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MINING AND QUARRY OPERATIONS

Articulated truck rollovers

What is the issue?

WorkSafe’s High Hazards Unit has recently been notified of rollover incidents involving the use of trucks in open cast mines, alluvial mines and quarries. The trucks involved range from road certified truck and trailer units through to heavy off-road articulated dump trucks. These incidents resulted in workers being injured and in one recent case, a tragic loss of life. Any truck rollover has potential to cause harm to the truck operator, passengers and/or bystanders.

This safety alert highlights the serious health and safety risks for operating articulated machinery in open cast mines, alluvial mines and quarries.

How did these incidents happen?

Key factors that were found included:
- uneven ground, particularly when tipping and reversing
- excessive speed
- loss of ground stability or subsidence beneath the truck
- hold up of material in the tray when tipping
- use of machinery outside of design capability
- under inflation or rapid deflation of tyres
- roads being too wet causing loss of traction
- tipping at a 90 degree angle to the dump tray
- untrained or inattentive drivers.

Vehicle incident one

A truck was tipping material and backed up onto a load that was dumped previously. Material was sticky and hung up in the tray causing the trailer to tip over.
Vehicle incident two

Large rocks were caught up within the tailgate of an articulated dump truck (ADT) tipping down grade without a dump windrow. This caused the ADT to lift upwards allowing the cab to lift off the ground and rotate.

Vehicle incident three

A service truck at an open cut mining operation drifted sideways when negotiating a sweeping right hand bend. The truck travelled approximately 20 metres before it lost traction at its rear wheels which spun the truck around 180 degrees. The left wheel then gripped into the road surface tipping the truck onto its side.
Controls to mitigate the risk of injury following a truck rollover should also be implemented and include:
- the fit-out and use of operator seat restraints
- the use of operator protective structures
- measures to ensure all tipping can only be completed in line so truck is not at an angle to the dump tray and in the fall zone
- appropriately designed and maintained windrows, berms and bunding.

More information

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