DEPARTMENT OF MINERALS AND ENERGY WESTERN AUSTRALIA

SIGNIFICANT INCIDENT REPORT NO. 99

REMOTELY OPERATED LHD - 'RUNAWAY'

INCIDENT

In an underground metalliferous mine, a remotely controlled load-haul dump machine being reversed downhill out of a stope draw-point towards the operator suddenly and unexpectedly increased speed.

The operator was using 'low idle' engine revs at the time, and attempted to arrest motion by rapidly selecting 'full forward' and steering the machine away. When the machine continued to increase downhill speed the operator then hit the emergency-stop and avoided injury by taking refuge in an adjacent safety 'cuddy'. Within seconds the machine collided against the roadway sidewall immediately opposite the cuddy with its engine stopped.

CAUSE

An investigation and trials conducted with the machine on the mine surface under controlled conditions, showed that the incident occurred because the machine's engine had stalled.

When the engine stopped, a consequential drop in transmission oil pressure caused the machine's drive clutch to disengage and allowed the machine to coast downhill under gravity as though in neutral.

One effect of the operator selecting 'full forward' on the remote control unit was to hold off the machine's brakes. Another was that at 'low idle' speed the engine output was insufficient to prevent the machine stalling.

COMMENTS AND PREVENTATIVE ACTION

Similar incidents have occurred previously, and serve as a reminder that an engine can stall quite readily.

Had the machine operator immediately pushed the emergency-stop, or simply released the direction control lever, the machine would have stopped under full service braking within two metres.

Of serious concern is the fact that a manufacturer's design modification specifically intended to safeguard against a 'stalled engine' had been previously notified but not implemented. The safeguard is aptly called an *'AUTOMATIC BRAKE APPLICATOR'* and initiates soon after the engine stops.

Employers and manufactures need to be mindful of their statutory 'Duty of Care' obligations and ensure that their processes for communicating and implementing design changes are effective.

J M Torlach
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10 November 1998

SAFETY AWARENESS SAVES LIVES