



## Mines Safety Significant Incident Report No. 151

### Crushed in a pinch point of fixed elevating work platform (EWP) — fatal accident

#### Incident

Whilst undertaking a pump change and repair work on a fixed scissor lift elevating work platform (EWP), an engineering tradesperson was crushed in a pinch point sustaining fatal injuries.

The deceased was an experienced tradesperson and had been trying to identify the cause of an ongoing problem in the lift ram circuit of the EWP. Work included fitting a new pump and modifications were made to the hydraulic circuit to power the EWP by means of the installation of a manual ball valve control and an external portable pump.

The deceased was found by a contract employee lying face down trapped between the EWP safety prop or bar and the safety prop securing bracket. The deceased was aware of the hazard and had previously used the safety prop to secure the EWP in an elevated position.

During reconstruction testing, under controlled conditions, the fixed EWP was observed to descend as a result of the loss of oil from the lift ram circuit via the additional hydraulic circuit and ball valve arrangement.

#### Immediate causes and contributory factors

- The deceased put himself unwittingly in a position where he was exposed to a hazard while reaching into the scissor lift when it came down unexpectedly.
- There was a lack of safe work procedures, job safety analysis and supervision for the repair work being undertaken.
- A manually operated ball valve was positioned within the workings of the EWP.
- The lift ram circuit was fitted with a variable rate flow descent control valve which was fully open with no restriction. This would allow an unrestricted rapid descent of the EWP in the event of any loss of oil from the lift ram circuit.
- Neither the EWP nor the external small portable pump found at the site had a check valve fitted to hold and retain the EWP in an elevated position.
- The safety prop was not in place to secure the EWP at the time of the accident.
- There was no guarding installed around the safety prop and securing bracket.
- The deceased was working on the EWP alone – previously another employee had assisted him when installing the safety prop.
- There was evidence of a spillage of hydraulic oil on the floor underneath the fixed platform. However, it is not known if the oil was lost prior to or at the time of the accident.
- A pendant, pump toggle control switch was found to be defective and would knock off if given a light tap or when dropped.

#### Comments and preventative actions

- In accordance with Section 9 of the *Mines Safety and Inspection Act 1994*, employers are required to ensure that a safe system of work is developed for any work being undertaken. Where procedures

are not available, employers should utilise job safety analysis (JSA) mechanisms to document the task, identify the risks and specify the safety controls to be used prior to the work being undertaken.

- All maintenance work needs to be regularly monitored and supervised throughout the shift to verify compliance with safety requirements, identify any deviations from safety standards and ensure alternative safe work methods are put in place to correct these deviations.
- Additional assistance should be made readily available on demand to employees working alone, to ensure that they do not over-extend themselves.
- Identified hazards should be managed and controlled in accordance with the hierarchy of control. The aim of a good risk analysis should be to eliminate the hazard, substitute a safer method or engineer out the hazard, in preference to accepting the risk and writing more safety rules, providing personal protective equipment (PPE) or both.
- Where the removal of moving machinery is impracticable, guarding of all pinch points and moving machinery parts is essential in protecting employees from inadvertent access.
- In accordance with Australian Standard AS 1418 *Cranes, hoists and winches*, all fixed EWP equipment and any external auxiliary pump, when used to operate an EWP, must be fitted with check valves on the lift ram circuit to prevent a rapid descent of the EWP due to any failure of the hydraulic circuit components.
- Where manually operated devices are installed for the purpose of external control of a EWP (as in the case of the manual ball-valve in this instance), they should be located outside the range of influence of the moving parts of the unit.
- All portable equipment should be regularly checked and maintained in an operational condition. Toggle switches that become defective should be replaced.



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12 February 2009