

## MOBILE ELEVATING WORK PLATFORMS (MEWPs)

### SUMMARY

1. New guidance is available on the use of MEWPs, which are commonly used in shipyards.

### BACKGROUND

2. HSE's Safety Policy Unit has issued a draft information sheet (attached as appendix 1) providing new guidance on wearing a harness whilst working from a MEWP. This replaces previous guidance on this issue and is the result of a concern that not all MEWPs have anchorage points designed for use with a harness.

3. The SSA guidance note on the safe use of MEWPs in shipyards contains advice on the use of harnesses. The relevant extracts are reproduced as appendix 2.

4. A best practice guide is available from the Construction Plant-hire Association entitled *Inspection, Thorough Examination and Maintenance of Mobile Elevating Work Platforms*. A copy of the guide, which was produced in May 2002, can be purchased from the Construction Plant-hire Association, 52 Rochester Row, London SW1P 1JU tel. 0202 7630 6868.

### ACTION

4. Members are asked to:

- note the contents of the draft guidance and to discuss what their thoughts are on it;
- to consider the need to revise the SSA MEWP guidance in light of the new guidance; and
- to note the availability of the best practice guide from the Construction Plant-hire Association.

## **Appendix 1 DRAFT - USE OF FALL PROTECTION EQUIPMENT WITH MOBILE ELEVATING WORK PLATFORMS**

### **Introduction**

This information sheet gives guidance on the selection of fall protection equipment for use with Mobile Elevating Work Platforms (MEWPs) and the following types are covered in this guidance:

- vehicle mounted, articulated and telescopic booms
- self propelled articulated and telescopic booms
- trailer mounted articulated and telescopic booms

**Note:** These types of MEWP are commonly referred to as 'cherry pickers'. The advice given in this guidance may also be relevant to scissors type MEWPs where personnel are at risk of falling.

This guidance has been produced in consultation with the International Powered Access Federation Ltd and The Construction Plant-hire Association. This guidance is not intended to cover: risks associated with work near to overhead lines; persons climbing out of the MEWP; and the detailed requirements for information, instruction and training associated with the operation of MEWPs.

### **Background**

Between 1995/96 and 2001/02 there have been 5 fatal accidents within HSE's Field Operations Directorate (FOD) where MEWPs have been struck by vehicles, the MEWPs have failed or the ground has given way under a wheel. To establish the causes of persons falling from MEWPs an analysis of HSE's FOD investigated incidents between 1995/96 and 2001/02 was undertaken relating to:

- MEWPs Collapsing
- MEWPs Overturning
- Persons being thrown from the carrier
- Carrier being trapped against fixed structures.

**Note:** the carrier is commonly referred to as the basket or cage  
This analysis has shown the following primary causes:

31%	Equipment failure
29%	Ground conditions
13%	Outriggers (not used or faults in use)
10%	Trapped against fixed structure
10%	MEWP struck by vehicle
6%	Load/Unload MEWP (being driven)

Single incidents were caused by overloading a carrier and a carrier being struck by a load.

The design of the MEWP carrier should ensure that the occupants are afforded the same level of protection from falling as they would have on a conventional access scaffold i.e. guardrail, mid-rail and toe-board.

The risk of falling is increased by a sudden movement caused by an impact, ground movement, or failure of a stability critical part of the MEWP. In many of these situations, the wearing of appropriate fall protection equipment could provide protection against the residual risk of falling, or being thrown out of the MEWP's carrier.

*(Picture MEWP overturn)*

### **Assessing the risk**

Employers and others responsible for the use of MEWPs must assess the risks of persons falling from or being thrown from the carrier and take precautions to eliminate or control those risks. When assessing the risk of persons falling from a MEWP the following points should be considered:

- What other vehicles, mobile plant or work equipment (e.g. over head cranes) could be close by.
- Could part of a MEWP protrude beyond the site boundary or delineation (e.g. buses have struck MEWPs).
- What are / will be the general ground conditions (e.g. softness, slopes).
- Are there any localised ground hazards (e.g. ducts, manhole covers, holes, voids, excavations).
- Has the MEWP been examined, maintained and daily checks done.
- Could the carrier be caught on protruding features (e.g. structural steel work, tree branches).

**Note:** MEWPs are normally intended for use as work platforms and not as a means of access or egress to elevated levels. Persons have been injured after climbing out of MEWP carriers to gain access on to roofs and structural steel work.

### **Controlling the risk**

Firstly assess whether risks can be eliminated, for example:

- Remove uneven ground or excavations, by adjusting the phasing of the work so that risks do not exist at the same time as the MEWPs are operating at the site. If this is not reasonably practicable then, assess the measures that should be put in place to minimise the risk of collapse, overturn or where a person could be thrown out of the carrier for example:
  - Selecting the right MEWP for the ground conditions, the height you need to reach, the range and sensitivity of movement and the load (e.g. rough terrain MEWP).

- Segregating other site traffic (delivery vehicles, dumpers, etc.) from the work area of the MEWPs.
- Ensuring no parts of a MEWP can protrude into live roads or other transport routes. If this is not practicable then systems of work need to be used (e.g. temporary road closure at quiet times).
- Ensure a MEWP has a thorough examination and inspection by a competent person at least once every 6 months. Examinations may be more frequent dependant upon the use and conditions the MEWP is operated in, the examination intervals should be stated in the written scheme of examination.
- Ensuring competent persons are undertaking routine maintenance in accordance with the manufacturers instructions. In particular that lubrication is being carried out, and that electrical repairs are properly undertaken and terminated (e.g. electrical faults have caused outriggers to raise whilst in use resulting in an overturn).
- Checking the site to establish if manholes, service ducts, potholes, soft ground or any other localised features exist in the area where the MEWPs will operate (e.g. a MEWP overturned due to hole only 75 mm deep).
- Ensuring temporary covers are strong enough to withstand the applied pressure. How will the covers be secured and monitored (Similar enquiries should be made about permanent covers as these have failed)
- Ensuring you establish the load bearing capacity (general and point loading, e.g. outriggers) when operating inside in a building or on a structure (e.g. a jetty).
- Ensuring you have a procedure for loading/unloading MEWPs. Does this procedure apply to all your MEWPs (e.g. some MEWPs do not have braking on all wheels).
- Ensuring operators are trained and familiar with the performance and controls of the MEWP they are using. (e.g. do they know the types of ground, slope it can operate on and when outriggers will require additional packing). Operators may also require task specific training (e.g. use of a chainsaw from a MEWP)
- Ensuring you have a system for recording faults, repairs and maintenance to your MEWPs. What types of fault would prevent further use of machine (e.g. controls not responding correctly).
- Ensuring if a different make or model of MEWP is delivered to site you assess its suitability for the task. This is important on ground with poor ground bearing capacities.

- Ensuring you have assessed other safer alternative methods before operating near a slope or edge. If you must operate near an edge or steep slope can baulks or other barriers be provided which will retain the MEWP. If this is not possible based upon the stopping performance of the MEWP where should a barrier be positioned. How will 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.
- Supervising the work to ensure that safe systems of work, are appropriate, and they are being adhered too. The higher the risk presented by the activities the greater will be the need for supervision and good systems of agreed communication, for example between MEWP operators and banksman.
- Ensuring weather conditions do not affect ground conditions (e.g. heavy or prolonged rain) or safe operation of the MEWP (e.g. high winds).

After assessing the risks and putting in place the control measures if a residual risk of impact or overturn exists, then the use of fall protection equipment should be considered, for example:

- When working next too or in a live highway (e.g. street lighting work, tree crown lifting) were the risk of a vehicle crossing the boundary and entering the work area exists.
- Where the MEWP is travelled with the carrier in a raised position and it may strike fixed objects in its path (e.g. branches, steel work)
- Where the MEWP is travelled with the carrier in a raised position over uneven ground

**Note:** The MEWP must be suitable for travelling with the carrier in a raised position.

This is not a comprehensive list of circumstance were the residual risk justifies the use of fall protection equipment.

### **Types of fall protection equipment.**

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

- Fall restraint system (also known as work positioning) - this stops a person falling in the first place.
- Fall arrest system - this safely stops a person who has fallen.
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When deciding as part of risk assessment which system should be used the following points should be considered:

- 1) Can the fall arrest of one person generate an impact force sufficient to cause the MEWP to overturn (check with the manufacturer that the MEWP can be used as part of a fall arrest system);
- 2) A fall arrest system is usually attached to a fixed anchorage point. A MEWP will flex causing more severe swinging movements after arresting a fall than would normally be anticipated. This could lead to a higher risk of the person striking the MEWP or other nearby structures. The dynamic impact of the fall arrest may cause other occupants, loose materials or tools to be ejected from the carrier;
- 3) Ensuring the MEWP is equipped with suitable anchor points (some are not). The majority of anchor points are currently rated for **fall restraint** and **not fall arrest**.
- 4) What height will the carrier be working at. A typical fall arrest system consists of a full body harness, a 1.8 metre lanyard and a shock absorbing device, a system like this typically requires 5 - 6 metres clearance height to deploy and arrest a fall (contact the fall arrest equipment supplier to establish the clearance height which should be used in your risk assessment).
- 5) Check that there are no projections (balconies, canopies) which a person could strike during a fall arrest.
- 6) The fall protection system must be attached to a cage anchor point designated and marked by the MEWP manufacturer as suitable for fall restraint or fall arrest and marked for the number of persons for which it is rated.
- 7) After a person's fall has been arrested how are you going to rescue them.

In practice this will mean that fall restraint (work positioning) will often be the chosen form of personal fall protection.

### **Fall restraint system**

A fall restraint system for use on a MEWP should normally be a combination of a fully body harness (BS EN 361<sup>1</sup>), not a waist belt, and a lanyard (BS EN 354<sup>2</sup>). This is because a fall restraint system normally operates by preventing a person going beyond a leading edge. However in this instance it would be to restrain a person after an impact or other sudden movement and so a full body harness should be used, rather than a waist belt.

It is becoming a common practice to use retractable lanyards to provide the occupants with maximum freedom of movement, together with immediate restraint in the event of impact or levelling system failure. The use of retractable lanyards for this purpose should only be considered after consultation with the manufacturer as to their suitability and the parameters under which they have been tested.

If fixed length lanyards are used they should be set short enough to prevent a person falling from the carrier of the specific MEWP that is going to be used.

### **Use of fall protection equipment**

Occupants will need instruction in the use of the harness and lanyard, and the procedures for periodic inspection, maintenance and storage of fall protection PPE (especially textile equipment). For further information refer to the HSE leaflet on the inspection of fall arrest equipment<sup>3</sup>.

### **The Law**

If you own, hire or otherwise operate or control the operation of MEWPs, you have duties under health and safety law. The Provision and Use of Work Equipment Regulations 1998 requires an employer or self employed to:

- Select work equipment that is suitable for the operation and the conditions.
- Ensure MEWPs are maintained in a good state of repair and efficient working order.
- Ensure persons who use MEWPs are trained to safely operate them, and have information and instructions regarding their use.

The Lifting Operations and Lifting Equipment Regulations 1998 requires an employer, self employed person or person who has any extent of control over a MEWP (e.g. a hire company) to:

- Ensure a MEWP has a thorough examination and inspection by a competent person at least once every 6 months or more frequently depending what is stated in the written scheme of examination.
- Organise and plan lifting operations. MEWPs should not be used as a crane (e.g. lift a suspended load) but may still be used for access.

The Management of Health and Safety at Work Regulations 1999 requires an employer or self-employed person to:

- Assess the risks to employees, self-employed persons and the public from the use of MEWPs.
- Co-operate and co-ordinate where a workplace is shared (e.g. for organising traffic routes and exchanging information on hazards and risks). A similar duty exists in the Construction (Design and Management Regulations) 1994.
- Assess the capabilities of employees who operate MEWPs and provide of periodic refresher training.

The Construction (Health, Safety and Welfare) Regulations 1996 requires an employer, self employed person or person who has any extent of control over construction work (e.g. a principal contractor) to:

- Ensure suitable and sufficient steps are taken to prevent the fall of persons and objects.
- Operate MEWPs in a safe manner for the conditions at the site.
- Organise traffic routes so that vehicles and pedestrians can move around safely, a similar duty exists for other workplaces in the Workplace (Health, Safety and Welfare) Regulations 1992.

### **Further information**

<sup>1</sup> BS EN 361: 1993 *Personal protective equipment against falls from a height. Full body harnesses.*

<sup>2</sup> BS EN 363: 1993 *Personal protective equipment against falls from a height. Fall arrest systems.*

<sup>3</sup> *Inspecting fall arrest equipment made from webbing or rope.* HSE free leaflet INDG367.

BS EN 354: 1993 *Personal protective equipment against falls from a height. Lanyards.*

BS EN 355: 1993 *Personal protective equipment against falls from a height. Energy absorbers.*

BS EN 358: 2000 *Personal protective equipment against falls from a height. Belts for work positioning and restraint and work positioning lanyards.*

BS EN 795: 1997 *Personal protective equipment against falls from a height. Anchor Devices – Requirements and testing.*

BSI publications referred to this guidance are available from BSI Sales Department, 389 Chiswick High Road, London W4 4AL. Tel:

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.

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## **Appendix 2 – Extracts from the SSA guidance note *Safe use of MEWPs in shipyards***

### SAFETY SPECIFICATION

A MEWP's safety specification will vary according to the type of machine. However, the following is a brief summary of a number of the key safety features (it is not an exhaustive list):

- the platform should have a guard-rail, a mid rail, toe boards, an inward opening gate, a slip resistant floor designed to prevent the accumulation of water and harness anchorage points;"

### HARNESSES

28 In many situations the wearing of a harness can provide good protection in the event of a person falling, or being thrown from a MEWP basket. While the above measures should be taken to reduce the risk of such an event happening, it is unlikely they will be able to eliminate the risk altogether. The level of risk in the following situations may for example, remain particularly high;

- protruding features which could catch or trap the basket;
- where mobile plant may foreseeably collide with the MEWP;
- rapid movement of the MEWP is possible; and
- the nature of work conducted may involve those involved overreaching either inadvertently or due to reasons of speed and convenience;

29. In such situations, or where the risk assessment indicates a similar level of risk of a person being thrown or falling from the MEWP, fall arrest equipment should be worn when working or travelling in the MEWP. This should consist of a full body harness, a lanyard and an energy absorber (see paragraph 46 for the relevant British Standards). An energy absorber may not be suitable for use with a MEWP which is restricted to low height working, i.e. below about 5 metres (depending on the fall arrest equipment used), as the distance between the anchorage point on the MEWP and the ground may not be sufficient for the energy absorber to deploy correctly before the user hits the ground. This clearance height should be considered in the risk assessment.

30. The lanyard must be fastened to a suitable anchorage point. While most MEWPs are fitted with designated anchorage points (which should be specifically marked) this may not always be the case. Some anchorage points may also be specified as "fall restraint" only. In addition, if a retractable lanyard is used a high anchorage point will be needed. It is therefore essential the type of MEWP selected is appropriate to the planned work.

31. Where the risk of a person being thrown or falling from a MEWP basket is identified as low, the risk can be reduced even further by using fall restraint equipment which can for example, help deter overreaching. The equipment used will normally consist of a waist restraint belt and a lanyard. The purpose of this equipment is solely to prevent a person from falling in the first place. As a result, they offer a lower level of protection than fall arrest equipment and should only be used to prevent a person from putting themselves in a position where a fall is possible.

32. With both fall arrest equipment and fall restraint equipment all persons involved should receive suitable training on their correct use.

33. Neither fall arrest or fall restraint equipment should be worn when travelling or working next to water where the greater danger is drowning. In such situations consideration should instead be given to wearing a life jacket.