Overview

This guidance note has been developed based on the recommendations handed down by the South Australian Coroner on 1 November 2018 following the inquest into the tragic death of a worker at the Royal Adelaide Hospital Construction site in November 2014.

Elevating Work Platforms (EWPs) are mobile items of plant designed to lift or lower people and equipment by a telescopic, hinged or articulated device, or combination of these, from a base support.

While EWPs may assist to control work at height risks, the movement of mobile plant introduces new risks. Fatal incidents and serious injuries may happen when operators and/or passengers are crushed against structures while using self-propelled boom and scissor type elevating work platforms (EWP).

Duty holders usually understand the risks EWPs pose to people on the ground, however what’s often not fully considered is the increased crush risk to workers from the EWP platform or within the basket.

Risk control measures

Persons conducting a business or undertaking (PCBU) and self-employed persons must, so far as is reasonably practicable, identify all hazards and eliminate or minimise any risks associated with the use of plant, such as EWPs, in a workplace.

Selecting appropriate equipment for the task

Consideration of each task and any potential hazards to ensure an EWP is suitable to use and that the type of EWP is appropriate for the task e.g. indoors or outdoors, presence of overhead hazards, condition of supporting surfaces. It may be appropriate to use an alternative – like scaffolding – to reach and carry out the task.

Before operating an EWP undertake a thorough task, site and equipment specific hazard and risk assessment. This may include consideration of the height, reach, crush or trapping hazards, safe working load, ground conditions and terrain, restricted working space and any electrical hazards, including overhead powerlines.

Safe work method statements

A safe work method statement (SWMS) must be developed and followed for operating an EWP if there’s a risk to people from its movement, including those working in it. Measures to control crush risks must be documented in the SWMS.

Workers must stand on the floor of the EWP only, not on the handrails or items such as ladders, scaffolding or boxes either placed on the platform floor or on the handrails.

Secondary guarding devices

Various secondary guarding devices may help prevent crush or trap injuries, depending on the type of EWP and work being done. Examples are:

- protective structures: a device attached or fixed to the existing guardrails that provides a protective barrier around the operator.
- sensing device: a device activated by force or pressure that stops the movement of the EWP to minimise harm.
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If you plan to fit a secondary guarding device to an existing EWP, you must undertake a specific engineering risk assessment including consultation with the designer/manufacturer/supplier to determine whether there are any impacts on design registration and to ensure any proposed changes do not introduce new safety hazards or negatively impact the operation of the EWP. You can contact WorkSafe ACT for further information about design registration requirements.

Operator training
Before operators start using EWPs training must be provided about the functions, safe work methods and emergency procedures.
For a boom-type EWP, where the boom length is 11 metres or more, the operator must hold a High Risk Work Licence.
The boom length is the greater of:
- the vertical distance from the surface supporting the boom-type EWP to the floor of the platform, with the platform extended to its maximum height; or
- the horizontal distance from the centre point of the boom’s rotation to the outer edge of the platform, with the platform extended to its maximum reach.

Pre-operational checks
Before use and at the start of each shift, an EWP must be checked by the operator and tested in accordance with the pre-operational checklist based on Australian Standards.
Checks must include safety devices and interlock controls. If faults are identified, the EWP must be placed out of action (tagged out) and fixed before being used again.

Positioning
The position of an EWP must be carefully assessed, in particular where there are overhead power lines or underground services. Prevailing wind conditions should also be considered. The stability of an EWP must also be carefully assessed for surface slopes, ground cavities and the condition of the ground surface.
The positioning must ensure that access to the emergency retrieval system is maintained.

Wheel-mounted EWP
EWPs that are supported on wheels when elevated must be free of damage that may result in instability. Most self-propelled EWPs are filled with solid or foam filled tyres. EWPs fitted with pneumatic tyres must not be able to elevate without stabilisers being activated. Pneumatic tyres must be free of defects and inflated to the correct pressure.

Base controls
Base controls should not be used when personnel are on the platform, except in an emergency or for maintenance purposes. All EWPs must be fitted with an emergency retrieval system or be provided with auxiliary retrieval equipment to enable the safe evacuation of people from the platform.

Safe working load
The total weight of personnel, tools and material being loaded on the platform must not exceed the EWPs rated load capacity. Refer to the safe working load decal.

Operating instructions
Operating instructions must be clearly and permanently displayed on the EWP.
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Safety harness
Full safety harnesses must be worn by everyone on the platform of a boom-type EWP and be secured to the anchor point.
Where there is a risk of a free fall, a fall-arrest harness designed for attachment to a lanyard assembly, including a personal energy absorber, must be worn by everyone on the EWP.

Work in public places
When an EWP is used in a public place or on a roadway, suitable barricades need to be positioned to keep pedestrians and vehicles at a safe distance. Warning signs should be displayed and the appropriate approvals obtained from local authorities.

Overhead powerlines
Extreme caution must be exercised when operating an EWP near overhead powerlines. The minimum safe distances for operating cranes, machinery, vehicles or vessels with elevating components near powerlines are detailed in the Safe Work Australia – General guide for working in the vicinity of overhead and underground electric lines.

Maintenance requirements
All maintenance, inspections and repairs need to be undertaken regularly and in accordance with the manufacturer’s recommendations. An EWP owner may engage a competent person to ensure this is done properly.
All EWPs ‘in-service’ should be regularly inspected and must be subject to a major inspection by the end of the tenth year.

Control of risks associated with EWP crushing
The range of motion available on some modern EWPs increases the likelihood of a crush incident occurring. For example, some EWPs now have a greater ability to move into and between structures.
Before operating an EWP in, around or near fixed structures, duty holders must eliminate crush risks, so far as is reasonably practicable. If it is not reasonably practicable to eliminate the risk, it must be reduced, so far as is reasonably practicable by:
• substitution: does the EWP provide the highest level of protection, for example, can the task be done from a scaffold instead of an EWP?
• using engineering controls, for example, can an EWP with an operator protective device/secondary guarding such as a physical barrier or pressure sensing device, be used for the task?
  Note: if hiring an EWP this may require advance notice to the hirer.
• a combination of control measures.
If a risk still remains after implementing higher order control measures (above), administrative controls must be used to further reduce the risk, so far as is reasonably practicable.
Administrative controls may include:
• familiarising operators with specific EWP model controls
• EWP inspection and maintenance regimes consistent with manufacturer’s instructions
• altered work procedures
• additional operator supervision
• EWP specific emergency procedures
• assigning a safety observer who is trained to use EWP ground-based controls.
  Note: Administrative controls will also be required to support substitution and engineering controls.
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Identifying risks associated with EWP crushing

There will be an increased risk of persons, such as operators or passengers, being crushed while using an EWP where, for example: overhead/adjacent fixed structures are present:

- where the nature of the task being carried out requires the EWP basket to be used near overhead/adjacent fixed structures, the likelihood of a crushing incident occurring increases in direct proportion to the number and proximity of fixed structures (e.g., roofs, cable trays, pipework) near the EWP basket where the basket moves unexpectedly. This may be due to unstable ground conditions, an operator’s lack of familiarity with the EWP’s model specific controls, or malfunction of controls.
- there are ground-based obstacles in close proximity to the EWP. Obstacles on the ground may divert an operator’s attention from overhead or adjacent structures (or their passenger’s safety) while travelling or manoeuvring the EWP.

Note: The more time spent in an EWP close to fixed structures the more likely a crush incident may occur.

Recommended risk control measures specific to boom-type EWPs

Boom-type EWPs operating in workplaces where there is an increased risk of workers being crushed against a fixed structure should be fitted with an effective operator protective device.

Lower risk – minimal overhead structure in proximity. Secondary guarding not required

Increased risk – multiple overhead structures in proximity. Secondary guarding required

Operator protective devices are commonly known as ‘secondary guarding’. Such devices may include, but are not limited to:

Physical barriers attached to the basket which reduce the likelihood of workers being crushed against structures
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Recommended risk control measures specific to scissor-type EWPs

Duty holders should consider a range of potential risk control measures for scissor-type EWPs applicable to their operational environments. Risk control measures may include:

- a 'lower-before-travel' policy, where workers are instructed that they must lower scissor-type EWPs to be completely clear of any overhead structures before driving/travelling in the unit
- driving scissor-type EWPs via the external 'umbilical' control when traversing through doorways or on internal ramps.
  Note: Observer(s) should be used to monitor blind-spots for pedestrians when being driven by external 'umbilical' control.

Further information:
- Managing Risks of Plant in the Workplace - Code of Practice
- Elevating Work Platform Association of Australia
- Overhead crush and electrocution hazards when using boom lifts – WorkSafe Victoria
- Overhead crush and electrocution hazards when using scissor lifts – WorkSafe Victoria
- AS 2550.10: Cranes, hoists and winches – Safe use Part 10: Mobile elevating work platforms

Pressure sensing devices positioned over the control panel which detect pending crush incidents and prevent further hazardous movements.

Proximity sensing devices which prevent an EWP’s basket from manoeuvring into crushing proximity of fixed structures.