



HSE-PRO-007 WORKING AT HEIGHTS

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1.0 INTRODUCTION

1.1 Purpose

This document outlines the minimum requirements for working at height. As a principle, no person is to be exposed to the risk of being hit by a falling object due to work at heights; and no person is to be at risk of a fall that is likely to cause injury.

2.0 SCOPE

The requirements of this procedure are mandatory for all works on Mid West Ports Authority (MWPA) controlled land. The procedure does not extend to work conducted on leaseholder sites unless that work impacts on personnel outside the lease.

3.0 RESPONSIBILITIES

The **Supervisor** or **Person in Control of the Workplace** is to ensure that:

- Personnel have the required training or high risk licence.
- Form HSE-PRO-032/FRM10 Application for Working at Heights Permit is to be obtained for any work to be undertaken at height.
- A Job Safety Environment Analysis (JSEA) is conducted prior to personnel conducting work at heights.
- The JSEA includes procedures for the safe retrieval of a person who has fallen (rescue plan) including the required rescue equipment.
- Personal fall protection systems are inspected prior to and after every use.
- This Working at Heights procedure is known by workers and followed.

MWPA Maintenance Planner (MWPA Maintenance Workshop) and **MWPA Maintenance Supervisor** (BHF) are to ensure that a register of fall protection equipment, including fixed anchor points is maintained and required maintenance checks are scheduled and conducted in accordance with AS/NZS 1891.4 Industrial fall-arrest systems and devices.

Workers who use a personal fall protection system must:

- Inspect harnesses and lanyard assemblies prior to and after every use.
- Ensure that the fall-arrest/travel restraint system is used properly taking into account fall clearance, etc.
- Comply with this Working at Heights procedure.

4.0 LEGISLATION AND STANDARDS

Mines Safety and Inspection Regulations 1995 – Regulation 4.5 requires fall arrest equipment to be provided to employees if the risk of injury from falling cannot be eliminated. The equipment must be appropriately designed for the task and used in a way as to reduce, so far as is practicable, the possibility of injury to the user.

The operator must be suitably trained in the use of the equipment. The equipment must be properly maintained, inspected regularly by competent, authorised personnel and certified for use.

For construction work, AS/NZS 1891 Industrial fall-arrest systems and devices is mandated under the Mines Safety and Inspection Regulations – Regulation 4.22.

Occupational Safety and Health Regulations 1996, Part 3 Division 5 provides further prescriptive requirements relating to prevention of falls at work.

5.0 RISK ASSESSMENT

A JSEA must be completed prior to working at heights and must consider:

- The risk of falling objects;
- A fall from height;
- Wind conditions;
- Proximity of hazards such as nearby structures and electrical systems and parts;
- Other work being undertaken in the area, which could impact on the operation;
- Emergency rescue plan (consider the risk of suspension trauma); and
- Height safety training.

Where personal fall prevention systems are used, the operator should continually observe and adjust the lanyard to a length where it prevents the operator reaching a position where they could experience a fall. Where this cannot be guaranteed and a fall is still possible, the harness must have a suspension trauma safety strap fitted. The pendulum effect must be considered and if possible action taken to prevent it occurring

A helmet chin strap should be worn to maintain helmet security when working at heights.

If there is a risk of an object falling on to persons working below, one or more of the following is required:

- Schedule work so that tasks creating an overhead work situation do not occur at the same time for different work groups (i.e. eliminate risk);
- Barricade the area below to prevent other personnel entering the work zone.;
- A sentry or spotter to monitor work and personnel moving around the area;
- A protective barrier e.g. steel mesh, structure ply, hoarding, etc. (grid mesh is not a physical barrier when the size of an object, tool, equipment etc. has the potential to fall through);
- Consider the 'ricochet distance' of any tool or other item if it is dropped and could strike parts of the structure; and/or
- Consider use of tool lanyards to prevent them falling.

Under no circumstances is a person to work or walk under a suspended load. Personnel should not walk or work under or near an area where personnel are working above, unless there is substantial over-head protection.

Work must not be completed in a position where there is potential for a un-arrested fall from a height that is likely to cause injury or death.

When connecting onto a fall protection system, workers must be able to approach, connect and disconnect from the connection point without being exposed to a fall risk situation.

The risk of falls should be controlled using the hierarchy of controls in the following order of preference – a combination of control measures may be appropriate:

1. **Elimination** - eliminate the need to access the fall risk area where possible e.g. install air-conditioning units in the centre of the roof.
2. **Substitution** – substituting access arrangements, for example providing an alternative means of access such as a safe walkway so the risks of falls are avoided or using an elevating work platform rather than a ladder.
3. **Isolation** – isolating or separating the hazard e.g. barricading or enclosing the fall risk area with edge protection, installing handrails and covering floor penetrations.
4. **Engineering control** – fall injury prevention system designed to restrain or arrest a person's fall from one level to another and minimise the risk of injury or harm to a person if they fall.
5. **Administrative control** – procedures, instruction, training and warning signs are in place to warn and protect persons exposed to falls. This could also include limiting the amount of time a person is exposed to a particular hazard. These controls should be used in conjunction with physical controls and appropriate supervision.
6. **Personal Protective Equipment** – to be utilised following a risk assessment has identified that with the use of PPE existing hazards may be mitigated to a tolerable level. Training must be given to staff using PPE to ensure it is being used correctly.

6.0 ELEVATING WORK PLATFORM (EWP)

A JSEA must be completed prior to working at heights in an EWP and must consider:

- The risk of falling objects;
- A fall from height;
- Ground conditions and stability of EWP;
- Wind conditions;
- Proximity of hazards such as nearby structures and electrical systems and parts (including contact and risk of being crushed between EWP and structure);
- Other work being undertaken in the area, which could impact on the operation;
- Emergency rescue plan (consider the risk of suspension trauma); and
- High risk licence and height safety training.

EWP's must be maintained, inspected and operated In accordance with the manufacturer's written instructions. A pre-start check is to be made and a logbook must be maintained on each EWP. The operator must check the currency of the EWP Certification before use.

Stability of the EWP is a critical factor. Rock walls and embankments can be prone to undermining from sea-state, tidal movements and damage from stormwater runoff. A minimum 3 metres must be maintained from the edge. If, for practical reasons, this cannot be achieved, approval from MWPA's Engineering Manager must be obtained and additional control measures may be imposed. Documented justification and additional technical data may need to be supplied.

EWP access to the maintenance access track to the east of the Berth 5 Amenities is by MWPA permission only. In this location EWP's are to stay behind the barriers provided and operate on steel plates at all times.

Tyre deflation and uneven ground surface can significantly affect the stability of an EWP. Always check ground conditions and for the presence of underground services and include in the JSEA. If surfaces are soft, consider the use of mats, steel plates or timber sleepers to distribute the operational load. If unsure, ground compaction values must be identified by the appropriately qualified personnel and indicated to the EWP operator and area manager. This must be done each time the area is accessed for EWP operations.

Geraldton frequently has strong wind conditions. The JSEA must assess the likely wind conditions and ensure the wind loading does not exceed the manufacturer's instructions.

A minimum of two personnel are required for any job using an EWP. As well as a licensed operator in the EWP basket, a licensed operator (spotter) is required on the ground when using an EWP in an area where traffic movement is expected or where the JSEA requires their presence.

If using an EWP, the person conducting the work from the EWP and the spotter must have completed a nationally recognised height safety training course.

The spotter must have no other task than to provide a safety watch for the operator, both in the air and surrounding areas at ground level. They may also be required to summons help from emergency response and could also be required to lower the EWP utilising the ground controls.

A High Risk Licence EWP licence must be held by the operator and the spotter (where used) as the spotter may be required to operate the equipment if an emergency situation arises.

The area around an EWP must always be cordoned off when in use. Consideration must be made for the slewing circle of the boom and basket. Where there is a likely risk the EWP could be hit by a vehicle or plant due to proximity, a physical barrier should be used.

A traffic management plan is required where EWP's are used on a roadway or road shoulder where interaction with traffic is likely. If an EWP encroaches on a laneway, the lane must be diverted around the EWP if sufficient room. If the laneway must be closed down to one lane, traffic controllers would generally be required.

Where an EWP is being used near power lines it is imperative that exclusion zone distances are maintained and a spotter is assigned. Additional controls such as isolation and use of protection such as insulators must be put in place. 'Tiger tails' (powerline indicators) must be considered as a minimum.

Access and egress from an EWP basket into steelwork and structures, when in the elevated position, is prohibited unless all of the conditions outlined in AS2550.10 Cranes, hoists and winches – Safe use – Part 10: mobile elevating work platforms are met.

7.0 WORKING SUSPENDED OVER WATER

An exemption from wearing a harness when working over water in an EWP has been issued to the MWPA by WorkSafe for maintenance of wharves (Exemption No. 11/2012, dated 26 June 2012). Harnesses used for working over water should have a built in auto-inflating personal flotation device (PFD) - the alternative is to wear a separate harness and auto-inflating PFD. The harness must be attached until over water at which time it can be unclipped. The harness must be reattached before moving over land or any hard surface.

When working over water and not attached to the EWP basket by a harness, a chin strap must be worn to secure helmet in case of a fall.

A rescue flotation device (e.g. life ring and retrieval rope) must be readily available when working over water in addition to PFDs. Ensure workers know where rescue ladders are located on the wharf edge. When working in an EWP or work box over water a spotter must be present at all times to guide the operator, monitor work and use the life ring for rescue if required.

Similarly to the EWP harness exemption, MWPA has been exempted by WorkSafe from the requirement to wear a harness when working in a work box, subject to the following conditions:

- A Rigger must be present at all times in the work box to guide the crane operator. A spotter must be available to monitor the workbox and persons working over water;
- An appropriate flotation device (life ring and retrieval rope) must be readily available for use.

(Synergy Record No. 1011776 dated 8 March 2010).

This exemption relates to MWPA maintenance workers who are required to operate in a workbox that is suspended over water to conduct maintenance tasks on the wharf face, wharf structure and on berth fenders. Other uses of a workbox outside these specific circumstances require full protection.

8.0 SUSPENSION TRAUMA

Suspension trauma is caused by the blood pooling in the limbs of a person suspended relatively motionless in a harness. If a person is unconscious and therefore not moving, their condition can deteriorate very quickly and potentially lead to death.

It is imperative that an emergency rescue plan is thought out and documented prior to the work to ensure a person can be rescued quickly. This shall be documented in or attached as an Annex to the JSEA.

All fall arrest harnesses must include a suspension trauma strap unless other suitable measure is implemented.

9.0 TRAINING REQUIREMENTS

If using a personal fall protection system, the person conducting the work, the spotter and any person who will be responsible for an emergency rescue, must have completed a nationally recognised height safety training course.

10.0 EMERGENCY RESCUE

A rescue plan is required to be documented in or attached to the JSEA whenever fall arrest systems are in use. Consider the following:

- The person may be unconscious or injured;
- The body-holding device;
- All harnesses must have a suspension trauma strap;
- The requirement to shut down plant and equipment in the vicinity of the incident;
- The steps the rescue team will take to ensure their own safety;
- Communication methods;
- Whether the injured person can be winched down;
- Emergency contact information; and
- Rescue equipment on hand.

If a fall injury prevention system has been used to arrest a fall, it must be withdrawn from service immediately and inspected by a competent person.

When work is undertaken when suspended over water, and a person falls into the water:

- Make sure that the person is conscious and that their PFD has inflated;
- If conscious assist the person to the nearest ladder and/or throw them a life buoy. Make sure you retain the end of the retrieval rope;
- Raise the alarm verbally, by radio or port emergency number as necessary. If a vessel is moving, alert marine pilot/tugs/pilot boat crew to avoid injury (a radio should be on site if this is the communication method).
- If unconscious consider having someone enter the water to provide assistance (ensure the rescuer has a PFD on and is a capable swimmer).
- Consider deploying dinghy or similar to assist.
- Provide first aid assistance and if necessary call for ambulance on 000.
- Report the incident to the Harbour Master and enter into STEMS.

11.0 MAINTENANCE AND INSPECTION OF EQUIPMENT

The relevant supervisor or person in charge must ensure a competent person inspects fall protection equipment at least six monthly and certifies that is in good, correct, safe condition

A register of all personal fall protection equipment must be kept as per AS/NZS 1891.4 Industrial fall-arrest systems and devices – Part 4: Selection, use and maintenance.

Equipment must be visually inspected prior to, and after, every use to ensure integrity. Permanently fixed anchorages must be inspected by a competent person at not more than six month intervals. They must also be inspected by an authorised competent person every 12 months and a certificate issued to indicate that the equipment is safe to use.

Equipment must be stored in an appropriate, designated storage area containing instructions on care, fitting and maintenance of equipment.

If equipment or anchorages require maintenance or are unserviceable they must be appropriately tagged and removed from use.

12.0 SIGNAGE OF FIXED ANCHORAGE POINTS

Permanent or long term fixed anchorage points must be signed with the following information as required by AS/NZS 1891.4:

- Name of installer and installation date, or if an existing structure has been certified, the name of the certifier and the certification date;
- The highest purpose category for which the anchorage is suitable (see AS/NZS 1891.4 Table 3.1);
- The ultimate strength rating, if less than 15 kN. In this case words must be added to the sign to the effect that the anchorage is to be used only for fall restraint scenario and not to be used for fall-arrest; and
- The maximum number of people (not more than two) who are permitted to be connected to the anchorage point at any one time.

13.0 LADDERS

13.1 Portable Ladders

The distance between the ladder base and the supporting structure (e.g. wall) should be approximately 1 metre away for every 4 metres of working ladder height (1 out, 4 up).

Ladders should be tied off where possible to prevent movement during use.

When used for access or egress, the ladder should extend at least 900mm above the stepping off point. Extension or single ladders are a means of access to or egress from a work area, not a work platform

Inspect ladders before each use. If damaged, tag out as unserviceable and either repair or destroy. Store ladders to avoid damage and deterioration.

Aluminium or conductive portable ladders must not be used for electrical work.

The minimum recommended safe practices and requirements for selection, safe use and care of portable ladders are set out in AS 1892. Ladders that do not comply with AS 1892 are not to be used on site.

13.2 Fixed Ladders

In areas where fixed ladders are installed, they should be in accordance with AS1657 Fixed Platforms, Walkways, Stairways and Ladders – Design, Construction and Installation.

The angle or slope should not be less than 70° to the horizontal and not greater than 75° to the horizontal. Under no circumstances should the ladder overhang the person climbing the ladder. If the angle is more than 75°, a safe system of work to prevent falls should be provided such as a permanent fall-arrest system or a double lanyard harness.

All fixed ladders should be visibly checked prior to use.

14.0 ASSOCIATED DOCUMENTS

HSE-PRO-032/FRM10 Application for Working at Heights Permit

15.0 REFERENCES

Occupational Safety and Health Act 1984

Occupational Safety and Health Regulations 1996

Mines Safety and Inspection Act 1994

Mines Safety and Inspection Regulations 1995

WorkSafe WA Code of Practice – Prevention of Falls in the Workplace

AS 1657 Fixed platforms, walkways, stairways and ladders – Design, construction and installation

AS 1891 Industrial fall-arrest systems and devices

AS 1892 Portable ladders

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

16.0 ADMINISTRATION

Custodian: HSEQ Manager

Approval: Geoff Mackin
Acting General Manager Operations

Date: 17 September 2018