Mines Safety Bulletin No. 146

Subject: Contact with workers or equipment by excavators

Date: 17 January 2018

Background

Since 2015, two workers have been seriously injured through contact with an excavator while it was being utilised as a crane. In both instances, the controls for the bucket, boom or dipper arm of the excavator were inadvertently or incorrectly activated while the workers were within the slew radius.

Additionally, there have been three reported incidents of personnel working within the slew radius of an operating excavator, and two where light vehicles, having entered the working radius, were damaged by contact with the excavator.

Summary of hazard

The unintended movement of the bucket, boom or dipper arm on an excavator can result in:

- a serious or fatal injury
- instability of the excavator
- damage to equipment.

Contributory factors

- Inadequate communication with mobile plant operators.
- Workers and vehicles in the line-of-fire of an operating excavator.
- Failure to follow the original equipment manufacturer's (OEM's) operating instructions, including application of the hydraulic lock-out lever to lock the controls and prevent inadvertent movement of the bucket, boom or dipper arm.

Example of a hydraulic lock-out lever. Left: Unlocked, controls operational. Right: Locked, controls non-operational (Note: Lever position and operation may differ depending on manufacturer and model).

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Actions required

The following actions are recommended to managers, supervisors and operators to reduce the potential for an excavator making inadvertent contact with workers or equipment.

Safe work practices

- Confirm workers are competent to use the equipment and perform the work activities.
- Confirm adequate hazard identification and risk management has been conducted prior to undertaking work.
- Provide a means of direct positive communication (e.g. radio) for workers on foot to communicate with the equipment operator if they are required to enter the working radius of the machine.
- Ground the bucket (where practicable) prior to any workers entering the slew radius of the excavator.
- Apply the hydraulic lock-out lever when workers need to enter the slew radius of the excavator to carry out work.

Fit-for-purpose equipment

- If an excavator is being utilised as a crane to lift a freely suspended load then the excavator must comply with the requirements of Section 5 of the Australian Standard AS 1418.8 *Cranes, hoists and winches – Special purpose appliances*, and be operated within the OEM's specifications (e.g. swing radius should be demarcated).

Further information

- Standards Australia, www.standards.org.au

AS 1418.8 *Cranes, hoists and winches – Special purpose appliances*

- Department of Mines, Industry Regulation and Safety, Mines safety alerts, www.dmp.wa.gov.au/Safety/Mines-safety-alerts-13194.aspx

Mines Safety Bulletin No.114 *Compliance requirements for multi-purpose mobile plant*

Mines Safety Bulletin No. 143 *Use of an excavator bucket as a lifting point*

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