



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: PE 10-010
Date Opened: 03/30/2010
Investigator: Chris Lash
Approver: Richard Boyd
Subject: Brake line corrosion failure

Date Closed: 01/05/2011
Reviewer: Jeff Quandt

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: GENERAL MOTORS CORP.
Products: MY1999-2003 GM C/K Pickups and SUVs
Population: 6,014,275

Problem Description: Brake line corrosion allegedly can result in rupture during brake application, resulting in sudden reduction of brake effectiveness and increased stopping distances.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	606	324	890**
Crashes/Fires:	15	17	30**
Injury Incidents:	2	1	3
Number of Injuries:	2	1	3
Fatality Incidents:	0	0	0
Other*:	0	974	974

*Description of Other: Warranty claims for brake pipe leakage.

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

ACTION / SUMMARY INFORMATION

Action: This investigations has been upgraded to an Engineering Analysis (EA11-001).

Summary:

The Office of Defects Investigation (ODI) received Defect Petition DP10-003 on March 2, 2010, requesting the investigation of model year (MY) 2003 Chevrolet Silverado 2500HD 4WD pickup trucks for corrosion failures of the vehicle brake lines. DP10-003 was granted and on March 30, 2010, Preliminary Evaluation PE10-010 was opened on more than six million model year 1999 through 2003 light trucks and sport utility vehicles manufactured and sold by General Motors Corporation (GM). On July 2, 2010, ODI received GM's response to an information request, which included GM's assessment of the frequency and safety consequences of the alleged defect. GM stated that: (1) the brake system of the subject vehicles is split front/rear and should a brake pipe suddenly fail for any reason, the affected vehicle would be capable of stopping with the pressure supplied by the remaining circuit; (2) the subject vehicles were designed to meet the hydraulic circuit partial failure requirements of Federal Motor Vehicle Safety Standards 105 and 135, Light Vehicle Brake Systems; and (3) should a brake fluid leak occur for any reason, the brake system malfunction indicator lamp (MIL) would illuminate and warn the driver before the brake fluid level was low enough to cause a loss of line pressure.

ODI's and GM's analysis indicates that 85 percent of the complaints occurred on vehicles used primarily in States that use salt on the roads during Winter months (Connecticut, Delaware, District of Columbia, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia and Wisconsin). Overall the complaint rates per 100,000 vehicles for Salt Belt States is 43.0 and Non-Salt Belt is 3.0. In approximately 25 percent of the complaints the brake pipe failure occurred suddenly, with no warning (i.e., no MIL, Brake Fluid Loss Warning), and resulted in extended stopping distances. In 30 of these the increase in stopping distance that resulted was a factor in the crash and in 10

others the vehicle was intentionally steered off the road or into another lane of travel in order to avoid a crash.

This investigation has been upgraded to an Engineering Analysis (EA11-001) for subject vehicles sold or currently registered in Salt Belt States to further assess the scope, frequency and safety risks associated with sudden failures of corroded brake pipes that can result in decreased brake effectiveness. ODI will continue to gather information on subject vehicles outside the Salt Belt as well.