

Safety Alert

Mines Inspectorate

All underground mines

Safety Alert No. 274
20 September 2011

Rear boom arm pivot failure on load haul dump unit

What happened?

The operator of an ED7 Load Haul Dump (LHD) unit was about to load ballast material into a ram car for transport underground when he noticed that the bucket moved slightly to the left.

He stopped the machine and inspected the boom. The right hand side pivot arm weld had failed allowing the right hand arm to separate from the machine. The left hand boom arm pivot weld experienced stress fractures from the right hand boom arm separation.

Uncontrolled movement of the boom and any quick detach system attachments could have resulted if this had gone undetected.

After a similar incident at the same mine in 2009, the original equipment manufacturer (OEM) issued a technical bulletin outlining the availability of two types of supplementary doubler plates and the welding procedures for fitting these. A specific non-destructive testing (NDT) inspection schedule was also recommended.

Why did it happen?

Metal fatigue of boom pivot-point welds caused the right arm weld to fail, which put extraordinary stress on the left arm weld.

Recommendations:

These types of machines are used to attach man baskets. Sites should consider dedicating a specific machine to this task, together with an enhanced NDT inspection regime for all machines.

- Ensure that NDT monitoring regimes, such as X-Ray, Dye Penetrant, Magnetic Particle, etc., are rigidly enforced at intervals not greater than that advised by the OEM.
- Ensure that visual inspections are carried out on a regular basis as part of the maintenance regime.
- Ensure that ALL OEM Technical Bulletins and recommendations have been received, evaluated and applied.

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Please ensure all relevant people in your organisation receive a copy of this safety alert. Any such advice supplied to site should reach those who require it, and it should also be placed on the mine noticeboards. See more safety alerts and bulletins at <http://mines.industry.qld.gov.au/safety-and-health/mines-safety-alerts.htm>