



Promoting the safe and effective use of powered access worldwide

SAFE USE OF MEWPS IN PUBLIC AREAS

TE-1095-0222-1-en-GB





CONTENTS

1.0	INTRODUCTION	3
2.0	SCOPE	3
3.0	WHO SHOULD READ THIS GUIDANCE?	3
4.0	RESPONSIBILITY FOR SAFETY	4
5.0	TRAINING AND COMPETENCE	5
6.0	RISK ASSESSMENT	5
6.1	OVERHEAD CABLES – RISK OF ELECTROCUTION	7
6.2	RADIO FREQUENCY (RF) AERIALS – RISK OF BURNS AND TISSUE DAMAGE	8
6.3	POSITIONING NEAR TRAFFIC – RISK OF BEING HIT BY A VEHICLE	8
6.4	LOADING AND UNLOADING MEWPS ON ROADS – RISK OF BEING HIT BY A VEHICLE	9
6.5	NIGHT WORK AND INCLEMENT WEATHER – RISK OF BEING HIT BY A VEHICLE	9
6.6	FALLING OBJECTS – RISK OF BEING HIT BY FALLING OBJECTS	9
6.6.1	OBJECTS FALLING ON TO THE PLATFORM – RISK OF BEING HIT BY FALLING OBJECTS	9
6.6.2	OBJECTS FALLING FROM THE PLATFORM – RISK OF BEING HIT BY FALLING OBJECTS	9
6.7	WORKING AT HEIGHT – RISK OF FALL FROM HEIGHT	10
6.8	GROUND CONDITIONS – RISK OF MACHINE OVERTURN	10
6.9	OVERHEAD OBSTACLES AND STRUCTURES – RISK OF ENTRAPMENT	10
6.10	REMOTE WORKING – RISK OF MISUSE	11
6.10.1	EMERGENCY PLANNING	11
6.10.2	SUPERVISION AND COMPLIANCE	11
6.11	MACHINE SECURITY – RISK OF UNAUTHORISED USE	11
6.11.1	GROUND CONTROL KEY	11
7.0	MEWP SELECTION	12
8.0	MEWP MAINTENANCE	12
9.0	PERSONAL PROTECTIVE EQUIPMENT (PPE)	12
10.0	TRAFFIC MANAGEMENT – GENERAL PRINCIPALS	12
10.1	COMMON HAZARDS	13
10.2	CLASSIFICATION AND CONTROL MEASURES	14
11.0	PEDESTRIAN MANAGEMENT	15
12.0	TRAVELLING AND MANOEUVRING MEWPS IN PUBLIC AREAS	16
12.1	TRAVELLING BETWEEN SITES ON PUBLIC ROADS	17
APPENDIX		18
ABOUT IPAF		19



Promoting the safe and effective use of powered access worldwide

Supplied by:

1.0 INTRODUCTION

The use of Mobile Elevating Work Platforms (MEWPs) to provide an effective means of access to work at height is constantly increasing worldwide as the productivity and safety benefits are recognised by businesses and employers. Long used in a managed and controlled environment for construction tasks, MEWPs are now recognised as the preferred means of access across all industry sectors for individuals and contractors responsible for undertaking work at height tasks.

Many commercial premises, warehouses and other businesses successfully manage the safety of their employees and the contractors who work or visit their sites. However, an increasing number of MEWPs are being used in areas where members of the public might be present, which is more challenging to control, ie not always segregated from unrelated work activities, vehicular traffic and the general public.

IPAF incident data for 2019 and 2020 (figure 1) indicates that approximately one third of all reported fatal or injury incidents occurred in an environment that would be classed as public areas, roads and highways. This is consistent with data from previous reports covering 2016-2018.

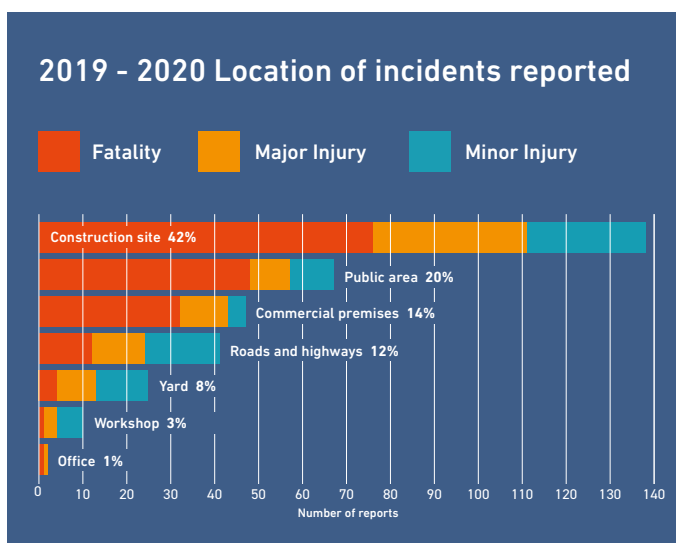


Figure 1: Extract from IPAF Global Safety Report 2021 showing the location of incidents reported

2.0 SCOPE

This document is intended to:

- Highlight the relevant hazards and associated risks when a MEWP is to be used in public areas, which are often more challenging to control than other work sites.
- Identify measures that can be implemented to eliminate or reduce the risk of an incident or injury when using a MEWP in locations where public and/or vehicles are not prohibited, ie not on fixed construction sites or defined commercial premises.

3.0 WHO SHOULD READ THIS GUIDANCE?

This guidance provides specific information, references and sample checklists for anyone with a duty of care or responsible for the completion of a work at height task involving a MEWP on or near roads or in public areas. Three key stakeholders identified as having responsibilities for the safe undertaking of work using MEWPs in public areas or near roads are:

- **Client/property owner – commissioning work at height**
The client has a duty of care and major influence over the way a project is procured and managed, including selection and actions of contractors.
- **Contractor/employer (User) – responsible for completion of the work**
The contractor/employer, often referred to as the User, is any person or organisation that controls the planning, management and use of the MEWP for a specific task, and is responsible for ensuring the MEWP is kept in safe working condition. The User is not necessarily the operator.
- **MEWP operator – accessing the work area using the MEWP**
The operator is a person using the MEWP controls from the work platform or the base. They may be employed or working for themselves.

This guidance may also provide a useful reference for any member of the public who observes the use of a MEWP near a road or in a public area and has concerns about the safety of the operation.

4.0 RESPONSIBILITY FOR SAFETY

No matter the duration of work, it is important to ensure that there are clear lines of responsibility set out when planning and performing work at height tasks using a MEWP. Table 1 below identifies the responsibilities and principal duties of the three key stakeholders.

Table 1 – Key duty holders, their responsibilities and principal duties

Duty holder	Responsibility	Principal duties
CLIENT	Choose suitable and competent contractor	<ul style="list-style-type: none"> Check ability to do the work safely Check using competent staff Check evidence of training Check suitable insurances Ask for references
EMPLOYER/ CONTRACTOR (User)	Organise and manage the task to ensure it is performed safely	<ul style="list-style-type: none"> Determine the WAH task and means of access Machine selection Planning, risk assessment to develop SSoW* Operator competence Correct PPE Clear instructions Management of task Supervision and emergency planning
OPERATOR	Complete the task in a safe manner	<ul style="list-style-type: none"> Understand the risks with the task to be performed Understand and follow preventative measures in place ie SSoW* Use the correct PPE and fall protection Complete pre-use checks Undertake a dynamic hazard assessment and verify or amend the SSoW* Have a constant awareness of surroundings Be aware of and adapt to potential changes in circumstances Have the authority to stop work if unsafe
GENERAL PUBLIC	Moral duty of care	<ul style="list-style-type: none"> Raise concerns if an unsafe act or an unsafe condition is observed Keep safe distance from work area and adhere to signage and site-specific instructions

*SSoW – Safe system of work, also referred to as SWMS – Safe-work method statement

Note 1: Where a property owner hires in a MEWP and operates it themselves, they will assume the duties of the client, the User and the operator.

Note 2: Where a MEWP is hired (provided) with an operator, the operator remains under the instruction of the User at all times.

5.0 TRAINING AND COMPETENCE

The training requirements for MEWP-related tasks may differ in different regions or countries, however, each duty-holder, as shown in table 1, should have competent resources available to ensure they can successfully and safely fulfil their responsibilities. It is essential that an individual recognise their own skills and limitations in order to seek advice and competent assistance where required. For example, when planning to operate a MEWP on or alongside roads, or near power lines, additional expertise in traffic management or from the power supplier may be required.

If in any doubt about what to do or what action is required, stop and seek help – it could prevent an accident. Industry-specific training courses are readily available some of which are listed in Appendix 1.



6.0 RISK ASSESSMENT

The safety principles of MEWP management and operation are constant no matter where or how a MEWP is to be used. These principles are outlined in national and international standards, which are supported by industry guidance and training programmes. Duty-holders should also refer to their local/regional standards, guidance and good practice for detailed information on the safe use of MEWPs. This should allow them to be able to put in place sufficient control measures to eliminate or minimise significant risks by means of structured planning, ie a risk assessment. This involves identifying existing hazards, from delivery of the MEWP through to completion of the work at height and the removal of the MEWP from site. Identifying potential hazards and the risk they impose when using a MEWP near roads or where public and/or vehicles are not prohibited will likely require a site visit. It is also important to bear in mind circumstances may differ significantly when it comes to completing the task at a later date. The risk assessment should also consider the fact that those completing the MEWP-related task may be working unsupervised, in unfamiliar surroundings, have limited control of work environment or changes in the immediate surroundings, eg unexpected increased in volume or variety of vehicular traffic or pedestrians.

Global incident data collated and published by IPAF (Ref Appendix 3.1) identifies the six main causes of MEWP incidents on roads, highways or in public areas between 2016 to 2020. These six causes are shown in figure 2 right

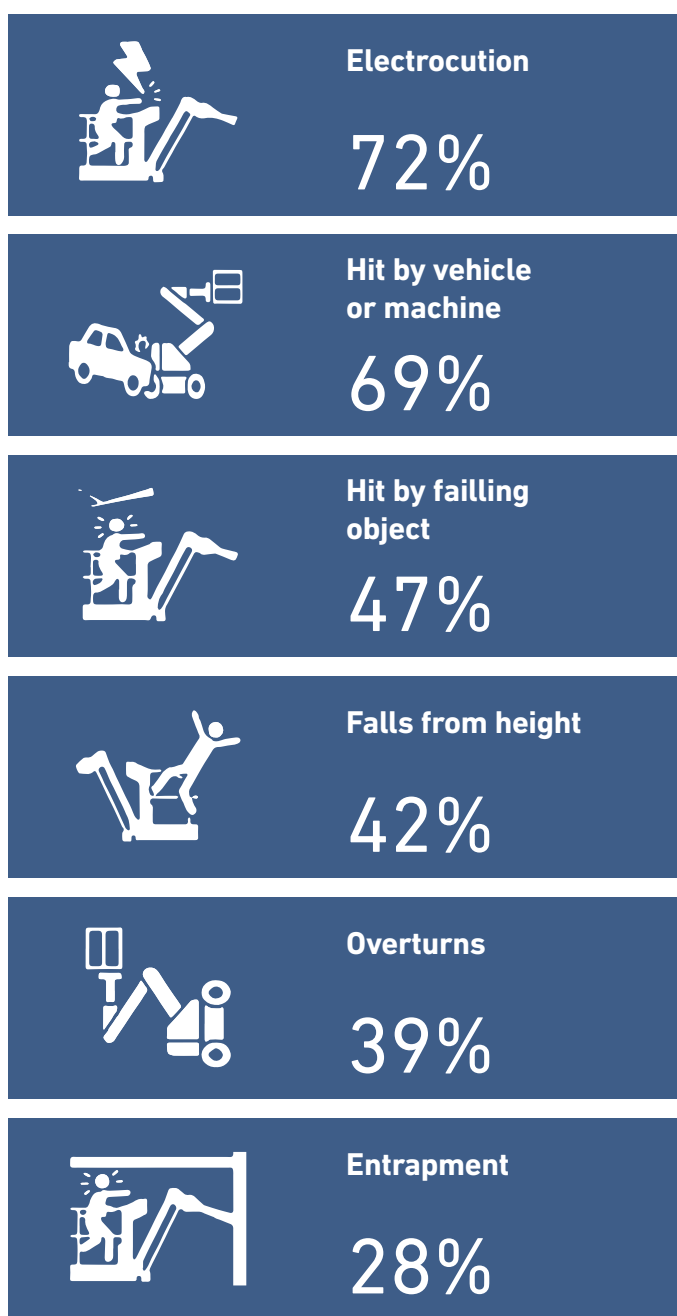


Figure 2: Percentages of reported fatal, major and minor injury incident on roads or in public areas from 2016 to 2020 for each of the six main incident causes.

Table 2 – Potential causes of incidents relating to the use of MEWPs on or near roads and in public places, and possible preventative measures

Note: The lists of potential causes and possible preventative measures are not exhaustive. They are intended to be used as examples only.

Incident type	Hazard	Potential causes	Possible preventative measures
SHORT OR LONG- TERM HEALTH EFFECTS FROM RF EXPOSURE	Exposure to Radio Frequencies (RF)	Unaware of RF transmitter location	Site assessment and training in awareness of RF hazards
		Working too close to live RF transmitter	Contact asset owner for agreement of a SSoW, use of RF detection devices
ELECTROCUTION – CONTACT WITH OR ARCING OVERHEAD POWER LINES	Presence of overhead power line	Misidentification of high-voltage power lines	Contact asset owner for agreement of a SSoW
		Unaware of presence of power lines	Site assessment
		Working too close to live power lines	Isolate power for period of work
		Unaware of dangers of power lines	Safety awareness training
		Hand tools or materials contacting power lines	Keep tools and all materials out of exclusion zone
		Electricity arcing to power tools and equipment	Continual awareness and observation of surroundings
HIT BY VEHICLE OR MACHINE	Movement of plant or vehicles near work area or road, extension of MEWP into or over a road	MEWP structure in contact with power lines	Create an exclusion zone
		Unaware of presence of other vehicle(s)/machine(s)	Planning, site assessment and SSoW
		Inadequate segregation in place	Continual awareness, creation of exclusion zone
		Working adjacent to or encroaching into roads or traffic lanes	Operator training, equipment selection and supervision
HIT BY FALLING OBJECT	Potential unstable objects overhead	Insufficient warning to other road Users	Good traffic management procedures
		Working near overhead plant or other equipment (MEWPS)	Site assessment
		Hit by materials debris or debris from trees	Planning PPE, ie face visor, cage separator
FALL FROM HEIGHT	Working at height	Public hit by object falling from platform	Creation of exclusion zone
		No Personal Fall Protection Equipment (PFPE) available/used	Provision and use of correct PFPE
		Sudden unexpected movement of MEWP	Operator training and situational awareness
		Sudden movement leading to 'catapult effect' of boom	Check travel route and ground conditions
		Failure to wear or attach PFPE	Harness training and supervision
		PFPE defective	Pre-use inspection
OVERTURN	Machine instability	Exiting the platform at height	Training, SSoW and supervision
		Working in unsafe manner including overreaching	Training and Site supervision
		Unaware of unstable ground	Site assessment
		Unaware of risk from machine instability	Operator training
ENTRAPMENT	Proximity of overhead structures	Incorrect machine set-up	Operator familiarisation
		Defective machine	Pre-use inspection and MEWP maintenance
		Unaware of entrapment hazards	Site assessment
		Operating machine erratically	Operator training
		Incorrect direction of movement	Machine familiarisation
		Uncontrolled movement – defective machine	Pre-use inspection and MEWP maintenance
ENTRAPMENT	Proximity of overhead structures	Change in nearby environment	Continual awareness of surroundings
		Uneven ground conditions – depressions etc	Check travel route and ground conditions

When using a MEWP in public areas further considerations for inclusion in a Safe System of Work (SSoW) to minimise the risk of an incident are identified above:

6.1 OVERHEAD CABLES – RISK OF ELECTROCUTION

Working at height in the vicinity or near of overhead power lines can be very dangerous as most are uninsulated. Hence close proximity or any contact with a person's body, conductive object or any part of the MEWP may result in serious/fatal injury. Many electrocution incidents happen because the MEWP operator is unaware of the overhead cables, or attempts to work too close to them.

It is the duty of the client and the User to be aware of the presence of overhead power lines and the duty of the User to consider any such hazard in the risk assessment. However, the MEWP operator should also always check the work area, including travel routes, for presence of overhead cables before starting work. Where overhead cables are identified, always assume they are live unless informed otherwise by the power supplier and apply the IPAF 9/15m rule.

- 50ft (15m) + fully extended platform from electrical pylons
- 30ft (9m) + fully extended platform from cables on wooden poles

NOTE: These recommended safe distances meet and exceed those specified in many countries / regions. Should the operator need to work any closer to power lines, they should seek expert advice and implement extra safety precautions as outlined below to ensure the Minimum Approach Distances (MAD) is never compromised.

To eliminate the risk of electrocution, the client and User should where possible take all reasonable steps to arrange for:

- The power to be shut off for the duration of the work;
and
- Implementation of a strict permit to work system to ensure work only takes place near the power lines when the power has been turned off and the lines fully isolated.

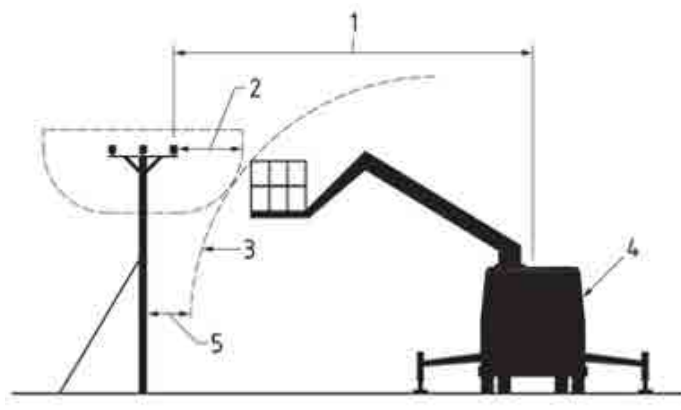
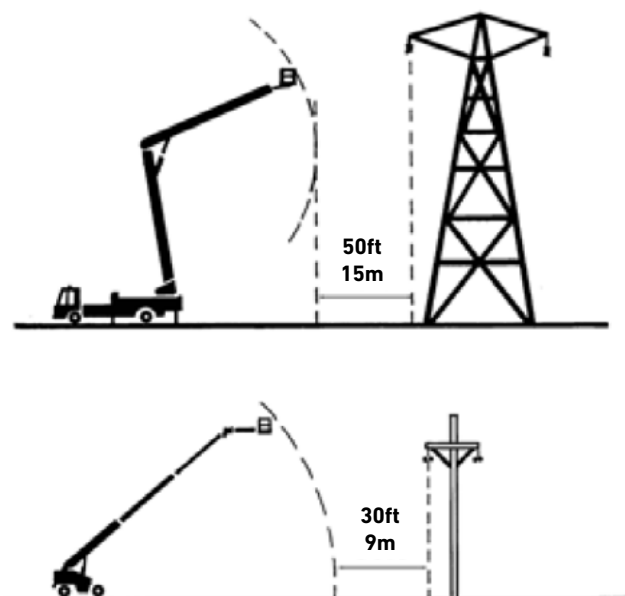


Figure 4: Example of stand-off distances.

Key - Figure 4

1. Safe stand-off distance
2. Absolute minimum exclusion zone
3. Minimum operating reach
4. MEWP positioned perpendicular to the power line where possible
5. Minimum 600mm from any point of the pole or pylon

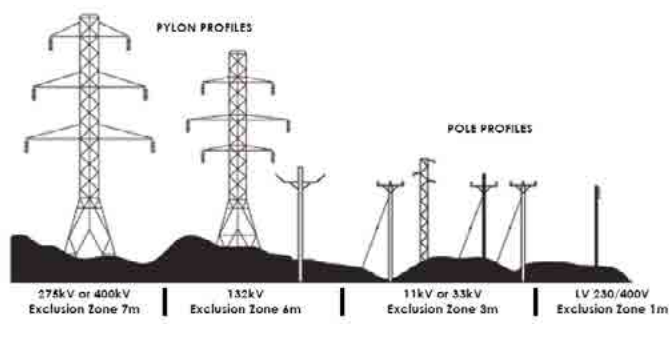


Figure 3: Example of exclusion zones with respect to electrical transmission and distribution.

Note: It may be prudent to increase the minimum exclusion zone recommended for LV 230/400V to 3 metres.

Where the power cannot be turned off and lines isolated and the work cannot be deferred, there will always exist a risk of electrocution and the following measures should be implemented:

- Be aware of the Minimum Approach Distances (MAD) identified in local standards and guidance and comply with those local safe use requirements.
- Implement an exclusion zone and maintain minimum stand-off distances. Figures 3 and 4 give examples of typical 'exclusion zone' and stand-off distances.
- Where possible use ground level barriers and goal posts and/or a spotter to prevent travelling inside the exclusion zone.
- Position the MEWP at a safe stand-off distance, so that at maximum extension the platform remains outside of the exclusion zone.

6.2 RADIO FREQUENCY (RF) AERIALS – RISK OF BURNS AND TISSUE DAMAGE

It is increasingly common to place RF aerials on roof tops and while someone accessing the area from within the building may see warning signs, a worker in a MEWP accessing the exterior of a building may not be aware of a RF device being in the vicinity. Many of these sources are positioned at height to be safe for the public. They may be also concealed or not visible from the ground. Hence, working at height may result in positioning the work platform near an RF source.

Exposure to RF radiation can be harmful and lead to serious injury or death. The appropriate safe working distance from an RF source is dependent on its power output. Prior to authorising working at height, it is essential the client and the User identify all RF sources, not just at the place of work but on neighbouring structures. Where RF sources are identified:

- Contact asset owners for advice on safe working distances from transmitting antenna or on the procedure for planned isolation (eg permit to work) should it be required. This is to ensure the risks have been considered in the safe system of work.
- Communicate in the safe system of work, any safe working distance from the RF source.

If a MEWP operator identifies a potential RF source, which has not been considered in the safe system of work, they should immediately stop work and check whether the non-ionizing safety symbol is present near the installation.

Where the presence of a RF source is suspected or confirmed the MEWP operator should seek competent advice before re-commencing work at height in the vicinity of the RF source.

A live RF source should not be approached until required precautions and control measures have been established, including the need for personal RF meters. Appropriate RF safety training and instruction, including identification of exposure symptoms should be considered for those planning or undertaking work at height.



6.3 POSITIONING NEAR TRAFFIC – RISK OF BEING HIT BY A VEHICLE

Regardless of the duration of the planned work – whether ten minutes or several days – it is essential to eliminate the risk of a collision between vehicular traffic and MEWPs. Although a MEWP operator may be able to see and anticipate traffic movements, drivers of plant and vehicles may not be expecting or looking for an elevated platform in the vehicle's path. Hence, encroaching into or working near live traffic lanes places both the MEWP occupants and vehicle occupants in possible danger and should be avoided at all times.

When working on or near roads and traffic routes it is essential MEWP planners and operators take sufficient precautions to ensure the MEWP always remains a safe distance from live traffic and never works above live traffic lanes. This equally applies when working near elevated roads, where the MEWP base may be situated in a safe area but the platform may be close to traffic lanes. Also consider the slip-stream effect, which larger passing traffic can have on an elevated platform.

Risk controls include:

- Create a traffic exclusion zone including a suitable safety zone between the extremities of the MEWP and any traffic lanes.
- Select a MEWP with slew restriction and/or with zero tail swing.
- Position the MEWP such that the platform, extending structure or counterweights remain in the safety zone and cannot swing into or above the traffic lanes.
- Sign and identify the MEWP so that it is clearly visible to all traffic well in advance especially on winding roads and quiet country lanes.
- Consider the use of temporary traffic control measures.
- Be constantly aware of the work area and be prepared to adapt work practices to minimise any unexpected circumstances.

Further guidance can be found in Sections 10 Traffic Management and 11 Pedestrian Management.

6.4 LOADING AND UNLOADING MEWPS ON ROADS – RISK OF BEING HIT BY A VEHICLE

While most risk assessments consider the actual use of the MEWP, many omit to consider the loading and unloading of machines. This is frequently conducted on or alongside roads as part of the delivery and collection process. It has been known to result in the MEWP or operator being hit by a vehicle, especially if undertaken during inclement weather or hours of darkness.

When a MEWP is delivered or collected in a public space, loading and unloading on the public highway should be avoided, wherever this is practical. The main aim of the client and the User is to eliminate/minimise the risk to individuals and members of the public by planning for the load/unload activities to take place away from the public highway and circulation of pedestrian traffic.

A safe loading area should be well-lit and segregated from traffic and pedestrians. It should also be clear of overhead and underground hazards. For further advice on safe loading of MEWPs, refer to IPAF load and unload good practice guidance, including "IPAF Loading and unloading on the public highway". Training in loading and unloading of MEWPs is available from IPAF training centres.

6.5 NIGHT WORK AND INCLEMENT WEATHER – RISK OF BEING HIT BY A VEHICLE

Unlike standard road-going vehicles, most MEWPs do not have headlights, taillights or directional indicators. Many have just a singular flashing beacon on the base. Without supplementary lighting, the base of the MEWP and any elevated structure may be almost impossible to see in poor light conditions and during inclement weather. To avoid being struck, the MEWP and platform must be sufficiently lit, eg with a flashing beacon, at all times to be clearly visible to nearby vehicles and other traffic.



6.6 FALLING OBJECTS – RISK OF BEING HIT BY FALLING OBJECTS

When working in an elevated position, consideration of objects falling on to the platform and its occupants is often overlooked, with potentially serious consequences.

6.6.1 Objects falling on to the platform – Risk of being hit by falling objects

When planning the work to be carried out from the platform, it is essential to consider the possibility of objects falling on to the MEWP from above. This is particularly so when cutting trees or vegetation or using a MEWP in deconstruction/demolition work and requires the implementation of sufficient precautions to prevent this from happening. In addition, the MEWP should never be used as an anchor point to tie off ropes when cutting large branches or lowering large objects. Any unexpected movement may cause the MEWP to become unstable and put the occupants at unnecessary risk of ejection (catapult effect).

6.6.2 Objects falling from the platform – Risk of being hit by falling objects

Whenever a MEWP is elevated, there is always a risk to persons below if tools, equipment or materials become dislodged and fall from the platform or work area. Primarily the User but also the operator should identify and apply sufficient control measures to ensure the safety of workers and public below and around the MEWP. Consider that items may not fall vertically but due to wind or bouncing off other structures may deflect significantly in their trajectory, and introduce a restricted area, or 'drop zone', around all parts of the MEWP. Possible solution to prevent objects falling from the platform may be to consider:

- Using tool tethers to prevent tools falling from the platform.
- The use of platform containment netting. However, this may affect operator visibility and increase the wind resistance of the platform, reducing machine stability when used outdoors. The fitting of platform containment netting should only be undertaken after consultation with the MEWP manufacturer, who might require the maximum permissible wind rating of the machine to be reduced if netting or other such measures are used.
- The use of material handling devices (MHA).

Further information on Pedestrian Management can be found in Section 11.

6.7 WORKING AT HEIGHT – RISK OF FALL FROM HEIGHT

For those who work at height there is an inherent risk of falling, which must be managed at all times. Unfortunately, many falls from height in more challenging areas to control are due to occupants at height not wearing or attaching required personal fall protection equipment (PFPE). While the guard rails of the MEWP platform are the primary fall protection, national standards, industry guidance and machine operating manuals commonly mandate the use of PFPE (a full body harness and lanyard) in group b or boom-type machines. It is recognised that supervision may be more challenging on remote, mobile or multiple sites, in and adjacent to public areas. In boom-type MEWPs, the requirement to wear PFPE is essential and it is important the User (person in control of the planning, management and use of the MEWP) includes the requirement in the SSoW and ensures all relevant individuals are:

- Issued with the correct equipment;
- Trained how to inspect, use and maintain it, including limitations of use;
- Monitored to make sure the PFPE is being used when and as required.

The operator and any other MEWP occupants should also adhere to the requirements of the safe system of work including the wearing of PFPE. Further information is available in IPAF's Technical guidance note H1: Fall Protection In MEWPS Ref Appendix 3.2.

6.8 GROUND CONDITIONS – RISK OF MACHINE OVERTURN

When intending to use a MEWP in unfamiliar or remote locations, on grassed areas etc, it is essential to assess the ground conditions to prevent the machine overturning during use. MEWP stability during travelling and operation is dependent on the ground's capacity to support the machine at its point of contact, especially as the pressure exerted by the MEWP is not always evenly distributed through the wheels or outriggers. Test have shown in specific configurations as much as 80% of the total weight of the MEWP may be transferred through one wheel or outrigger. The specification section of the MEWP operating manual will have the possible maximum ground force exerted by the machine.

Every machine should have a point load decal adjacent to each point of contact with the ground.

Before using a MEWP, the ground should be assessed for its capacity to accept the potential loads imposed by the MEWP and where appropriate, the use of spreader plates or ground bearing pads considered to reduce the ground bearing pressure. Further guidance on the Assessment of Ground Conditions (Appendix 3.3) and selection of the appropriate size of spreader pad can be found on the IPAF website (Appendix 3.4).

The risk of an overturn increases significantly when travelling narrow machines across inclines and this should be avoided. Some tracked MEWPs can be relatively narrow in the stowed configuration, so there is a significant risk of overturning when travelling across sloping or uneven ground. Where possible, increase the base of the machine by extending the tracks and/or semi-deploy the outriggers when travelling to increase the stability and to help prevent an overturn.

6.9 OVERHEAD OBSTACLES AND STRUCTURES – RISK OF ENTRAPMENT

Entrapment hazards are often present and come in many forms. Some are more obvious than others, eg working near a bridge or underpass, balcony, window ledges, large road signs or hoardings, tree branches, driving through a doorway etc. Many of the entrapment incidents involving a MEWP operator happen at a time or place when they are least expected, and the operator is not aware of the potential danger. It is vital the MEWP operator is always checking the working environment, so they are aware of their proximity to overhead obstacles and nearby structures to operate the controls accordingly with caution and accuracy, using finer controls for final positioning.

Note: Under certain circumstances, secondary guarding devices can provide additional protection. The User should take into consideration the use of these devices during the planning and selection of the MEWP. Further guidance on the prevention of entrapment can be found in Strategic Forum Plant Safety Group document – Avoiding Trapping/ Crushing Injuries to People in the Platform (Appendix 3.5)



6.10 REMOTE WORKING – RISK OF MISUSE

The use of MEWPs in areas which are more challenging to control or in the vicinity of public areas, roads and highways is often undertaken by self-employed individuals or remote workers, where individuals work alone with infrequent contact with their employer or those organising, managing or supervising work at height. This type of remote working presents specific challenges that need to be addressed during the planning and risk-assessment stage of MEWP use, including emergency planning and supervision to ensure compliance with SSoW.

6.10.1 Emergency planning

An integral part of the planning requirements for using a MEWP in any location is to have an emergency plan in place. This is more challenging for remote workers and may involve a second co-worker or a responsible person being in attendance while the MEWP is elevated. They will also need to have been familiarised with the ground controls and auxiliary functions of the specific MEWP. The SSoW should consider the control measures required if the operator is working alone, eg use of a lone worker device. Further guidance on emergency rescue can be found on the IPAF website. (Appendix 3.6)

6.10.2 Supervision and compliance

While no-one purposefully sets out to have an accident, some operators may be tempted not to follow defined safe systems of work or be tempted to ignore their training in a misconceived belief that they know better or that by doing so they can get the job done quicker. Users should implement occasional supervisory checks to satisfy themselves that remote workers are following the required safety procedures and working safely.



6.11 MACHINE SECURITY – RISK OF UNAUTHORISED USE

Away from managed and fixed sites, good machine security practices are essential to avoid misuse of the machine and prevent unauthorised use. Serious accidents have occurred where unauthorised or untrained personnel have used a MEWP without the knowledge or consent of the User.

The MEWP should be stored in a safe and secure compound. When leaving a MEWP in an area accessible to others, the machine should be lowered and its power source switched off. The MEWP should be isolated against unauthorised use and left in a safe position, which is not blocking thoroughfares or emergency routes. It should never be left unattended on the side of a public highway. Further guidance on MEWP security can be found on the IPAF website. (Appendix 3.7)

6.11.1 Ground control key

When the MEWP is being used, it is important to ensure that the ground control ignition keys remain in the base unit during normal operation. This is necessary because in an emergency the ground controls may be required to quickly recover the platform and/or the operator.

In situations where keeping the key in the base is not practical, eg when working on or adjacent to public highways or public thoroughfares, additional control measures should be implemented. These may include the provision of a second key to be held by the nominated ground rescue person.

7.0 MEWP SELECTION

Much of the safe use and operation of a MEWP depends on selecting the correct MEWP at the planning and risk assessment stage. Thorough risk assessment and site assessment should help identify the most suitable MEWP for the specific work at height task(s). Apart from determining common requirements such as height, outreach, minimum rated load/people, wind speed, power source, etc, there are other factors to be considered. These include duration of the work, distance the machine will travel, types of ground the MEWP will have to travel over and operate on, and the proximity to other hazards, all of which should influence correct machine selection.

The majority of self-propelled MEWPs are designed for off-road use away from public roads and may require a supplementary vehicle to deliver to and collect the machine from site.

Vehicle-mounted MEWPs (MEWPs mounted on a road-going chassis) are specifically designed to be road-going vehicles, which comply with the relevant national Motor Vehicle Construction Lighting and Use requirements and require the appropriate road licences and insurances. These machines have the added advantage of not requiring transportation on a secondary vehicle to and from site. This may save cost and time, but more importantly allows the site to be cleared immediately the work at height tasks have been completed.

When working in the proximity of overhead power lines, consideration should be given to the selection of an insulated aerial device (IAD) where the power cannot be isolated and where safe stand-off distances cannot be maintained. These are used predominantly by regional electricity companies for access to overhead powerlines whilst they are still energised. Information on Site Assessment for MEWP Selection training can be found on the IPAF website (Appendix 3.8).

8.0 MEWP MAINTENANCE

To ensure MEWPs are kept in safe working condition and comply with local regulatory and manufacturer's requirements, they require suitable inspection and maintenance procedures to be adhered to. These may vary from region to region and include but may not be limited to:

- Daily pre-use inspection;
- Intermediate inspections and maintenance in accordance with MEWP manufacturer's instructions;
- Thorough examinations – six-monthly, annual or as per country requirements ;
- Where MEWPs are used in remote locations or by individuals with only one or two aging machines, it does not relieve the User and operator of their legal duty to maintain the MEWP in a safe condition. The use of a defective MEWP or one that has had an unauthorised modification might significantly increase the risk of an incident and personal injury.

See the IPAF website for more information.

9.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

When working in public areas or alongside vehicle routes it is important to be seen to make others aware of your presence as soon as possible, so they can take appropriate action to ensure everyone's safety. Users and operators should be aware of and adhere to any workplace requirements. As an absolute minimum, the wearing of appropriate high-vis PPE throughout the set-up and work in public areas is essential at all times, including when entering or exiting the MEWP.

Hi-vis clothing should provide adequate protection both during the day and night, as well as in adverse weather. It must be correctly fastened and maintained in a clean, useable condition. Other PPE may be needed depending on site-specific requirements or as identified in the risk assessment. For information on Personal Fall Protection Equipment PFPE, refer to 6.7 Falls from Height.

10.0 TRAFFIC MANAGEMENT – GENERAL PRINCIPALS

Operating a MEWP on or adjacent to roads can involve significant risk that must be controlled to ensure that the works progresses safely. Even if the work at height is not on the roadway, but the MEWP providing the access will be positioned on or immediately adjacent to the road, then further measures to manage safe traffic flow will be required. Ideally, a vehicle-mounted MEWP should be first choice for this kind of work. (Refer to Section 7).

It is the User's responsibility to ensure that suitable and sufficient arrangements in the form of a safe system of work are devised, communicated, and implemented to keep both those within and those outside the work area safe. The risk assessment should identify additional signing, lighting and guarding that will be needed to ensure the safety of road Users and operatives.

It is the operator's responsibility to follow the requirements of the safe system of work. They should have the authority to stop work and raise their concerns at any time if they believe their own or others safety is in jeopardy. Anyone placing or removing temporary road signage, including warning cones, should be trained to do so in order they comply with good safety practices and local traffic management requirements.

10.1 COMMON HAZARDS

As part of the planning process for operating a MEWP on or adjacent to roads, the User should fully understand the work to be performed from the MEWP and the estimated time of day and duration of the work. Then, as with all work, a risk assessment is essential to identify potential hazards and evaluate the risks in order to develop the all-important safe system of work. Hazards to consider when planning work on or near roadways include:

- Road layouts, speed limits, and proximity of junctions;
- Traffic volumes including at peak times and during the estimated period of work;
- Large vehicles – specifically trucks and buses;
- Pedestrian access routes, expected volumes, consideration for disabled/vulnerable;
- MEWP type and visibility;
- Possibility of encroaching into traffic;
- MEWP selection to prevent MEWP structure encroaching exclusion zone.

A site visit by a qualified and competent person is recommended to fully appreciate the potential risks and identify appropriate safety measures required, including:

- Provision and size of a 'safety zone';
- Use of temporary signage and diversion of traffic and/or pedestrians;
- Requirements for signage and marking of vehicles;
- Need to control traffic flow by engaging a professional traffic management company.

In many cases, appropriate planning authorisations and permits may be required from lead highway authorities in order to work from or immediately adjacent to the road. It is advisable to check with the authorities well in advance of the work to see if such permissions are required. Failure to gain the necessary authorisations may result in legal action and unnecessary delays to work. Where the User is not familiar with local/regional traffic management requirements, they should recognise this fact and seek the advice or services of a competent person who is.



10.2 CLASSIFICATION AND CONTROL MEASURES

National, regional or local authority requirements will determine the classification of the work taking into consideration factors such as:

- Road speed limits;
- Traffic count;
- Duration of the work;
- Road-User visibility to and beyond the work area.

Where national or local authority requirements exist, they must be adhered to. Where they do not, the following outlines general good practice principles:

Short-duration works involve a single vehicle or a small number of vehicles undertaking one or more intermittent stops at the roadside of less than 15-30 minutes* for such activities as streetlight maintenance, pole testing, tree cutting or telecoms maintenance work. Some short-duration works may be undertaken without the use of static signs or cones provided that the site-specific risk assessment demonstrates that:

- There is good visibility – the distance will be dependent on existing road speed limits.
- Traffic can pass the works vehicle safely and without difficulty.
- It is performed in periods of low risk for operatives and road Users.
- The MEWP must be conspicuous with one or more amber warning beacons that can be seen from any direction.
- A directional sign is displayed on the vehicle for drivers approaching the MEWP to indicate on which side to pass.

Other than in the above circumstances, short-duration work will require appropriate warning signage and cones spaced at required distances to inform oncoming vehicles and protect site workers.

It is recommended that MEWPs working on public roads have high-visibility vehicle markings in the form of rear chevrons fitted. This is a legal requirement in some regions. On single-carriageway roads with more than two lanes and on dual carriageways it is strongly recommended that short-duration works are carried out with an impact protection vehicle to safeguard the MEWP and its operatives. A static lane closure may be required where work is being carried out on a central reservation.



Picture 1: Example of high-visibility vehicle markings in the form of rear chevrons.



Pictures 2 and 3: Examples of vehicles fitted with impact protection used to alert other road Users of vehicles working from or immediately next to the road, provide appropriate information to drivers and to reduce the severity of injury should a road User collision with a works vehicle occur.

Fixed-site working includes roadside stops expected to last more than 30-60 minutes* and these must have the relevant signing and guarding in place. Where work periods exceed the short duration or is of a high-risk nature, traffic controls must be applied in accordance with local authority requirements. If in doubt as to what these measures are, contact the relevant lead authority or seek the assistance of someone who is qualified in traffic management requirements.

**Time durations may vary in different regions and should be verified with the relevant local authority.*

11.0 PEDESTRIAN MANAGEMENT

Where footways and pedestrian areas are affected by MEWP use, it is the User's and operator's responsibility to make sure pedestrians passing the works remain safe. This means protecting them from the MEWP, the work area including the potential from dropped objects and passing traffic.

If the work with the MEWP is going to obstruct a footway or part of a footway, a safe route for pedestrians should be maintained, which may include access to properties and public areas.

The footway should be 1-1.5 metres unobstructed width. All temporary pedestrian routes must be fit for purpose and able to be used safely by all pedestrians, regardless of their mobility.

Pedestrian access assessment

The safe system of work should consider, but not be limited to:

- Building access for staff and visitors;
- Safe access routes for pedestrians, regardless of mobility;
- How and when the MEWP will be put into position;
- The expected pedestrian footfall at the time of the works;
- The need for exclusion zones and their size;
- Can pedestrians be re-routed without having to cross or walk along roads?

Signage for pedestrian barriers

The use of cones, tape or pedestrian barriers to guide pedestrians will be dependent on the findings from the above assessment. See Table 3 below.

RISK LEVEL	EXAMPLE LOCATION	PROTECTION REQUIRED
LOW RISK	Open space or field with limited public footfall	No barriers required
MEDIUM RISK	Public car park outside normal opening hours or busy periods where expected footfall is low	Cones and barrier tape
HIGH RISK	Shopping centre during normal opening hours where footfall is expected to be medium/high	Pedestrian barriers and ground-based personnel

Table 3: Examples of pedestrian protection required dependant on risk assessment findings.



Whilst table 3 provides a simple guide, local regulations may require higher standards. It is important that the situation is continually assessed and, should the risk increase or members of the public disregard the existing measures, more stringent measures will be required.

Closing pedestrian pathways

Where the risk assessment identifies it is not possible to provide an alternative footway then a temporary obstruction may be permissible. Where no alternative pathway is available or can be provided and dependant on local requirements, consider the following:

- Accessibility for less able and vulnerable people
- Pathway is not closed for longer than 15 mins at a time.
- Ground staff are available at all times to direct pedestrians past the works.
- All overhead works cease when pedestrians are within the work zone.
- Temporary pathway closure notice(s) are provided.
- The local authority has been notified and has agreed to this measure.

Cyclists – Suitable provisions should also be made for the safety of cyclists passing or crossing the work area. Highways authorisation is likely to be required to suspend official cycle lanes.

Equestrian Users – If the route is used by horse riders or horse-drawn vehicles, suitable provisions should be made to ensure the safety of people riding, leading or driving horses past the works. Consideration should be given to suspending all operations when horses are passing the work zone, especially where activity may entail loud or potentially startling noise or movement.

12.0 TRAVELLING AND MANOEUVRING MEWPS IN PUBLIC AREAS

The precautions required when travelling a MEWP in a controlled environment of construction site or commercial premises are also relevant when travelling a MEWP in a public area and should be applied and managed accordingly. However, there are additional risks to consider such as:

- Being in an uncontrolled environment.
- Pedestrians who may be unaware of the dangers presented by a MEWP.
- Having to anticipate and manage pedestrian behaviours, including the young and less abled.
- Vehicle movements in more challenging areas – eg car parks, campuses etc.

The intended route of the MEWP should be walked or assessed before moving the MEWP, checking for hazards such as powerlines, manhole covers, kerbs, building projections, overhead obstructions or other obstacles which could present a danger. Temporary barriers may be used along the intended route to segregate the MEWP from pedestrians and other vehicles. See section 11 – Pedestrian Management.

The MEWP to be moved should be capable of travelling over the ground conditions found along the intended route, for example a slab scissor lift is not suitable for travelling over rough or uneven ground. Only rough-terrain MEWPs should be driven on ground that is not compacted and levelled.

Before travelling, the MEWP should be in the manufacturer's recommended travel position and checks should be made to ensure there are no persons or obstacles in the path of the machine.



Any outriggers or stabilisers should be retracted and locked as recommended by the manufacturer before moving off. Note: Some tracked machines may require tracks to be extended and or the stabilisers to be partially deployed during travel to provide extra stability.

If operator visibility is limited, or the public are encroaching too near the MEWP, a trained marshal/spotter with suitable high-visibility clothing should be used to direct the movement of the MEWP and control pedestrian movement. There should be an agreed method of communication between the operator and the trained marshal/spotter.

The MEWP should be driven at an appropriate speed for conditions – slow speed where pedestrians are in the vicinity. The operator should continually look out for persons, vehicles and obstacles in the vicinity of the machine as they progress along the intended route. The operator and marshal/spotter must not be distracted by mobile phones (including hands-free), radios, or other devices during this operation. No part of the MEWP should be allowed to encroach into a live traffic lane.

If at any time the operator loses visibility of the Marshal / Spotter, the MEWP travel should be stopped and not restarted until visibility is returned and confirmation received that it is safe to move. Appendix 2 gives a summary of the main points which a MEWP marshal/spotter should be aware of and adhere to.



12.1 TRAVELLING BETWEEN SITES ON PUBLIC ROADS

MEWPs that are not mounted on a road-going chassis may be driven short distances on the highway in certain circumstances. Some vehicle licensing authorities may prohibit unregistered vehicles from being driven or operated on the road under all circumstances, while others may class them as 'engineering plant' or similar and identify specific requirements, which must be followed. Always check with your insurance company to confirm the MEWP and operator are insured while travelling between sites on public roads.

The requirement to drive a MEWP on the highway between sites should be included in the planning/risk assessment process and precautions taken to protect all persons involved along with passing traffic.

These measures may include:

- The use of an escort vehicle with suitable warning lights and signage to warning of a slow-moving vehicle
- The MEWP operator having:
- An operator licence for the group and type of machine to be driven.
- A driving licence for a road going vehicle such as a car.
- Trained marshal / Spotters and or signaller wearing Hi-vis clothing who use agreed hand signals to communicate with the MEWP operator.
- Marshal / Spotters and Signallers should give priority to other road Users and recognise they do not have authority to stop vehicles other than the MEWP.

APPENDIX

APPENDIX 1: Recommended training courses

Find details of all IPAF Training courses available at: www.ipaf.org/ipaf-mewp-training-courses; these include:

- MEWP Operator– 1a, 1b, 3a, 3b and specials
- Advanced MEWP Operator training IPAF PAL+
- Demonstrator
- Harness Inspection and Use
- MEWPs for Managers
- MEWP Supervisor (North America)
- Pre-Delivery Inspection
- Competent Assessed Person
- Site Assessment for MEWP Selection.

EWPA training courses available include:

- Yellow Card – Boom Lift, Scissor Lift and Vehicle-Mounted Lift
- MEWP Supervisor course.

Supplementary courses include:

- Traffic management
- Spotter course
- Traffic Marshal
- Manufacturer specific training courses
- Working at height.

Contact your local IPAF office or representative for further advice on training: www.ipaf.org/contact

APPENDIX 2: MEWP marshal/spotter responsibilities

The following is a summary of the main points a MEWP marshal/spotter should be aware of and adhere to, in order to ensure their own safety and the safety of others. It is not a definitive list and is meant for guidance purposes to be considered along with specific site requirements and the findings of a task-specific risk assessment.

Preparation: The MEWP marshal/spotter should:

- Wear hi-vis clothing and appropriate PPE at all times during the operation;
- Be familiar with all site safety procedures and site layout;
- Only act as MEWP marshal/spotter if they have had the appropriate training and are authorised by their employer;
- Have no other duties or distractions while carrying out marshal/spotter duties.

Planning the manoeuvre: The MEWP marshal/spotter should:

- Discuss the specific journey details with the operator before any movement of the MEWP commences.
- Risk-assess the task – where possible eliminate pedestrians and traffic to remove need for a marshal/spotter.
- Walk the route with the MEWP operator to identify significant hazards and take appropriate action to eliminate or reduce any risk before starting the manoeuvre.
- Agree signals to be used – consider using hi-vis gloves to increase visibility of signals given.
- Agree if at any time, the operator is unclear of the marshal/spotter's signals, the operator should stop and personally check the current situation.
- Undertake the manoeuvre in daylight and good visibility. Where possible avoid times of poor visibility, inclement weather, peak traffic or pedestrian movement.

Starting the manoeuvre: The MEWP marshal/spotter should:

- Ensure they are in a position where the operator can always see them.
- Signal the operator to stop moving, and before changing position, if eye-contact (visibility) with the operator will be lost or impeded.
- Agree the operator should stop immediately if they lose sight of the marshal/spotter and not re-start movement until signalled to do so by the marshal/spotter.
- Give clear and agreed signals, one at a time.
- Give the STOP signal and wait for the MEWP to stop travelling before walking towards the operator to clarify the previous instruction, should the operator question a signal.

Watching for pedestrians: The MEWP marshal/spotter should:

- Warn pedestrians within the vicinity of the MEWP of its intended movement and potential dangers.
- Always be aware their primary responsibility is to ensure their own safety and that of other pedestrians.
- If necessary, cordon off the area to be travelled, before starting the manoeuvre.

Negotiating obstructions: The MEWP marshal/spotter should:

- Always allow enough room and clearance from the moving MEWP.
- Never position their body between the MEWP and fixed or stationary objects.
- If a mistake is made by either operator or marshal/spotter, stop the MEWP and assess the situation before restarting – do not rush.
- Look out for overhead or ground obstructions and excavations.
- Discuss obstructions with MEWP operator.
- Ensure the MEWP has enough clearance from obstacles.
- Signal for the MEWP to stop and make the operator aware if approaching close to an obstruction.

REMEMBER

- If in doubt, halt the MEWP movement.
- Be aware of and give way to other site traffic.
- Road traffic always has priority.
- A MEWP marshal/spotter does not have the authority to stop traffic on a public highway.

APPENDIX 3: Link to documents referred to in the text of this document

- 3.1** Global Safety Guide – www.ipaf.org/accident
- 3.2** Technical guidance note H1: Fall protection in MEWPS
- 3.3** Assessment of Ground Conditions
- 3.4** Spreader pad calculator – <http://pads.ipaf.org>
- 3.5** SFPSG – Avoiding trapping/crushing injuries to people in the platform
- 3.6** IPAF emergency rescue guidance – Guidance on emergency rescue
- 3.7** IPAF guidance on MEWP Security
- 3.8** Site Assessment for MEWP Selection training – IPAF Site Assessment Course

APPENDIX 4: Useful reference documents

National standards

ISO 18893 Mobile elevating work platforms – Safety principles, inspection, maintenance and operation

ANSI A92.22 MEWP Safe Use – USA

ANSI A92.2 Vehicle-mounted MEWPs – USA

CSA B354.7 MEWP SAFE USE – Canada

CSA C225 Vehicle mounted MEWPs – Canada

BS 8460 Code of practice for the safe use of MEWPS – UK

AS 2550.10 Cranes, hoists and winches—Safe use Part 10: Mobile elevating work platforms – Australia

UNE 58921 Instructions for review, inspect MEWP – Spain

UNE 58923 MEWP OPERATOR TRAINING – Spain

SS616 Code of practice for safe use of mobile elevating work platforms – Singapore

Industry guidance

IPAF Resources including guidance and toolbox talks – www.ipaf.org/resources

IPAF Pre-use Checklist – www.ipaf.org/resource-library/mewp-pre-use-inspection-checklist

IPAF MEWP specific safe use Plan Guide

EWPA – Good Practice Guide, Mobile Elevating Work Platforms: ewpa.com.au/resources/good-practice-guide

EWPA Resources – ewpa.com.au/resources/alerts-and-notice

Hong Kong – Safe use of power-operated elevating work platforms

Malaysia – Guidelines for safe use of mobile elevating work platform

Netherlands – Veiligheidsvoorschriften voor werken in de nabijheid van hoogspanningsverbindingen (Safety requirements for working in the vicinity of high-voltage connections)

Italy – Inter ministerial Decree of 22 January 2019 – affixing road signs in the presence of vehicular traffic: www.gazzettaufficiale.it/eli/id/2019/02/13/19A00867/sg

Technical regulations relating to signage schemes, differentiated by road category, to be adopted for temporary signalling: www.mit.gov.it/sites/default/files/media/normativa/2016-02/Decreto_Ministeriale_10-07-2002_all_1.pdf

ABOUT IPAF

The International Powered Access Federation (IPAF) promotes the safe and effective use of powered access equipment worldwide in the widest sense – through providing technical advice and information; through influencing and interpreting legislation and standards; and through its safety initiatives and training programs.

IPAF is a not-for-profit organization owned by its members, which include manufacturers, rental companies, distributors, contractors and Users. IPAF has members in more than 70 countries, who represent the majority of the MEWP rental fleet and manufacturers worldwide.

Visit www.ipaf.org for local office information

Contact IPAF

Moss End Business Village
Crooklands
Cumbria LA7 7NU
United Kingdom

Tel: +44 (0)15395 66700
info@ipaf.org
www.ipaf.org

Become an IPAF member

By joining IPAF you are joining a global movement to ensure a safer and more productive powered access industry. Membership also brings a host of special services and benefits including access to the members' safety analysis dashboard. IPAF brings multiple benefits including the following:

- Global harmonization with regional focus on standards development;
- Resources for technical experts;
- A wide range of products and technical guidance to assist MEWP Users, supervisors and User meet their responsibilities;
- Opportunities to network and promote your company
- A consensus voice for all industry stakeholders, large and small;
- Certified training program to ensure complete, consistent and compliant training.

For more information about becoming a member of IPAF visit www.ipaf.org/join



In conjunction with

This guidance document was developed in conjunction with the IPAF International Safety Committee and approved at the committee's meeting on 20.01.22. IPAF would like to thank all who have contributed to the development and ongoing review of this technical guidance document.



***Promoting the safe and effective
use of powered access worldwide***

Supplied by: