

SAFETY BULLETIN

DATE: JULY 2019

Objects entering cabins of underground mobile plant

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

Issue

There have been repeated incidents reported to the NSW Resources Regulator recently involving objects entering the operator cabins of mobile plant in underground coal and metal mines.

The incidents have one or more common factors:

- Mine operators failed to adequately identify, remove or delineate potential hazards in vehicle roadways.
- There were inadequate site rules about how vehicles should pass in underground roadways.
- Vehicle operator awareness of the hazards needs to improve while operating vehicles.
- Workers who were involved in incidents suffered minor injuries or had the potential to cause a fatality.

Circumstances

Incident 1 – 24 May 2019:

An underground coal mine load haul dump (LHD) operator suffered a fractured cheek bone, as well as severe head and neck lacerations resulting from a protruding roof bolt that was stowed in the rib side mesh. The operator's arm and shoulder were also injured when his body was forced onto the LHD door by the roof bolt.

The operator was towing a sled in an underground coal mine roadway and moved the LHD closer to the rib side at a cut-through intersection to allow another vehicle to pass.

The operator said he did not see the protruding roof bolt and that he didn't touch the rib with the vehicle but the roof bolt entered into the operator's cabin at head height and hit him.

Figure 1 Simulation of the roof bolt entering the operator's cabin and hitting the operator on the cheek bone (left photo). As the LHD moved forward, the bolt went behind the operator's head (middle photo). As the LHD moved further forward, it pivoted on the LHD canopy and forced the operator onto the LHD door (right photo) (IncNot0034693)



Incident 2 – 29 April 2019:

The driver of an underground coal mine personnel transporter hit the rib side.

The driver said that a single 2.4 metre roof bolt entered through the passenger windscreen and went through the cabin divider mesh and landed on the rear seat of the transport vehicle. The bolt entering the cabin caused the driver to hit the rib side.

The driver was not injured. However, if a person had been seated in the front passenger seat or in a rear seat, the impact from the roof bolt could have been fatal.

Figures 2 Damage to side of personnel transporter



Figure 3 Post-incident simulation of the final location of the roof bolt on the personnel transporter rear passenger seats (IncNot 0034483)



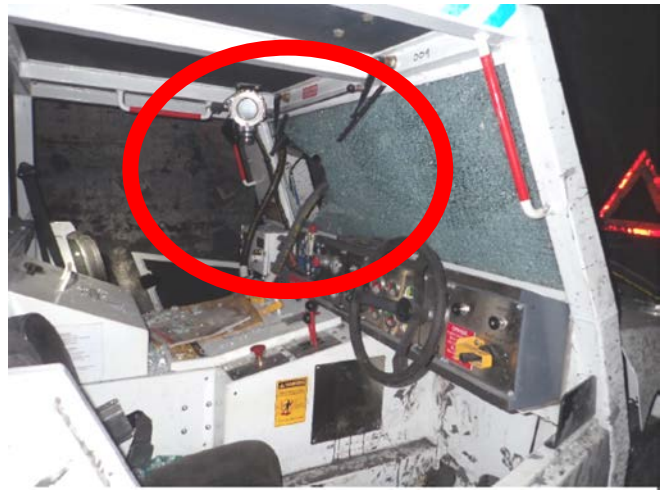
Incident 3 – 23 April 2019:

The driver of an underground coal mine personnel transporter was reversing the vehicle and passed underneath a 25 millimetre air hose hung across the roadway.

The driver saw the hose clear the roof racks and continued to reverse. The driver heard a loud bang and noticed that the air hose connector fitting had shattered the front windscreen and entered the cabin. The driver had driven underneath the hose the previous day with two different types of mobile plant without incident.

The driver was not injured. However, a passenger could have been hit and injured by the hose fitting entering the cabin.

Figures 4 and 5 The damaged windscreen, air hose and fitting that entered the personnel transporter cabin (IncNot0034486)

**Incident 4 – 11 April 2019:**

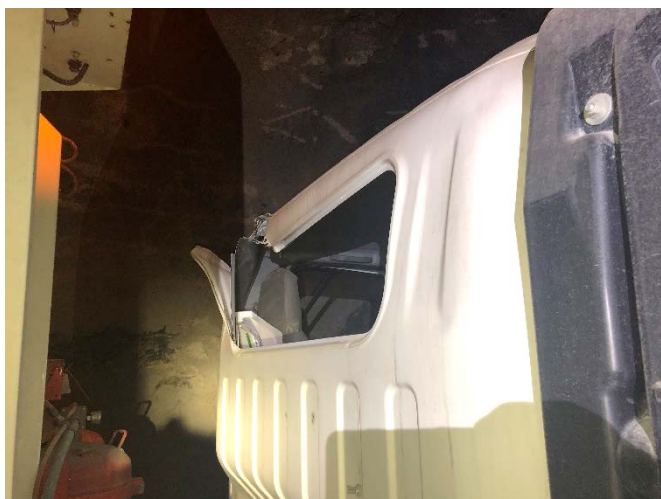
A Jumbo drill rig was travelling down a decline in an underground metal mine. The Jumbo pulled over into a stockpile to allow a light truck to pass. A drill steel protruded 2.2 metres from the back of the Jumbo.

A driver and passenger were inside the light vehicle. As the vehicle passed the Jumbo, the protruding drill steel end hit the truck's passenger side mirror.

The drill steel continued through the passenger side window, over the head of the passenger and pierced the metal cabin shell above the back window. The back window was pushed out.

The tip of the drill steel lodged against the headframe of the truck tray. The drill steel was compressed against the truck bulkhead and the stored energy was released when the bottom plate of the Jumbo steel holder frame bent. This caused the drill steel to be ejected from the truck, landing about 14 metres away.

Figure 6 and 7 (left) Post-incident simulation of the drill steel entering the truck cabin from the Jumbo. (right) Damage to the back of the cabin body above the passenger seat caused by the drill steel entering the cabin (IncNot 0034365)



High potential mobile plant incidents:

Between 13 February and 13 March 2019, there were five incidents reported to the Regulator by underground metal mines in which mobile plant lost control and hit walls. The potential for objects to enter cabins is elevated in these circumstances.

Three of these vehicle incidents were reported in the NSW Resources Regulator's [Safety Bulletin \(SB 19-02\) Rise in vehicle collisions raise concerns](#), published on 12 March 2019.

Recommendations

Mine operators should review the site mechanical engineering control plan (*WHS(MPS) Reg 2014 clause 26*) and specific control measures for movement of mobile plant (*WHS(MPS) Reg 2014 clause 28*), in particular:

- a. identify and remove, or clearly delineate, potential hazards to mobile plant in vehicle roadways
- b. provide and enforce rules for mobile plant to pass in underground roadways
- c. specifically review mobile plant with extended loads, over-hanging loads, or towing loads to ensure that any load that is outside the standard machine design is adequately delineated for visibility by other drivers
- d. review training competencies of mobile plant operators and conduct toolbox talks to improve operator awareness of the hazards of operating mobile plant in underground roadways as highlighted in this safety bulletin.

NOTE: Please ensure all relevant people in your organisation receive a copy of this safety bulletin and are informed of its content and recommendations. This safety bulletin should be processed in a systematic manner through the mine's information and communication process. It should also be placed on the mine's common area, such as your notice board where appropriate.

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