



Mines Safety Bulletin No. 103

Subject: Failure of maintenance jacking points on stackers, reclaimers and shiploaders during replacement of slew bearings

Date: 22 January 2013

Summary of hazard

During the exchange of a reclaimer slew bearing, it was noticed that one of the three jacking points was yielding. Jacking ceased immediately and the original equipment manufacturer (OEM) was contacted. An investigation by the operator and OEM found that two of the three jacking points had yielded. If the jacking operation had not been terminated, major structural collapse would have resulted.

Further investigation by the OEM highlighted similar issues with three other machines in Western Australia.

Contributory factors

- The design was a duplicate of that for another reclaimer but the “park” or “service” position had been moved for operational reasons.
- The implications of changing the design details and whether it was still fit-for-purpose had not been recognised by any party.
- The necessary stiffeners or webs situated under the jacking points had not been installed in the appropriate locations in the modified configuration.

Recommendations

- Before commissioning stackers, reclaimers and shiploaders, the OEM should ensure that the jacking points are suitable, and the maximum safe working load is identified.
- Where a copy or carry-over design is utilised, ensure that all conditions of use are identical to the original design or variations have been identified and addressed.
- Australian Standard AS 4324.1:1995 *Mobile equipment for continuous handling of bulk materials* (Appendix K) recommends that a design audit engineer is engaged.
- The designer, OEM and client should ensure that their procedures for managing change are sufficient and executed correctly with regards to their internal processes and those of the other parties.
- Delineation of jacking points and their safe working loads is recommended.

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