

High Potential Incident Alert - 192

August 2015

Pulley wheel detaches and falls near worker

A technician was repositioning a 7 tonne geared beam trolley for inspection. The 11kg chain drive pulley wheel slid off the drive shaft and fell about 4 metres to the deck below. The pulley wheel missed the technician by just 60 centimetres.

The initial investigation of the scene found a damaged split pin on the deck. It was determined that this had been holding the wheel to the drive shaft before it fell.

The technician had followed controls set out the Job Safety Analysis. Before starting the repositioning, he ensured he was not standing directly under the lifting equipment. There were no injuries, but if the pulley had struck him a severe injury or even a fatality could have occurred.

CRITICAL FACTORS

- The mild steel split pin did not meet original equipment manufacturer specifications.
- The pin conveyed torque to the wheel, not just retention.
- Inspection by vendor six months before this incident did not identify the incorrect pin.
- Scope for vendor inspection didn't include a requirement to check for pin type.



KEY LESSONS

The technician was alert to the potential of dropped objects and positioned himself away from the beam.

Permit to Work and JSA Controls were in place and effective

Perform visual inspection of lifting and rigging gear prior to functional tests and operation.

Check all trolleys on facilities and ensure correct pins are installed.

Add an additional retaining safeguard, i.e. a tie wire through the rolled pin and around shaft.

Consider modifying design by using a washer to hold the wheel to the shaft and a castellated nut with a split pin to prevent unwinding.

Schedule replacement of trolleys exposed to open weather every three years.

Review scope of lifting inspections to ensure all items are identified and addressed.

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