



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

# ODI RESUME

Investigation: PE09-031

Date Opened: 7/13/2009

Date Closed: 11/19/2009

Principal Investigator: Chris Lash

Subject: Front suspension ball joint failure

Manufacturer: Ford Motor Company  
Products: 2007-2008 Ford Edge and Lincoln MKX  
Population: 321,475

Problem Description: A front suspension ball joint may separate while driving. If the ball joint separates, control of the vehicle could be affected, increasing the risk of a crash.

## FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	3	31	31
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	0	0

\*Description of Other:

Action: This Preliminary Evaluation has been closed.

Engineer: Christopher Lash *CL*

Date: 11/19/2009

Div. Chief: Jeffrey Quandt

Date: 11/19/2009

Office Dir.: Kathleen C. DeMeter

Date: 11/19/2009

Summary: On July 13, 2009, the Office of Defects Investigations (ODI) opened Preliminary Evaluation PE09-031 to investigate allegations of front lower ball joint separation in model year (MY) 2007 and 2008 Ford Edge and Lincoln MKX vehicles. The investigation was based on three owner complaints alleging that the front lower ball joint separated and caused the front suspension to collapse while driving. ODI also identified information related to the alleged defect in Early Warning data submitted by Ford. Preliminary analysis indicated that the failures were related to the pinch bolt used to secure the front lower ball joint stud to the steering knuckle. One complaint alleged that a crash occurred which resulted in a minor injury. However, no additional information could be obtained to support this claim.

Information provided by Ford in response to ODI's Information Request letter for PE09-031 indicate that in early MY 2007 production there were some issues with the front lower control arm ball joint assembly process. The pinch bolts used were hand started and had the potential to cross thread and not achieve proper clamp load, potentially resulting in a loose joint. In November 2007, changes were implemented to chase and clean the first six threads of the bolt to provide easier hand starting of the nut and ensure good thread engagement before tightening.

Ford also identified ongoing concerns with the power transmission unit (PTU) seals and front suspension hydro-bushings on the subject vehicles, which both require disassembly of the front lower ball joint to repair. If the ball joint is not properly reassembled following such service, the joint may separate in later service. Ford has provided additional instructions and new pinch bolts to the PTU repair kit to improve the joint reassembly process.

ODI's analysis of failure data identified 31 incidents of joint separation (with 12 specifically stating that they occurred while driving). Repair records for these 31 vehicles shows that 28 involve separation of the joint on the passenger (right) side, which is the side that must be disassembled for PTU service. Twenty-three of these were found to have been previously disassembled for control arm bushing service, PTU service or other transmission repair.

The eight claims that did not involve prior service repairs requiring joint disassembly all occurred very early in vehicle life, indicating that it is unlikely that any joints manufactured with loose pinch bolts are still in service. All of these joints failed within 6 months in service and 10,000 miles (the maximum failure mileage is 8,097 miles). There haven't been any such failures (i.e., not involving prior service/disassembly) since December 2008.

The rate for incidents that did not occur following service and, thus, may be related to the manufacturing process issues identified by Ford is very low (2.5 per 100,000 vehicles) and these incidents occurred very early in the life of the vehicles and are not showing a continuing failure trend. Accordingly, this investigation has been 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.