



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: EA 13-004
Prompted by:
Date Opened: 04/26/2013 **Date Closed:** 11/15/2013
Investigator: Derek Rinehardt **Reviewer:** Jeff Quandt
Approver: Frank Borris
Subject: Loss of Steering Control

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: Ford Motor Company
Products: MY 2005-11 Crown Victoria, Grand Marquis and Town Car
Population: 805,213
Problem Description: The lower intermediate shaft swing link may seize due to severe corrosion. A seized swing link may cause the upper intermediate shaft to collapse resulting in separation of the steering column lower bearing and a loss of steering control.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	7	12	18**
Crashes/Fires:	0	0	0
Injury Incidents:	0	0	0
Fatality Incidents:	0	0	0
Other*:	0	17	17

*Description of Other: Warranty claims related to lower bearing separation

** Total eliminates duplicates received by ODI and manufacturer.

ACTION / SUMMARY INFORMATION

Action: This Engineering Analysis is closed. Recall 13V-385.

Summary:

In its recall notice dated August 26, 2013, Ford Motor Company (Ford) notified NHTSA of a safety defect condition that may result in loss of steering in approximately 355,000 model year (MY) 2005 through 2011 Ford Crown Victoria and Mercury Grand Marquis vehicles built at the St. Thomas Assembly Plant, MY 2005 through 2007 Lincoln Town Car vehicles built at the Wixom Assembly Plant, and certain MY 2008 through 2011 Lincoln Town Car vehicles built at the St. Thomas Assembly Plant and that are currently registered or were originally sold in Connecticut, Delaware, the District of Columbia, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, or Wisconsin (NHTSA Recall 13V-385, Ford Recall 13S08). Ford's recall addresses a corrosion related defect in the lower intermediate shaft that may result in separation of the steering column lower bearing and loss of steering control. Ford's recall will remedy the defect condition by instructing dealers to replace the lower intermediate shaft and to inspect and repair the upper intermediate shaft and steering column lower bearing as necessary. A retaining clip will be installed if the lower bearing has separated.

Ford's investigation of steering column separations in the subject vehicles identified a defect condition in the lower intermediate shaft that could result in separation of the column lower bearing. According to Ford's August 26th defect report, severe corrosion of the lower intermediate shaft may cause the lower intermediate shaft swing link joint(s) to stiffen or seize. Ford determined that forces acting on the upper intermediate shaft because of seized swing links may eventually cause the upper intermediate shaft to collapse, which may result in separation of the column lower bearing

and loss of steering control. Analysis of ODI complaints and Ford complaints and warranty identified 22 incidents of steering separation (12 complaints and 10 non-duplicative warranty claims) that may be related to the lower intermediate shaft defect condition. All 22 incidents involved vehicles in the recall region, where 419,210 or roughly half (52%), of the subject vehicles were sold.

Ford's investigation also determined that column lower bearing separation may occur in vehicles that experienced upper intermediate shaft collapse in prior frontal impact collisions if the shaft was not properly diagnosed and repaired. Ford identified 13 steering separation incidents outside the recall region (6 complaints and 7 non-duplicative warranty claims) where 386,003 of the subject vehicles were sold. Ford did not find evidence of the lower intermediate shaft corrosion issue in these vehicles. Six of the vehicles had known prior collisions and the histories of the remaining 7 were unknown. To address concerns with possible steering separations in vehicles outside the region for safety recall 13V-385, Ford is conducting a Regional Program (13R01) to inspect and repair the steering assemblies of those vehicles as necessary. The lower intermediate shaft will be replaced only if it fails the inspection, the upper intermediate shaft will be repaired if it fails a Ford-specified measurement test. In the event the steering column lower bearings are found out of position, they will be re-seated and secured with a retaining clip.

Based on Ford's field actions, this investigation is closed.

The VOQs cited above can be viewed at www-odi.nhtsa.dot.gov/complaints under the following identification numbers: 10505992, 10479893, 10477192, 10475950, 10474596 , 10471184 , 10347404.