Safety Alert

Date: October 2022

Dangers of lifting and pulling activities revealed

This safety alert provides safety advice for the NSW mining industry.

Issue

Two workers have suffered injuries within 3 days during lifting and pulling activities at 2 NSW underground coal mines.

In consideration of the circumstances of each incident, it was fortunate the injuries were not far worse.

Circumstances

First incident

A mechanical tradesman was separating a longwall tailgate drive from the 4 tailgate roof supports. The mine was using an alternate set of longwall equipment to mine another panel and this equipment had not been used for months.

The worker was instructed to inspect the task and determine the best way to carry out the task. Multiple methods were possible.

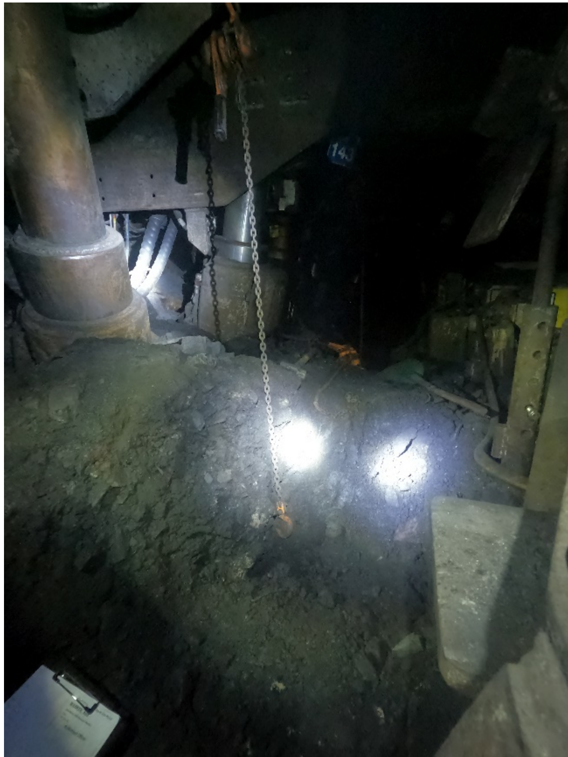
The relay bar clevis pins were successfully removed from roof supports 141 and 142 using a lever hoist anchored to the roof support canopy and the hook attached to a lug on top of the pins. The same method was attempted for roof supports 143 and 144.

The lug on top of the clevis pin on roof support 144 was damaged but the pin was sitting high in the relay bar. This allowed the worker to wrap the chain of the lever hoist around the pin, attaching the hook back onto the chain (choking the chain around the pin). Load was applied to the lever hoists on both supports but the clevis pins did not move.

A heavy lift machine was then used to move the tailgate drive to try to loosen the pins. This assisted with the pin on roof support 143. The worker then went to apply further load to the lever hoist on roof support 144.

As the worker applied additional loaded to the lever hoist, the chain and hook has slipped off the pin and flung upwards, striking the worker on the cheek. The worker was taken to hospital by ambulance.

Figure 1 Set-up of lever hoist over a clevis pin



Second incident

A continuous miner was being prepared to be trammed out of the panel for repairs to the shovel lift cylinder and clevis. The development panel was crewed with contractors including the deputy. Due to the shovel float functionality, the shovel could not be pinned or held in a raised position for tramming. To tram the miner, the shovel had to be chained to the cutter boom. This was the sixth time the miner required workers to hold the shovel for tramming.

On previous occasions, the shovel was raised and chocked, the cutter boom was lowered to position, and the shovel then chained to the head, the head was never moved. A job hazard assessment (JHA) was completed for the first time this occurred but this could not be found during the investigation. This procedure was never formalised. Due to the damage to the shovel, it could not be raised.

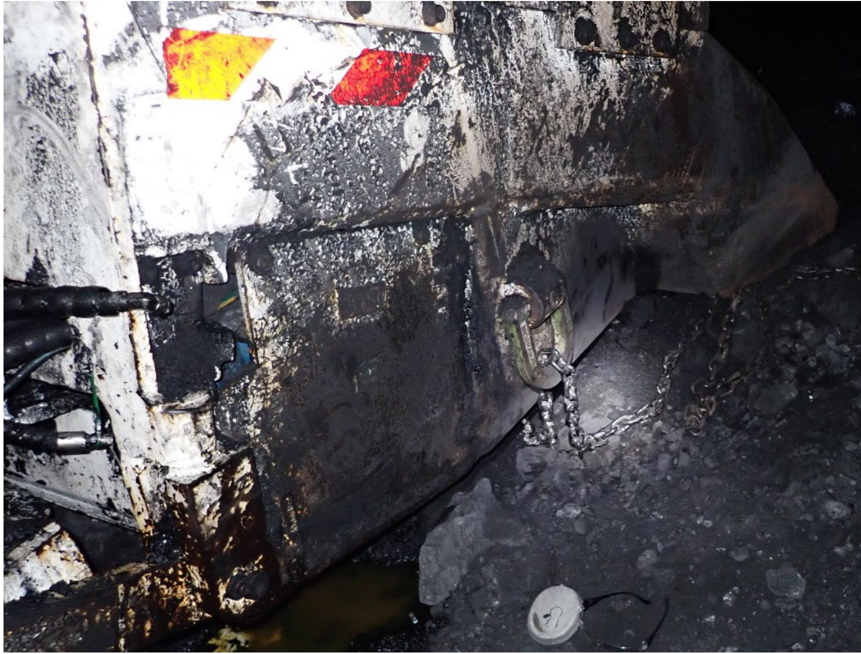
No procedure was provided and a new JHA was not completed. The miner driver, deputy and electrician inspected the travel route. The cutter boom was lowered and a 10 mm chain was connected to RUD lugs on either side of the shovel.

The deputy and electrician moved to a cut through behind the miner. The miner driver powered up the miner and started the hydraulic pumps and moved to what he thought was a safe place to the right-hand side of the miner, clear of the chain on that side. As the cutter boom was raised the chain failed on the left-hand side of the cutter boom and flung in an arc. The chain hit the worker on the face and shoulder.

No controls were in place to prevent the cutter boom from travelling beyond the travel limits of the shovel. The miner driver stated he didn’t think he raised the cutter boom beyond this point but there was no control or indication of this.

The worker was treated at hospital and given 2 stitches to the cheek, just below the eye and another 2 stitches to the neck. The worker’s safety glasses were also impacted but remained in place and intact.

Figure 2 10 mm chain attached to an RUD lug



Recommendations

Mine operators should:

- provide workers with detailed procedures on the intended method and lifting techniques including identifying the correct lifting equipment when planning lifting tasks
- develop and review safe work procedures for carrying out lifting activities for routine tasks
- train workers to identify the correct attachment points and methods for lifting activities
- create safe work procedures when JHA/JSAs are used repeatedly
- include contract work groups in planned behavioural, workplace and task inspections
- regularly train workers in the triggers when different levels of risk assessment are required
- review shovel float function and the methods used to support the shovel during flitting operations.

Workers should:

- not use lifting equipment unless trained
- not conduct lifting activities if they do not understand the energies and potential hazards involved in a task
- raise their supervisor when unable to locate a procedure.

Refer to:

Flight bar hits worker while installing safety chain

Investigation report - Serious injury at Springvale Colliery 5 February 2019

Lateral load shifting incidents (video)

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