



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: PE 18-005
Date Opened: 05/04/2018
Investigator: Lauren Firey
Approver: Stephen Ridella
Subject: Upper Steering Column Separation
Date Closed: 11/20/2018
Reviewer: Jeff Quandt

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: Toyota Motor Corporation
Products: 2008-2013 Toyota Highlander
Population: 708,067

Problem Description: Upper steering column may separate from lower column while driving if adjustments are made to the steering wheel position (tilt and/or telescoping).

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	2	5	6**
Crashes/Fires:	0	1	1
Injury Incidents:	0	0	0
Fatality Incidents:	0	0	0
Other*:	2	23	24**

***Description of Other:** Separation occurred while vehicle was stationary, unknown whether separation occurred while vehicle was stationary or in motion, or incident involved column drop without separation while vehicle was stationary or in motion.

** Total eliminates duplicates received by ODI and manufacturer.

ACTION / SUMMARY INFORMATION

Action: This Preliminary Evaluation has been upgraded to an Engineering Analysis (EA18-006).

Summary:

On May 4, 2018, the Office of Defects Investigation (ODI) opened Preliminary Evaluation PE18-005 to investigate three allegations of steering column separation for Model Year (MY) 2008 through 2013 Toyota Highlander vehicles. Two (2) of the 3 complaints were received by ODI in April 2018 and occurred while the vehicle was in motion. Since opening PE18-005, one (1) additional VOQ involving steering column separation has been received. This incident occurred while the vehicle was stationary.

As part of PE18-005, ODI examined the field data, warranty data, and relevant technical information submitted by Toyota in response to the PE18-005 information request letter. Ten (10) additional incidents of steering column separation were identified. Four (4) of these instances occurred while driving.

During PE18-005, ODI confirmed that the steering columns in the subject vehicles are equipped with breakaway capsules that are designed to collapse/shear during certain types of vehicle collisions. This design feature aims to reduce driver injury severity from impact with the steering wheel in frontal vehicle collisions. There is no direct method for detecting when the capsules in the subject vehicles have sheared. If the driver operates the tilt/telescoping feature after the breakaway capsules have separated, the steering column may drop out of position and could subsequently detach entirely from the rest of the steering assembly. Loss of steering while driving may cause a loss of vehicle control, which could lead to a vehicle crash.

To date, ODI has identified 14 incidents involving complete steering column separation, 6 of which occurred while

driving. One of these incidents involved a minor crash. Additionally, there have been 16 events where the steering column dropped from the dashboard mounting brackets, but column separation did not occur. Four of these incidents happened while driving. Of these 30 total separation/drop incidents, 5 of the vehicles have evidence of minor collision repairs months or years prior to the steering column failure.

This investigation has been upgraded an to Engineering Analysis (EA18-006) in order to 1) conduct a more detailed analysis of the conditions that may cause the steering column breakaway capsules to separate and 2) assess factors that may contribute to the problem of failing to detect and repair breakaway capsules after they have separated. Toyota has recently revised their repair manual and issued a Collision Repair Information Bulletin to help address the second concern.

The VOQs associated with this investigation can be viewed at www.NHTSA.gov under the following ODI complaint numbers: 11141761, 11083623, 11083280, 10888043.