U.S. Department of Transportation

National Highway Traffic Safety Administration

ODI RESUME

OFFICE OF DEFECTS INVESTIGATION
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Investigation: EA 11-011
Prompted by: Fleet Complaint
Date Opened: 09/09/2011
Investigator: Nate Seymour **Reviewer:** Bruce York-B
Approver: Frank Borris
Subject: Haldex Spring Brake Failures

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: DAIMLER TRUCKS NORTH AMERICA, FREIGHTLINER LLC
Products: 2007 Sterling L-liner
Population: 14,407

Problem Description: The parking brake spring may break resulting in an unintentional partial application of the wheel-end brake. This could result in a wheel-end fire.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	1	4	4**
Crashes/Fires:	4	2	4**
Injury Incidents:	2	1	2**
Number of Injuries:	2	1	2**
Fatality Incidents:	0	0	0
Other*:	0	0	0

***Description of Other:**

** Count indicates duplicate reports received by ODI and manufacturer.

ACTION / SUMMARY INFORMATION

Action: An Engineering Analysis has been opened.

Summary:

ODI opened a Preliminary Evaluation (PE11-007) based on one fleet report that it had experienced multiple wheel-end fires. The fleet believed the fires were due to a power spring fracturing and puncturing a brake chamber diaphragm resulting in a loss of compressed air to the brakes. The loss of air was then believed to cause the brakes to drag and overheat.

Brake chambers have a limited service life and are subject to wear out and the effects of corrosion. However, the failures identified by the fleet occurred much earlier in their life than expected and may not have exhibited discernible failure symptoms or provided adequate warning to the operator.

A vehicle driver suffered smoke inhalation during one of the fires suspected to have been caused by the alleged dragging brakes. Another injury was sustained by a mechanic when he attempted to remove the brake chamber with a broken power spring. The brake chamber sprung from its mounting bracket as it was loosened and struck the mechanic in the face, causing multiple lacerations.

ODI has initiated testing at the Vehicle Research and Test Center (VRTC) to determine the cause of the spring failures and the effect they may have on the wheel-end brakes. ODI is also looking to better understand any warning signs that may precede a power spring failure.

ODI has upgraded this investigation to an Engineering Analysis to further evaluate the cause of the wheel fires and

assess the scope, frequency, and safety consequences of the alleged defect.