Truck's Spring Brake Failure Kills Pedestrian

INCIDENT

A member of the public was killed when he walked between two unattended trucks parked on a hill road. The hand brake failed on the uppermost vehicle, causing it to run into the lower, crushing the victim.

CIRCUMSTANCES

Two trucks were parked on a hill, facing down.

The uppermost truck (truck 2) parked behind the first (truck 1) and the driver applied the park brake (a spring brake). Truck 2's driver exited the truck's cab and walked towards the rear of the vehicle, when the park brake released. The truck rolled down the hill into truck 1, crushing a member of the public who was walking between the rear of truck 1 and the front of truck 2.

INVESTIGATION

The investigation revealed that this was not an isolated incident; a number of other uncontrolled park brake releases have been recorded.

Truck 2 was fitted with a park brake control valve positioned at the base of the driver's seat. There are two known variants of brake valve – both operate the same way with the same locking system. They were manufactured up until approximately 2003.

In the case of truck 2, the locking dowel in the park brake control valve had not fully engaged in the valve body, and the brake released.

There were two identified reasons for the brake not fully engaging:

1. the park brake operating lever (located in the handle head of the park brake control valve body) was sticking, and
2. the locking hole in the park brake control valve body was worn and elongated.

Either fault – on its own or together – will prevent full brake engagement.

The driver engaged the park brake control valve, but the operating lever failed to fully engage the locking dowel. The driver exited the truck with the park brake engaged but not correctly locked. Factors such as engine vibration, the bump of the closing door, and the return spring pressure on the operating lever would have been enough to release the brake, with fatal consequences.

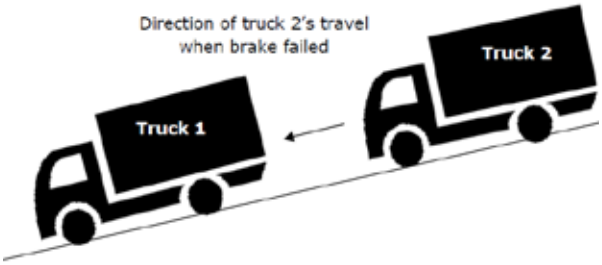

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Figure 1: Diagram showing how the trucks were parked and the direction truck 2 travelled when the park brake failed.

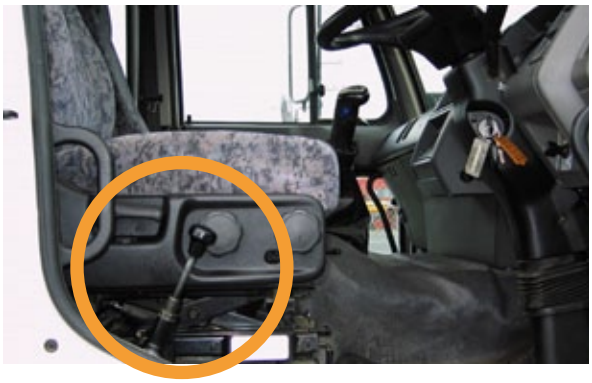

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Figure 2: shows the interior of a truck cab with a park brake control valve positioned at the base of the driver's seat. The park brake is in the "engaged" position.

GUIDANCE

The New Zealand Police's Commercial Vehicle Investigation Unit carried out an investigation, and made a number of recommendations.

Considering the age of some of the vehicles with this type of park brake control valve, control valve operation must be checked regularly. Operators and service personnel need to be made aware that:

When applying the park brake, the driver must ensure that the operating handle on the park brake control valve has fully dropped into its locking position. If this does not occur, the valve must be serviced immediately. The park brake control valve body wears down with use and, aided by the entry of dust and dirt, the smooth operation of the valve is affected – often to the degree that it will fail.

Dust boots on any such control valves must be in good condition.

Due to the position of the park brake control valve at the side of the seat base, the driver should make sure that he or she does not catch his or her clothing on the control lever when exiting the cab, because this, too, will often result in an uncontrolled park brake release.

WHICH INDUSTRIES/SECTORS OR MATTERS WILL THIS INFORMATION BE RELEVANT TO?

- All operators of heavy motor vehicles fitted with control valves and other vehicles fitted with similar type valves with spring brakes as a park brake;
- All drivers of these vehicles;
- All heavy motor vehicle service providers and repairers.

Note: This material has been prepared using the best information available to the Police/Department of Labour at the time of publication. Information may change over time and it may be necessary for you to obtain an update. This material is also only intended to provide general advice and does not constitute legal advice. You should make your own judgement about action you may need to take to ensure you have complied with your workplace health and safety obligations under the law.