

POLICY ON THE USE OF FALL ARREST SYSTEMS IN ELEVATING WORK PLATFORMS

1. INTRODUCTION

The following policy has been developed by the EWPA Inc as guidance for members in each State and Territory in the use of Fall Arrest Systems in Mobile Elevated Work Platforms (MEWPs). Fall protection is an important issue for those who use MEWPs. While the guardrail system is the primary fall protection, a fall arrest system is required with all boom type elevating work platforms. Refer to AS2550.10 Section 5.15.

NOTE: To determine the risk of a person being ejected from the platform, the travelling speed, the operating height, the boom length, the natural frequency of the MEWP, the proximity of structures to other items that may catch on the harness or lanyard, the slope of the ground and the evenness of the ground should be taken into consideration.

Australian State and Territory regulatory authorities and Australian Standards require users of fall arrest systems to ensure there is adequate clearance under the system so that in the event of a fall the user of the system will not strike the ground or will suffer minimal consequences from striking, any other obstacle beneath the system.

The issue facing MEWP users is to determine the appropriate system or systems to use. This policy is not intended to cover all the aspects of fall prevention but rather be a targeted guide for use of fall arrest systems and devices used with MEWPs.

2. FALL ARREST SYSTEMS AND FALL RESTRAINT DEVICES

- 2.1. All personnel in the platform (or basket) of a boom type MEWP must use a fall arrest system or restraint device which is secured by a lanyard to an approved anchor point provided for this purpose. Boom type MEWPs can include self-propelled booms, knuckle booms, trailer lifts, cherry pickers, truck mounted booms, MEWPs that operate with a Z type of lifting arm and telehandlers fitted with EWP baskets.

NOTE: Some scissor lifts and vertical mast platforms are only suitable for a fall restraint system. Check the operators manual or consult the manufacturer. On newer machines attachment points will be marked restraint only if they only suitable for a fall restraint device

- 2.2. Fall arrest systems or restraint devices are not required on other types of MEWPs such as scissor lifts or vertical personnel lifts, unless a risk assessment indicates that they should be worn for risk control purposes, in which case the policy of boom type MEWPs will apply.
- 2.3. All fall arrest systems or restraint devices, must conform to the requirements of the following Australian Standards:
AS/NZS 1891.1 2007: Industrial Fall Arrest Systems & Devices: Harnesses and Ancillary Equipment
AS/NZS 1891.4 2009: Industrial Fall Arrest Systems & Devices: Selection, Use and Maintenance
- 2.4. All snap hooks and karabiners shall be self-closing and shall be capable of being opened only by a minimum of at least two consecutive actions.
- 2.5. **Inspection of Fall Arrest System Before Use**
The operator must inspect their fall arrest system or restraint device before use as per manufacturer's instructions. The inspection should include checking for damage to the webbing through burns, chemicals, etc, and damage to buckles, hooks and attachment hardware. Ensure the harness and lanyard are within their test period (this is stamped on the harness and lanyard). Guidance is available in AS1891.4 2007.
- 2.6. **Repair of Fall Arrest System or Restraint Device**

Any piece of equipment, including both personal and permanently installed items (including the anchorage point), which has been used to arrest a fall or which shows any defect during operator or periodic inspection shall be withdrawn from service immediately and a replacement obtained if necessary. It should be examined by a height safety equipment inspector who will decide whether the equipment is to be destroyed or repaired if necessary and returned to service. Experience shows that repair of harnesses and lanyards, even when carried out by a competent person, is unacceptable as it raises safety issues in the testing requirements and subsequent use.

2.7. Correct Use

- 2.7.1.** Always use the fall arrest system or restraint device in accordance with manufacturer's instructions.
- 2.7.2.** Ensure the full body harness is correctly fitted and adjusted before entering the basket and ensure the lanyard is securely attached to the approved anchor point before using the MEWP. Incorrect adjustment can cause major injury.
- 2.7.3.** The attachment hook on the lanyard must not be hooked back on itself – use the correct mounting point.
- 2.7.4.** The practice of permanently attaching fall arrest systems or restraint devices to the approved anchor point in the MEWP platform is discouraged as it inhibits correct inspection of the fall arrest system or restraint device. In addition the system or device is unnecessarily exposed to all weather conditions even when not in use and may suffer consequent deterioration.

2.8. User Beware

There are many different types of full body harness and lanyards. Correct selection is essential for safety and a competent person should be consulted if in doubt.

3. LANYARDS AND HARNESSSES

There has been much discussion and ongoing research into the wearing of harnesses and lanyard lengths in boom type elevating work platforms. It is industry practice that all boom type EWP operators wear a fall arrest harness with the appropriate length lanyard, complete with shock absorber, correctly attached to the attachment point on the platform. In the past few years the focus has moved to the length of the lanyard to be used and the reasonable benchmarks are detailed below:

3.1. Harness Type

A full body harness is the most appropriate harness type when operating a MEWP.

3.2. Lanyards

A lanyard which will absorb energy in the event of a fall and limit the impact force to a maximum of 6kN must always be used. An example of this is a lanyard used with a 'personal energy absorber' as defined in AS1891.1. A lanyard with an energy absorber should always be used regardless of the length of the lanyard.

The lanyard must be attached to the harness at the designated ring on the harness, usually at neck/shoulder height on the back or chest height on the front. Do not use the side harness rings.

3.3. Lanyard Length

Any lanyard used should permit the occupants in the EWP adequate freedom of movement when positioned anywhere in the platform while they have both feet located on the platform floor.

The maximum length of the lanyard should be no more than 1.8m when working in EWPs with a platform width of 1.8m or more.

On platforms that are less than 1.8m wide a 1.2m lanyard should be supplied where the anchorage point is either mid or top mounted.

On all bottom-mounted anchor points on platforms a 1.8m lanyard should be used.

NOTE: This general recommendation is based on operators and occupants who are no more than 193cm (6'4") tall.

Other lanyard lengths may be required for some users and specific risk assessments may be required before starting work.

As a general rule lanyards **MUST** be as short as practical and **MUST** include a shock absorber or personal energy absorber.

3.3.1 Determining Adequate Free Fall Clearance

An adequate free fall clearance is the minimum height the platform floor must be above the ground (or other surface) that would prevent an ejected operator from striking the ground. To determine an adequate free fall distance the following must be considered:

- Length of the lanyard
- Height of the operator
- 'Tear out' length of the personal energy absorber
- Height of the lanyard attachment point in the platform

Taking these factors into consideration, an adequate free fall clearance would **typically** be achieved when the floor of a MEWP platform is at a height of more than 3.5m above the ground (or other surface) but may be as low as 1.5m.

3.3.1.1. Regardless of platform size, when performing work tasks in a MEWP platform at heights where an adequate free fall clearance is NOT obtained (eg less than approximately 3.5m), the following should be considered:

- Use the shortest possible lanyard which enables the work tasks to be completed. Complete with a shock absorber.
- Where possible, clear movable obstructions, structures, projections etc, from underneath the MEWP platform before commencing work tasks.
- Implement site specific Safe Work Procedures that prevent the operator from driving the MEWP, eg the operator would have to either lower the platform as close to the ground as possible or raise it to a height where an adequate free fall distance is obtained before driving the MEWP.
- Consider other methods of conducting the work tasks.

3.4. Other Lanyard Options

3.4.1. Retractable Reel Lanyards

May only be used if the retractable reel lanyard manufacturer approves the use of the lanyard with the specific MEWP model. This is not recommended by the EWPA because of ergonomic concerns.

3.4.2. Twin Tail Fall Arrest Lanyards

Where this special type of lanyard is to be used they should be designed to AS1891.1 and used in accordance with AS1891.4. Not recommended by the EWPA

3.4.3. Adjustable Lanyards

Adjustable lanyards allow the operator to use them as part of a fall arrest system or as part of a fall restraint device depending on the adjusted length of the lanyard. When using an adjustable lanyard as part of a fall arrest system an energy absorber must be used and the maximum length of the lanyard shall not exceed 1.8m.

Not recommended by EWPA as operator fails to adjust to the correct length.

3.5. Approved Attachment Points

The approved attachment point on the platform must be marked as such. Unless designated otherwise each anchorage point shall be considered suitable for attachment of one device.

3.6. Guardrails

These are fitted for operator safety and are NOT to be used as an anchorage point for the safety lanyard.

3.7. Powerlines

Where the boom type MEWP is required to work around live wires (using an appropriately insulated MEWP) then a full body harness with an additional facility to connect a CDD (controlled descent device) or EDD (emergency descent device) is required.

This requirement for the full body harness is because the operator will need to support their full body weight and control their descent down a special rope line attached to the basket or platform in the event of an emergency.

3.8. Working Over Water

Where the operator of a MEWP is working over water additional consideration must be taken into account to ascertain the appropriate fall restraint/arrest system. It may be inappropriate to wear a harness hence the importance of a detailed risk assessment.

3.9. Unloading/Loading Boom Type MEWPs

Unless a risk assessment determines otherwise, then a full body harness must be worn by the operator of the boom type MEWP when loading or unloading the unit for transportation, complete with an appropriate length lanyard and shock absorber.

4. TRAVELLING IN A MEWP

When travelling in a boom type MEWP (ie moving from one location to another) the following should be considered:

- Where practical the boom should be retracted and the platform should be kept as low to the ground as possible (without striking the ground) and the MEWP driven at a speed appropriate to the ground conditions, eg select 'slow drive speed' when driving on rough, uneven ground.
- Where it is not practical to travel with the platform low to the ground, the platform must be raised to a height where an 'adequate free fall distance' is obtained (ie approximately 3.5m and above).

- Travel with the platform elevated shall only be permitted on firm surfaces free of obstructions and potholes.

5. ACCESS / EGRESS FROM MEWPs AT HEIGHT

AS 2550.10-2006

Clause 5.9 – Access to and Egress from the Platform in the Elevated Position

Personnel shall not enter or leave the platform when elevated (except in an emergency) unless each of the following conditions is met:

- a) Risk analysis shows that this means of access is safer than all other means of access.
- b) The structural adequacy of the landing area has been established, and the landing area is clear.
- c) The risk of falling from the landing area is considered and controlled.
- d) The working envelope of the MEWP is at least 1.2 times greater than that required to access the landing (eg if the landing is positioned 10m vertically and 5m horizontally from the support surface, then the work platform shall be able to access a point located 12m vertically and 6m horizontally. This requirement is specified to ensure that the MEWP is working within its operating envelope at all times.
- e) The work platform floor is capable of being located within 300mm vertically of the landing.
- f) Where the work platform is located over the landing, the landing point is not less than 2m from the edge of the structure, unless a safety harness is properly worn and attached to a suitable anchorage, where any potential fall is in excess of 2m.
- g) Where the work platform is located adjacent to the landing, the maximum gap between the platform and landing does not exceed 100mm, and access and egress does not take place unless a fall arrest system is used and attached to a suitable anchorage on the structure.

NOTE: When egressing from a MEWP, where a person is required to use a fall arrest system and remain connected to an anchorage at all times, a double lanyard should be used.

- h) The base controls are tagged to indicate the equipment is in use and to caution against interference.
- i) The resulting deflection that occurs when access and egress is performed at elevated positions is assessed and allowed for.

NOTE: To avoid excessive deflection, scissor lifts should be placed end on, when the work platform is positioned adjacent to a landing.

6. SIGNAGE ON MEWP / BASKET

The following signage wording on the platform/basket is recommended on boomlifts:

**7. SUSPENSION TRAUMA**

Refer to Australian Resuscitation Council Guideline 9.1.5 - Harness Suspension Trauma - First Aid Management - on EWPA website under Information Sheets.

[Harness Suspension Trauma Guidelines 9.1.5 ARC](#)

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