

Safety and health alert

11/97 (Revised) Vehicle hoist failure

Incident

A Stenhoj DS4 four-post vehicle hoist of 3 tonnes capacity failed when raising a 1.5 tonne passenger car at a vehicle service centre. The hoisting beam (platform) was raised to its full height when failure occurred.

The hoist was not fitted with a limit switch to restrict movement of the platform to its full height. Consequently, the hydraulic ramrod had fully retracted, causing the cable block to contact the ram housing. The ramrod snapped off at the base of the thread attaching the cable block where a fatigue fracture had developed).

The safety locks arrested the fall of the platform, but the left front of the car slipped off the hoisting beam and knocked the adjacent drive post causing it to tilt outwards and disengaged the safety lock on the post.

Factors

- Stenhoj DS4 four-post vehicle hoists manufactured from 1970 to 1988 were not fitted with a limit switch to restrict raising the hoisting beam to the full height causing the cable block to contact the ramrod housing.
- The hydraulic ramrod had developed a fatigue fracture in the vicinity of the threaded area. Regular maintenance had failed to identify the fracture in the ramrod. The fractured ramrod snapped when the cable block collided with the ram housing.

Recommendations

1. Employers who operate vehicle hoists must engage competent persons to maintain and inspect the plant regularly, in accordance with the manufacturer's instructions.
2. To ensure care is taken when fully raising the hoist and minimise any impact load on the ramrod, the fitting of an electrical limit switch is recommended. This will substantially reduce impact loading on the critical component.
3. If the cable block has made any impressions on the ram housing, a nondestructive examination of the rod ends should take place, and this part should be replaced if cracks are detected.
4. Any alteration to vehicle hoists must comply with regulations 4.11 (Alteration to design), 4.34 (Keeping of records) and 4.54(4) (Requirements of Hoists) of the *Occupational Safety and Health Regulations 1996*.

Further Information

Further information can be obtained from the WorkSafe internet site

www.worksafe.wa.gov.au, or by contacting customer service on 1300 307 877 or email: safety@docep.wa.gov.au.

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