



SIGNIFICANT INCIDENT REPORT NO: 125

VEHICLE INCIDENT INVOLVING THE TRANSPORTATION OF EXPLOSIVES UNDERGROUND

Incident:

An external transport company was transporting 8 tonnes of packaged explosives to a main magazine underground. The driver of the explosives truck stopped on the decline, after negotiating a bend.

Whilst the explosives truck was stationary, two mine trucks on the way down the decline had to take avoiding action to prevent a collision with it. The first truck hit a sidewall and the second truck collided with the first, sustaining only minimal damage. The explosives truck driver, being unaware of the incident, continued to the explosives magazine to unload the cargo. No serious injuries occurred as a result of this incident but in other circumstances the outcome could have been catastrophic.

Contributing Factors:

The transport of explosives was being carried out during normal mining operations. No restrictions had been placed on the number of vehicles operating at the time when a large quantity of explosives was being transported.

A procedure had been developed which gave the driver of the explosives truck right of way over all other vehicles. All other vehicles were expected to get out of the way of the explosives truck when it was underground.

Contrary to procedure, the explosives truck driver stopped on the decline directly after negotiating a bend, giving little warning to other vehicles operating in the area. The driver had stopped on the decline due to a mine truck coming up the decline, whose operator had not provided clear confirmation that the vehicle was clear of the decline block which the explosives truck was about to negotiate.

Comments and Recommendations:

The transportation of large quantities of explosives underground can create a significant increase in the level of risk to personnel working underground.

The consequences of a collision with such a vehicle could be disastrous should a fire or explosion occur.

In Western Australia near Marvel Loch in 1998, an explosives transport vehicle exploded approximately 40 minutes after a tyre fire occurred and spread to the rest of the vehicle.

The risk potential for an explosion arising out of a fire or vehicle collision in explosives transport operations has a low or unlikely probability of occurrence, but extreme or catastrophic consequences to the driver of the vehicle and other employees underground. In other words, the risk is high and the use of operational procedures alone to manage the risk may be inappropriate given the nature of the potential hazard.

Principal employers and mine managers should examine and review the transportation of explosives at the mines under their control in light of this incident. A risk analysis should be undertaken and the controls implemented should be appropriate to the scale of the hazard.

The following recommendations are made with respect to the underground transportation of explosives in large quantities. As far as is practicable: -

- ❖ Normal vehicle movements, particularly large vehicle or truck movements, should cease in affected areas during the transportation of large quantities of explosives underground.
- ❖ The transport of large quantities of explosives should be undertaken during periods when minimum numbers of staff are underground. e.g. during shift changes, when the majority of personnel are on the surface.
- ❖ Large quantities of explosives and detonators should not be transported together in the same vehicle.
- ❖ The quantity of explosives or detonators transported at any one time should be limited to a prescribed level to ensure an acceptable residual risk.
- ❖ The quantity of explosives transported underground to a main magazine should not exceed by more than 500kg the amount normally required for one week's work at the mine.
- ❖ Adequate means of proclaiming the identity and position of the explosives transport vehicle should be provided. (This may be done by placarding and/or the installation of flashing beacons, but compliance with legislation dealing with the use of such items must be ensured. Other suitable means may be used.)
- ❖ A vehicle escort should be provided to avoid the possibility of a collision. The escort vehicle should be operated by personnel familiar with the handling and transport of explosives.
- ❖ Personnel should be trained to operate vehicles at speeds compatible with the line of sight and visibility conditions.

These recommendations are listed in accordance with the recommended hierarchy of controls.

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