



SIGNIFICANT INCIDENT REPORT NO: 128

Steering Failures on Haul Trucks

INCIDENT

Several recent incidents have occurred at both surface and underground mines involving a loss of control of haul trucks due to failure of steering components. Haul trucks have ranged in size from 40 tonne payload underground haul trucks to 240 tonne payload surface haul trucks.

Fortunately, no persons were injured in any of the incidents and damage to equipment was minimal. However trucks have travelled considerable distances and veered uncontrollably before coming to a stop.

An incident of this nature occurring on a truck travelling down a pit ramp or near other vehicles could have catastrophic consequences.

CAUSES

Most of the incidents were due to fatigue failure of steering components.

One underground failure resulted from damage to steering components caused by a collision with the decline wall. The operator elected to continue hauling ore and did not report the initial collision or park up the truck for inspection.

One surface mine identified rough, uneven haul roads as a causative factor. Another failure occurred when the truck hit large potholes on the haul road.

PREVENTATIVE ACTION

1. Planned maintenance schedules (e.g. weekly, 250 hour etc) should include appropriate checks of the steering function and components.
2. Regular non destructive testing (e.g. ultrasonic) of steering components should be initiated in consultation with Original Equipment Manufacturer (OEM) standards. Several mines conduct such tests every 1000 hours of truck operation.
3. Steering components should be tested (or replaced) after any significant impact involving steering equipment. After any such impact vehicles should not be operated until inspected by competent personnel.
4. Equipment operators must be alert to any unusual handling /steering movements. After any unusual steering movement trucks should be parked up until inspected by a competent person.
5. Operator training modules should clearly stipulate required operating procedures associated with suspected or actual steering failure.
6. Truck haulage ways should be properly designed, constructed and maintained to provide a satisfactory running surface.
7. Manufacturers should be notified of steering failures and involved in the investigation to determine if design issues need to be addressed.

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21st October 2004