

LEAFLET 7**WORKING AT HEIGHTS****CONTENTS****Para**

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LEAFLET FOR LINE MANAGERS**INTRODUCTION**

1 Working at height (WAH) is a MoD wide activity carried out daily by both Service and Civilian personnel. In 2003/04 falls from height accounted for 67 fatal accidents at work in the UK and nearly 4000 major injuries. Falls from height remain the single biggest cause of workplace deaths and one of the main causes of major injury.

2 The risk of falls from high places is generally obvious and the need for mitigation easily recognised. However, low falls from places such as fixed or mobile access staging, ladders, vehicles, aircraft, plant and machinery are not so easily recognised. Low falls are often overlooked (or ignored) due to the smaller distances involved or the risk of serious injury is not appreciated. This is particularly the case if the fall is onto sharp or dangerous surfaces or into toxic substances. Moreover, previous or inherited working practices are often accepted as standard with no serious consideration given to falls from height. Low falls account for more fatal and major injuries than high falls; therefore the same risk consideration must be given since injuries can be severe for both.

3 This leaflet and its associated guidance is intended to assist commanders and line managers to meet the statutory requirements of the WAH Regulations 2005.

SCOPE

4 This leaflet applies to all WAH activities carried out on the MoD Estate (and includes HM Ships at sea and in port) and to MoD personnel carrying out duty activities in places other than the MoD Estate. All such activities are to be carried out in accordance with (iaw) the guidance contained in this leaflet.

5 All WAH activities in relation to shore based masts, towers and fixed accessways are to be carried out iaw Safety Rules and Procedures 07 (SRP07) (WAH – Masts Towers & Fixed Accessways). SRP 07 is at volume 3, chapter 7 of this publication.

6 SRP 07 requires the establishments coordinating manager WAH (CMWaH) to determine, and list in a register, all high places where access is to be restricted and operated under the requirements of SRP 07. This leaflet applies to all other workplaces.

DISAPPLICATION

7 This leaflet does not apply to the provision of instruction or leadership to one or more persons in connection with their engagement in caving, climbing, by way of sport, recreation, or team building. However these activities will require risk assessment iaw leaflet 11 or 39 of this publication depending on the activity.

REGULATIONS

8 Beyond the provision of the Health and Safety at Work Act 1974, other regulations that may be applicable to WAH activities include:

- 8.1 The Management of Health and Safety at Work Regulations 1999.
- 8.2 The Workplace (Health, Safety and Welfare) Regulations 1992.
- 8.3 The Provision and Use of Work Equipment Regulations 1998.
- 8.4 The Lifting Operations and Lifting Equipment Regulations 1998.
- 8.5 The Personal Protective Equipment at Work Regulations 1992.
- 8.6 The Merchant Shipping and Fishing Vessels (Working at Height) Regulations. (*to be issued*).

DEFINITIONS

Working at Height (WAH)

9 WAH is defined as any work undertaken at any place above, at or below ground level from, which if measures were not taken a person could fall a distance liable to cause personal injury. It includes gaining access to, or egress from such a place except by a staircase in a permanent workplace.

So Far As is Reasonably Practicable (SFARP)

10 So far as is reasonably practicable means of balance of what can be achieved taking into consideration time, cost and difficulties experienced with fully implementing the requirement and the benefit to be gained in reducing the risk.

Safe System of Work (SSOW) Method Statement (MS)

11 Means a formal documented procedure intended, when followed, to enable an activity or process to be completed safely.

Permit to Work (PTW)

12 A Permit to Work PTW is a formal written authority (issued by a suitably authorised person) to closely control an activity or process, which, following a risk assessment and the formulation of a safe system of work or a method statement, a high level of risk still exists. It is a part of a safe system of work and not a replacement for it; neither is a PTW a guarantee of absolute safety.

Electromagnetic Radiation

13 Electromagnetic fields and waves in the frequency range up to 300GHz, typically emitted by radar and radio transmitters, sometimes referred to as Radio Frequency (RF) Radiation.

Equipment

14 Equipment, in the context of this leaflet, includes platforms (i.e. ships, vehicles and aircraft) plant (both mobile and static) and appliances, apparatus or tools.

Commanders and Line Managers

15 Commanders and line manager means all staff, both Service and Civilian, who have authority and responsibility for directing and supervising people working for them, be they permanent, temporary or contractually employed.

Competent Person

16 An individual is deemed competent by virtue of their training, knowledge experience and other qualities.

Access and Egress

17 Access and egress includes ascent and descent in the context of the WAH regulations 2005.

Fragile Surface

18 Fragile surface means any surface which would be liable to fail if any reasonably foreseeable loading were to be applied to it.

Collective Protection

19 Devices employed to prevent persons from falling from height without the use of individual personal protective equipment. Examples being guard rails, fencing and physical barriers and edge protection.

Working Platform

20 Means any platform used as a place of work or as a means of access or egress to, or from, a place of work. Examples being:-scaffolds, suspended scaffolds, cradle, mobile platforms, trestles gangways, gantries, ladders (fixed and portable) and staging equipment.

Ladder

21 Unless stated otherwise, throughout this leaflet the term “ladder” includes fixed, portable and step ladder.

Anchor Points

22 Anchor points are required to enable a fall protection/fall restraint system to be connected to the work place/platform/structure. Wherever possible anchors for use with fall arrest systems must be positioned above the user's workplace. Further detailed guidance regarding anchor points is contained in JSP 569.

Fall Arrest

23 A device designed, when used iaw the manufactures instructions, will arrest or limit the extent of a fall to an individual. Typical components that comprise a Fall Arrest System are illustrated at Fig 1.

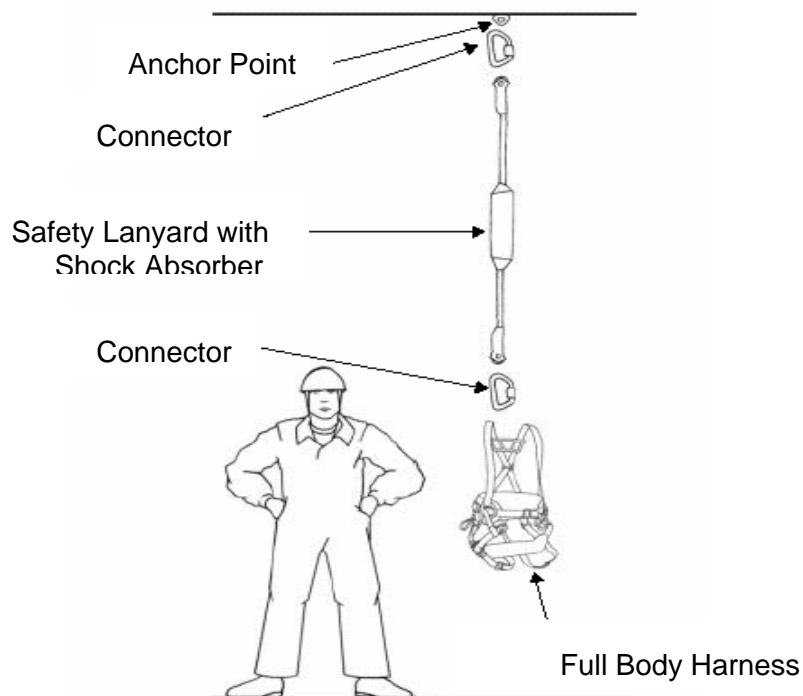


Fig 1 Fall Arrest System

Fall Restraint

24 A device or system designed, when used iaw the manufacturers instructions, will prevent or restrain an individual from placing themselves in a position where a fall from height could occur. Typical components that comprise a Fall Restraint System are illustrated at Fig 2.

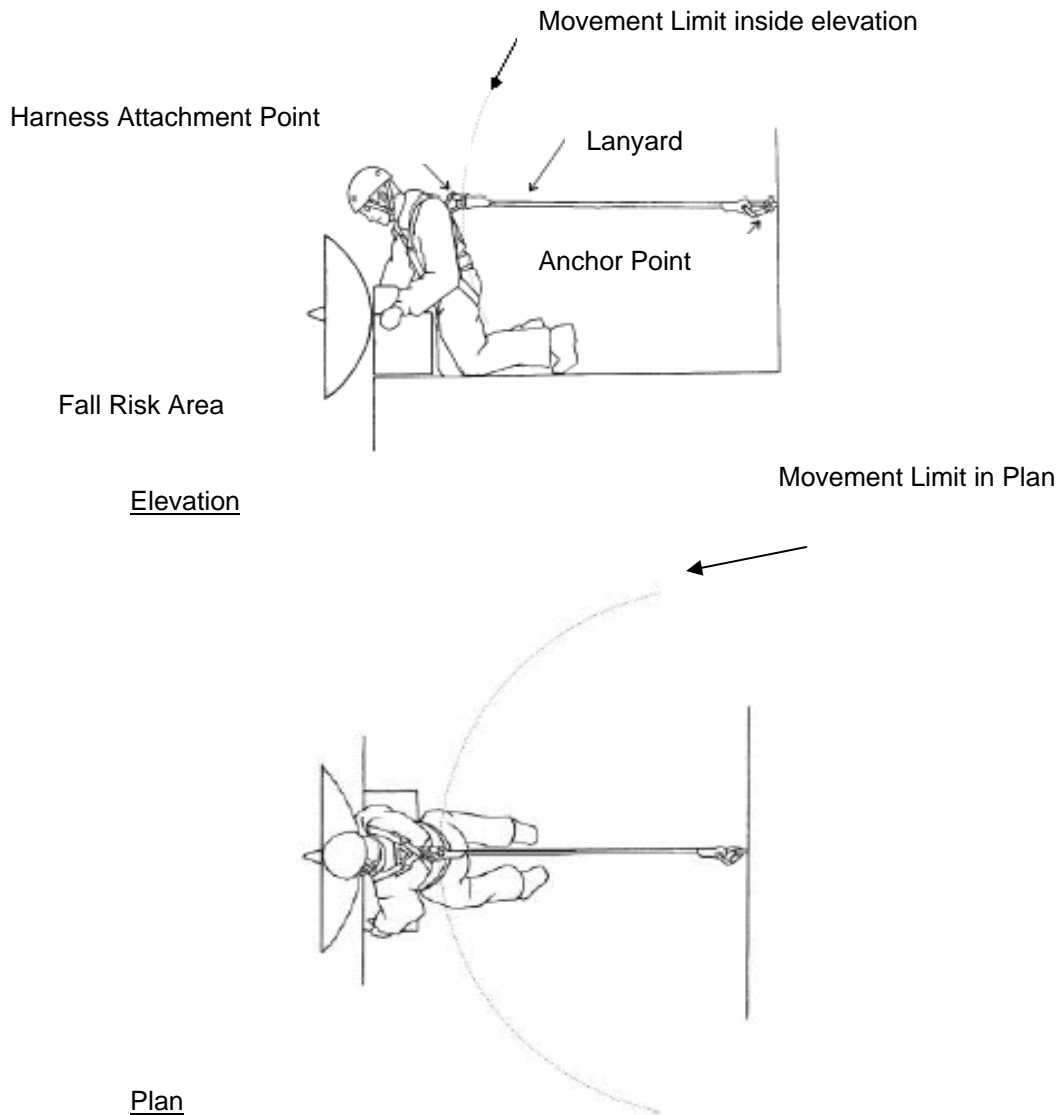


Fig 2 Fall Restraint System

Supplier

25 The Supplier is the person/team that supplies the equipment for use. This could be a commander or line manager for local purchase or hire items, or more often, the leader of an Integrated Project Team (IPT) in the Defence Procurement Agency (DPA) or the Defence Logistic Organisation (DLO).

RESPONSIBILITIES

Suppliers

26 Suppliers shall ensure that equipment procured for use complies with the Secretary of State's Safety and Environment Policy Statement. Wherever practicable suppliers of equipment should ensure that the risks to personnel WAH are eliminated or reduced through design and/or selection. Those managing the equipment procurement process and specification development of the equipment are responsible for:

26.1 Ensuring that equipment supplied is suitable for the activity, fit for purpose and carries the "CE" marking. Equipment specially developed for the Armed Forces may not display a "CE" mark.

NOTE

If civilians carry out an activity that the armed forces have special for purpose PPE civilians must be afforded this protection if no CE marked alternative can be procured.

26.2 Ensuring that where the requirement for personnel to WAH to access, egress, operate or maintain the equipment can reasonably be foreseen, the supplier shall:

26.2.1 Ensure that appropriate through life safety management arrangements (iaw DefStan 00-56) and best practice stated in the Project Oriented Safety Management System (POSM) are established for equipment and that access/egress to operate or maintain the equipment complies with the WAH Regulations 2005.

26.2.2 Assess all WAH risk areas and recommend solutions to reduce the risks to so SFARP.

26.2.3 Ensure that systems and/or procedures are in place to enable access, egress and WAH activities to be carried out safely and in compliance with this leaflet.

26.2.4 Ensure, SFARP, that where WAH Personal Protective Equipment (WAHPPE) is intended for use on or with an item of equipment as a control measure, that the WAHPPE is compatible with in-service items of WAHPPE as detailed in JSP 569.

Commanders and Line Managers

27 Commanders and line managers have the following duties:

27.1 Ensure that all WAH activities are risk assessed iaw Volume 2, leaflet 39 of this publication. They are also to ensure that any work at height is properly planned (including the planning for emergencies and rescue), appropriately supervised and carried out in a manner which is SFARP, safe.

27.2 Ensure that all equipment used in connection with WAH shall be maintained and inspected by competent person's iaw Service or manufacturer's instructions and publications.

27.3 Ensure that no person engages in any activity, including organisation, planning and supervision, in relation to WAH 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.

Personnel Duties

28 All Service & Civilian personnel have the following duties:

28.1 Report to the relevant commander or line manager any activity or defect in respect to WAH that they believe is likely to endanger themselves, others, equipment or property.

28.2 Use any work equipment or safety device provided for WAH iaw any training and/or instructions received.

ASSOCIATED LEAFLETS

29. Associated Leaflets.

- JSP 375, Volume 2, Leaflet 8 (The Provision and use of Work Equipment).
- JSP 375, Volume 2, Leaflet 9 (Lifting Operations and Lifting Equipment).
- JSP 375, Volume 2, Leaflet 11 (Safety in Military Training and Exercises).
- JSP 375, Volume 2, Leaflet 13 (Management of Personal Protective Equipment).
- JSP 375, Volume 2, Leaflet 18 (Permit to Work).
- JSP 375, Volume 2, Leaflet 22 (Safety in the use of Electromagnetic Fields).
- JSP 375, Volume 2, Leaflet 39 (Health and Safety Risk Assessment).
- JSP 375, Volume 2, Leaflet 55 (Retention of Records).
- JSP 375, Volume 3, Chapter 7 (Safety Rules and Procedures 07).

REFERENCES AND FURTHER READING

29 References and Further Reading

- JSP 437 Personal Protective Equipment Catalogue.
- JSP 569 Working at Height – Personal Protective Equipment (WAHPPE): General and Technical Information.

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LEAFLET 7 ANNEX A**WORKING AT HEIGHTS****CONTENTS**

Para

GUIDANCE FOR COMMANDERS AND LINE MANAGERS

- 1 Introduction
- 6 Risk Assessment
- 8 Safe System Of Work (SSOW)
- 10 Personal Protection Equipment to Prevent Falls
- 12 Emergency and Rescue Arrangements

GUIDANCE FOR COMMANDERS AND LINE MANAGERS**INTRODUCTION**

1 Falls account for more fatalities and serious injuries than any other cause, the risks are substantial irrespective of the duration of the task. In addition, a number of people are injured by materials falling, being dropped or thrown from above.

2 Working at Height (WAH) covers a multitude of work activities, the majority of which do not pose a significant risk to health and safety due to the security of the working environment. There are however situations where WAH does pose a significant risk. This leaflet is intended to give general guidance on WAH and specific references where there is a risk of a person falling a distance liable to cause personal injury.

3 It is important to identify and assess all possible fall risks in the work environment and avoid or minimise them by using the following hierarchy:

- 3.1 Elimination.
- 3.2 Substitution (modifying practices, machinery, relocating gauges,).
- 3.3 Control Measures (collective protection).
- 3.4 Control Measures (Personal Protection Equipment (PPE)).

4 The WAH Regulations 2005 clearly state the requirements imposed on the MoD and all personnel, who are obliged to anticipate the dangers, associated with WAH and mitigate against them. Examples of work activities that are classified by the Health and Safety Executive (HSE) as WAH include:

- 4.1 Working on a flat roof.
- 4.2 Working off bandstands.
- 4.3 Erecting falsework and formwork.
- 4.4 Working from a ladder (see annex B).
- 4.5 Working at ground level adjacent to an open excavation.
- 4.6 Working near or adjacent to fragile materials e.g. skylights.

5 Examples of work activities where the regulations will not apply include:

- 5.1 Walking up and down a staircase in a permanent workplace.
- 5.2 An operator sitting in a seat on an excavator.
- 5.3 Mounted policemen.

RISK ASSESSMENT

6 A risk assessment (see Leaflet 11 or 39 to determine which is applicable) shall identify the measures that need to be adopted to avoid or reduce the risk of injury. Where possible work should be undertaken at a safe level to minimise the risk, if this is not possible the following factors will need to be considered.

- 6.1 WAH is properly planned and appropriately supervised.
- 6.2 Personnel must be physically capable, and deemed competent to carry out the work.
- 6.3 Ensure WAH is practicably safe by assessing the type of work to be performed, its duration, frequency and any hazards involved in the work process. Are recognised guidelines for the work process available (e.g. manufacturers operating instructions, Service publications, method statements and or safe systems of work).
- 6.4 Safe access and egress to the work place.
- 6.5 The location of the work and whether it presents any additional risks e.g. is it near or over water or dangerous substances, moving machinery, passing traffic, overhead power lines or in an area exposed to non-ionising radiation (transmitting antennas).
- 6.6 Could the work be a hazard to others not associated with the activity (falling objects).
- 6.7 Will the work affect or be affected by other work going on in the same area.
- 6.8 The condition and stability of the work surface and whether it may be uneven, unstable, slippery or fragile.
- 6.9 Possible effects of the weather (temperature, wind speeds, snow/ice or lightning risk).

NOTE

When members of the police, fire, ambulance or other emergency services are acting in an emergency Para 6.9 does not apply.

- 6.10 Correct selection of work equipment and control measures. (Collective protection measures should be considered before the use of WAH Personal Protection Equipment (WAHPPE).
- 6.11 Implementation of a safe system of work (SSOW).

7 The risk assessment should be used to prioritise resources and identify existing controls and any further precautions required. Personnel are to be made aware of any hazards found in the risk assessment, particularly the WAH elements of the activity. Identify the level of supervision required, which will depend on several factors including the level of the risk of injury and the complexity of the work. Factors will also include the skill, training, experience and competence of personnel and the numbers involved. Regularly monitor and review the risk assessment to ensure that measures taken are effective against existing and new risks.

SAFE SYSTEM OF WORK (SSOW)

8 Where WAH cannot be avoided then the information compiled from the risk assessment is used to implement a SSOW (which may already be incorporated within relevant Service or manufacturers publications). A SSOW must be properly planned, appropriately supervised and carried out safely by developing the appropriate control measures. Where a risk assessment determines the use of PPE as a control measure the SSOW should be documented. There are numerous control measures by which WAH hazards can be eliminated or risks minimised. These include:

8.1 Where SFARP use collective methods to gain safe access such as fixed stairways and platforms. If not available, consider other methods such as Mobile Elevating Work Platforms (MEWP's), fixed or mobile staging, or ladders. Ensure plant and equipment is fit for purpose and safe to use.

8.2 Ensure access equipment is not overloaded, that it is stable and secure to prevent collapse (tying and footing of ladders, locking of platform wheels and out riggers deployed).

8.3 Use collective protection methods (guardrails, barriers etc) to prevent falls from height or to reduce the consequence of a fall (safety nets, mats, air bags etc).

8.4 Unless it is unavoidable, personnel are not to work in a position directly below another person and therefore exposed to the risk of being struck by falling objects. To prevent falling objects use edge protection, such as toe boards, fencing, covers or nets.

8.5 Maintain meticulous house keeping, especially whilst WAH, remove or isolate hazards that could create trips and slips, ensure the correct handling and stowage of tools and equipment.

8.6 Control access and egress to the work area, including the cordoning of work area, deployment of barriers and warning signs (hard hat area).

8.7 Determine appropriate communication systems for personnel who WAH.

8.8 Use appropriate Personal Protection Equipment (PPE) such as hard hats or footwear. The PPE requirements must be detailed in the risk assessment (see JSP 437).

8.9 If WAHPPE has been identified for fall protection then the type must be established and its compatibility to any existing systems assessed (see JSP 569) and personnel trained in its use.

8.10 Ensure, where appropriate, that first aid and emergency arrangements (recovery, rescue and evacuation of workers from height) are in place (see Para's 12 to 15).

8.11 Where the inadvertent actions of personnel WAH or others, could present a danger to personnel, plant or equipment the implementation of a PTW system should be considered.

9 Safe systems of work should be regularly revised to consider ways of reducing the frequency of WAH, (ensuring every day stock items are stored on the ground or the use of long lasting light bulbs in high places).

PERSONAL PROTECTION EQUIPMENT TO PREVENT FALLS

10 The adoption of WAHPPE in the hierarchy of control measures is normally, following the risk assessment process, regarded as the last resort. However, WAH creates a unique set of risks and WAHPPE can often be the only safe and practical solution. WAHPPE systems generally consist of an ergonomic harness, connectors, safety lanyard and an anchor device. There are two main types of WAHPPE:

10.1 Fall Restraint (FR) maintaining a safe distance from an edge.

10.2 Fall Arrest (FA) to arrest the fall of a worker.

11 The choice of WAHPPE is varied and depends on the type and complexity of task. Advice on fall protection systems can be obtained from the WAH Support Cell at DG LOG (Strike) AS IPT AS4f, or JSP 569.

EMERGENCY AND RESCUE ARRANGEMENTS

12 Emergency and rescue procedures and first aid facilities must be put in place if considered necessary as a result of a risk assessment. Evacuation plans should consider the safe and speedy evacuation of personnel WAH in the event of a dangerous situation such as fire or thunder storms. This is particularly important due to the additional time taken to descend from high working positions or extraction from places with restricted access.

13 Procedures for the provision of first aid and the immediate rescue and recovery of an incapacitated worker from height (or restricted access) must also be considered and documented. Injuries could be life threatening therefore it is essential that the worker is rescued and recovered immediately for medical treatment. Simple and effective rescue training and written rescue plans can greatly increase the speed and effectiveness of rescue operations.

14 The immediate rescue and recovery of a suspended worker is particularly important if a worker (using WAHPPE) has suffered an arrested fall and is in post fall suspension. Typically in a fall, the full body harness is designed to distribute the arrest forces over a significant portion of the torso, reducing its impact and leaving the fall victim in an upright position to facilitate self or assisted rescue. However, an awkward body position at the moment of arrest could result in internal injuries and difficulties in breathing due to the slamming effect of the impact and subsequent harness constrictions. Furthermore the posture of an unconscious fall victim is life threatening to the airway. An accident or illness may have been the initial cause of the fall and other injuries may have occurred such as deep external lacerations or broken bones all of which emphasise the need for immediate rescue. Suspension, even with no apparent injuries is very dangerous and it is vital that a suspended fall victim is rescued immediately before suffering any effects from post fall suspension trauma.

15 Whilst awaiting rescue the suspended fall victim (if able) should be encouraged to keep moving their legs and toes to prevent blood pooling in the lower parts of the body. Where possible they should elevate their legs or create a sitting position in the harness. Support can be given in the form of a knee loop or improvised work seat. On recovery to a safe position the fall victim must be made to stand (if possible) for a few minutes, then into a squatting position before being helped into a lying down position with head slightly raised. This process should take between twenty and thirty minutes to complete. Medical staff or emergency services should examine all casualties who have suffered or believed to have suffered the effects of being suspended.

LEAFLET 7 ANNEX B**WORKING AT HEIGHTS****CONTENTS****Para**

	GUIDANCE IN THE USE OF PORTABLE LADDERS & STEPLADDERS
1	Scope
3	Background
5	Responsibilities
8	Control Measures
9	Guidance
10	Leaning Ladders
11	Stepladders
12	Guidance for Ladder Users

GUIDANCE IN THE USE OF PORTABLE LADDERS & STEPLADDERS**SCOPE**

1 This annex covers the temporary use of portable ladders and stepladders and does **not** apply to collective protection measures such as working platforms or fixed access systems.

NOTE

Whilst the guidance contained in this Annex, is primarily concerned with portable ladders and stepladders it may, where appropriate, be used to assist in formulating a SSW on any fixed access way not detailed "restricted access" by the establishments coordinating manager WAH.

2 Throughout this Annex "ladders" refers to both portable leaning ladders and stepladders unless stipulated otherwise.

BACKGROUND

3 The use of temporary ladders as a means of access and egress to high workplaces and as a place of work is widespread throughout the MoD. Their use in the workplace has often come about through custom and practice and is often unsupervised without much thought being given to their suitability or to alternative, safer, equipment.

4 About a third of reported falls from height at work involve ladders and stepladders, accounting for 14 fatalities and 1200 major injuries, on average, each year.

RESPONSIBILITIES

5 The WAH Regulations 2005 states that every employer shall ensure that a ladder is used for WAH only if a risk assessment under Regulation 3 of the Management of the Health and Safety at Work Regulations 1999 (MHSWR 99) has demonstrated that the use of more suitable work equipment is not justified because of the low risk and:

5.1 The short duration of use; or

5.2 Existing features on site which he cannot alter.

6 Commanders and line managers must ensure that the use of other work equipment has been eliminated and that the use of a ladder can be justified in light of Para 5 above.

- 7 Factors determining whether the use of a ladder can be justified or not include:
- 7.1 The frequency of the activity.
 - 7.2 The duration of the task.
 - 7.3 The WAH activity (is the ladder going to be used for access and egress or is it going to be used as a working platform).
 - 7.4 Does the WAH activity require tools or heavy, awkward shaped objects. If so how much do they weigh and can a person climbing carry them safely?

CONTROL MEASURES

8 Once the conditions of Para 5 (by risk assessment) have been met and the decision to utilise other work equipment has been eliminated the use of a ladder will require risk assessing and control measures put in place. Listed below are control measures associated with the use of ladders (this list is not exhaustive):

- 8.1 Any surface upon which a ladder rests must be stable, firm, of sufficient strength and of suitable composition to support the ladder safely, so that its rungs or steps remain horizontal.
- 8.2 Position the ladder to ensure its stability during use.
- 8.3 A suspended ladder (e.g. a portable ladder, secured to a structure where the foot of the ladder is not in contact with a stable base) must be attached in a secure manner so that it cannot be displaced and any swinging movement is prevented (this does not apply to a flexible ladder).
- 8.4 A portable ladder shall be prevented from slipping during use by:
 - 8.4.1 Securing the stiles at or near their upper or lower ends.
 - 8.4.2 Effective anti-slip or other effective stability device; or
 - 8.4.3 Any other arrangement of equivalent effectiveness.
- 8.5 Ladders used for access must 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.
- 8.6 Interlocking or extension ladders must be used in such a way that their sections are prevented from moving relative to each other while in use.

(1) Mobile ladders must be prevented from moving before they are stepped on.
- 8.7 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.
- 8.8 Ladders shall be used in such a way that a secure handhold and secure support are always available to the user. The user can maintain a safe handhold when carrying a load unless, in the case of a step ladder, the maintenance of a handhold is not practicable when a load is carried, and a risk assessment under Regulation 3 of the MHSWR has demonstrated that the use of a stepladder is justified because of:
 - 8.8.1 The low risk; and
 - 8.8.2 The short duration of use.

- 8.9 All ladders are to be subjected to a maintenance and inspection regime carried out by competent person's iaw Service or manufacturer's publications.
- 8.10 Ladders must only be used by persons competent to do so.
- 8.11 Ladders should not be painted (painting can mask defects).

GUIDANCE

- 9 Listed below is general guidance with regard to the safe use of ladders:

- 9.1 Ensure that ladders are not overloaded.
- 9.2 Ensure that only one person is on a ladder at one time.
- 9.3 Ensure that the ladder is not so long and flexible that sway and vibration could cause a loss of balance.
- 9.4 Ensure that the type of ladder is suitable for the location and task (leaning or stepladder).
- 9.5 Ensure that where a ladder could be struck by vehicles they are protected (barriers cones etc).
- 9.6 Prevent pedestrians walking under a ladder or being struck by falling objects by the use of protective barriers, cones etc.
- 9.7 Ensure that the opening of doors or windows will not interfere with an in use ladder
- 9.8 Ensure that overhead or adjacent power lines that the ladder user could touch or fall into (should the ladder topple) are isolated.
- 9.9 Always use a non-conductive ladder for necessary live electrical work.
- 9.10 Ensure that measures are put in place to prevent unauthorised use by members of the public or other workers.
- 9.11 Ensure that ladders are not stood on movable objects, such as pallets, bricks, tower scaffolds, excavator buckets, vans or MEWPs.
- 9.12 Ensure that personnel are wearing appropriate PPE as required.

LEANING LADDERS

- 10 Listed below is guidance specific to leaning ladders:

- 10.1 Ensure that the ladder is at the correct angle of 75° (1 unit out for every 4 units up).
- 10.2 Ensure that ladders do not rest against weak upper surfaces (gutters, glazing etc).
- 10.3 Ensure that users do not use the top three rungs of a ladder.
- 10.4 Ensure that ladders are not used horizontally (bridging gaps).

STEPLADDERS

- 11 Listed below is guidance specific to stepladders:

11.1 Personnel should (wherever possible) not carry out work (such as drilling through brick or concrete) that will impose a side loading on a stepladder; this can be avoided by having the stepladder steps facing the work activity. Where side loading cannot be avoided measures are to be put in place to prevent the steps tipping over (e.g. tying the steps to a suitable point). If this is not possible a more suitable type of access equipment should be used.

11.2 Do not use the top two steps of a stepladder unless a suitable handrail is available on the stepladder or the top three steps of swing-back or double-sided stepladders where a step forms the very top of the ladder.

11.3 Ensure that the legs of a step ladder are fully deployed and any locking devices fully engaged before climbing a stepladder.

GUIDANCE FOR LADDER USERS

12 Listed below is general guidance specific to ladder users which should be read in conjunction with the rest of this Annex:

12.1 Do not overreach when using a ladder, keep your belt buckle (navel) within the ladder stiles and both feet on the same rung through out the task.

12.2 Maintain at the working position 3 points of contact (hands and a foot/feet and a hand). Where you cannot maintain a handhold, other than for a brief period of time, other measures will be needed to prevent a fall or reduce the consequences of one.

12.3 Do not attempt to move a ladder whilst standing on the rungs or steps.

12.4 Do not slide down the stiles.

12.5 Do not attempt to extend a ladder whilst standing on the rungs.

LEAFLET 7 ANNEX C**WORKING AT HEIGHTS****CONTENTS****Para**

	GUIDANCE IN THE USE OF STAGING AND ACCESS EQUIPMENT
1	Introduction
4	Scope
5	Requirements
6	Identification and Guidance Regarding Primary Components
14	General Requirements
22	Inspections and Reports

GUIDANCE IN THE USE OF STAGING AND ACCESS EQUIPMENT**INTRODUCTION**

1 The MoD utilises both mobile and static Staging & Access Equipment (SAE) in numerous locations for a variety of tasks and short term work activities. It should be noted that some types of SAE are often referred to as “tower scaffolds” and should not be confused with general scaffolding.

2 SAE is a collective measure of risk mitigation and should therefore be considered prior to the use of PPE. Falls account for more fatalities and serious injuries in the workplace than any other cause, the risks are substantial irrespective of the duration of the task or the distance fallen. In addition, a number of people are injured by materials falling, being dropped or thrown from above.

3 The risk assessment for the WAH activity will have identified the appropriate SAE as suitable and sufficient for the task prior to work commencing. However, the introduction of the SAE may, in itself, introduce additional hazards into the workplace and the use of the equipment will require additional risk assessment.

SCOPE

4 The guidance in this annex covers general purpose SAE. It does not cover scaffolding, platform specific or other special to type access staging equipment that may be in use. Guidance for the use of such equipment should be sought from the appropriate equipment authority or manufacturer. However, the guidance in this Annex can be used as an overall general guide.

REQUIREMENTS

5 The WAH Regulations 2005 define specific requirements for SAE, which under the regulations are termed Working Platforms (WP). The regulations do not provide as a matter of course specific dimensions, heights etc. These are instead required to be “suitable and sufficient”. This is achieved through the process of risk assessment and compliance with Service publications or manufacturers instructions.

IDENTIFICATION AND GUIDANCE REGARDING PRIMARY COMPONENTS

6 Fig 1 below details the primary components of SAE as used in this Annex other literature may use different terminology.

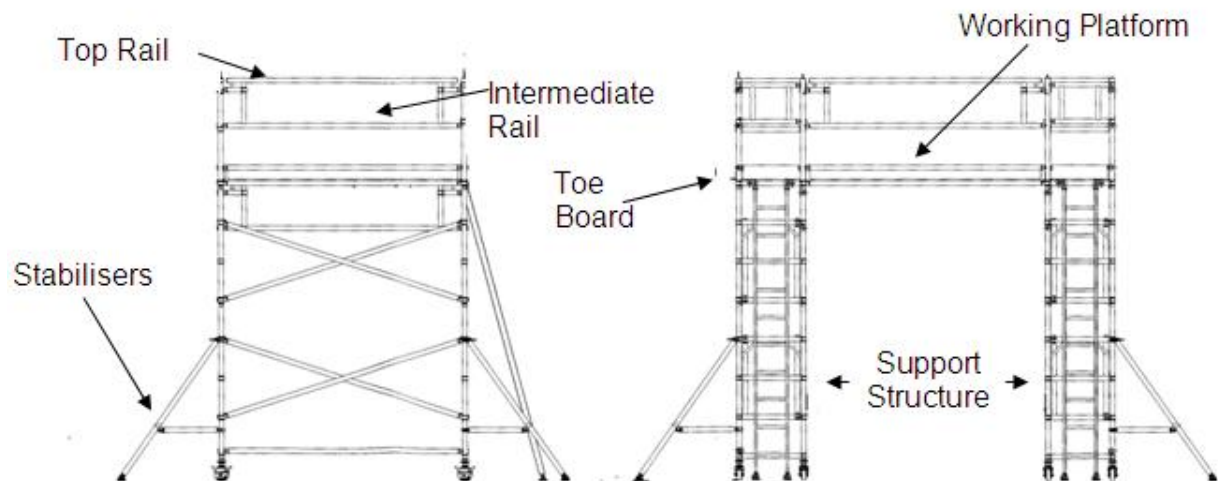


Fig 1 Staging and Access Equipment

7 A supporting structure is defined as any structure used for the purpose of supporting a work platform.

8 The top rail should be at a minimum height of 950mm above the working platform, with the gap to the intermediate rail no greater than 470mm. The toe board should be suitable and sufficient.

NOTE

SAE equipment in use prior to April 2005 may continue with the 910 mm high handrail height, until the SAE is reconfigured or replaced.

9 The working platform should be of a suitable size to allow for the safe movement of personnel upon the platform. Consideration should be given to the type and duration of the work undertaken.

10 The working platform should have a suitable surface and be constructed and/or positioned such that a person could not fall through. In addition there should be no gap through which material or object could fall and injure a person below.

11 Stabilisers shall be configured iaw Service and/or manufacturers instructions.

12 Any surface on which SAE is sited shall be stable, level and of sufficient strength to safely support the SAE and any intended loading. Bricks or building blocks must never be used to take the weight of any part of the SAE.

13 The SAE shall be of suitable and of sufficient strength and rigidity for the purpose for which it is being used. In the case of a wheeled structure, it must be prevented by appropriate devices from moving inadvertently.

GENERAL REQUIREMENTS

14 All SAE should be erected, used, maintained and inspected only by competent persons and iaw Service or manufacturer's instructions.

15 Maintenance and inspection records should be retained iaw single or joint Service procedures.

16 Measures must be put in place to ensure that safe working loads of SAE are not exceeded.

17 Access to SAE shall be controlled at all times to prevent unauthorised use especially during assembly and dismantling.

18 Ensure that the SAE is not moved from location to location with personnel or equipment at height unless it is specifically designed to be operated in such a manner.

19 Where vehicle or pedestrian routes run close to the location of the SAE the risk assessment should detail additional control measures i.e. barriers, signage etc.

20 A SAE must never be used:

20.1 As a support for ladders, trestles or other access equipment.

20.2 In weather conditions which are likely to make it unstable.

20.3 With broken or missing parts.

20.4 With incompatible components.

21 In addition to the general requirements detailed above the following principles can be applied to help create and maintain a safe working environment during the erection, use and dismantling of SAE:

21.1 A supporting structure must be stable whilst being erected, used and dismantled. It must only be modified by a competent person with the approval of the single or joint service support authority or the manufacturer.

21.2 Personnel using SAE should, at all times, operate within its supporting structure and not, at any time, over-reach, thereby causing the SAE to become unstable or increase the risk of falling.

INSPECTIONS AND REPORTS

22 The inspection requirements of SAE are dependant on the height of the working platform and are detailed below:

22.1 If the working platform is less than 2 metres in height the SAE must be inspected:

22.1.1 After assembly in any position.

22.1.2 After any event liable to have affected its stability.

22.1.3 At suitable intervals depending on frequency and conditions of use.

22.2 If the working is 2 metres or more in height, it must be inspected:

22.2.1 After assembly in any position.

22.2.2 After any event liable to have affected its stability.

22.2.3 At intervals not exceeding 7 days.

23 A new inspection report is not required every time a mobile SAE is moved to a new location on the same site. However, if guard rails or other components are removed to enable the SAE to be moved past an obstruction, then a pre use check must be carried out by a competent person to ensure that the SAE has been reinstated correctly.

24 Results of inspections are to be recorded and retained until the next inspection report. The use of a visible tag system to display the SAE status and date of the last inspection is recommended. However, if the SAE is 2 meters or more in height and the inspection is undertaken after installation or assembly, or to comply with the seven day inspection regime, the competent person must:

24.1 Complete the inspection report before the end of the working period.

- 24.2 Provide a copy of the report to the person the inspection was carried out for, within 24 hours.
- 25 The person receiving the inspection report must:
 - 25.1 Retain the report at the site that the inspection was carried out until the work is completed.
 - 25.2 Thereafter retain the report for a minimum of three months.

LEAFLET 7 ANNEX D**WORKING AT HEIGHTS****CONTENTS****Para**

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GUIDANCE IN THE USE OF MOBILE ELEVATING WORK PLATFORMS**INTRODUCTION**

1 A wide variety of MEWPs (both powered and un-powered) are in use across all departments of the MoD and are known by many different names. Some of the more common names are: extending work platforms, powered and un-powered access equipment, mobile access equipment, cherry pickers, tower wagons, hydraulic platforms and scissor lifts.

2 MEWPs are generally used in a situation where, as a result of a risk assessment, their use is deemed less hazardous than alternative methods of WAH. However the use of MEWPs brings with it its own hazards, in addition, to those hazards inherent to the particular task. A risk assessment covering the use of an MEWP will be required under the WAH Regulations 2005. The guidance in this leaflet is intended to assist Commanders, Line Managers and Operators carrying out the risk assessment process by detailing terms and definitions associated with MEWPs and identifying some of the hazards associated with their use.

SCOPE

3 This guidance covers those MEWPs that have the ability for the working platform to be raised, lowered, rotated or slewed in relation to the chassis. It does NOT cover general access staging which may or may not be mobile.

TERMS AND DEFINITIONS

Mobile Elevating Work Platform (MEWP)

4 A mobile machine that is intended to move persons to working positions where they can carry out work from the work platform with the intention that persons are getting on and off the work platform at one defined access position and which consists of, as a minimum, a work platform, controls, an extending structure and a chassis. There are two types of MEWP described below:

4.1 **Group A.** MEWP where the vertical projection of the centre of the load is always inside the tipping lines.

4.2 **Group B.** MEWP where the vertical projection of the centre of the load may be outside the tipping lines.

5 Relating to travelling, MEWPs are divided into three types:

5.1 **Type 1.** Travelling is only allowed with the MEWP in its transport position.

5.2 **Type 2.** Travelling with raised work platform is controlled from a point of control at the chassis.

5.3 **Type 3.** Travelling with raised work platform is controlled from a point of work at the platform.

NOTE

Types 2 & 3 can be combined.

6 Figs 1 and 2 illustrate some typical Mobile Elevating Work Platform designs:

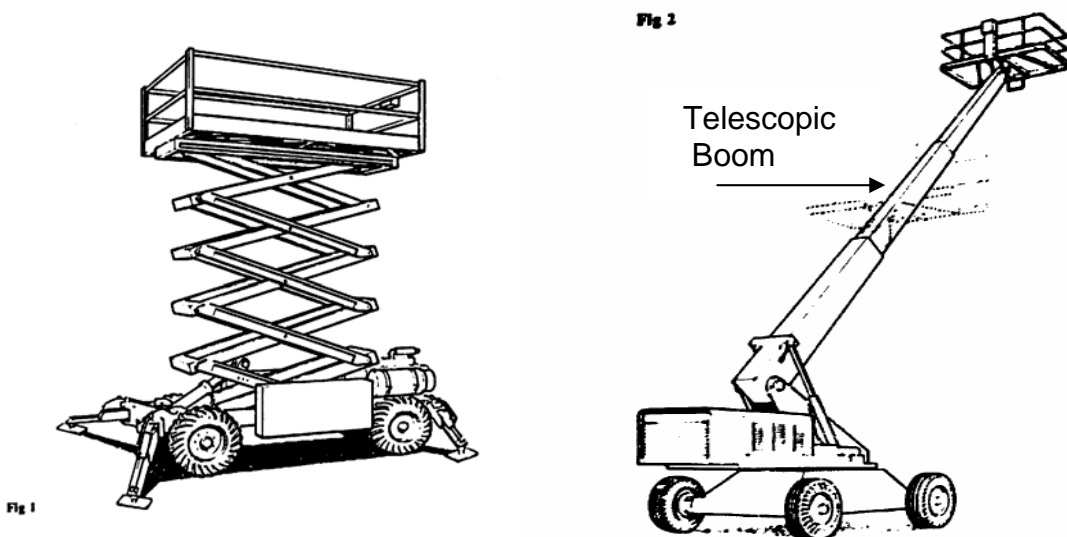


Fig 1 & 2 Mobile Elevating Work Platforms

Work Platform

7 A fenced platform or a cage which can be moved under load to the required working position and from which erection, maintenance, repair, inspection or similar work can be carried out. Work platforms associated with MEWP are commonly referred to as: the carrier, cage, basket or bucket. (See Fig 3)

Extending Structure

8 A structure which is connected to the chassis and supports the work platform. It allows movement of the work platform to its required position. It may, for example, be a single or a telescoping or an articulating boom or ladder, or a scissors mechanism or any combination of them, and may or may not slew on the chassis. (See Fig 3)

Chassis

9 Base of the MEWP. It may be pulled, pushed, self propelled, etc. (See Fig 3)

Stabilizers

10 All devices and systems used to stabilize MEWPs by supporting and/or levelling the complete MEWP or the extending structure, (e.g. jacks, suspension locking devices and extending axles). Stabilizers are sometimes referred to as outriggers (See Fig 3)

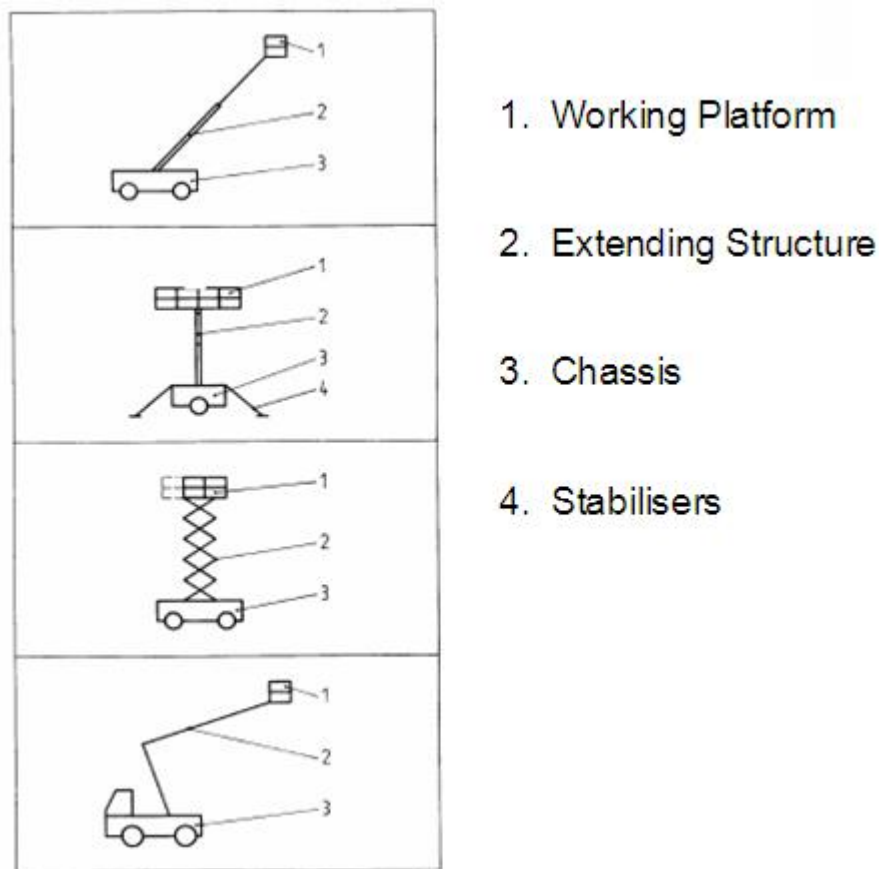


Fig 3 Work Platform

Lowering

11 All operations to move the work platform to a lower level. (See Fig 4)

Raising

12 All operations to move the work platform to a higher level. (See Fig 4)

Rotating

13 Circular movement of the work platform about a vertical axis. (See Fig 4)

Slewing

14 Circular movement of the extending structure about a vertical axis. (See Fig 4)

Travelling

15 All movements of the chassis with work platform out of transport position. (See Fig 4)

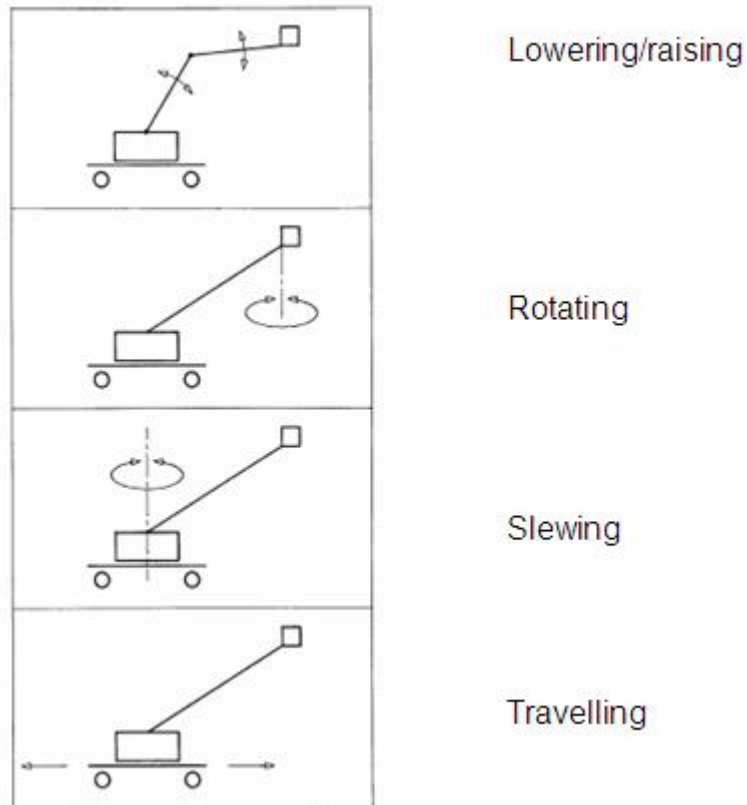


Fig 4 Moving the Work Platform

Access

16 Position to provide access to the work platform.

Transport

17 The position of the work platform prescribed by the manufacturer in which the MEWP is brought to, or taken from, the place of use.

NOTE

The access position and transport position can be identical.

Pedestrian Controlled MEWP

18 MEWP that has the controls for powered transport located so that they are capable of being operated by a person walking close to the MEWP.

Vehicle Mounted MEWP

- 19 MEWP that has travelling controls located within the cab of the vehicle.

Self Propelled MEWP

- 20 MEWP that has the travelling controls located at the work platform.

Rated Load

- 21 The load for which the MEWP has been designed for normal operation. The rated load is composed of persons, tools and material acting vertically on the work platform

NOTE

A MEWP can have more than one rated load.

HAZARDS

- 22 An analysis of incidents involving MEWPs identified that the majority were attributed to the MEWP collapsing, overturning, persons being thrown from the work platform and the work platform being trapped against fixed structures,

- 23 The analysis of incidents identified the following primary causes, equipment failure, unsuitable ground conditions, stabilisers (not used or faults in use), personnel being trapped against a fixed structure, the MEWP being struck by a vehicle and the work platform being overloaded or being struck by a load.

- 24 Some additional common hazards associated with the use of MEWPs include, tools and equipment falling from the work platform, entrapment of personnel (or limbs) in the MEWP mechanism, personnel plant or equipment being struck by the work platform or the supporting mechanism when slewing, inadvertent movement due to, misapplication of the controls, brake failure etc, personnel becoming stranded on the work platform in the raised position following power or control failure, collisions between the MEWP and other vehicles or equipment, travelling on a type 3 MEWP in the raised position without a banksman and the MEWP overturning due to:

- 24.1 Overloading (both personnel and equipment).
- 24.2 Excessive wind loading both outdoors & indoors i.e. operating with the building doors open (large storage facility/aircraft hangar).
- 24.3 Travelling with the work platform raised on an MEWP not designed for such operations.
- 24.4 Misuse of the MEWP (being used as a crane or prop).

OPERATION

- 25 All MEWPs are to be operated, maintained and tested (iaw) the manufacturers or joint/single service instructions.

- 26 All operators of MEWPs must be competent and authorised to operate the equipment to a level specified by the supplier.

NOTE

The use of a MEWP can introduce hazards into the workplace e.g. a diesel/petrol powered MEWP into an enclosed space (fumes) and the use of an MEWP that is incompatible with the zoning requirements of the Dangerous Substances and Explosives Atmosphere Regulations (DSEAR).

Assessing the Risk

27 Commanders, line managers and others responsible for the use of MEWPs are to assess the risks of personnel and equipment falling from or being thrown from the work platform, or of the MEWP overturning, and take precautions to eliminate or control these risks. The following points will require consideration:

- 27.1 Other vehicles, mobile plant or work equipment (e.g. overhead cranes) may be working close by.
- 27.2 Parts of the MEWP (particularly the working platform and boom) could protrude beyond the site boundary (e.g. buses have struck MEWPs).
- 27.3 The general ground conditions (e.g. softness, slopes ice and mud).
- 27.4 Local ground hazards (e.g. ducts, manhole covers, voids, excavations etc).
- 27.5 Ensure that the MEWP been examined, inspected, maintained and daily checks carried out.
- 27.6 The work platform could be caught on protruding features (e.g. electrical distribution/transmission lines, steel work, tree branches).
- 27.7 The MEWP, in its operating position, may be intruding into a non-ionising radiation area.

Controlling the Risk

28 Firstly assess whether risks can be eliminated, for example:

- 28.1 Remove uneven ground or excavations.
- 28.2 Remove soft ground by compacting.
- 28.3 If elimination is not reasonably practicable then assess the measures that should be put in place to minimise the risk of falling from or with the carrier.
- 28.4 Liaise with the site Radiation Safety Officer (RSO) to determine if the operation will place the operator in a non-ionising radiation hazard area. Adjacent hazard sites must also be considered.

29 Examples of control measures are divided into three categories: safe plant; safe site; and safe operator. Site conditions and locations will vary considerably. Listed below is a checklist that will be applicable in most situations; however the list is not exhaustive:

29.1 **Safe Plant:** Select the right MEWP for the job (consider ground conditions, working height, the task including the range/sensitivity of movement, the anticipated load, (e.g. people and equipment). Ensure the MEWP is maintained and tested iaw Service or manufacturer's instructions. Maintenance and inspections may be more frequent depending on the use and operating conditions. Inspection intervals should be stated in the manufacturers or joint/single service instructions. MEWPs are complex pieces of work equipment that need to be maintained. In particular, inadequate lubrication and electrical repairs have caused problems (e.g. a fault from an electrical repair has caused stabilisers to raise while in use).

29.2 **Safe Site:**

- 29.2.1 Segregate other site traffic (delivery vehicles, dumpers, etc) from the work area.

29.2.2 Ensure parts of the MEWP cannot protrude into roads or other transport routes. If this is not possible, put in place (and document) a safe system of work (e.g. temporary road closure at quiet times).

29.2.3 Check the work area for localised features, e.g. manholes, service ducts, potholes, etc (e.g. a 75 mm deep hole caused an MEWP to overturn).

29.2.4 Check that both temporary and permanent covers are strong enough to withstand the applied pressure.

29.2.5 Check that both temporary and permanent covers are secured and monitor them.

29.2.6 Establish the load bearing capacity (general and point loading, e.g. stabilisers) when working inside in a building or on a structure (e.g. a jetty).

29.2.7 Ensure there is adequate supervision and that appropriate safe systems of work are in place and are being adhered to. Have agreed systems of communication (e.g. between MEWP operators and banksman).

29.2.8 Check weather conditions have not altered ground conditions (e.g. heavy or prolonged rain/snow/ice).

29.2.9 Establish limits for safe operation (e.g. maximum wind speed). Remember conditions can change internally (e.g. if roller/hangar doors are opened).

29.2.10 Comply with permit-to-work systems where they are in use.

29.2.11 Ensure you have a rescue plan agreed and in place for a fall. Are trained personnel and rescue equipment on-site and readily available? Do all operatives understand what to do, has the rescue plan been practised?

29.2.12 Assess other alternative work methods or equipment before operating near a steep slope or edge. If operating near an edge or steep slope, can barriers be provided that will retain the MEWP? If this is possible, where will the barriers be positioned? If this is not possible, can the work be sequenced so that the MEWP can operate in a safe manner (e.g. in line with the edge rather than towards it).

29.3 Safe Operation: MEWPs are normally intended as work platforms and not as a means of access or egress to elevated levels. Personnel have been injured after climbing out of MEWP work platforms to gain access to roofs and structural steel work. In addition, MEWPs must not be used as a crane unless this use is specifically detailed in the manufacturers or joint/single service instructions. Furthermore:

29.3.1 Ensure operators are competent and familiar with the performance and controls of the MEWP that they are going to use (e.g. do they know the types of ground/slope it can operate on or when stabilisers will be required).

29.3.2 Ensure maintenance and inspection checks have been carried out (iaw the manufacturer's joint/single service instructions).

29.3.3 Ensure operators know when further operation of the MEWP would be unsafe.

29.3.4 Ensure that the operator is aware of general site hazards and restrictions. This is particularly important where poor groundbearing, overhead obstructions or RF radiation hazards may be present.

FALL PROTECTION

30 If there remains a residual risk of impact or persons falling after the risks have been assessed put the control measures in place, the use of fall protection equipment should be considered, for example:

30.1 When working next to or in a traffic route where there is a risk of a vehicle hitting the MEWP.

30.2 When travelling with the work platform in a raised position (on both even and uneven ground).

30.3 Where the MEWP or work platform may strike fixed objects in its path (e.g. branches, equipment and structures etc).

31 There are two types of fall protection that a person can use in the carrier:

31.1 Fall restraint system.

31.2 Fall arrest system (see Para 32.6).

32 When deciding, as part of the risk assessment, which system should be used, the following points should be considered:

32.1 Check the manufacturer instructions that the MEWP can be used as part of a fall restraint/arrest system.

32.2 Anchor points in the work platform should be marked for fall restraint or fall arrest and the number of persons for which they are rated. Currently the majority of anchor points are rated for fall restraint and not fall arrest.

32.3 Arresting a fall could also generate enough force to cause an overturn (check the MEWP can absorb this shock load).

32.4 After a fall the MEWP will flex, causing more severe swinging movements than normal (this could lead to a higher risk of the "faller" striking the MEWP or other nearby structures).

32.5 Could the dynamic impact of a fall arrest cause other occupants, loose materials or tools to be ejected from the work platform?

32.6 The user needs to establish the height the work platform will be working at and select fall arrest equipment that will work within that height. A typical fall arrest system with a full body harness, 2.0 m lanyard and shock-absorbing device requires up to 5 m clearance height to deploy and arrest a fall. Contact the fall arrest equipment supplier to establish the minimum clearance height for the proposed equipment.

32.7 Check that there are no projections (balconies, canopies) that a person could strike during a fall.

32.8 Detailed rescue plans to recover an individual following a fall arrest must be documented and practised.

32.9 Fall restraint lanyards must be selected so that they are short enough to prevent a person reaching a position where they could fall.

32.10 When working next to water, a harness should not be worn due to the risk of drowning if the MEWP falls into the water. Life jackets should be worn.

32.11 Operators will need instruction in the use of any harness, lanyard, rescue equipment and procedures for periodic inspection, maintenance and storage of WHAPEE.