

# MOBILE ELEVATED WORK PLATFORMS (MEWPs)

## Guidance on Safe Operating Procedures



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# Mobile Elevated Work Platforms (MEWPs)

## Guidance on safe operating procedures

### Introduction

This guidance document has been prepared to assist those working with Mobile Elevated Work Platforms (MEWPs). It offers guidance on the following MEWP types:

- Static Vertical - for example, Scissors lifts (static), vertical personnel platforms (static)
- Static Boom - for example, Self-propelled booms (outriggers), vehicle mounted platforms
- Mobile Vertical - for example, Scissors lifts (mobile), vertical personnel platforms (mobile)
- Mobile Booms - for example, Self-propelled booms

Please note the guidance does not cover non-integrated working platforms (also known as safety baskets or man cages); and it does not provide complete guidance for all MEWP operations.

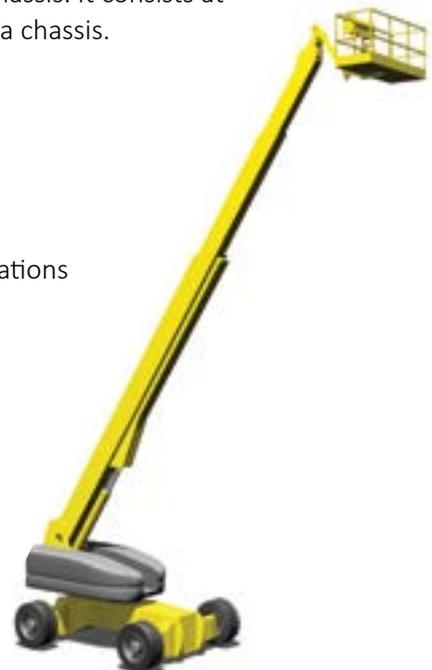
### What is a MEWP?

A MEWP is a mobile machine. It is used to move persons to working positions where they are carrying out work from the work platform, with the intention that persons are getting on and off the work platform only at access positions at ground level or on the chassis. It consists at a minimum of a work platform with controls, an extending structure and a chassis.

### Legal provisions

The legal provisions governing MEWPs are contained in the:

- Safety, Health and Welfare at Work Act 2005,
- Safety, Health and Welfare at Work (General Application) Regulations 2007 (particularly Chapter 2-Use of Work Equipment and Part 4-Work at Height),
- European Communities (Machinery) Regulations 2008 [S.I.No.407 of 2008], and
- Safety, Health and Welfare at Work (Construction) Regulations 2013



## Risk assessment

Before carrying out any work at a height, a comprehensive site specific risk assessment should be carried out by a competent person. This should clearly identify all risks involved when using the MEWP and the measures needed to eliminate or control those risks. Particular attention should be given to planning travel to and from the work area, accessing the work area, lighting (to aid good visibility), and carrying out the work task at a height. Ensure the risk assessment is communicated effectively to all relevant persons and, where necessary, it should be reviewed periodically.

## Working near or over water

When working near water or over water a detailed risk assessment needs to be carried out to ascertain the risk of drowning. If the risk of drowning is greater than the risk of falling from a height from the MEWP, then it is important to consider carefully whether or not it is appropriate to wear a harness (in certain circumstances it may be more appropriate to wear life jackets).

## Working on live roads

When working near live roads (for example, when erecting signage on motorways) a detailed risk assessment needs to be carried out. This should identify the most suitable MEWP for the task and the means of transport and delivery (See section on Controlling and Managing the Risks).

## Safe system of work

Based on the risk assessment, it is important to adopt a safe system of work for performing work tasks to ensure the work is done safely. The safe system of work including the rescue plan should be communicated effectively to all workers involved and within the vicinity of the works. All managers and supervisors should be familiar with all aspects of the system. They should also review and revise the system as work progresses and instruct staff accordingly. The rescue plan should be practised as part of the review process.

## Personnel Protective Equipment (PPE)

Where appropriate and following a comprehensive risk assessment, personal protective equipment should be worn by MEWP operators. The following is a non-exhaustive list of PPE:

- A hard hat (with a chin strap where appropriate)
- Suitable safety footwear
- Suitable high visibility vest or jacket
- Suitable clothing for cold or wet weather conditions
- Hearing protection
- Eye protection
- Hand protection

- Full body harness with a short restraint type lanyard which can be connected to designated anchor points in the basket to prevent a fall from the working platform where applicable.

A risk assessment must be completed by a competent person, taking account of the manufacturer's instructions, to determine what type of fall arrest or fall restraint (where applicable) is required to be used while operating a MEWP.

Generally for boom type MEWPs a full body harness with a short restraint type lanyard will be required to protect the worker from being catapulted out of the machine in the event of a boom swing, jolt or tilt. The lanyard must be anchored on a designated anchor point within the machine.

Vertical lift or scissor lift type MEWPs are unlikely to be affected by the same type of swings and jolt movements of the boom type MEWPs.

## Selecting the type of MEWP to be used

Pre-planning is essential before choosing to use a MEWP. First, examine if the work can be done at ground level as this will eliminate the risk of working at height. If this is not possible then the following is a non-exhaustive list of issues to consider before deciding on the type of MEWP to be used:

- (1) The nature of the work.
- (2) The working environment that the MEWP will be operating in, particularly—
  - Will it be used on a construction site where there are other work activities taking place and workers present?
  - Will it be used on a motorway project or public road?
  - Will it be used for maintenance work from time to time?
  - Will it be used indoors or outdoors?
  - What are the ground conditions or work surfaces like? Soft, rough, solid, poured, finished etc.
  - What is the structural capacity of the ground that the MEWP will operate on?
  - Will it be expected to travel in the elevated position?
  - Will refuelling on site be necessary?
- (3) The space available at the workplace to position and operate the MEWP, particularly, what height and outreach are necessary? Also are there overhead structures which could lead to trapping or crushing injuries, or overhead electricity lines which could lead to electrocution?



- (4) The safe working load (SWL) of the MEWP.
- (5) The number of people to be lifted by the MEWP.
- (6) Whether or not the MEWP will be used for lifting persons tools and equipment, and if so how this can be done safely? (See section on handling materials).
- (7) Will material handling devices need to be used?

## Controlling and managing the risks

When the most appropriate MEWP for the work has been selected, the next requirement is to manage the risks associated with its use. It is important to follow the manufacturer's instructions when using the MEWP. The following is a non-exhaustive list of issues that should be addressed:



### Transport, delivery and collection

- Ensure a safe traffic management plan is in place when loading and unloading the MEWP from the depot onto the delivery truck and similarly when removing the MEWP from the workplace. Ensure exclusion zones are in place and only use trained and experienced personnel to carry out specific tasks.
- Consider other hazards when carrying out loading and unloading procedures of the MEWP, including work at height; load securing, crushing; slips, trips and falls; and the environment that MEWP is being delivered to (for example are there other factors such as weather conditions, traffic, overhead lines, lack of maneuvering space and members of the public which need to be taken into consideration).
- Ensure the delivery truck and associated equipment are suitable for the MEWP being transported.
- Carry out a pre-delivery inspection and have it documented, and ensure a competent person inspects the condition of the MEWP when it has been delivered to the site.
- Ensure that the MEWP carries a CE mark and a copy of the Declaration of Conformity (Certificate of Conformity) is available from the supplier.
- Ensure that the delivery driver is familiar with the particular MEWP being transported.
- Where familiarisation is required upon delivery ensure that the familiarisation is conducted to relevant trained site operators accordingly.
- Ensure the relevant maintenance and service records of the MEWP are up to date and available upon request from the rental company.

- Ensure there is a written pre-operational checklist for the MEWP. This can be found in the manufacturer's manual. Ensure that all pre-operational checks are undertaken and recorded. Any defects or faults must be reported immediately to the supervisor and the MEWP should not be used. It should be tagged "out of service" and the keys removed until the defects have been corrected.
- Ensure that the delivery documentation and familiarisation documents (where required) are signed by the relevant personnel and dated at time of delivery and familiarisation.

## Hiring a MEWP

The majority of MEWPs are hired out from hire companies. The following is good practice for hire companies and contractors prior to selecting the most appropriate MEWP for the specific work task.

### Good practice for Hire Companies

- Establish what tasks the MEWP will be used for by the customer, for example will it be for one specific task or a range of tasks? It could be beneficial to offer an on-site assessment to select the right MEWP.
- Establish how the MEWP will be transported from the hire company's premises to the required location? Pre-planning is essential. Responsible persons should be appointed and a plan of action should be in place to ensure it is delivered by competent personnel.
- Check if familiarisation is required? A familiarisation process should be agreed where necessary. It is the employer's responsibility to ensure that employees operating the MEWP are trained and familiar with the characteristics and safe operating procedures of the MEWP prior to using it.
- Ensure that a site safety briefing is provided to operators at the workplace on the safe use of the MEWP when it is being delivered. It is also important to demonstrate and discuss good work practice for the site specific tasks.
- Ensure that procedures and agreements are in place for the maintenance and inspection of the MEWP during the hire period.
- Ensure everyone is familiar with the site rescue plan. This should include work at height rescue including the MEWP operators. The site rescue plan should also be practised.

### Good practice for Contractors

- Ensure those involved in managing and supervising the use of MEWPs are competent to do so.
- Give sufficient notice to hire companies to enable them to source the most appropriate MEWP for the particular task or tasks intended.
- Carry out site and ground assessments when ordering a MEWP to ensure the MEWP selected is appropriate for the working environment.
- Where material handling attachments and other appliances such as secondary guarding are required, consider these at the pre-planning stage.
- Select experienced and trained operators. It is the responsibility of the employer to provide adequate training.

### **At delivery stage and during the hire period**

The following is good practice for hire companies and contractors:

- Check and review the site assessment, nature of task, ground conditions and environmental factors.
- Ensure all experienced and trained personnel are available and where familiarisation is necessary ensure it is provided prior to commencement of the work.
- Ensure tool box talks on MEWPs are site specific and a safe system of work is in place to report any defects or unsafe work practices.
- Ensure an open communication policy is in place with both MEWP operators and other site personnel and that there is adequate supervision of operations at all times.
- Discuss safe operating procedures for MEWPs at site meetings and as work progresses.
- Strictly manage other equipment which is in close proximity (for example, other MEWPs, cranes, teleporters) and ensure it is under competent supervision by the nominated personnel.
- Ensure maintenance records are kept up to date and documented and safe operating inspection programmes are in place at all times for the assessment of MEWPs in use.
- Report any defects immediately and deal with them in a safe and efficient manner (If in doubt stop the work, isolate, tag and report the MEWP until it is safe to continue).

### **Storage or recharging**

- MEWPs should be stored in a secure compound or in a designated area with the keys removed. The brakes should be fully operational and in use and the working platform lowered into the parked position.
- If a MEWP is parked on a gradient, the wheels should be chocked.
- Where recharging of electrically powered MEWPs is necessary ensure this is carried out in a safe manner and is protected from environmental factors. In particular recharging should be carried out in a well-ventilated area.
- The keys to operate the MEWP should be issued to authorised personnel only. A safe system of work needs to be in operation at all times regarding this.

### **Positioning of a MEWP**

The ground conditions on which a MEWP rests should be examined prior to operating it. MEWPs should be operated on level ground surfaces which are stable and will not compress under the weight of the MEWP. This may require a visual inspection and/or a full geotechnical survey of the ground prior to work taking place. A risk assessment, carried out by persons who have the appropriate knowledge and expertise, should establish whether both are required or if a visual inspection will suffice.

Prior to operation of a MEWP, the weather conditions need to be assessed. For example, if there has been heavy rain, flooding or freezing of the ground prior to or during the MEWP's use, reassessment checks may need to be carried out to avoid the MEWP sinking due to the unstable environment.

Some MEWPs require the use of outriggers or jacks while others operate on wheels. Suitable spreader pads or plates are necessary to ensure the stability of the MEWP where outriggers are in use.

When spreader pads are required, good practice should be followed at all times. In particular, ensure the outrigger foot is correctly centred on the spreader pad. If a hollow on the ground exists ensure that it is filled in prior to placing the outrigger and spreader pad into the correct position. Very poor ground conditions may also require the use of timber mats, proprietary mats, steel grillages or concrete pads to improve the foundations prior to the MEWP outriggers being used. If timbers are used they must be of adequate strength, thickness and in good condition. Never use scaffold boards.

Ensure MEWPs are not located within close proximity to trenches, excavations, additional soil or excavated material. Watch out for cracking on the ground of a back filled trench. An engineering assessment must be carried out by a competent person should a MEWP be required to work in the 'danger area' near the excavation.

Structural stability of floors, cellars and basements should be assessed prior to using a MEWP. The appearance of paved areas can be deceiving. They may appear strong visually but in reality they may be laid on weak ground underneath. Watch out for this also when working on footpaths, roads, car parks or estate roads.

Underground services such as sewers, drains, gas and water mains can lead to a MEWP becoming unstable. Employers have a legal obligation to review the risks such as underground services within the vicinity of operation of the MEWP.

### Safe traffic management plan

Ensure there is a safe traffic management plan in place with designated routes to segregate MEWP activities from workers, pedestrians and vehicles activities. Ensure the traffic management plan contains an appropriate risk assessment particular to the specific tasks involved.

It may be necessary to have a competent banksman to facilitate the guiding of the MEWP, for example where there is limited or poor visibility, where an operator's blind spot exists or where there are pedestrians present. In such circumstances, the system of work should provide:

- a safe plan to segregate traffic routes so far as is practicable from other activities,
- a fully trained and competent banksman/signaller wearing appropriate highly visible clothing,
- two-way effective communication between the banksman and operator,
- that the MEWP operates in a configuration that minimises the operator blind spot,
- a minimum approach distance for the banksman to the MEWP, and
- that the MEWP can be brought to an immediate stop if the operator loses sight of the banksman.

Finally, environmental factors such as weather conditions, time of day and seasonal changes all need to be taken into account to ensure adequate lighting is in place to perform the tasks safely.

## Working at heights

Working at a height is a high risk activity and a proper site specific risk assessment should be carried out prior to commencement.

The hazards associated with carrying out work at a height include, but are not limited to:

- Falling from a height
- Overturning and ejection of occupants from working platform
- Collisions
- Objects falling from a height
- Entanglement
- Trapping and crushing
- Electrocution
- Structural/mechanical failure and becoming stranded
- Suspension trauma
- Incorrect operation
- Lack of familiarisation and improper training

## Falling from a height

The purpose of a MEWP is to lift people to a height safely in order for them to perform their tasks within the working platform. Generally MEWPs are not used to transfer people from one level to another or as an exit for persons at a height. Only in exceptional circumstances should exiting the working platform at a height be permitted, namely:

- for the purpose of an emergency rescue, and
- if after a detailed risk assessment it has been highlighted that it is the safest and most effective means of access to a particular location and all other means have been exhausted.

## How to carry out the work at height task correctly

Before commencing work the trained operator must:

- ensure the safe working load (SWL) allowance in the MEWP basket is clearly displayed and is never exceeded. Some machines specify a very low SWL. The standard European male is 80kg, but this varies depending on the individual. This should be checked prior to operating. It is important to note that the MEWP's safe working load includes: persons, tools, equipment/materials and any material handling devices;
- carry out and document a pre-inspection of the MEWP to ensure all functions are operating correctly, it is in safe working order and not damaged;

- ensure the travel path of the MEWP to the work area is safe and avoid sloping ground where possible;
- ensure good, stable, level ground conditions are in place for supporting the MEWP;
- use appropriate supports (spreader plates) where necessary under outriggers or wheels;
- put in place a safe traffic management plan to segregate MEWP activity and other activities. Exclusion zones should also be in place; and
- ensure the MEWP operator is wearing appropriate PPE to carry out the activity.

While travelling to or from the work area the operator should:

- adjust the platform position to ensure adequate clearance when passing under overhead obstructions (note safe operating procedures should be in place when in close proximity to overhead electricity lines-see relevant section); and
- travel forward at an appropriate speed for the ground conditions, and if reversing is required ensure it is done safely and at a low speed.

During the work task the trained operator should:

- perform regular checks to ensure ground conditions are stable for the MEWP;
- where appropriate wear a harness and suitable short lanyard as per risk assessment ensuring that the lanyard is attached to the designated anchor point inside the platform;
- be aware of the surroundings and avoid making contact with obstacles. Use continual observation when raising and lowering the boom;
- ensure working platform is free of obstacles such as trailing leads and loose material;
- identify high risk hazards such as overhead electricity lines. (see next section);
- use the MEWP correctly as per the manufacturer's guidance and instruction for safe operation;
- ensure smooth and careful operation of controls;
- if a particular activity such as refuelling a chainsaw is required, ensure this is done on the ground;
- ensure safe working load is not exceeded having regard to the total load and maximum number of persons;
- ensure the wind speed does not exceed the manufacturer's recommended wind speed; and
- do not use a mobile phone or equivalent at the same time as operating a MEWP; however mobile phones can be used during emergency situations and for banksmen with very large/awkward machine movements.

After completing work the trained operator should:

- ensure the MEWP is clear of dust and debris;
- carry out a visual inspection of the machine to ensure it is damage free and report any defects immediately to the owner. Isolate and tag 'out of service' to prevent further use; and
- leave the machine in a safe and secure manner with all controls isolated and keys removed. Ensure it is operated only by authorised personnel.

## Operator awareness

The work environment and surroundings of a MEWP operator are likely to change during the duration of the work task. It is important that the operator is continuously aware of their work situation and the associated hazards in order that the necessary control measures are in place at all times.

## Incorrect operation

The following factors can cause a MEWP to be operated incorrectly:

- Lack of knowledge and training of the operator
- Lack of familiarisation with a particular model of MEWP and its control operation
- Familiarity with site access routes for other activities but failing to check ground conditions when using the MEWP equipment
- Lack of focus when using the MEWP's controls as a result of attention on other aspects of the job such as looking out for obstacles, variations in ground conditions making movement of equipment harder or becoming distracted with other events
- Leaning over the control panel to perform a task or checking the ground conditions. This can result in the controls being operated by accident and moving the MEWP which can result in entrapment between the guard rail and an overhead structure
- Lack of supervision of new operators or where required by competent experienced supervisors
- Lack of communication of operators activities with other activities taking place

## Trapping or crushing

Trapping/crushing risks where present should be identified in a site specific risk assessment and appropriate control measures put in place to avoid occurrence with all tasks.

Personnel involved in the management and operation of MEWPs should be aware of the risks of a person being trapped in the platform and the necessity to have a proper emergency and rescue plan in place to ensure that the operator of the MEWP (and any other users) can be rescued safely in the event of a trapping incident occurring between the platform of the MEWP and the obstruction.



The location of the operator's instruction manual and authorised personnel should be identified in the emergency and rescue plan. Authorised personnel (for example MEWP operators, managers and supervisors) should be aware of the location of such a manual and have sufficient knowledge and familiarity through performing drills on how to operate the ground and emergency controls should such an incident occur.

There should always be an authorised person at ground level who is able to take action in the event of a trapping incident occurring.

MEWP operators may often work in the platform alone. Therefore it is important that there is a ground based person who is aware of and briefed properly in how to use the ground controls on the MEWP, or the emergency descent controls.

Selecting the right MEWP for the work and taking account of the manufacturer's recommendations can greatly reduce the risk of entrapment. The site specific risk assessment should consider potential trapping risks in the pre-planning stage and should be used when deciding what type of MEWP is best suited to the work considering the need for secondary guarding on the MEWP.

Where managers and operators are unsure about the appropriate equipment for the job they should seek expert advice from the hire company or manufacturer.

For certain types of work, where there is an increased risk of crush injuries from adjacent structures or objects, it may be necessary therefore to fit appropriate secondary guarding in accordance with the manufacturer's recommendations. A secondary guarding device is a piece of equipment which can be fitted to a MEWP in addition to the primary guarding in place and is intended to further reduce the risk of entrapment. However operators must continue to be aware of their surroundings and follow safe working practices.

It is important to note that if a MEWP has been modified, it is the responsibility of the person who carried out the modification to ensure that it operates safely afterwards. Adaptation, addition or modification can affect the design or safe use of a MEWP.

## Handling materials

Where a MEWP is used to install materials check the weight and dimensions of the materials and consider if there are any manual handling and load distribution issues which need to be addressed.

Generally MEWPs are not used to lift any equipment other than tools and accessories and it is important to ensure that the MEWP is suitable for lifting the tools and accessories. Do not balance material on the handrails unless they have been specifically designed for the purpose by the manufacturer.



A MEWP is designed to lift people to a work position; and other plant (a crane or a telescopic handler) should be used to handle materials. This will reduce the risk of overturning and injury due to manual handling.

A specific risk assessment needs to be in place if an item needs to be lifted, and consideration given to the use of proprietary material handling device.

### Avoiding electrocution

Pre-planning and proper management of work at height activities are essential to avoid electrocutions. A risk assessment must be carried out in order to address the dangers of the overhead electricity lines present and the safe operating procedures necessary to avoid electrocution. The employer needs to liaise with the appropriate service provider.

Electrocutions happen as a result of:

- lack of awareness of the proximity of overhead electricity lines present and the voltage running through them;
- the operator or boom coming within close proximity or touching the overhead electricity lines;
- errors occurring when operating controls and moving the boom in the wrong direction when close to the overhead electricity lines; and
- poor operating of the boom and not stopping when and where expected.

Training, experience and familiarisation with the equipment is important. Supervision particularly of high risk activities and less experienced staff is of particular importance.

## Training

It is important that those that manage and supervise the use of MEWPs have received adequate training.

Ensure all MEWP operators are competent and have received the appropriate training for the particular MEWP they are operating. Training records should be kept on file.

Familiarisation of equipment in use is also critical. The operator's manual should be supplied with all MEWP's and available to operators. Operators should be familiar with the manufacturer's guidance and instructions, the particular features and control functions of the specific model of MEWP being used and have knowledge of the operation of safety devices and emergency lowering procedures.

## Maintenance

MEWPs should be regularly maintained, in accordance with the manufacturer's recommendations, and pre-use checks carried out to ensure the MEWP controls are functioning correctly. Ensure there is a constant check in place to ensure that MEWPs are in good working order at all times.

A documented record of pre-use inspection checks (which can be further divided into visual checks and function checks), regular inspections (GA2, GA3 Forms or alternatives) and service records should be in place.

Operators should isolate, tag and report any defects or problems with the equipment and these should be dealt with. The MEWP should be taken out of service immediately if the problem or defect is critical. Safety is paramount.

## Thorough examination

MEWPs and any material handling device used with them must be thoroughly examined at least every six months by a competent person or more frequently if required. Proof of a current thorough examination (GA1 or alternative equivalent e.g. insurance engineer surveyor report), or copy of it should be kept on the machine and also in the case of a construction site on file in the site office to demonstrate that the equipment is in good working order and safe to use.

## Further information

[www.hsa.ie](http://www.hsa.ie)

[HSA Information Sheet- Safe Load Securing of Plant and Machinery](#)

[HSA Vehicles at Work-Workplace Transport Safety](#)

[Code of Practice for Avoiding Danger from Overhead Electricity Lines](#)

[Code of Practice for Avoiding Danger from Underground Services](#)

[www.ipaf.org](http://www.ipaf.org)

[www.iso.org/](http://www.iso.org/)

[www.nsai.ie/](http://www.nsai.ie/)

[www.hse.gov.uk/construction/safetytopics/mewp.htm](http://www.hse.gov.uk/construction/safetytopics/mewp.htm)



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