



Significant Incident Report No. 197

Subject: Dozer loading leads to prime mover jack-knife and fuel tank rupture

Date: 27 May 2014

Summary of incident

A dozer on a mine site was being driven up an earthen ramp onto a prime mover's trailer in readiness for transportation. The loading process was being spotted by the truck driver, who was standing on the trailer's gooseneck.

The rear of the trailer tilted down under the weight of the dozer as it was being loaded, and the drive wheels of the prime mover lifted off the ground. The prime mover, trailer and dozer moved forward 10 to 15 metres. The truck driver entered the cab of the prime mover while it was moving and attempted to steer the vehicle.

The dozer cantilevered backwards, digging its ripper tines into the ground, which stopped the forward movement of the trailer.

The prime mover, while lifted off the ground, swung into the trailer, rupturing the main fuel tank.

Fortunately, no-one was injured and the incident did not escalate when the fuel tank was ruptured.



Photographs showing prime mover, trailer and dozer after the incident; and jack-knifed prime mover and the spill from the ruptured fuel tank

Direct causes

- The loading ramp was higher than the trailer, leading to most of the dozer's weight being transferred onto the rear of the trailer as it was being loaded. The change in the trailer's centre of gravity made it unstable and the rear of the trailer tilted down while the front lifted.
- The configuration for connecting brake hoses to the trailer was not compatible with that for the prime mover, and only the emergency hose was connected. This allowed the trailer brakes to be released and, consequently, there was no braking capacity on the trailer to stop it moving.
- The wheel chocks stored on the trailer and prime mover were not used.

Contributory causes

- When the trailer tilted down, the prime mover was lifted at the trailer's gooseneck such that its rear wheels were no longer in contact with the ground. Consequently, the only brakes stopping the forward movement of the prime mover were rendered ineffective.
- There were no safe work instructions for loading the dozer, nor had a risk assessment been conducted.

Actions required

Managers and supervisors are reminded of the importance of safe work instructions that identify the hazards and controls for each job step. For loading and unloading operations, the position of the centre of gravity of an object affects its stability. Those involved in such operations should be aware of this hazard and know how to respond.

The following actions should be considered when developing procedures for the transport of plant.

- Those involved in the job receive competency-based training aligned to the tasks, including awareness of the increased potential for loads and vehicles to move.
- Transport contractors are inducted in the safe work instructions prior to commencing work on site.
- The controls to prevent the uncontrolled movement of vehicles during loading and unloading are defined and implemented, including the use of wheel chocks.
- Loading ramp designs and locations have been assessed as suitable by a competent person and are known to those responsible for loading and unloading activities.

Further information

Visit www.dmp.wa.gov.au/ResourcesSafety for information on occupational safety and health in the resources sector.

This Significant Incident Report was approved for release by the State Mining Engineer on 27 May 2014