Investigation information release

Date: November 2022

Worker seriously injured using a crowbar to push a securing pin on a dozer counterweight during a lifting operation

Incident date: 8 November 2022

Event: Worker seriously injured using a crowbar to push a securing pin on a dozer counterweight during a lifting operation

Location: Werris Creek Coal Mine

Overview

A worker suffered a serious laceration to his ear when he was hit by a crowbar he was using to push out a securing pin while moving a 9.8 tonne dozer counterweight.

At the time, the counterweight was held by a vertical two-leg chain assembly slung from a Franna crane. No other support device was used to prevent movement of the counterweight during the task.

The securing pin was pushed by the crowbar horizontally, which released the counterweight. The counterweight rotated back about 50 mm until the chain assembly prevented the counterweight moving further. The crowbar flicked sideways due to the movement of the counterweight and hit the worker's ear.

The mine

Werris Creek Coal Mine is on Quirindi Road about 50 km south-west of Tamworth in northern NSW. The mine is an open cut coal mine and produces a thermal and PCI coal that is exported to world markets. Whitehaven Coal Limited is the mine operator of Werris Creek Coal Mine.

The incident

Three mechanical maintenance workers employed by an equipment hire and maintenance company, assisted by a Franna crane operator, commenced the task of moving the counterweight at about 9.15am on Tuesday 8 November 2022. The purpose of moving the counterweight was to enable access necessary to replace the dozer transmission.

The dozer was owned and maintained by the equipment hire company and the task was being undertaken in a maintenance area allocated to it.

The workers created a job hazard assessment (JHA) that was counter-signed by a maintenance supervisor employed by the mine. The workers did not know the specific weight of the after-market counterweight but estimated it to be about 12 tonne by reference to generic information from the dozer OEM on-line database. There was no weight identification plate on the counterweight.

The counterweight was attached to the dozer by 2 top and 2 bottom securing pins.

A vertically slung two leg chain assembly (13 mm diameter grade 80T chain assembly with a WLL of 11.2 tonne at 60^0) was attached to 2 lugs on the counterweight and lifted by the Franna crane while the 2 top securing pins were removed.

Figure 1 The dozer counterweight secured by the 2 lower pins and lowered to the ground after the incident.

The workers used a crowbar to push out the first top securing pin without incident. The load on the Franna was about 4 tonne while removing the first top securing pin.

During removal of the second top securing pin the load on the Franna increased to about 5.5 tonne.

Figure 2 Post-incident location of the second top securing pin in the right hand side flange on the dozer

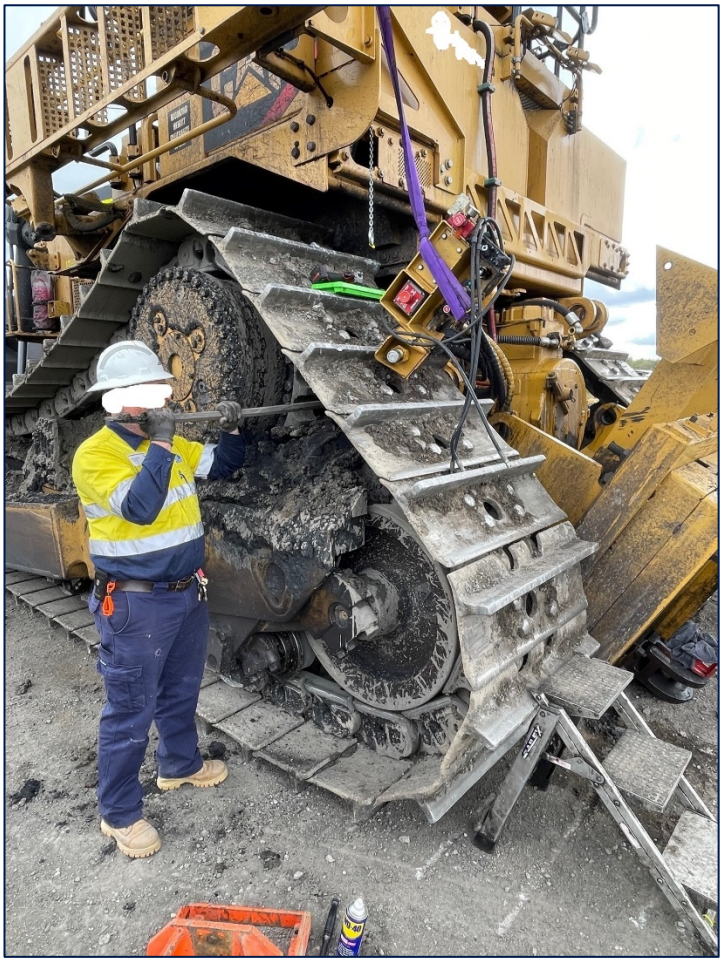
One of the workers used the crowbar to strike the second top securing pin. The injured worker took over the task and warned the other 2 workers about the potential for the counterweight to move.

The injured worker continued to strike the pin several times. As the pin moved sideways it released the counterweight. The counterweight pivoted on the 2 lower pins and rotated back about 50 mm towards the Franna until the chain assembly held the weight and prevented it from moving further.

When the counterweight rotated the load on the Franna increased to about 8 to 8.5 tonnes.

The crowbar flicked sideways during the movement of the counterweight and struck the worker's head.

Figure 3 Post-incident simulation of the injured worker and position of the crowbar under the dozer track to push the second top securing pin horizontally so as to release the counterweight



The investigation

The Regulator has commenced an investigation to determine the cause and circumstances of the incident. The investigation will explore, among other things:

- the systems of work implemented including:
    - Risk assessment: Potential movement of the counterweight and means of control.
    - Equipment: Using a crowbar to push a securing pin.
    - Lifting loads: Using a Franna crane and chain assembly to hold the counterweight.
    - Procedures: Releasing and moving the counterweight.
    - Controls: Support devices to control potential unplanned movement of the counterweight.
    - Contractor management.
- the information about the counterweight on the dozer available to the workers undertaking the task, the owner of the dozer, the mine operator
- the experience, training and assessment of competency of workers involved in the task and supervisors.

The mine operator and contractors are cooperating with the investigation. A report will be published when the investigation is concluded.

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Further information

Please refer to the following guidance materials:

- NSW Resources Regulator Code of practice – Mechanical engineering control plan
- SafeWork NSW - Code of practice - Managing the risks of plant in the workplace
- NSW Resources Regulator Investigation report Dangerous incident at Boggabri mine August 2022
- Safety Bulletin SB22-05 Crane incidents on the rise
- Safety Alert SA22-04 Dangers of lifting and pulling activities revealed

About this information release

The Regulator has issued this information to draw attention to the occurrence of a serious incident in the mining industry. Further information may be published as it becomes available.

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