

Mobile plant overturns

Information for employers about risks associated with mobile plant (such as dump trucks) overturning at mines or quarries.

February 2014

Background

In a recent incident, a fully loaded articulated dump truck overturned while travelling along a section of sealed road inside a mine. The truck was turning into an intersection when the rear of the truck (the tub) overturned, leaving the truck's prime mover upright.

Since January 2010, thirty reported mobile plant overturn incidents have occurred in the Victorian earth resources industry. Of these, fourteen related to dump trucks, with the remainder comprising light vehicles (four), loaders (four), excavators (three), scrapers (two), water trucks (two) and one dozer. Nine incidents involved articulated trucks.

Mobile plant overturns commonly involve the following factors:

- Unstable ground conditions – soft ground that is unable to support the vehicle's bearing load can cause it to overbalance. This could occur along the edge of a road or when a vehicle is dumping overburden material at a tip head.
- Uneven ground – different surface levels can raise the body of a vehicle causing an overbalance. Uneven ground may be common around tip heads.
- Uneven roads – vehicles can lose control while travelling on roads that are uneven or incorrectly cambered around bends.
- Loss of vehicle traction on the road surface.
- Vehicle failure caused by defective, worn out or poorly maintained vehicle components including brakes, steering, tyres or suspension.
- Collision with other vehicles or objects.

Other factors can include:

- The type of load – some materials (eg soft, sticky clays) may remain in the vehicle body, potentially causing an overbalance while dumping.
- Uneven vehicle load distribution.
- Poor road signage, traffic management and communication practices.

Recommended risk control measures:

- **Ensure** appropriate safe systems of work are in place and these are regularly monitored, reviewed and, if necessary, revised. When reviewing systems of work, **consider** any changes in a vehicle's design limits (eg speed, load or gradient limits) or technological developments and the availability of the latest operator protective devices (such as reversing cameras etc).
- **Provide** employees with training on new or revised systems of work (eg drivers unfamiliar with the make or model of the vehicle they are expected to operate should receive appropriate training).
- **Ensure** onsite roads are safe and properly maintained taking into account changing environments and conditions.
- **Establish** appropriate rules and standards for safe onsite road use, including speed limits for travel and manoeuvres, taking into account changing environments and conditions.
- Before new or hired plant is used in the workplace, **ensure** any necessary information is obtained from the supplier or manufacturer about its features and design limits.
- **Communicate** any necessary information to drivers and others (eg load information for those responsible for loading and driving vehicles) to enable them to perform their work in a way that is safe and without risks to health.
- **Ensure** the surface of any off-loading area is appropriate for the vehicle's requirements/manufacturer's recommendations.
- **Ensure** mobile plant is operated in accordance with manufacturer's recommendations (including load limits and other specific features).
- **Ensure** regular vehicle inspections and maintenance are undertaken on essential components such as brakes, steering, tyres (including pressure) and suspension in accordance with the manufacturer's recommendations, or where practicable, by the manufacturer's authorised service provider to enable a safety standard comparison.

If a mobile plant overturn incident occurs:

- **Ensure** an investigation is conducted into the cause of the incident by a suitably qualified and competent person having regard to the relevant manufacturer's specifications. The outcome of the investigation should be documented and retained.
- **Notify** WorkSafe Victoria immediately if the incident occurred at a mine.

Contact Details

Call us on: **1800 136 089**

Email us at: info@worksafe.vic.gov.au

For more information on occupational health and safety, go to WorkSafe's website: worksafe.vic.gov.au

Disclaimer: This Alert contains information following the Victorian WorkCover Authority's (VWA's) inquiries into the incident at the date of this report. The information contained in this report does not necessarily reflect the final outcome of the Victorian WorkCover Authority's action with respect to this incident. The VWA does not warrant the information in this report is complete or up-to-date, and does not accept any liability to any person for the information in this report, or its use.