U S. Department of Transportation
National Highway Traffic Safety Administration

ODI RESUME

Investigation: RQ09-003
Date Opened: 07/01/2009 Date Closed: 02/18/2010
Principal Investigator: Michael Lee
Subject: Front Air Bag Crash Sensor Failure

Manufacturer: Chrysler, LLC.
Products: 2005 – 2006 Chrysler Minivans (Dodge Caravan, Grand Caravan and Chrysler Town and Country) built from 01/19/05 to 04/05/06
Population: 497,909

Problem Description: The frame rail-mounted front air bag crash sensors can fail due to corrosion. When the sensors fail, the frontal air bags may deploy late and/or the driver air bag inflation level may be reduced in certain types of frontal crashes.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	58	987	1,045
Crashes/Fires:	0	0	0
Injury Incidents:	0	0	0
# Injuries:	0	0	0
Fatality Incidents:	0	0	0
# Fatalities:	0	0	0
Other*:	0	11,400	11,400

*Description Of Other: Warranty Claims for sensor replacements.

Action: This Recall Query is closed (NHTSA Recall No. 10V-008).

Engineer: *Michael Lee* MJL Date: *02/18/2010*
Div. Chief: *D. Scott Yon* Date: *02/18/2010*
Office Dir.: *Kathleen C. DeMeter* Date: *02/18/2010*

Summary: Chrysler will replace the frame rail-mounted front air bag crash sensors in approximately 312,442 model year (MY) 2005 and 2006 Chrysler minivans (Recall 10V-008). These vehicles are equipped with front crash sensors with Ultradur brand plastic housings and steel bushings and were built between January 19, 2005 and April 5, 2006. This action covers vehicles originally sold, or currently registered, in 27 states (Alaska, Connecticut, Delaware, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode island, South Dakota, Utah, Vermont, West Virginia and Wisconsin) and the District of Columbia.

Vehicles sold or currently registered outside of these states, approximately 185,000 MY 2005-2006 minivans, are not included in the recall. Although these vehicles use the same crash sensors and were built during the same period as the ones described above, they experience significantly lower failure

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RQ09-003: Closing Resume

Summary Continued:

rates because of reduced road salt exposure. Also, MY 2006-2007 minivans built after April 5, 2006, are not included in the recall. These vehicles are equipped with front crash sensors with Crastin brand plastic housings and steel bushings and experience significantly lower failure rates compared to the recalled vehicles.

The MY 2005 and 2006 Chrysler minivans are equipped with advanced frontal air bags with multi-stage inflators and seat belt pretensioners. These components work with the Occupant Restraint Controller (ORC) located in the passenger compartment. The multi-stage inflators are designed to provide different air bag inflation levels based on crash severity. To help decide whether to deploy the frontal air bags and what characteristics to apply (i.e. low-, mid-, or high-stage), the air bag system consists of left and right front crash sensors mounted on the frame rails behind the front bumper and a central crash sensor inside the ORC. Based on the crash signals from the central crash sensor and the front crash sensors, the ORC decides whether to deploy the air bags. The primary function of the front crash sensors is to detect frontal offset and oblique impacts and deploy the air bags in a timely manner.

A corroded front crash sensor can become disabled and cause the air bag warning lamp to illuminate. When one or both front sensors fail, the frontal air bags may deploy late and/or the driver air bag inflation level may be reduced in certain types of frontal crashes. Late deployments may cause air bag-induced injuries and/or result in reduced air bag protection. It should be noted that occupants of vehicles involved in a crash, as well as accident investigators, may not be aware of late deployment or improperly reduced level of air bag inflation and thus field reporting of such events may be suppressed.

Chrysler's supplier (Bosch) conducted computer simulations to determine the air bag times-to-fire and air inflation levels in various crash modes and front crash sensor conditions. The majority of the simulation data indicated that the air bag system would deploy timely without input from the front crash sensors. These data also suggested, however, that in conditions without the front crash sensors, there is a potential for late deployment, most significantly, in the 25-mph and 40-mph offset deformable barrier (ODB) crash modes. The data also showed that reduced level of driver air bag inflation may occur during the 40-mph ODB crash mode.

NHTSA and Chrysler differ regarding the significance and impact of the defect, but in the interest of remedying the affected vehicles expeditiously and to avoid a protracted dispute, Chrysler is implementing steps to replace the front crash sensors. Based on these actions, the agency has decided that further use of its resources does not appear to be warranted. Accordingly, this investigation is closed. The closing of this investigation does not constitute a finding by NHTSA that no safety-related defect exists in the subject vehicles. The agency will monitor the issue and reserves the right to take further action if warranted by the circumstances.

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