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

ODI RESUME

Investigation: PE08-060
Date Opened: 10/14/2008 Date Closed: 04/09/2009
Principal Investigator: Chris Lash
Subject: Tire Valve Cracking

Manufacturer: Ford Motor Company
Products: MY 2007-08 Ford Vehicles using low pressure snap-in valves
Population: 1,095,000

Problem Description: The original equipment snap-in tire valves may crack due to poor ozone resistance. Air leakage from a cracked tire valve may result in tire damage, which could affect vehicle control.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	113	213	320
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	611	612

*Description of Other: Warranty Claims for leaking tire valves.

Action: This Preliminary Evaluation is closed.

Engineer: *Christopher Lash* Date: *04/09/2009*
Div. Chief: *Jeffrey Quandt* Date: *04/09/2009*
Office Dir.: *Kathleen C. DeMeter* Date: *04/09/2009*

Summary:
On October 14, 2008, ODI opened PE08-060 to investigate allegations of cracked and leaking snap-in tire valves in model year (MY) 2007 vehicles manufactured by Ford Motor Company. The valves were supplied to Ford by Topseal auto-parts, a subsidiary of the Shanghai Baolong Automotive Corporation in China.

Valves made by Topseal for aftermarket sale were the subject of two recent safety recalls by tech international (08T-018) and Dill Air Controls (08T-028), the latter of which was investigated by ODI in PE08-036 and EA08-022. The defect conditions addressed by the aftermarket tire valve recalls both involved inadequate resistance to ozone cracking due to issues with the supply of anti-ozonant chemicals to Topseal for a period from July to mid-November 2006. The aftermarket valves were compounded with a blend of EPDM and natural rubber, using a relatively low percentage of EPDM (EPDM provides inherent resistance to ozone cracking). Hence, the need for anti-ozonant chemicals and the problems with cracking when those chemicals were missing or out of specification in some lots of valves. Both recall campaigns involved inspection programs to identify and replace valves with visible surface cracking.

Although the Topseal valves supplied to Ford also appear to have been affected by the anti-ozonant supply issues in mid to late-2006, Ford indicated that its valves were made at a different Topseal production line and were compounded with a higher percentage of EPDM rubber to meet more stringent specifications from Ford. ODI's analysis of complaint and warranty data provided by Ford showed that problems with cracked tire valves were significantly higher for MY 2007 vehicles produced from December 2006 through March 2007. Ford responded by implementing changes in its material specifications for snap-in rubber tire valves and also increasing the quality and acceptance standards for valves imported for use in its vehicles.

While the complaint and warranty claim rates are elevated for subject vehicles produced from December 2006 through March 2007, the rates of leaking valves are well below one percent of production for each of the peak months for all of the affected models. A substantial majority of the subject vehicles are equipped with tire pressure monitoring systems (TPMS) which warn the driver when any tire pressures drops below 25 percent of recommended inflation pressure.

As outlined in a letter to ODI dated April 6, 2009, Ford has agreed to send letters to owners of certain MY 2007 and 2008 Ford, Lincoln and Mercury vehicles to provide information about the cracking concern. Letters will be sent to owners of vehicles built from November 2006 through May 2007. Owners can opt for a free dealer inspection. Valves exhibiting surface cracks or air leakage related to ozone attack will be replaced by Ford under its normal warranty terms. Ford expects to send the letter by approximately mid-May 2009.

Based on the use of TPMS in the majority of subject vehicles and the relatively low rates of repairs associated with leaking valves and resultant tire damage, ODI believes that the actions Ford has agreed to take will provide effective and expeditious resolution for vehicles that were built during the period when valves with inadequate resistance to ozone cracking were most likely to have been used in vehicle production. Further investigation of this matter would not be an efficient allocation of agency resources. Accordingly, this investigation is closed. The closing of this investigation does not constitute a finding by NHTSA that a safety-related defect does not exist. The agency will continue to monitor complaints and other information relating to the alleged defect in the subject vehicles and take further action in the future if warranted.