

Technical Information Note - Rescue: an hierarchical approach

Introduction

1. The Work at Height Regulations 2005¹ (as amended) (WAHR) adopt an hierarchical approach for managing and selecting equipment for work at height. This includes 'rescue'².

The Law³

2. The Regulations have an overriding principle that you must do all that is reasonably practicableⁱ to prevent anyone falling. They set out a simple hierarchy for managing and selecting equipment for work at height. Dutyholders must:

- **Avoid** work at height where they can (Reg. 6(2));
- Use work equipment or other measures to **prevent** falls where they cannot avoid working at height; and where they cannot eliminate the risk of a fall (Reg. 6(3));
- Use work equipment or other measures to **minimise** the distance and/or consequences of a fall should one occur.

3. When selecting equipment for work at height dutyholders must:

- Use the most suitable equipment; and
- Give *collective* protection measures (e.g. guard rails) priority over *personal* protection measures (e.g. safety harnesses).

4. The hierarchy can be illustrated visually, as follows⁴:

AVOID ⁱⁱ		Collective protection	Individual protection
PREVENT ^{iii iv}		1. Barrier, guardrail, etc., MEWPs.	2. Work restraint system, personal fall prevention system (e.g. valley frame).
MITIGATE ^v	Minimise the <i>height</i> and <i>consequences</i>	3. Safety netting (rigged high), soft landing system (close to work).	4. Personal fall protection equipment (in order of preference: rope access, work positioning, fall arrest).
	Minimise the <i>consequences</i>	5. Soft landing system, safety netting (rigged low).	6. Inflatable injury prevention (e.g. air jacket), other (e.g. life jacket when working over water).
Work equipment that does neither (e.g. ladders, step-ladders, hop-ups, trestles, etc.) ^{vi} .		7. Minimise the risk of fall occurring through instruction, training and supervision	
Table 1 - Hierarchy for managing and selecting equipment for work at height			

¹ <http://www.legislation.gov.uk/uksi/2005/735/contents/made>

² Within industry, a distinction is sometimes made between the terms *rescue* and *evacuation*. **Rescue** typically involves the recovery of a casualty by another person, either remotely or directly; **Evacuation** is typically carried out by a stranded user to escape from a remote situation, such as a wind turbine.

³ See INDG401, *The Work at Height Regulations 2005 (as amended) - A brief guide* ([Link](#))

⁴ See BS8437: 2005: +A1: 2012, *Code of practice for selection, use and maintenance of personal fall protection systems and equipment for use in the workplace*

Industry guidance

6. The Work at Height Safety Association⁵, in Technical Guidance Note 5, *Guidance on rescue during work at height* (November 2008), provides guidance on emergency planning and the provision of rescue resources for work at height, either for rescue of an incapacitated person by others, or self evacuation of an individual without additional assistance.

7. It suggests that there are *three* main reasons why employers need to make provision for rescue arrangements when working at height, namely:

- (a) The Work at Height Regulations require this;
- (b) The casualty needs to be attended to and recovered quickly^{vii}; and
- (c) It is the employer's responsibility and not that of some other individual or organisation.

8. Reflecting the hierarchy for managing and selecting equipment for work at height (see above), the Technical Guidance Note outlines *four* options for dealing with an emergency which requires an injured or incapacitated person to be recovered to a place of safety. In order of preference (bearing in mind the immediate aim is to recover the casualty to the nearest point of safety), these are:

- (1) Lowering a remote casualty (e.g. use of a reach-pole and/or retrieval, with the rescuer remaining in a place of safety);
- (2) Raising a remote casualty;
- (3) Self evacuation by descent;
- (4) Rescuing another in descent (e.g. a pick-off rescue exposing both the casualty and the rescuer).

9. In all cases it is preferable that the rescuer is **not** involved in descent or in tension/suspension. When rescuing a third party, Options 1 and 2 are preferable to Option 4. Furthermore it is generally more straightforward, and physically easier, to lower a load (Option 1) than to raise one (Option 2).

10. The potential for a casualty to be located over an edge should be considered and any rescue will be further complicated where edges and obstructions are involved. The Technical Guidance Note states that recovery over an edge will:

- Increase the effective load in raising operations due to additional friction
- Create risks of cutting or abrasion of the anchor line
- Interfere with the operation of rescue equipment

and that all these issues should be considered when selecting equipment to ensure that it will still operate effectively in the conditions required.

Work positioning and single rope working

11. When a user relies on personal fall protection equipment for full or partial support, and the rope is stationary (with the user moving relative to it) then Schedule 5, Parts 1 and 3, of the WAHR apply (Reg. 8(d)⁶):

- Part 1^{viii}, *Requirements for all personal fall protection systems*, requires that, requires that a personal fall protection system only shall be used only if a risk assessment has demonstrated that the use of other, safer work equipment is not reasonably practicable.
- Part 3^x, *Additional requirements for rope access and positioning techniques*, requires that a fall protection system may comprise a single rope only where a risk assessment has demonstrated that the use of a second line would entail higher risk to persons (and appropriate measures have been taken to ensure safety).

Conclusion

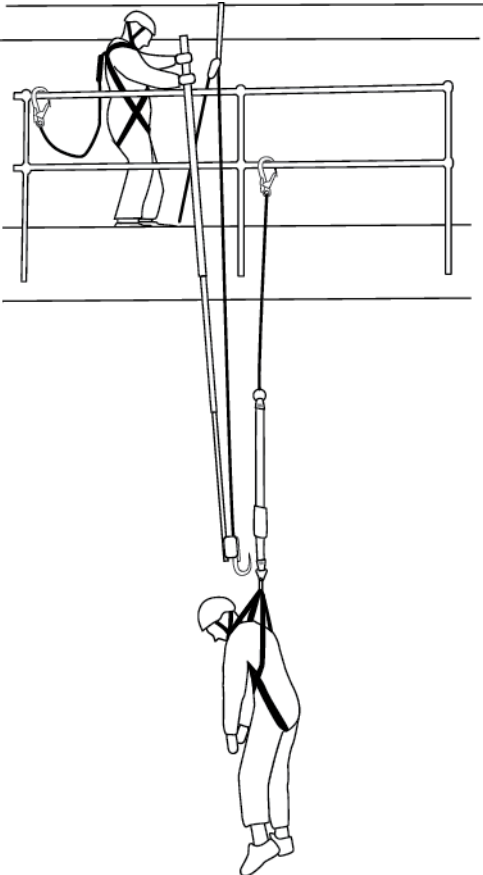
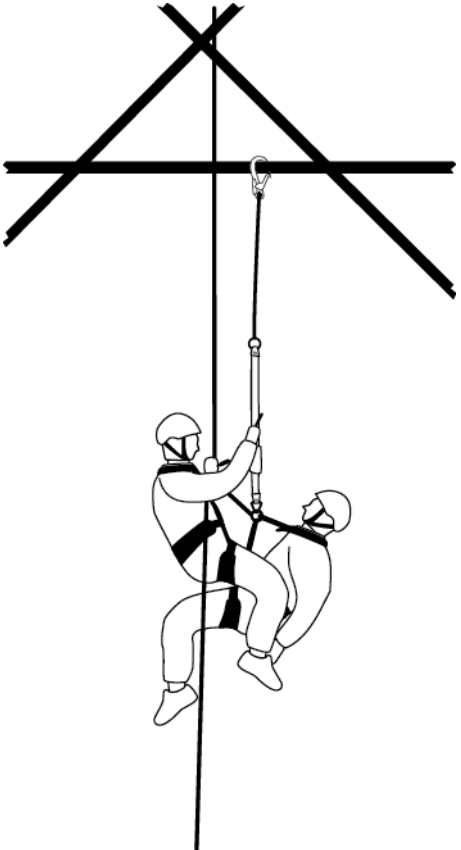
⁵ www.wahsa.org.uk (accessed 25th July 2013)

⁶ Reg. 8(d) of the WAHR, Requirements for particular work equipment, states: "Every employer shall ensure that, in the case of— ... (d) a personal fall protection system, Part 1 of Schedule 5 and— ... (ii) in the case of rope access and positioning techniques, Part 3 of Schedule 5 ...".

12. A rescue should, where possible, take place from an “existing place of work” or in a way that a fall is prevented (e.g. work restraint). This measure is not considered grossly disproportionate to the benefits of risk reduction that would be achieved.

13. In general, it is not considered that the use of a second line would introduce higher risk.

© The heightec Group Ltd
July 2013

<p>Example of rescue methods where the rescuer is working from an “existing place of work” and/or the fall is prevented <i>(Preferred)</i></p>	<p>Example of a rescue method where the rescuer is in suspension and, during the rescue, there will be a short fall onto the rescue device <i>(Non-preferred)</i></p>		
		<p>Additional hazards introduced</p>	<p>Control measure(s)</p>
		<p>Rescuer has to leave an <i>existing place of work</i> to retrieve the casualty</p>	<p>Undertake rescue from an <i>existing place of work</i>, with the rescuer in work restraint</p>
		<p>Rescuer is working on a single rope</p>	<p>Raise the casualty slightly, using a rope grab, and then lower them (meaning that the rescuer does not need to put themselves at risk)</p>
		<p>Rescuer has to cut the casualty’s (deployed) fall-arrest lanyard, creating additional risk</p>	<p>The deployed lanyard does not need to be cut, as it can be disconnected by the rescuer (from an <i>existing place of work</i>).</p>
<p>During the ‘pick-off’, the casualty’s weight is transferred to the locked-off descender NOTE: A descender is not type-tested whilst locked off</p>	<p>Not applicable NOTE: Applies during a ‘pick-off’ rescue</p>		

- i The definition set out by the Court of Appeal (in its judgment in **Edwards v. National Coal Board**, [1949] 1 All ER 743) is:

“Reasonably practicable’ is a narrower term than ‘physically possible’ ... a computation must be made by the owner in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) is placed in the other, and that, if it be shown that there is a gross disproportion between them – the risk being insignificant in relation to the sacrifice – the defendants discharge the onus on them.”

In essence, making sure a risk has been reduced ALARP [*as low as reasonably practicable*] is about weighing the risk against the sacrifice needed to further reduce it. The decision is weighted in favour of health and safety because the presumption is that the duty-holder should implement the risk reduction measure. To avoid having to make this sacrifice, the duty-holder must be able to show that it would be grossly disproportionate to the benefits of risk reduction that would be achieved. Thus, the process is not one of balancing the costs and benefits of measures but, rather, of adopting measures except where they are ruled out because they involve grossly disproportionate sacrifices”.

Source: www.hse.gov.uk/risk/theory/alarplance.htm.

The words ‘reasonably practicable’ should not be confused with ‘practicable’. In a legal context, ‘practicable’ infers a statutory obligation that has to be met if, in the light of current knowledge, it is feasible (irrespective of cost or difficulty). Put at its simplest, ‘practicable’ means ‘if it can be done, it must be done’. Where a dutyholder is required to do what is ‘reasonably practicable’ or ‘practicable’ to achieve a safe system of work, Section 40 of the Act provides that the burden of proof is on the *defendant* to satisfy the court that it was not practicable or reasonably practicable to do more to control the risk than was in fact done. This is often referred to as a ‘reverse burden’, because it reverses the normal situation that the prosecution must prove the facts beyond reasonable doubt.

- ii **Reg. 6(2)** - 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.
- iii **Reg. 6(3)** - 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.
- iv **Reg. 6(4)** - The measures required by paragraph (3) shall include—(a) his ensuring that the work is carried out—(i) from an existing place of work; ... and (b) where it is not reasonably practicable for the work to be carried out in accordance with sub-paragraph (a), his providing sufficient work equipment for preventing, so far as is reasonably practicable, a fall occurring. .
- v **Reg. 6(5)** - Where the measures taken under paragraph (4) do not eliminate the risk of a fall occurring, every employer shall—(a) so far as is reasonably practicable, provide sufficient work equipment to minimise—(i) the distance and consequences; or (ii) where it is not reasonably practicable to minimise the distance, the consequences, of a fall; ...
- vi **Reg. 6(5)** - Where the measures taken under paragraph (4) do not eliminate the risk of a fall occurring, every employer shall— (b) without prejudice to the generality of paragraph (3), provide such additional training and instruction or take other additional suitable and sufficient measures to prevent, so far as is reasonably practicable, any person falling a distance liable to cause personal injury.
- vii **Reg. 7(1)** - Every employer, in selecting work equipment for use in work at height, shall—(a) give collective protection measures priority over personal protection measures; and (b) take account of—(i) the working conditions and 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 other provisions of these Regulations.
- viii **Schedule 5, Part 1** - Requirements for all personal fall protection systems, requires that, “A personal fall protection system shall be used only if—(a) a risk assessment has demonstrated that ... (ii) the use of other, safer work equipment is not reasonably practicable ...”.
- ix **Schedule 5, 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. ...

The heightec Group Ltd, Lake District Business Park, Mint Bridge Road, Kendal, Cumbria, LA9 6NH, UK

Tel: +44 (0) 1539 728866

Email: admin@heightec.com Web: heightec.com



Training division: heightec - The National Access and Rescue Centre – Aberdeen, Birmingham, Kendal, Leeds, London

-
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.

The heightec Group Ltd, Lake District Business Park, Mint Bridge Road, Kendal, Cumbria, LA9 6NH, UK

Tel: +44 (0) 1539 728866

Email: admin@heightec.com Web: heightec.com



Training division: heightec - The National Access and Rescue Centre – Aberdeen, Birmingham, Kendal, Leeds, London

Company no. 03435385

Registered in England and Wales

VAT No. 698 1128 04