

27 Preventing Falls and Falling Objects

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Introduction

1. This chapter provides guidance for compliance with the Work at Height Regulations (WAHR) and the safe management of Defence activities in order to prevent / reduce the risk of falls of personnel or equipment from height that is liable to cause personal injury; and how the roles and responsibilities are attributed within Defence. The scope extends to any foreseeable risk of falls from height involving Defence assets or the Defence estate including unauthorised parties gaining access to areas with significant risks of falls; sheer drops, unguarded fixed access ladders etc.

2. This chapter does not cover Defence personnel responsible for planning, supervising or undertaking work at height on designated Restricted High Places (RHPs)¹, these shall be managed in accordance with JSP 375, Volume 3. This chapter does not apply to undertaking Adventurous Training (e.g. caving, climbing) for which Service specific policies and nationally accepted good practice shall be followed, however, it does apply to the maintenance or modification of high ropes course, route setting on climbing walls etc.

3. For the purpose of Defence activities, the definition of working at height is: “any activity in any place above, at or below ground level, including obtaining access or egress (except by staircase) from such a place, that if there were no precautions in place, a person or item could fall a distance liable to cause personal injury”.

4. The risk of falls from high places (e.g. into a pit or excavation, from a ship mast, or from a roof) or objects falling on to people below is generally obvious and the need for managing this activity is easily recognised. However, it is the falls from other than high places that are not so easily recognised these may include:

- a. ladders, steps etc.;
- b. road vehicles;

¹ RHPs are, for example, masts, towers and other buildings, plant rooms and installations including work platforms with permanent fixed access systems such as fixed ladders, step-irons, etc. A mast or tower structure which does not have a fixed access system but is climbable by using its lattice frame may also to be designated as an RHP. NOTE: RHPs do not apply to ships .

- c. aircraft; and
- d. plant and machinery.

5. It is falls from other than high places that are often overlooked due to the smaller distances involved and the risk of serious injury is therefore not always appreciated. Falls of relatively short distance are often overlooked in the activity risk assessment as they are considered incidental to the main task.

6. The risk of falls, regardless of the distance, can have serious consequences depending on what the person or object falls onto / into. Falls remain the single biggest cause of workplace deaths and one of the main causes of major injury. The ideal method of preventing a fall from height is to remove the need for working at height. The challenge is to change the thinking and consequent behaviour and reduce the likelihood of that one act or slip which could end in tragedy; correct planning and suitable training of Defence personnel is essential to meeting this aim. Examples of work activities that are classified as working at height may include:

- a. working on aircraft;
- b. unloading and loading of vehicles (e.g. refilling tankers, using loading bays);
- c. maintenance of vehicles and equipment;
- d. working on a roof;
- e. erecting falsework and formwork;
- f. using a ladder or stepladder;
- g. working at ground level adjacent to an open excavation, pit or hole;
- h. working within an excavation, pit or hole;
- i. working on, or erecting scaffolding;
- j. infrastructure maintenance tasks (for example, changing lights or ceiling tiles in an office);
- k. working near or adjacent to fragile material (e.g. sky lights);
- l. work on a “deck”² in the Maritime and Air environment; and
- m. climbing into or out of a vehicle.

² Ground level equates to “Deck” in the Maritime and Air environment

7. Defence is bound by the requirements of the WAHR and the Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Work at Height) Regulations (MSFV (HSW) (WAH) R) which states that where possible working at height should be avoided. If working at height is unavoidable, reasonably practicable measures must be implemented to prevent falls of persons and / or falling objects or where the risk cannot be eliminated, to minimise the distance and the consequences of the fall.

8. Where an activity carried out in the interests of national security cannot comply with any of the WAHR, an exemption case specific to the activity for a person or class of persons to be exempted from the relevant part(s) of the regulation(s) will be required to be submitted to the relevant Defence Regulatory Authority domain; (land, maritime, air) for consideration.

Roles and Responsibilities

Procurement or Acquisition

9. All equipment acquired for use with working at height activities must be properly designed, constructed (including safe access for inspection and maintenance both externally and internally) and correctly installed for the purpose intended. Asset safety case documentation including relevant operational / maintenance and safety information shall be provided to the end user.

Commanding Officer (CO) / Head of Establishment (HoE)

10. The CO / HoE shall ensure that the identification of all areas under their control where there is a risk of falls or falling objects, that the risks to personnel and / or visitors (or others who may be affected) are assessed and appropriate management systems are implemented. Any areas with the potential for persons to gain access (particularly on remote or unguarded sites) to significant working at height risks e.g. sheer drops, unguarded fixed access ladders shall be controlled to restrict access to authorised persons only.

11. The CO / HoE shall assure that where the working at height activities are controlled by a third-party organisation (e.g. Maintenance Management Organisation, project team, external contractor) that any points of demarcation and responsibility is agreed, clearly defined and documented. Effective communication between any third-party organisations and the CO / HoE is necessary to provide assurances that all working at height activities are safely managed in association with JSP 375, Volume 1, Chapter 34 (4C System).

Infrastructure Provider / Equipment Manager (IP / EM)

12. Those with responsibility for the provision and maintenance of infrastructure shall ensure that all working at height activities under their control is identified and that suitable and sufficient arrangements are in place to safeguard all Defence personnel and visitors, and where appropriate in accordance with JSP 375, Volume 1, Chapter 34 (4C System), and assurance provided to the CO / HoE.

13. Where appropriate access to high places shall be controlled and restricted to authorised personnel (e.g. restrictors on windows opening on to roofs, anti-climb devices on fixed access ladders). If the area is designated an RHP the activity shall be managed in accordance with JSP 375, Volume 3. All RHPs are to be identified with appropriate signage and access restricted to authorised personnel (e.g. physical restrictions).

Managers

14. Managers are to ensure that all potential activity which may require working at height within their area of responsibility is identified and appropriate measures are undertaken to ensure safety of personnel and visitors. Where working at height cannot be avoided, the manager responsible for the activity or for the management of contractors carrying out the activity must ensure that a suitable and sufficient risk assessment (JSP 375 Volume 1 Chapter 8) is conducted in consultation with personnel who are familiar with the activity and who are competent to undertake the work.

15. The control hierarchy³ when planning any working at height activities is:

- a. avoid working at height - so far as is reasonably practicable work should be conducted at ground level;
- b. prevent falls – where working at height cannot be avoided, prevent falls using an existing safe place of work or use the correct type of equipment. A safe place of work may need to be created if none exists (e.g. using temporary guard rails around a roof, or by providing a correctly constructed scaffold);
- c. minimise the distance and consequence of a fall - so far as is reasonably practicable, to provide the right type of work equipment to minimise the distance and consequences of a fall. (e.g. the distance that a person can fall can be reduced with safety nets or fall arrest systems);
- d. reduce time spent required to be at height - co-ordination of maintenance needs can combine several small maintenance jobs together; and
- e. training and instruction - ensure where working at height is undertaken that all such work is to be appropriately planned (including selection of work equipment) and supervised and that this work is conducted by suitable and sufficiently competent personnel.

16. If working at height cannot be avoided suitable control measures shall be put in place, which may include a Safe System of Work (SSoW) and where appropriate a Permit to Work (JSP 375, Volume 1, Chapter 30) implemented. The manager shall ensure that for all working at height activities under their control that (as a minimum):

³ Consistent with the general hierarchy of risk controls within the Management of H&S at Work Regulations 1999, Schedule 1 and subsequent amendments.

- a. they are properly planned, organised and appropriately supervised, this includes planning for emergencies and rescue;
- b. there is safe access and egress to the work area;
- c. environmental conditions that could endanger health and safety are taken into account (e.g. are the conditions; cold? wet? hot? is the location exposed to winds? what conditions could change the surface of the structure, or affect the person carrying out the work);
- d. work being undertaken in the same area will not affect or be affected by the working at height activity or vice versa;
- e. any areas where levels may change, and Defence personnel may be exposed to a fall from one level to another (e.g. a person falling into the interior of a ship from an open floor hatch or aircraft carrier hangar lift) is minimised;
- f. all Defence personnel and contractors involved in working at height are given appropriate information, training; are competent and supervised, or under supervised training by a competent person;
- g. where appropriate Defence personnel and contractors involved in working at height are physically and mentally fit to carry out their duties safely. (e.g. no known history of heart disease, severe high blood pressure, epilepsy, vertigo, balance conditions, impaired limb function, uncorrected visual impairment, alcohol or drug dependence, and diabetes);
- h. all equipment used for working at height activity is suitable for the task and appropriately inspected by a competent person(s);
- i. PPE (clothing, footwear and appropriate fall injury protection systems are appropriately maintained;
- j. the risks from working on or near fragile⁴ surfaces are properly controlled;
- k. the risks from falling objects are properly controlled:
 - (1) any materials or tools for the task may need to be carried or brought securely up to the work area;
 - (2) any materials and objects are stored safely so they won't cause injury if they are disturbed or collapse (e.g. nails, pieces of wood, debris);
 - (3) mesh or netting slung beneath cradles, harnesses, or mobile elevated platforms to prevent anything falling and causing injury or damage; and

⁴ "fragile surface" means a surface which would be liable to fail if any reasonable foreseeable loading were to be applied to it.

(4) areas below where the work activity is taking place being suitably controlled and secured or fenced off as necessary, to prevent injury to third parties, with and suitable signage to warn personnel of the activity.

l. any openings or holes are to be identified, and secured to prevent personnel from falling into them e.g. use of a robust cover or guard rails;

m. work at height over public areas will require much higher level of control e.g. a double-boarded platform with a polythene sheets in between the boards to prevents small items such as nails and bolts from falling; vertical barriers may also be required; and

n. risk assessments are regularly reviewed (e.g. new equipment or plant are introduced, change of personnel or following an accident or near miss).

17. In some instances, a combination of the above measures may be appropriate.

18. Managers must ensure that all equipment, (including fall arrest systems, restraint systems, catch netting and tethers) used for work at height is suitable, correctly maintained and appropriately inspected by a competent person(s) so that it is safe to use. If required, the most appropriate fall injury protection systems for the activity being undertaken are to be selected, (Note: most fall restraint equipment has a maximum load safety limit). The equipment selected for use shall give collective (or passive) protection measures priority over personal protection measures:

a. collective protection is any equipment that does not require the person working at height to act for it to be effective, e.g. permanent or temporary guard rails or barriers, toe-boards, scaffold towers; and

b. personal protection is equipment which requires the individual to act for it to be effective, e.g. putting on a safety harness correctly and connecting it, with an energy-absorbing lanyard, to a suitable anchor point.

19. Selection of equipment should also take account of:

a. the most appropriate equipment for the task;

b. the working conditions at the task location;

c. how the equipment is to be brought up to the task location;

d. nature, frequency and duration of the work; and

e. risks to the safety of all those at the task location where the work equipment is to be used:

(1) equipment / tools for the task may need to be carried or brought securely up to the work area; and

(2) equipment / tools such as drills, spanners, wrenches etc are to be suitably prevented from falling below the work area, e.g. attached to a safety line.

20. For further advice on types of equipment and tools to use with working at height activities, managers should consult their TLB safety organisation.

All Personnel

21. Defence personnel shall:

- a. use work equipment or safety devices provided to them in accordance with instruction and training;
- b. work to their level of competence and do not disregard the systems in place for their and other persons safety;
- c. report any equipment or safety device defects;
- d. report unsafe working practices; and
- e. bring to their managers attention any medical or physical condition they feel could affect their ability to carry out their duties safely whilst working at height.

Exemptions

22. The provision in the WAHR / MSFV (HSW) (WAH) R allows the Secretary of State for Defence (SofS) to exempt a person or class of persons from specified parts of the specific regulations.

23. An exemption from the WAHR / MSFV (HSW) (WAH) R will only be granted where the SofS is satisfied that the person or class of persons involved in activities detailed in an exemption case submission (ECS) are carried out in the interests of national security. Any exemption granted will be time limited (maximum five years) and subject to conditions. Where the provisions of the WAHR / MSFV (HSW) (WAH) R cannot be complied with and an exemption is granted, control measures are to be put in place to mitigate the working at height activity to a level that is as low as reasonable practicable and minimises the risk to the health and safety of the person or class of persons concerned.

24. The ECS must contain a reasoned argument to demonstrate that in order to protect national security (operational capability) that Defence is reliant on the exemption being granted, and the conditions stipulated in the regulations have been satisfied. The ECS shall include the following information:

- a. the type of person, or class of person being exempted;
- b. the name and purpose of the particular equipment, system or activity giving rise to the problem;
- c. an outline of the problem and its magnitude – i.e. without exemption how particular activities (e.g. training) will be adversely affected, numbers of people placed at potential risk, the impact on front line operational capability (e.g. military tasks that will become impossible to undertake, or otherwise severely hampered) etc;
- d. actions undertaken and / or considered to comply with the regulations – where compliance is being ruled out on cost grounds, cost data is to be provided;
- e. an action plan for compliance with the regulations in the short, medium and long term – i.e. proposed mitigation measures to reduce the risk to a level as reasonably practicable, likely costs and timescales, etc;
- f. the time period for which the exemption is required (limited to a maximum of five years) and the rationale for it;
- g. the plan for assessment of Defence personnel undertaking the activity and provision of suitable and appropriate health surveillance / health monitoring;
and
- h. where renewal of an existing exemption is being sought, details on the success or otherwise of the previous action plan, including the results of health surveillance or health monitoring.

25. The preparation of the ECS will require input from operating authorities, acquisition teams and medical personnel etc. as appropriate. The draft ECS shall be passed for scrutiny to the relevant subject matter experts for a decision on approval. After passing scrutiny, the sponsor forwards the completed ECS and draft exemption certificate to the SofS for signature granting the exemption.

26. If the case is successful, a certificate will be issued by SofS. A copy of the certificate shall be provided to the Defence Safety Authority by the sponsor. If not successful, the working at height activity must be discontinued until such time as it can comply with the regulations.

Retention of Records

27. Working at Height Risk Assessments (original and revised) together with related Maintenance and Inspection Records etc. are to be retained in accordance with JSP 375, Volume 1, Chapter 39 (Retention of Records).

Related Documents

28. The following documents should be consulted in conjunction with this chapter:

- a. JSP 375, Volume 1;
 - (1) Chapter 08 - Risk Assessment;
 - (2) Chapter 15 - Personal Protective Equipment;
 - (3) Chapter 22 - Work Equipment;
 - (4) Chapter 24 - Lifting Operations and Lifting Equipment;
 - (5) Chapter 30 - Permit to Work;
 - (6) Chapter 33 - Construction and Excavation;
 - (7) Chapter 34 - 4C System: The Management of Visiting Workers and Contractors; and
 - (8) Chapter 39 - Retention of Records.
- b. JSP 375, Volume 3;
 - (1) Chapter 2 - Common Requirements; and
 - (2) Chapter 7 - Working at Height.
- c. Other MOD Publications;
 - (1) DSA01.1 – Defence Policy for Health, Safety and Environmental Protection; and
 - (2) DSA01.2 Chapter 2 – Requirement for Safety and Environmental Management Systems in Defence.
- d. Legislation and Guidance;
 - (1) [Health and Safety at Work, etc Act](#);
 - (2) [Management of Health and Safety at Work Regulations](#);
 - (3) [HSE L24 – Workplace health, safety and welfare](#);
 - (4) [HSE L113 - Lifting Operations and Lifting Equipment Regulations](#);
 - (5) [The Merchant Shipping and Fishing Vessels \(Health and Safety at Work\) \(Work at Height\) Regulations](#);

- (6) [HSE L22 – Safe use of work equipment;](#)
- (7) [The Construction \(Design & Management\) Regulations](#)
- (8) [Personal Protective Equipment at Work Regulations;](#)
- (9) [HSE HSG33 - Health and Safety in roof work;](#)
- (10) [HSE INDG401 - The Work at Height Regulations - A brief guide;](#)
- (11) [HSE INDG403 - Top tips for Ladder and Stepladder Safety;](#)
- (12) [HSE INDG413 - Preventing Falls from Vehicles;](#)
- (13) [HSE INDG284 - Working on Roofs](#)