

Forklift Accident Case History No 6: Fork Dislodges off Fork-Carriage onto Operator's Leg

The Accident

While adjusting the width of the forks to suit the width of the product to be moved, a forklift operator stood on the outside of the fork and pulled it to the outer extremity on the supporting fork-carriage. The fork came off striking the forklift operator on his left leg. He received severe lacerations requiring 16 stitches.

Investigation Findings

A service agent was called in by the employer to carry out maintenance work on the side shift hydraulic unit. This work called for the removal of the load guard to allow access to the side shift hydraulic unit.

The service agent advised the employer that the side shift unit and load guard had been removed and, with care, the employer could continue to use the forklift.



View of load guard (aka backrest). Note how it acts as an end stop to prevent forks falling off carriageway.

The investigation identified a new hazard/risk involved in the adjustment of the forks and a potential risk of forks being displaced during normal use.

Although the forklift operator was trained, the training course did not cover the physical adjustments of forks, i.e. safe by position.



View of forklift with the load guard/backrest removed.

Main Points to Note

- If the fork-carriage locking pins had been correctly used, the accident would not have occurred.
- Where a load guard is fitted, forklift operators may become accustomed to using the load guard as an end stop to prevent forks falling from the carriageway.
- Manufacturers, suppliers, hirers and owners/users of forklifts are to ensure that adequate end stops are provided to fork-carriages.
- Where maintenance work has been carried out on any item of forklift equipment, the company carrying out the maintenance work needs to complete a hazard identification process to ensure all hazards are identified and advise the forklift controller of these hazards.

- The forklift controller is to advise the forklift operator(s) of any changes to a machine, along with potential hazards and necessary controls to eliminate, isolate or minimise the exposure of the operator to the identified hazards.
- Employers with in-house training programmes and forklift tutors are to ensure that training includes the safe work methods and practices for adjusting forks.

Applicable Standards for Guidance

NZS/ANSI/ASME B56.1-1993, Part III, Manufacturer Section 7.25, states: “Forks shall be designed to avoid unintentional unhooking and/or excessive lateral movement”.

NZS/ANSI/ASME B56.1-1993, Part II, User Section 6 para 6.2.8.1, states: ... “it shall be confirmed that the positioning lock is in good repair and working order”.

Australian Standard AS 2359.1-1985, Part I, Design and Manufacture Section 6.4 (p24), states: ... “all mounting shall have means to prevent dislodgement of the fork arms”.

AS 2359.1-1985, Part 6, Section 11.1.1.4 (p15-securing of fork arms), states: “Fork carriages and fork arms shall be manufactured in such a way that:

- (i) unintentional detachment of the fork arms from the carriage is prevented, and
- (ii) unintentional lateral displacement or lateral detachment of the fork arms is prevented”.



Close-up view showing load guard removed.

New Zealand Forklift Manufacturers and Distributors Association (NZFMDA)

Inspection Scheme report lists: ... “item 4.8, forks positioning lock” ... as part of the check.

OSH Safety Code for Fork-Truck Operators – No. 1: Front Loading Fork-Lift Trucks 1985, weekly checklist: ... “item 7 forks and retaining pins” ... as part of the check.