

SAFETY BULLETIN

Failure of mobile equipment braking systems and procedures

BACKGROUND

An unacceptable number of incidents involving the failure of mobile equipment braking systems, maintenance systems and operating procedures at mines have resulted in serious injuries and fatalities. Investigations have shown that poor workplace practices and inappropriate management systems have contributed to the failure:

- to complete effective prestart checks
- of maintenance management systems
- to wear seatbelts
- to follow safe operating procedures.

A number of serious incidents involving mobile equipment have occurred where injury to operators has been significantly reduced or eliminated through the correct use of seatbelts. Industry & Investment NSW has previously provided guidance (see references below) to assist mines to identify and address these failures.

Mine operators are reminded of their obligation under section 8 of the *Occupational Health and Safety Act 2000* to provide a safe workplace and to provide plant that is safe and without risks to health when properly used.

Other relevant legislative references include:

- the *Occupational Health and Safety Regulation 2001* clause 136A Use of plant - particular risk control measures
- OHS Regulation 2001 clause 137 Maintenance and repair of plant - particular control measures
- OHS Regulation 2001 clause 141 Powered mobile plant – particular control measures)
- the *Mine Health and Safety Regulation 2007* clause 14 (b) Additional contents of mine safety management plan.

Refer to the website www.legislation.nsw.gov.au for the legislation.

RECOMMENDATIONS

All mines that operate mobile equipment, or employ contractors to operate mobile equipment, should ensure the following are in place.

Prestart checks

1. Prestart checks that are specific to the type or item of mobile equipment and that identify all mobile equipment safety critical systems including braking systems and brake failure warning systems.
2. Prestart checks that are rigorously carried out by competent operators.
3. Training that ensures that operators are competent to identify, inspect and test mobile equipment safety critical systems in accordance with the original equipment manufacturer's (OEM) recommendations.
4. A prestart check procedure that identifies, reports and records high-risk defects and ensures the defects are repaired by competent maintenance staff before the mobile equipment is operated.
5. Regular monitoring and periodic auditing of prestart check procedures and outcomes against the mine safety management plan.

Maintenance management systems

1. Mobile equipment inspection, test and maintenance activities that are conducted in accordance with the OEM's recommendations and appropriate safe work procedures (SWP).
2. A system that establishes and records a detailed history of all inspection, test and maintenance activities undertaken, and identifies and documents all safety critical systems particularly braking systems.
3. Mobile equipment is assessed against the relevant requirements of *MDG 15 Guideline for mobile and transportable equipment for use in mines*.
4. Training that ensures that operators, supervisors and maintenance staff who work with mobile equipment understand safety critical systems and are competent for their task.
5. A system that ensures that competent maintenance staff periodically check and test all safety critical systems to confirm their functionality, and inspect mobile equipment generally to verify that it is safe to operate.
6. Maintenance procedures for braking systems which are consistent with the level of risk for the site operational environment.
7. Regular monitoring and periodic auditing of the maintenance management system against the mine safety management plan.

Seatbelts

1. Seatbelts and anchorages that are fitted to mobile equipment in accordance with *MDG 15 Guideline for mobile and transportable equipment for use in mines*.
2. Training that ensures that operators are competent and understand that seatbelts must be worn.

3. Regular workplace inspections and task observations that are conducted to ensure compliance by operators with the correct use of seatbelts.

Safe operating procedures

1. A system that identifies the site operational environment for mobile equipment including loads, road conditions, and maximum gradients.
2. A system that confirms that mobile equipment braking systems are designed and tested to ensure that mobile equipment is safe to operate, and is capable of ascending, descending, stopping and holding in all site operational environments.
3. A review of mobile equipment operational risk assessments and SWPs for the operation of mobile equipment in all site operational environments. The risk assessments and SWPs must include but are not limited to the following:
 - a. Emergency procedures in the case of the failure of braking systems and runaway of mobile equipment.
 - b. Operation of mobile equipment on gradients including correct speed, gear selection and use of retarders when descending.
 - c. Parking procedures for mobile equipment including park brake testing and parking on gradients to prevent runaway in case of park brake failure.
4. Training that ensures that operators are competent to operate mobile equipment in accordance with relevant SWPs and understand braking systems and braking procedures.
5. Regular workplace inspections and task observations that are conducted to ensure compliance by operators with SWPs.

REFERENCES

- SA05-10 Fatal truck accident at quarry*
SB06-01 Use of operator / passenger restraint and protection devices
SA06-07 Seatbelts must be worn
SA06-10 Lucky escape from underwater truck
SA06-12 Maintenance of safety critical systems – Braking, steering and warning systems
SA06-13 Braking standards for trucks may not be fit for purpose
SA06-14 Information to be supplied on safe operating grades for mobile equipment
SB07-09 Fatality involving loader
SA09-01 Driver injured in dump truck rollover
MDG 15 Guideline for mobile and transportable equipment for use in mines.
Minerals Industry Safety Handbook - parts 5.10 and 5.11

NOTE: Please ensure all relevant people in your organisation receive a copy of this Safety Bulletin, and are informed of its content and recommendations. This Safety Bulletin should be processed in a systematic manner through the mine's information and communication process. It should also be placed on the mine's notice board.

Signed

A handwritten signature in black ink, appearing to read 'Rob Regan', written in a cursive style.

**Rob Regan
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MINE SAFETY OPERATIONS BRANCH
INDUSTRY & INVESTMENT NSW**

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