

Tilting cabins on trucks

Information for employers about risks associated with incorrectly securing tilting cabs on trucks.

December 2014

This Alert informs owners, operators, and hirers of the risk associated with some cab-over-truck designs whereby the cabs can be incorrectly secured, allowing them to tilt forward during driving and braking.

Background

Recently a street sweeper configuration that had a cab-over-truck design was involved in an incident where the cabin of the truck tilted forward while the truck was braking. This led to loss of vehicle control and collision with a tree, which resulted in fatal injuries being sustained by the driver.

The truck cabin featured a latching system designed to secure the cab from tilting forward. The system featured two latching hooks that engage on corresponding pins on the chassis when the cab is fully tilted backward.

The primary latching hook was configured with a manual lever system that was to be engaged after the cab was fully tilted backward. A safety pin was used to prevent the latching hook lever from disengaging during driving. The safety pin had to be removed and the lever lowered before the cab could be tilted forward. The system was designed to prevent the primary latching hook from being engaged if the cab was not fully tilted backward. However mechanical investigators identified that the safety feature could unintentionally fail (ie the driver may assume the locking mechanism has engaged properly when in fact it hasn't – this could be due to defect or latch not properly engaging) before the cab was fully tilted backward.

To prevent the cab tilting fully forward if the primary latching hook was not secured, a secondary latching hook was configured to automatically engage with the chassis when the cabin was tilted fully backward. A manual release lever was used to disengage the secondary latching hook before the cab could be tilted forward.

During the incident it was identified that the primary latching hook's lever was in the engaged position and the safety pin in place, however the latching hook lever was able to be placed into the engaged position before the cab was fully tilted backward. This appeared to have prevented the primary and secondary latching hooks from securing

on the chassis. Contact marks were observed on one latching hook and its corresponding chassis pin, indicating that the hook was resting on the pin rather than engaging with it, preventing the cab from being fully secured backward and the secondary latch from being able to engage with its chassis pin.

With both latching hooks unsecured, the cab was able to tilt forward when the truck suddenly braked.

When cabs are not secured to the chassis, attempts to verify they are secured can result in a false indication of latching hook security due to the weight of the cab making it hard to lift or tilt forward.

It has also been identified that other truck models or configurations may feature similar cab latching mechanisms.

Control measures

As an employer, under the *Occupational Health and Safety Act 2004*, you are required, so far as is reasonably practicable, to provide and maintain a working environment for your employees that is safe and without risks to health.

This includes providing and maintaining plant and systems of work that are, so far as is reasonably practicable, safe and without risks to health. This also includes maintaining, so far as is reasonably practicable, each workplace under your management and control in a condition that is safe and without risks to health.

If trucks feature a similarly functioning cab securing mechanism as outlined above, before driving the truck it is recommended:

- cabs are visually inspected to ensure the cab is fully tilted back and lowered
- where visual access can be gained, the cab latching mechanism is inspected to verify components, such as latching hooks, are correctly engaged with the chassis pins and any manually actuated levers and safety pins are in their correct locations for cab security
- the cab is verified to be fully tilted back and secured – this may be done by trying to lift and tilt the cab forward.

- As noted the weight of the cab may give a false indication of cab security.

Note: Additionally if other staff or service personnel undertake the securing of the cab to the chassis, it is recommended that the driver always conducts the final checks before operating the vehicle.

In addition to pre-operation checks:

- ensure drivers are provided with information, instruction and training regarding the correct operation and securing of truck tilt cabs, as well as pre-operation inspection requirements that verify that truck cabs are secured before driving the vehicle
- fit an indicator for the driver to warn them if the cab is not fully tilted back and in the necessary position for the latching hook mechanism to operate correctly. Note: this is an additional measure that may be used in conjunction with visual inspections and it should not be relied upon alone. Alternatively, where practicable, fit an interlock system that prevents the truck from driving unless the tilt cab has been correctly secured to the chassis
- conduct regular inspections and preventative maintenance on the cab latching system and ensure it remains functional.

Figure 1: Latching hooks that secure cab to chassis pins

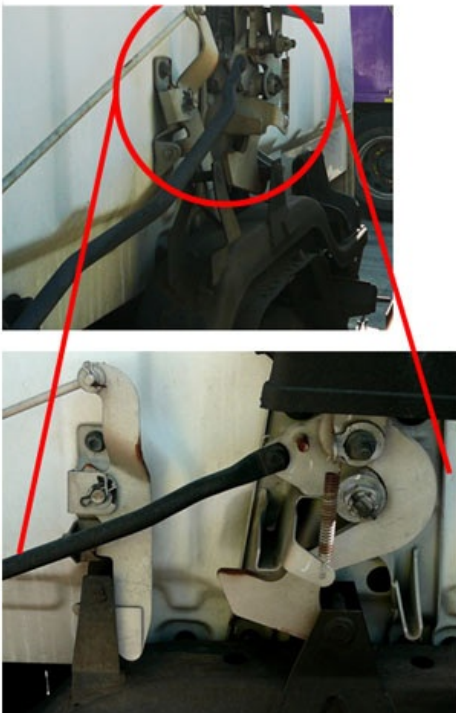


Figure 3: Correct engagement of latching hooks on chassis pins

Figure 2: Chassis pins

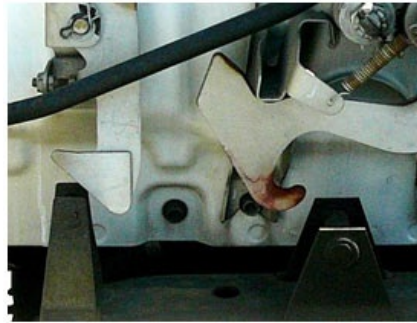


Figure 4: Failure to correctly engage latching hooks on chassis pins

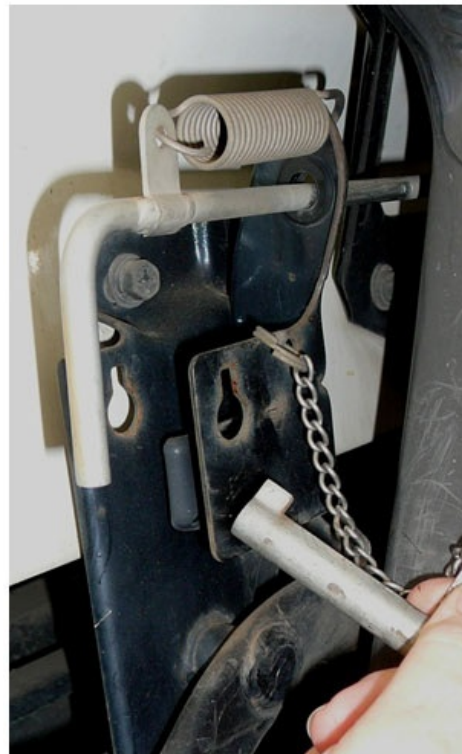


Figure 5: Latching hook lever safety pin location

