ODI RESUME

U.S. Department of Transportation
National Highway Traffic Safety Administration

Investigation: PE 08-029
Date Opened: 04/22/2008
Principal Investigator: Andrea Noel
Subject: Front Sub-frame Corrosion

Manufacturer: Hyundai Motor Company
Products: 1999 – 2002 Hyundai Sonata
Population: 198,894 (estimated)

Problem Description: Front sub-frame corrosion may result in front suspension failure, steering anomalies and/or vehicle disablement due to half-shaft detachment.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	40		
Crashes/Fires:	0		
Injury Incidents:	0		
# Injuries:	0		
Fatality Incidents:	0		
# Fatalities:	0		
Other*:	0		

*Description Of Other:

Action: A Preliminary Evaluation has been opened.

Engineer: *Andrea Noel* A.N. Date: *04/22/2008*
Div. Chief: *Jeffrey L. Quandt* Date: *04/22/2008*
Office Dir.: *Kathleen C. DeMeter* Date: *04/22/2008*

Summary: The Office of Defects Investigation (ODI) has received 40 complaints alleging front sub-frame corrosion in Model Year (MY) 1999 through 2002 Hyundai Sonata vehicles. Complaints indicate that the corrosion is severe ("fist" sized holes in the frame) and can result in complete or partial control arm detachment, wheel collapse/separation, half-shaft detachment resulting in sudden vehicle disablement (loss of motive power to drive wheels) and/or steering anomalies (e.g., "pull" or "swerving"). There are 19 complaints for MY 1999 vehicles, 16 for MY 2000, 3 for MY 2001 and 2 for MY 2002. The right side is cited in each of the complaints that give a location (19). Additional incidents were identified in field reports review by ODI, which refer to the component as the front sub-frame, engine cradle or front cross-member. Photographs of the assembly identify the right rear corner, near the right front wheel suspension mounts, as the area of concern.

There appears to be an increasing trend in failures, with 10 reported so far in 2008, 19 in 2007, 11 in 2006 and 1 in 2005. Thirty-five complaints are from high-corrosion "salt-belt" states (note: for purposes of this investigation the "salt-belt" or corrosion states include the following 20 states and the District of Columbia: Connecticut, Delaware, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia and Wisconsin). Failure mileages range from 58,500 to 143,000 miles, with a median of 92,713 miles.
(Continued on page two)

A.N. 4/28/08

Some of the complaints indicate that the problem was discovered during an inspection or routine maintenance (e.g., oil change) but most allege that the corrosion wasn't detected until it resulted in a suspension failure, partial or complete wheel detachment, steering anomaly, and/or sudden vehicle disablement (e.g., half-shaft detachment). Incident speeds range from 5 to 65 mph.

One incident allegedly resulted in the vehicle becoming disabled in the traffic lanes of a parkway at night with the driver and child passengers stuck in the car while passing traffic swerved around the vehicle at high speeds. Another complaint alleged the failure resulted in the vehicle becoming "stuck in the middle of a dangerous intersection." A third complaint indicated that the vehicle was declared a total loss by the insurance carrier due to damage caused by the lower control arm completely separating from the frame, causing the half-shaft to detach from the transmission and resulting in damage to the wheel housing and quarter panel from the partially detached wheel.

A Preliminary Evaluation has been opened to assess the scope, frequency and safety consequences of the alleged defect.

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