



SAFETY BULLETIN NO: 52

OPERATION OF WATER TRUCKS IN OPEN PIT MINES (QUARRIES) - HIGH RISK INCIDENTS -

THE HAZARD

In the past four years 20 reports have been received by the Department on the loss of control of on-highway type road watering trucks being operated in quarries. In half of these incidents the trucks rolled over, resulting in injury to the operators in 35% of the total reported incidents.

Investigations identified two main immediate causal factors.

- (i) The brake systems of the trucks involved were inadequate for the duty; and
- (ii) The training of the operators of water trucks was less than adequate.

REMEDIAL ACTION TO CONTROL/ELIMINATE THE RISKS

As a **minimum** operations should maintain compliance with the Regulations.

(a) Regulation 13.2 of the Mines Safety and Inspection Regulations 1995 requires, in part, *“that a motor vehicle is not used in a mine unless it is equipped and maintained with suitable brakes capable of effectively stopping and holding that vehicle fully loaded under any conditions of operations when driven in accordance with the manager’s instructions”*.

In order to comply with this regulation the manager is obliged to determine the suitability of the braking systems on vehicles operating in the quarry under his control. Reference back to the vehicle manufacturer with details of the required duty may be necessary to satisfy this requirement. This issue is particularly important when modified on-highway trucks are about to be introduced into any quarry as water trucks. Most on-highway trucks are not fitted with retarders (as are off-highway trucks) and reliance on supplementary “brake-support” systems such as exhaust brakes should be subject to a comprehensive risk assessment.

(b) Regulation 4.13 of the MSIR 1995 requires, in part, *“that every employee is given adequate instruction and training in safety procedures and systems of work and in the tasks required of the employee”*.

In order to comply with this regulation the manager of a quarry should ensure that each operator of a water truck used in that quarry fully understands the rules which apply to the



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operation of each type of water truck the operator may be required to drive. Coping with loss of operating control functions such as brake failures, steering failures, engine failures etc. should be covered in the training regime. Operators should be made aware of the dangers when attempting gear changes whilst travelling down steep grades, and the consequences of not utilising retarder systems during those trips.

The Broader Obligations Under The General Duty Of Care

The equipment used in any application should be fit for purpose.

Experience has shown that modified on-highway trucks are less than adequate for water truck service in deep open pits with extended steep hauls, and rough pit floor conditions.

The appropriate equipment for this type of duty is the robust off-highway units which are designed to operate under these conditions.

The on-highway units are satisfactory for road watering on the general run of surface roads, and for use in shallow open pit work not involving the deep pit conditions referred to above.

Such operations include pits in the bauxite (alumina) and mineral sands sectors, and many of the extractive industry quarries.

The above considerations are directed at on-highway type water trucks in this particular application for a number of reasons:

- The vehicle is usually travelling loaded on down hauls.
- The movement of the water in the tank, even with baffles, tends to cause instability.
- The truck is in continuous use and interacts with the heavy off-highway equipment on haul roads and benches.
- The truck of necessity traverses freshly watered roads on a continuous basis.

The use of on-highway type vehicles for bulk explosives and service truck applications involves a lower level of risk, as their operation is much more intermittent, and so these units are not constantly interacting with the heavy vehicle traffic to the same extent that water trucks are required to do.

Nevertheless, the operation of on-highway type trucks in even these limited duty capacities requires that braking systems are adequate, and the vehicles are well maintained and operated by fully competent persons.

SUMMARY

Principal Employers and Managers of open pit mines should carry out a comprehensive assessment of the risks in determining the class of vehicle to be used as water trucks in the light of the information in this Bulletin, and review the previous history of operating experience in doing so.

J M Torlach
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