoing costs of around £30,000 in subsequent years. Total costs to HSE are likely to be in the region of £660,000 over ten years in present value terms. This is an implementation cost.

### **Cost to Local Authorities**

78. Environmental health and technical officers, responsible for inspection in the local authority enforced sectors, are also going to need to familiarise themselves with the Regulations. There are 3,640 environmental health and technical officers, which translates into 1,070 full time equivalents. If we assume that each of the 3,640 officers spend a third of a day familiarising themselves with the Regulations, then this is equivalent to each of the full time equivalents spending a full day (the same as HSE inspectors).

79. The average annual wage is estimated by the Chartered Institute of Environmental Health at £24,678 for an Environmental Health Officers and £20,231 for Environmental Health Technicians. Assuming 220 working days per annum and a 40-hour week and that non-wage labour costs adds a third to wage costs, the average adjusted hourly wage is approximately £17 per hour. Therefore, the initial cost of familiarisation is estimated at £160,000.

80. As with HSE inspectors, there will be an increased burden on environmental health and technical officers from answering queries from industry. It is estimated that when the Regulations are first introduced, the 1,070 full time equivalent officers will spend approximately two days of their time answering queries (which is equivalent to the time spent by HSE inspectors). Assuming the same wage cost as above, this is estimated at £290,000. We assume that the volume of enquiries will decrease substantially after the first year, so only 10% of the enquiry costs will repeat each year. This cost is estimated at £510,000 over 10 years in present value terms.

81. The total cost to local authorities of implementing these Regulations have been estimated at £450,000 in the first year, with ongoing costs of £29,000 per year. This is estimated at approximately £680,00 over ten years in present value terms.

## Environmental Impacts

82. No environmental impacts are expected from these proposals.

### Total costs to society

<i>Cost item</i>	<i>Net Present Value (NPV) of costs over appraisal period</i>	<i>Annualised costs</i>
Familiarisation	£5.9m - £7.1m	£0.5m – £0.61m
Training	£8.5m - £12.8m	£0.73m - £1.09m
Equipment modification	£28.8m - £43.8m	£2.45m - £3.73m
Alternative means of access: MEWPs		
Training	£14m - £21.7m	£1.19m - £1.85m
Purchasing	£74.3m - £115.6m	£6.33m - £9.85m
Hiring	£18.2m - £28.2m	£1.55m - £2.41m
Total	£106.4m - £165.5m	£9.07m - £14.11m
Alternative means of access: Scaffold		
Training	£12.8m - £20m	£1.1m - £1.7m
Purchasing	£3.1m - £4.8m	£0.26m - £0.41m
Hiring	£7.8m - £12.1m	£0.66m - £1.03m
Total	£23.7m - £36.9m	£2.02m - £3.14m
Cost to HSE	£0.66m	£0.06m
Costs to LA	£0.68m	£0.06m
Total	£174.6m - £267.4m	£14.87m - £22.80m

Note: These figures may not add up due to rounding.

83. The majority (£167.4m - £259.1m) of these costs are policy costs, and only between £6.5m and £7.7m are implementation costs. Whilst the cost appear high, it should be noted that the costs per business are only around £100 per year. The main reasons why the aggregate costs appear high is

firstly the large coverage of the Regulations, and secondly the large costs a very small proportion of firms will incur when deciding to opt for alternative means of access.

## **IMPACT ON SMALL AND MEDIUM SIZED BUSINESSES**

84. There are no costs likely to arise from this Directive that would represent an unreasonable, or disproportionate, burden on small and medium sized businesses. This is because the cost that a small firm is likely to incur is the price of purchasing LSDs, which cost £60 each. Also, the number purchased is likely to be directly related to the size of the firm, i.e. how many ladders they own. This was confirmed via consultation with a number of small businesses.

85. Window cleaning has been identified as a sector on which the Regulations are likely to have a significant impact. Three window-cleaning firms were contacted by telephone, one had 17 employees, one had 3 employees and the other worked on their own. The first one was an industry leader in best practice, so the Regulations would not have an impact on them. However, they were keen to stress that this is unusual, and it would probably be the case that usually equipment (i.e. LSDs) would have to be purchased. The firm with three employees operated a virtually ladder-less system (i.e. use of poles, etc) so the Regulations would have a limited impact on them. They would, however, have to purchase LSDs for the four ladders they do own at a cost of £60 each. The window cleaner working on their own operated a totally ladder-less cleaning system, and only owned steps. Therefore the Regulations would not impact on them at all.

## **COMPETITION ASSESSMENT**

86. The Work at Height Regulations will cover a broad range of companies in virtually all industry sectors. The telecommunications industry has been identified as a sector that the Regulations might have a significant impact on.

87. The market for telecommunications is characterised by a small number of large firms with a large market share. In the telecommunications industry, large firms account for 83% of turnover, compared with 55% across all industries. Due to the nature of the industry (large degree of infrastructure, etc), it is extremely likely that a single firm will have more than 20% of the market share, and that the three largest firms together will have at least 50% of the market share. However, the costs of the Regulations will not affect some firms more substantially than others, nor will they affect the market structure, changing the number or size of firms. The Regulations also will not lead to higher start up or higher on-going costs for new or potential firms that existing firms do not have to meet. This means that, despite the already existing oligopolistic nature of the market, the Regulations will not adversely affect competition.

88. Each of the different industries affected will have different structures, but the effects of the Regulations on competition should be generic. That is, because the costs, when they occur, will be in proportion to the size of the

firm, and apply to all existing and potential firms equally, the market structure and competition will not be affected.

## COMPARISON OF COSTS AND BENEFITS

89. The total cost of the Regulations has been estimated at between £174m and £266.8m million over ten years, in present (2000) values. This assumes full compliance with proposals, so that every person who uses a ladder, scaffold or rope would be adequately trained and have the appropriate equipment. The potential benefits, given a 5% reduction in injuries from working at a height, have been estimated at around £175 million over ten years. Based on our assumption, benefits may, or may not outweigh the costs. However, the level of benefits are extremely uncertain. Therefore, put another way, the Regulations would only have to achieve a reduction of between 5% and 8% in the rate of accidents from falls from height in order for costs to balance benefits.

### Uncertainties

90. To a large extent, the costs of the Regulations will depend on how they are interpreted by industry. If industry is already employing best practice, there should be no additional costs. However, in some cases, the Regulations may imply that current working practices are now unsuitable. If this is the case, there are likely to be significant costs. It is extremely uncertain to predict how industry will react and interprets these Regulations.

#### *Number of individuals carrying out Work at Height*

91. Due to the problems of estimating such a figure, the number of people working at height is uncertain. After consultation with representatives of the relevant industries we estimated the number of people employed in work where the use of ladders is an essential requirement to be 2.5 to 3 million. This includes the construction industry, where nearly all the 1.6 million workers will use a ladder. However, as stated throughout the RIA, construction is already covered by the CHSWR, so these Regulations will only impact on the 0.9 – 1.4 million workers using ladders outside of construction. If the numbers using ladders are higher than this estimate, the costs of implementing these Regulations will be higher, but the benefits will also be higher as a greater number of people will be protected from falling from height. The following table shows the effect on both costs and benefits of altering our estimation of the number of workers using ladders outside of construction.

<i>Number of workers using ladders outside of construction</i>	<i>Balancing Percentage</i>	<i>Effect on Benefits</i>
0.4m – 0.9m	2% - 5%	Lower - less people will be protected from falls from height

1.4m – 1.9m	8% - 10%	Higher – more people will be protected from falls from height
1.9m – 2.4m	10% - 13%	Higher – more people will be protected from falls from height

92. Changing the estimate of the number of people carrying out work at height has a large effect on costs, thus the balancing percentage. However, again it should be noted that the benefits, as well as the costs would increase with the number of people working at height.

*Alternative means of access*

93. A major uncertainty, which is linked to how people will interpret the Regulations, is the proportion of ladder users switching to alternative means of access to heights as a result of the Regulations. The RIA has assumed a 5% switch (equivalent to 45,000 – 70,000 workers), based on industry sources and the knowledge that there is already a trend towards alternative means of access, so it is important not to overestimate the effect of the Regulations. The following table shows the effect on both costs and benefits of altering our estimation of the proportion of ladder users switching to alternative means of access as a result of the Regulations.

<i>Proportion of ladders users switching to alternative means of access</i>	<i>Balancing Percentage</i>	<i>Effect on Benefits</i>
2.5%	3% - 5%	Lower – less people using alternative means of access which are considered to be safer than ladders.
7.5%	7% - 11%	Higher – more people using alternative means of access which are considered to be safer than ladders.
10%	9% - 14%	Higher – more people using alternative means of access which are considered to be safer than ladders.

94. Changing the estimate of the proportion of those using ladders switching to alternative means of access has a very large effect on costs, thus the balancing percentage. However, once more it should be noted that the benefits, as well as the costs, would increase with the number of people using alternative means of access, which are considered to be safer than using ladders.

95. Another uncertainty, related to the switch to alternative access, is the proportion choosing to use MEWPs and the proportion choosing to use tower scaffolding, etc. The RIA assumes a 50/50 split, but the following table will show the effects on costs and benefits of choosing different proportions.

<i>% Choosing MEWPs / % choosing tower scaffolding</i>	<i>Balancing Percentage</i>	<i>Effect on Benefits</i>
100% / 0%	7% - 11%	Uncertain – both are alternative means of access, so are safer than ladders.
75% / 25%	6% - 10%	Uncertain – both are alternative means of access, so are safer than ladders.
25% / 75%	4% - 6%	Uncertain – both are alternative means of access, so are safer than ladders.
0% / 100%	3% - 4%	Uncertain – both are alternative means of access, so are safer than ladders.

96. The costs, and thus balancing percentage, are much lower the greater the proportion deciding to use tower scaffolding as opposed to MEWPs. This is because MEWPs are considered to be more expensive, both to purchase and hire, than tower scaffolds, etc. Also, those switching to MEWPs are more likely to purchase them, further increasing the costs. It also should be noted that, despite the higher costs with the higher proportion using MEWPs, the benefits are likely to remain approximately the same. This is because both modes provide alternative access to work at height, so neither mode is expected to result in significantly different benefits.

97. Another area of uncertainty is whether those switching from ladders will decide to purchase or hire their new equipment, and the duration of the hire term. For those switching to MEWPs, it was assumed that half would buy and half would hire for an average of 15 days per year. This was based on industry information and our knowledge of the costs of the two actions. For those switching to tower scaffolding, it was assumed that only 20% would purchase and the remainder would hire for an average of 20 days per year. Again, these assumptions were based on industry information and the costs of the two actions, combined with knowledge that those most likely to switch to scaffolding are more likely to suffer from constraints on their capital. Once more, as we are attempting to predict choices, these assumptions are uncertain.



### *Other uncertainties*

98. The percentage reduction in falls from height as a result of these Regulations is also uncertain. In the RIA we have assumed a 10% reduction in falls from height, but this is based on Priority Programme targets rather than specific evidence. However, a balancing percentage is included within the RIA; that is the statement that between 5% and 8% of all falls from height would have to be prevented in order for costs to balance with benefits. It should also be noted that increased industry action is likely to prevent more falls from height, thus accrue higher levels of benefits, but also cause higher costs.

99. There are other uncertainties that are expected not to have such a significant impact on costs. Two of these are the proportion of ladder users needing to purchase a LSD, and the proportion of users needing to go on ladder safety training courses or rope access competence assessments. It was assumed that 70% of window cleaners and 50% of other ladder users would have to purchase a LSD, that 5% of ladder users would have to go on ladder safety training courses and that 10% of rope access workers would need competence assessments. All these assumptions were based on advice from various industry sources, but, due to their nature, are subject to uncertainty.

### **ARRANGEMENTS FOR MONITORING AND EVALUATION**

100. These proposals will be subject to formal review by the EC after 4 years. The implementing Regulations will also be monitored by HSE and existing industry/HSE liaison bodies.

### **ENFORCEMENT AND SANCTIONS**

101. Depending on the industry sector concerned, the regulations will be enforced by either the Health and Safety Executive or Local Authorities.

102. Compliance is expected to be high, due to many of the requirements of the regulations already applying to the construction industry. Even outside the construction industry, many of the requirements are already considered to be best practice.

103. Non-compliance will be identified by responding to queries raised, investigating accidents and incidents, and routine checks by inspectors. Inspectors may offer duty holders information and advice. Where appropriate enforcement action may be taken in accordance with the HSC Enforcement Policy Statement.

104. The Health and Safety at Work etc Act 1974, section 33 (as amended) sets out the offences and maximum penalties under health and safety legislation.

105. The impact of the new Regulations will be assessed over time by monitoring reports of fatalities, injuries and near misses, which are submitted by duty holders.

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## **ANNEX D**

Full text of the Temporary Work At Height Directive.

**DIRECTIVE 2001/45/EC OF THE EUROPEAN PARLIAMENT AND OF  
THE COUNCIL  
of 27 June 2001**

**amending Council Directive 89/655/EEC concerning the minimum safety and  
health requirements for the use of work equipment by workers at work  
(second individual Directive within the meaning of Article 16(1) of Directive  
89/391/EEC)**

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN  
UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 137(2) thereof,

Having regard to the proposal from the Commission , submitted after consulting the Advisory Committee on Safety, Hygiene and Health Protection at Work,

Having regard to the Opinion of the Economic and Social Committee

After consulting the Committee of the Regions ,

Acting in accordance with the procedure referred to in Article 251 of the Treaty,  
Whereas:

- (1) Article 137(2) of the Treaty provides that the Council may adopt, by means of Directives, minimum requirements for encouraging improvements, especially in the working environment, to ensure a better level of protection of the safety and health of workers.
- (2) Pursuant to the said Article, such Directives must avoid imposing administrative, financial and legal constraints in a way which would hold back the creation and development of small and medium-sized enterprises.
- (3) The improvement of occupational safety, hygiene and health is an objective which may not be subordinated to purely economic considerations.
- (4) Compliance with the minimum requirements designed to ensure a better standard of health and safety in the use of work equipment provided for temporary work at a height is essential to ensure the health and safety of workers.
- (5) The provisions adopted pursuant to Article 137(2) of the Treaty do not prevent any Member State from maintaining or introducing such more stringent measures for the protection of working conditions as are compatible with the Treaty.
- (6) Work at a height may expose workers to particularly severe risks to their health and safety, notably to the risks of falls from a height and other serious occupational accidents, which account for a large proportion of all accidents, especially of fatal accidents.
- (7) Self-employed persons and employers, where they themselves pursue an occupational activity and personally use work equipment intended for carrying out temporary work at height, may affect employees' health and safety.
- (8) Council Directive 92/57/EEC of 24 June 1992 on the implementation of minimum safety and health requirements at temporary or mobile construction

sites (eighth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC) imposes on these categories of persons the obligations to respect inter alia Annex 4 and Annex I of Directive 89/655/EEC.

- (9) Any employer who intends to have temporary work carried out at a height must select equipment affording adequate protection against the risks of falls from a height.
- (10) In general collective protection measures to prevent falls offer better protection than personal protection measures. The selection and use of equipment appropriate to each specific site for preventing and eliminating risk should be accompanied by specific training and supplementary investigations where appropriate.
- (11) Ladders, scaffolding and ropes are the equipment most commonly used in performing temporary work at a height and the safety and health of workers engaged in this type of work therefore depend to a significant extent on their correct use; the manner in which such equipment can most safely be used by workers must therefore be specified; adequate specific training of the workers is therefore required.
- (12) This Directive is the most appropriate means of achieving the desired objectives and does not go beyond what is necessary for that purpose.
- (13) This Directive is a practical contribution towards creating the social dimension of the internal market.
- (14) Member States should be given the opportunity to make use of a transitional period to take account of the particular problems which SMEs have to face,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

The text annexed to this Directive shall be added to Annex II to Directive 89/655/EEC.

## Article 2

1. Member States shall adopt and publish the laws, regulations and administrative provisions necessary to comply with this Directive not later than (three years from the date of publication in the Official Journal). They shall forthwith inform the Commission thereof.

Member States shall have the right, as regards the implementation of section 4 of the Annex, to make use of a transitional period of not more than two years from the date mentioned in the first subparagraph, in order to take account of the various situations which might arise from the practical implementation of this Directive in particular by small and medium-sized enterprises.

2. When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by the Member States.
3. Member States shall notify the Commission of the provisions of national law which they have already adopted or adopt in the field covered by this Directive.

## Article 3

This Directive shall enter into force on the day of its publication in the Official Journal of the European Communities.

## Article 4

This Directive is addressed to the Member States.

Done at Luxembourg,

For the European Parliament  
The President

For the Council  
The President

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## ANNEX

4. Provisions concerning the use of work equipment provided for temporary work at a height.

### 4.1. General provisions

4.1.1. If, pursuant to Article 6 of Directive 89/391/EEC and Article 3 of this Directive, temporary work at a height cannot be carried out safely and under appropriate ergonomic conditions from a suitable surface, the work equipment most suitable to ensure and maintain safe working conditions must be selected. Collective protection measures must be given priority over personal protection measures. The dimensions of the work equipment must be appropriate to the nature of the work to be performed and the foreseeable stresses and allow passage without danger.

The most appropriate means of access to temporary workplaces at a height must be selected according to the frequency of passage, the height to be negotiated and the duration of use. The choice made must permit evacuation in the event of imminent danger. Passage in either direction between a means of access and platforms, decks or gangways must not give rise to any additional risks of falling.



4.1.2. Ladders may be used as work stations for work at a height only under circumstances in which, given point 4.1.1, the use of other, safer work equipment is not justified because of the low level of risk and either the short duration of use or existing features on site that the employer cannot alter.

4.1.3. Rope access and positioning techniques may be used only under circumstances where the risk assessment indicates that the work can be performed safely and where the use of other, safer work equipment is not justified.

Taking the risk assessment into account and depending in particular on the duration of the job and the ergonomic constraints, provision must be made for a seat with appropriate accessories.

4.1.4. Depending on the type of work equipment selected on the basis of the foregoing, the appropriate measures for minimising the risks to workers inherent in this type of equipment must be determined. If necessary, provision must be made for the installation of safeguards to prevent falls. These must be of suitable configuration and sufficient strength to prevent or arrest falls from a height and, as far as possible, to preclude injury to workers. Collective safeguards to prevent falls may be interrupted only at points of ladder or stairway access.

4.1.5. When the performance of a particular task requires a collective safeguard to prevent falls to be temporarily removed, effective compensatory safety measures must be taken. The task may not be performed until such measures have been taken. Once the particular task has been finished, either definitively or temporarily, the collective safeguards to prevent falls must be reinstalled.

4.1.6. Temporary work at a height may be carried out only when the weather conditions do not jeopardise the safety and health of workers.

4.2. Specific provisions regarding the use of ladders.

4.2.1. Ladders must be so positioned as to ensure their stability during use. Portable ladders must rest on a stable, strong, suitably-sized, immobile footing so that the rungs remain horizontal. Suspended ladders must be attached in a secure manner and, with the exception of rope ladders, so that they cannot be displaced and so that swinging is prevented.

4.2.2. The feet of portable ladders must be prevented from slipping during use by securing the stiles at or near their upper or lower ends, by any anti-slip device or by any other arrangement of equivalent effectiveness. Ladders used for access must be long enough to protrude sufficiently beyond the access platform, unless other measures have been taken to ensure a firm handhold. Interlocking ladders and extension ladders must be used so that the different sections are prevented from moving relative to one another. Mobile ladders must be prevented from moving before they are stepped on.

4.2.3. Ladders must be used in such a way that a secure handhold and secure support are available to workers at all times. In particular, if a load has to be carried by hand on a ladder, it must not preclude the maintenance of a safe handhold.

### 4.3. Specific provisions regarding the use of scaffolding

4.3.1. When a note of the calculations for the scaffolding selected is not available or the note does not cover the structural arrangements contemplated, strength and stability calculations must be carried out unless the scaffolding is assembled in conformity with a generally recognised standard configuration.

4.3.2. Depending on the complexity of the scaffolding chosen, an assembly, use and dismantling plan must be drawn up by a competent person. This may be in the form of a standard plan, supplemented by items relating to specific details of the scaffolding in question.

4.3.3. The bearing components of scaffolding must be prevented from slipping, whether by attachment to the bearing surface, provision of an anti-slip device or any other means of equivalent effectiveness, and the load-bearing surface must have a

sufficient capacity. It must be ensured that the scaffolding is stable. Wheeled scaffolding must be prevented by appropriate devices from moving accidentally during work at a height.

4.3.4. The dimensions, form and layout of scaffolding decks must be appropriate to the nature of the work to be performed and suitable for the loads to be carried and permit work and passage in safety. Scaffolding decks must be assembled in such a way that their components cannot move in normal use. There must be no dangerous gap between the deck components and the vertical collective safeguards to prevent falls.

4.3.5. When parts of a scaffolding are not ready for use, for example during assembly, dismantling or alteration, they must be marked with general warning signs in accordance with the national provisions transposing Directive 92/58/EEC and be suitably delimited by physical means preventing access to the danger zone.

4.3.6. Scaffolding may be assembled, dismantled or significantly altered only under the supervision of a competent person and by workers who must have received appropriate and specific training in the operations envisaged, addressing specific risks in accordance with Article 7, and more particularly in:

- (a) understanding of the plan for the assembly, dismantling or alteration of the scaffolding concerned;
- (b) safety during the assembly, dismantling or alteration of the scaffolding concerned;
- (c) measures to prevent the risk of persons or objects falling;
- (d) safety measures in the event of changing weather conditions which could adversely affect the safety of the scaffolding concerned;
- (e) permissible loads;

- (f) any other risks which the abovementioned assembly, dismantling or alteration operations may entail.

The person supervising and the workers concerned must have available the assembly and dismantling plan referred to in 4.3.2., including any instructions it may contain.

#### 4.4. Specific provisions regarding the use of rope access and positioning techniques

The use of rope access and positioning techniques must comply with the following conditions:

- (a) the system must comprise at least two separately anchored ropes, one as a means of access, descent and support (work rope) and the other as back-up (security rope);
- (b) workers must be provided with and use an appropriate harness and be connected by it to the security rope;
- (c) the work rope must be equipped with safe means of ascent and descent and have a self-locking system to prevent the user falling should he lose control of his movements. The security rope must be equipped with a mobile fall prevention system which follows the movements of the worker;
- (d) the tools and other accessories to be used by a worker must be secured to the worker's harness or seat or by some other appropriate means;
- (e) the work must be properly planned and supervised, so that a worker can be rescued immediately in an emergency;

- (f) in accordance with Article 7, the workers concerned must receive adequate training specific to the operations envisaged, in particular rescue procedures.

In exceptional circumstances where, in view of the assessment of risks, the use of a second rope would make the work more dangerous, the use of a single rope may be permitted, provided that appropriate measures have been taken to ensure safety in accordance with national legislation and/or practice.



**Copy of the questionnaire to fill in by hand.**

**Instructions for completion**

Please fill in the boxes, writing as clearly as possible. Where there is a series of tick boxes, please tick only one box. Where appropriate, please tick a box and give an explanation of your answer in the space provided below. Please tick a box and give a written answer if possible as the more information we receive the better. Please continue your answers on a separate sheet if necessary, making it clear that you have done so and which question you are answering on the supplementary sheet.

**Please provide some background information about yourself and your organisation.**

<b>Title:</b>	<b>Forename:</b>	<b>Surname:</b>
---------------	------------------	-----------------

<b>Organisation:</b> <b>Address 1:</b> <b>Address 2:</b> <b>Address 3</b> <b>Town / City:</b> <b>County:</b> <b>Post code:</b>	
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<b>Email address (optional):</b>	<b>Telephone Number (optional):</b>
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<b>Number of employees:</b> <input type="checkbox"/> 1-5 <input type="checkbox"/> 6-10 <input type="checkbox"/> 11-25 <input type="checkbox"/> 26-50 <input type="checkbox"/> 51-100 <input type="checkbox"/> 101-500 <input type="checkbox"/> Over 500
--

<p><b>Role:</b></p> <p><input type="checkbox"/> Director</p> <p><input type="checkbox"/> Health &amp; Safety Advisor / Consultant</p> <p><input type="checkbox"/> Health &amp; Safety Manager</p> <p><input type="checkbox"/> Inspector</p> <p><input type="checkbox"/> Project Manager</p> <p><input type="checkbox"/> Technical Advisor</p> <p><input type="checkbox"/> Trainer</p> <p><input type="checkbox"/> Other – please specify</p>		<p><b>Sector:</b></p> <p><input type="checkbox"/> Adventure Activities</p> <p><input type="checkbox"/> Agriculture</p> <p><input type="checkbox"/> Arboriculture</p> <p><input type="checkbox"/> Chemical / Pharmaceutical</p> <p><input type="checkbox"/> Cleaning</p> <p><input type="checkbox"/> Communications</p> <p><input type="checkbox"/> Construction</p> <p><input type="checkbox"/> Distribution</p> <p><input type="checkbox"/> Energy Industry</p> <p><input type="checkbox"/> General Maintenance</p> <p><input type="checkbox"/> Health &amp; Safety Consultants</p> <p><input type="checkbox"/> Inspection</p> <p><input type="checkbox"/> Local/Central Government</p> <p><input type="checkbox"/> Manufacturers / Suppliers</p> <p><input type="checkbox"/> Ports / Maritime</p> <p><input type="checkbox"/> Retail</p> <p><input type="checkbox"/> Rope Access Industry</p> <p><input type="checkbox"/> Scaffolding Industry</p> <p><input type="checkbox"/> Steeplejacking</p> <p><input type="checkbox"/> Training Company</p> <p><input type="checkbox"/> Window Cleaning</p> <p><input type="checkbox"/> Other – please specify</p>
<p><b>Role (details of ‘Other’):</b></p>	<p>If you have answered ‘Other’ to Role or Sector, please enter a category that best defines the role or sector that your organisation operates in.</p>	<p><b>Sector (details of ‘Other’):</b></p>
<p><b>Confidentiality:</b></p> <p>Please indicate below if you do not wish details of your comments to be available to the public. (NB if you do not put a cross in the box they will be made public)</p>		



Please treat my response as confidential.  (X means confidential)  
Alternatively, to treat your comments on a particular section as confidential, please insert bracketed text '(Treat as confidential)' within that section response.

In your view how well does the Consultation Document identify and address the key issues?  
 Very well     Well     Not Well     Poorly

Is there anything you particularly liked or disliked about this exercise?

How/where did you find out about this consultation exercise? Please select an option from the list below, then either specify further or enter where you found out about it if you selected 'Other'.

- |  |  |
|--|--|
| <input type="checkbox"/> HSE Consultation Letter                   | <input type="checkbox"/> HSE Presentation/Event                      |
| <input type="checkbox"/> HSE Inspector/Official                    | <input type="checkbox"/> HSE Website                                 |
| <input type="checkbox"/> Other government website – please specify | <input type="checkbox"/> Article in a Trade Journal – please specify |
| <input type="checkbox"/> Word of Mouth – please specify            | <input type="checkbox"/> Other – please specify                      |

**Transitional Arrangements**

**Q1. Should any industries, groups or provisions relating to specific items of work equipment be subject to these transitional arrangements? Please tick one box from the options below, and then explain your answer in the space provided (making reference to what specifically should be subject to a transitional period).**

- Yes     No     Don't Know

--

◆ **Please make any additional comments on Transitional Arrangements here.**

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**Regulation 2 - Interpretation**

'Work at Height'

**Q2. Is the definition of 'work at height' clear? Please tick one box from the options below, then write any additional comments in the space provided e.g. how could it be improved upon?**

Very Clear    Clear    Don't Know    Unclear    Very Unclear

--

'Working platform'

**Q3. Are the definitions about 'working platforms' set out in the Work at Height Regulations a) clear and b) workable? Please tick one box from both of the lists below, then write any additional comments in the space provided e.g. how could it be improved upon?**

**3a)**  Very Clear    Clear    Don't Know    Unclear    Very Unclear

**3b)**  Very Workable    Workable    Don't Know    Unworkable  
 Very Unworkable

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'Fragile Surfaces'

**Q4. Do you agree that we have adopted the right approach to fragile surfaces? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes     No     Don't Know

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'Personal Fall Protection Systems'

**Q5. Do you agree that we have adopted the right approach to Personal Fall Protection Systems? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes     No     Don't Know

--

Other

◆ Please make any additional comments on Interpretation here.

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<b>Regulation 3 - Application</b>
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<b>Q6. We would welcome your comments on the appropriateness of the dutyholder application – particularly in relation to any situations which you feel may not be covered by these proposals or where further guidance might be required.</b>
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<b>Q7. Do you agree that the WAHR should be applied offshore in the way proposed? Please tick one box from the options below, then write any additional comments in the space provided.</b>
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<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
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<b>◆ Please make any additional comments on Application here.</b>
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**Regulation 4 – Organisation and Planning**

**Q8. We would welcome your views on the requirements in the WAHR to organise and plan work at height.**

**Q9. We aim to encourage dutyholders to assess the ‘overall’ risk involved in working at height, for example by considering the risk of installing equipment for work at height as well as the risks of using it, by taking full account of the nature and duration of the work, by taking account of emergency and rescue situations and by taking a full range of technical solutions: a) are our aims understood? and b) could they be made clearer? Please tick one box from both of the lists below, then write any additional comments in the space provided e.g. how could it be improved upon?**

**9a)**  Yes  No  Don't Know

**9b)**  Yes  No  Don't Know

‘Health and Medical Issues’

**Q10. Should we say any more in the Guidance about a person’s physical capability for working at height? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes  No  Don't Know

--

**Q11. Have we a) achieved a reasonable balance and b) gone into the right amount of detail on health and medical issues? Please tick one box from both of the lists below, then write any additional comments in the space provided.**

**11a)**  Very Good Balance     Good Balance     Reasonable Balance  
 Poor Balance     Very Poor Balance     Don't Know

**11b)**  Too Much Detail     Right Amount of Detail     Not Enough Detail  
 Don't Know

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'Appropriate Supervision'

**Q12. Should we say more about management of workers and the work process in the Guidance? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes     No     Don't Know

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'Weather Conditions'

**Q13. Have we given enough explanation about weather conditions and the effect they can have in the Guidance? Please tick one box from the options below, then write any**

**additional comments in the space provided.**

Yes     No     Don't Know

'Other'

◆ **Please make any additional comments on Organisation and Planning here.**

**Regulation 5 - Competence**

**Q14. Can or should we attempt to define 'competence' in the Regulations? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes     No     Don't Know

**Q15. Is the Guidance clear in its definition of 'competence'? Please tick one box from the options below, then write any additional comments in the space provided.**

Very Clear    Clear    Don't Know    Unclear    Very Unclear

**Q16. To what extent, if at all, should the definition of competence encompass consideration of a person's training and qualifications? Please tick one box from the options below, then write any additional comments in the space provided.**

Significantly    Moderately    Slightly    Not At All

◆ **Please make any additional comments on Competence here.**

**Regulation 6 – The hierarchy of avoiding and controlling risks from Work at Height**

**Q17. Do you agree with the principles set out in the hierarchy in Reg. 6 – e.g. is there sufficient clarity on what is required of dutyholders? Please tick one box from the options below, then write any additional comments in the space provided.**

Strongly Agree    Agree    Neither Agree Nor Disagree    Disagree  
 Strongly Disagree



--

**Q18. In the hierarchy is the meaning of a safe place of work for work at height, as defined in Schedule 1, clearly defined? Please tick one box from the options below, then write any additional comments in the space provided.**

Very Clear    Clear    Don't Know    Unclear    Very Unclear

--

**Q19. Do we need to say more – without being over-prescriptive – about the type of equipment that should be used to meet each step of the hierarchy? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes    No    Don't Know

--

**◆ Please make any additional comments on the Hierarchy here.**

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**Regulation 7 – General principles for selection of work equipment for Work at Height**

**Q20. We would welcome your views on the proposed selection criteria (Regulations and Guidance), in particular:**

- a) Will it ensure that the safest and most effective measures will be selected to perform work at height?**
- b) Is it clear where differing types of work equipment come into play when considering the hierarchy?**
- c) Does it address the practicalities of performing work at height in all cases?**
- d) Does the supporting Guidance illustrate adequately the various issues to consider when choosing different work equipment?**

**Please choose an tick one box from each of the lists below, then write any additional comments in the space provided.**

**20a)**  Yes  No  Don't Know

**20b)**  Very Clear  Clear  Don't Know  Unclear  Very Unclear

**20c)**  Yes  No  Don't Know

**20d)**  Very Clear  Clear  Don't Know  Unclear  Very Unclear

**◆ Please make any additional comments on the principles for the selection of work equipment here.**

**Regulation 9 – Fragile Surfaces**

**Q21. Are the Regulations too restrictive in insisting on coverings and other protective measures for fragile surfaces? Please tick one box from the options below, then write any additional comments in the space provided.**

Too Restrictive     Restrictive     Not Restrictive Enough     Don't Know

**Q22. Should duties concerning fragile surfaces be qualified by SFAIRP? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes     No     Don't Know

◆ **Please make any additional comments on Fragile Surfaces here.**

**Regulation 12 – Inspection**

**Q23. Have we succeeded in making it clear what needs to be inspected and when in the Regulations and the Guidance? Please tick one box from the options below, then write**

**any additional comments in the space provided.**

Very Clear    Clear    Don't Know    Unclear    Very Unclear

**Q24. Is it right that we drop the requirement in CHSWR for records of inspection of scaffolding to be kept for 3 months? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes    No    Don't Know

**Q25. Is it right that only scaffolding, and not other working platforms such as MEWPs, should be subject to the requirement to be inspected every 7 days (as currently required in the Construction (Health, Safety and Welfare) Regulations 1996)? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes    No    Don't Know

**Q26. Should the provisions governing the lifting of people using rope access and positioning equipment be removed from LOLER and placed in the WAHR? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes     No     Don't Know

◆ **Please make any additional comments on Inspection here.**

**Regulation 13 – Inspection of places of work at height**

**Q27. Do you agree that a duty to inspect visually the surface before work at height commences should be included in the Regulations? Is it practicable? Please tick one box from the options below, then write any additional comments in the space provided.**

Strongly Agree     Agree     Neither Agree Nor Disagree     Disagree  
 Strongly Disagree

◆ **Please make any additional comments on Inspection of places of work at height here.**

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<b>Regulation 14 – Duties of persons at work</b>
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<b>Q28. Is the proposed approach to the duties on persons at work acceptable? Please tick one box from the options below, then write any additional comments in the space provided.</b>
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<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
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<b>Q29. Is it right that we place specific duties in the WAHR, rather than relying on the duties as stated in other legislation? Please tick one box from the options below, then write any additional comments in the space provided.</b>
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<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
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<b>◆ Please make any additional comments on the duties of person at work here.</b>
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<b>Regulation 15 – Exemption by the Health and Safety Executive</b>
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<b>Q30. Should any group of people, type of premises, type of work equipment or class of activities be exempted from these Regulations? Please tick one box from the options below, then explain your answer in the space provided (making reference to what specifically should be subject to an exemption).</b>
---

<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
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◆ <b>Please make any additional comments on Exemptions here.</b>
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<b>Schedule 1 – Requirements for places of Work at Height</b>
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<b>Q31. Are these requirements a) clear and b) appropriate as they apply to a safe place of work at height? Please tick one box from both of the lists below, then write any additional comments in the space provided.</b>
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<b>31a)</b> <input type="checkbox"/> Very Clear <input type="checkbox"/> Clear <input type="checkbox"/> Don't Know <input type="checkbox"/> Unclear <input type="checkbox"/> Very Unclear
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<b>31b)</b> <input type="checkbox"/> Very Appropriate <input type="checkbox"/> Appropriate <input type="checkbox"/> Don't Know <input type="checkbox"/> Inappropriate <input type="checkbox"/> Very Inappropriate
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◆ Please make any additional comments on requirements for places of work at height here.

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**Schedule 2 – Requirements for Guard-rails, etc.**

**Q32. Is it right that we should increase the minimum height of guard-rails to at least 950mm? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes     No     Don't Know

--

**Q33. Are the other specific measurements in this Schedule a) necessary and b) appropriate? Please tick one box from the options below, then write any additional comments in the space provided.**

**33a)**  Yes     No     Don't Know

**33b)**  Yes     No     Don't Know

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◆ Please make any additional comments on requirements for guardrails, etc. here.

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**Schedule 3, Part 2 – Scaffolding**

**Q34. What would be the impact of having specific requirements for scaffolds? Please tick one box from the options below, then write any additional comments in the space provided.**

Positive     Negative     Don't Know

--

**Q35. Should we define 'scaffolding' in order to make it clear that this is meant to be covered? Please tick one box from the options below, then write any additional comments in the space provided.**

Yes     No     Don't Know

--

**Q36. Does the Guidance explain fully enough what is required in a scaffolding plan and when a plan is necessary? Please tick one box from the options below, then write any additional comments in the space provided.**

- Very Well Explained     Well Explained     Adequately explained  
 Poorly Explained     Very Poorly Explained     Don't Know

◆ **Please make any additional comments on scaffolding here.**

**Schedule 4 – Collective Fall Protection Systems**

**Q37. In the requirements for ‘collective safeguards for arresting falls’, do we need to include any more technical detail on these, in the Regulations or the Guidance? If so, what detail should we include? Please tick one box from the options below, then write any additional comments about what detail should be provided in the space provided.**

- Yes     No     Don't Know

◆ **Please make any additional comments on Collective Fall Protection Systems here.**

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<b>Schedule 5 – Personal Fall Protection Systems</b>
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<b>Q38. We would welcome your views on the applicability of the requirements of Schedule 5, Parts 2 and 3 to all work positioning systems in various industries such as outdoor activities or arboriculture.</b>
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<b>Q39. We have – in close consultation with industry trade associations - considerably expanded on what the Directive says about ‘rope access’. We have done this in the interests of accuracy and relevance. We would like to know if these sections (Schedule 5 and the related Guidance) are accurate and comprehensible. Should the Guidance give more examples to illustrate the systems that are referred to? Please tick one box from the options below, then write any additional comments in the space provided (making reference to which specific examples should be included).</b>
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<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know
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<b>Q40. We would welcome your views on the use of single ropes in circumstances where use of two ropes would be more dangerous, and in particular on any other activities where the use of single rope working may be justified under the terms of Schedule 5, Part 3 of the WAHR.</b>
--

◆ **Please make any additional comments on Personal Fall Protection Systems here.**

**Schedule 6 – Ladders**

**Q41. Have we struck the right balance between deterring inappropriate use of ladders and accepting their practicalities and the fact that they are commonly used in a wide variety of situations? Please tick one box from the options below, then write any additional comments in the space provided.**

- Very Good Balance     Good Balance     Average Balance  
 Poor Balance     Very Poor Balance

**Q42. Regarding the Guidance, should we say more about when it is appropriate to use, and the usefulness of, ladder stabilisation and ladder anti slip devices? Please tick one box from the options below, then write any additional comments in the space provided.**

- Much More Detail Needed     Slightly More Detail Needed  
 Amount of Detail About Right     Less Detail Needed  
 Much Less Detail Needed

--

**Q43. Is Schedule 6 of the Regulations appropriate for all types of ladders, including stepladders and fixed ladders? Please tick one box from the options below, then write any additional comments in the space provided.**

- Very Appropriate     Appropriate     Don't Know     Inappropriate  
 Very Inappropriate

--

**Q44. Are the requirements for rest platforms on portable and fixed ladders still appropriate? Please tick one box from the options below, then write any additional comments in the space provided.**

- Yes     No     Don't Know

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◆ **Please make any additional comments on ladders here.**

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**Q45. Please make any other comments in the space provided. These could be about the Regulations, Guidance, Directive or the Regulatory Impact Assessment. If you make any comments, please make it explicit what you are referring to.**

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**Please return to:  
David King,  
Work at Height and Machinery Safety Branch,  
HSE,  
5NW Rose Court,  
2 Southwark Bridge,  
London,  
SE1 9HS.**

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