



REMOTELY OPERATED LHD - BRAKE FAILURE

INCIDENT

In an underground metalliferous mine the service brakes of a remotely controlled load-haul dump machine failed to apply when the loaded machine was reversed from an open-stope towards the operator. Application of the park-brake also failed and the machine came to rest after colliding against a sidewall.

The operator was positioned well clear of the machine and avoided injury.

CAUSE

The brake failures occurred because the 'tow-hitch' retrieval mechanism fitted to the rear of the machine had been incorrectly assembled when serviced the day before.

The mechanism operates in a manner that allows the machine's hydraulic brakes to be released during a retrieval process, and a 'shear-pin' intended to prevent inadvertent operation during normal remote control had not been re-installed when the mechanism was re-assembled.

COMMENTS AND PREVENTATIVE ACTION

The unsafe condition did not become immediately apparent because a detachable 'locking-plate' normally used in the manual operating mode was in place. The brakes first became inoperative when the machine arrived at the underground workplace and the 'locking-plate' was removed to activate the mechanism ready for remote operation.

Had the operator been close to the rear of machine when the brakes failed, clearly the outcome could have easily proved fatal. Similarly, if the machine had been parked on an uphill grade, the machine may well have coasted backwards over the operator when the 'locking plate' was removed.

Further incidents can be avoided by ensuring that pre-start checks of the retrieval mechanism and brake performance are carried out before operating the machine.

It is also essential to note that a machine towed by its retrieval hook will need to be securely chocked prior to being disengaged from the tow.

The circumstances of this incident, and a series of other reported occurrences, all demonstrate that remotely controlled machines can (and sometimes do) respond in an unplanned and unexpected manner, seriously jeopardising the safety of any personnel in the close vicinity.

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