



Significant Incident Report No. 267

Subject: Haul truck operator loses control descending ramp on haul road - fatal accident

Date: 07 September 2018

Summary of incident

Note: The Department of Mines Industry Regulation and Safety's investigation is ongoing. The information contained in this significant incident report is based on materials received, knowledge and understanding at the time of writing.

On the night shift of 15 August 2018, a haul truck driver was fatally injured when he lost control of a Komatsu 830E A/C haul truck and crashed into a windrow. The haul truck was descending a ramp with a full load of ore. The Komatsu 830E A/C is an electric drive truck, not a conventional geared unit.

The ramp was part of the haul road from the pit operations to the crusher. The ramp was inclined with a down grade between 8% and 10%, and a length from crest to toe of 1250 m. There was a gradual right hand curve at the toe of the ramp.

The mine's standard for the safe operating ramp speed for a loaded haul truck is not to exceed 20 km/hour. A speed of 79 km/hour was recorded on the ramp.

Data recordings of the incident show that the service brake was not activated during the descent.



Haul road. Left: Approach to ramp crest. Right: Approach to bend at toe of ramp.

Note: The electronic braking controls the descent speed of the truck if it is maintained within the safe operating range. The electronic braking will not slow a loaded truck on a 10% slope if the speed is above 25 km/hour as the gravitational force overcomes the electrical resistance.

In order to stay in the safe parameters, the trucks are to approach the ramp crest at 16 km/hour to allow the driver time to reduce the truck speed for a safe descent at 20 km/hour. These two parameters are set to keep the speed in the safe operating zone and allow sufficient time to engage the electric braking system after going over the crest. As soon as the truck exceeds 25 km/hour, the driver should engage the service brakes to perform an 'emergency' stop.

Direct causes

The operator lost control of the truck while descending the ramp. The truck was going too fast to negotiate the gradual turn at the bottom and crashed into the windrow.

Contributory causes

- The truck exceeded the speed at which the electric braking system could stop it.
- The service or mechanical brake was not engaged for an emergency stop.
- The truck was fully loaded descending a long slope.
- Immediately preceding the crest of this long slope there was another crest followed by a short downhill and then an uphill section in the form of a saddleback.

Actions required

The following measures are recommended for the safe operation of electric haul trucks on ramps.

- Conduct a risk assessment for each ramp to determine the safe operating parameters for the truck in accordance with original equipment manufacturer (OEM) standards.
- Consider installing a road feature such as a chicane or an intersection ahead of the crest as an engineering control to force the operator to slow down before the ramp.
- Evaluate the location and type of speed warning devices.
- Retard speed control devices should be engaged during the ramp descent.
- Training programs should emphasise the importance of activating the service brake to stop a truck as soon as it passes the electrical braking capability.

Further information

Visit www.dmirs.wa.gov.au/ResourcesSafety for information on occupational safety and health in the resources sector.

This Significant Incident Report was approved for release by the State Mining Engineer on 07 September 2018