



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

ODI RESUME

Investigation: EA06-012
 Prompted By: PE06-011
 Date Opened: 06/22/2006 Date Closed: 12/07/2007
 Principal Investigator: Scott Yon
 Subject: Engine Stalling

Manufacturer: Ford Motor Company
 Products: 1997 – 2003 Ford F-SD, Excursion, and Econoline W/7.3L Diesel
 Population: 1,176,000 (Estimate)

Problem Description: The engine stalls due to a failure of the Cam Position Sensor.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	230	1,371	1,595
Crashes/Fires:	10	4	14
Injury Incidents:	1	0	1
# Injuries:	1	0	1
Fatality Incidents:	0	0	0
Other*:	0	307,986	307,986

* Description of Other: CPS Warranty Claims (excludes F450/550, Econoline).

Action: This Engineering Analysis is closed. Safety Recall 07V-553.

Engineer: D. Scott Yon *12/20/07* *Population* Date: 12/07/2007
 Div. Chief: Jeffrey L. Quandt *Revised/Corrected* Date: 12/07/2007
 Office Dir.: Kathleen C. DeMeter Date: 12/07/2007

Summary: In a December 3, 2007 letter, Ford advised NHTSA that it will conduct a safety recall to replace the Cam Position Sensor (CPS) in approximately 1.2 million subject vehicles to address reports of engine stalling. A new design CPS with improved performance and durability will be installed as a remedy. Owner notifications will begin in December 2007.

The subject vehicles are durable, full-sized, medium duty trucks commonly used for commercial purposes, rescue/emergency response, and commercial or recreational towing. CPS failure is comparable to unexpectedly turning the key off since the signal it produces is vital to the electronic engine control system. CPS signal loss terminates fuel injection resulting in an engine stall. Once stalled, the engine may restart right away, or may restart after a delay (typically 5 to 10 minutes), or may not restart at all. In addition to exposing the driver and other motorists to crash risk due to loss of motive power or vehicle disablement, engine stalling also effects the power assisted steering and braking.

Through consumer interviews, ODI determined that CPS failures occurred without any form of warning, at any vehicle speed (50% at highway speeds), and under any driving condition, such as accelerating. Consumers reported that about a third of the vehicles failed to restart, with another third reporting delayed restarting. Half the vehicles that did restart experienced another stall on the same or a subsequent drive cycle (before CPS replacement) re-exposing those consumers to the risks associated with a stalling event. In their Vehicle Owner's Questionnaire reports, half of the ODI complainants described difficulty controlling the vehicle due to lose of power assist systems, especially those who were towing at the time of the incident.

The one alleged injury incident occurred in an intersection when a subject vehicle stalled while turning across oncoming lanes of traffic. Although unsubstantiated, the complainant alleged an injury to a child occupant during ODI's interview. The other crash allegations mostly involved low speed, loss of control incidents often caused by lack of power assist; no injuries are reported in these incidents, and property damage, if any, was minimal. Consumers also reported other incidents with significant safety risks, such as disablement in a lane or on a shoulder of a high-speed roadway or interstate, or extended disablement in remote areas during severe weather conditions.

The population above is Ford's estimate of the 1.4 million subject vehicles produced that are currently registered. The Ford complaint and warranty counts noted above are current as of Ford's last submission dated June 21, 2007; they do not include F-450, F-550, or Econoline counts as these products were not formally within scope of the investigation when failure information was requested. Warranty data analysis indicates that about half the claims involved a stall while driving event (Ford's assessment) and that poor CPS durability was a longstanding concern. Ford reported that the new CPS design should meet or exceed their 10 year, 150k mile life expectancy design requirement.

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