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

OFFICE OF DEFECTS INVESTIGATION

ODI RESUME

Investigation: PE18007
Prompted By: VOQ Review
Date Opened: 07/16/2018
Date Closed: 12/27/2024
Investigator: Michael Lee
Reviewer: Peter Kivett
Approver: Tanya Topka
Subject: Loss of Motive Power

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: Ford Motor Company
Products: 2013 Ford Escape
Population: 139,408

Problem Description: Sudden loss of motive power from engine overheating due to coolant loss.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	EWR D&I	Other	Total	EWR Field Reports
All Incidents:	173	222	0	1,875	395	CONF
Crashes/Fires:	5	1	0	0	6	0
Injury Incidents:	0	0	0	0	0	0
Number of Injuries:	0	0	0	0	0	0
Fatality Incidents:	0	0	0	0	0	0
Number of Fatalities:	0	0	0	0	0	0

Description of Other:
Warranty Claims

ACTION/SUMMARY INFORMATION

Action: This (PE) Preliminary Evaluation is closed without a manufacturer action.

Summary:
On July 16, 2018, the Office of Defects Investigation (ODI) opened this Preliminary Evaluation (PE) to investigate alleged instances of sudden stalling without warning on model year (MY) 2013 Ford

Escape vehicles equipped with 1.6L GTDI turbocharged engines. Complaints alleged that vehicles stalled due to engine overheating, resulting in a delayed or no restart condition. When the investigation was opened, ODI had received 40 Vehicle Owner Questionnaires (VOQs). At this time, ODI has received 173 VOQs with five reported fires and no reported crashes.

In investigating the incidents alleged in the VOQs, ODI revisited an apparently related recall that Ford had issued in November 2013 (Recall 13V-583). In Recall 13V-583, Ford recalled all MY 2013 Ford Escape vehicles equipped with the 1.6L engines, built from October 5, 2011, to June 2, 2013. This recall addressed potential engine compartment fires due to localized overheating of the engine cylinder head leading to cracks that can cause oil leaks onto a hot engine surface. The remedy was to provide several enhancements to the engine shielding, cooling and control systems, which involved recalibration of the powertrain calibration module and the instrument cluster system. The recalibration implemented a “Failure Mode Effects Management” (FMEM) strategy to alert the driver of a low coolant state and limit the power to the engine to prevent overheating to the point of cracking the cylinder head.

The FMEM strategy includes a “Low Engine Coolant – Service Required” message in the instrument cluster when the coolant reaches a prescribed low level and the engine continues to perform normally, and a coolant level sensor that was incorporated such that if the coolant level is further reduced, the engine enters a reduced power mode (vehicle speed limited to about 40 mph). If the vehicle is driven farther and coolant is not added to the vehicle, the vehicle enters a further reduced power mode and audible and visual alerts will appear and sound, and the engine will be limited to operation at idle speeds.

ODI sent Ford an information request letter in August 2018, and, in April 2021, additionally required that Ford provide an update of its field and warranty data. In response, Ford provided 4,047 customer complaints, field reports, and legal claims, consisting of 3,865 unique VINs, and 47,214 warranty claims, consisting of 33,684 unique VINs.

Having had repeated discussions with ODI, Ford eventually binned all 4,047 post-recall reports and all 47,214 warranty claims to those that relate to loss of motive power due to coolant loss. Having so binned these reports and claims, Ford reported that the relevant number dropped to 227 reports with 222 unique VINs and 2,774 warranty claims with 1,875 unique VINs. In analyzing its own responsive data, Ford maintained that the remedy for Recall 13V-583 adequately addresses the risk of loss of motive power resulting from an engine overheat due to low coolant by providing clear warnings and progressive reduced power FMEM strategies. Ford further maintained that some complaints imply that the vehicles properly displayed the advanced and progressive warnings and reduced engine power modes, but that complainants ignored them. Ford, therefore, reported that it has not identified any further defect in the coolant system and that it believes the rate of complaints of reduced motive power (which some customers perceive reduced power as vehicle stalls) due to low coolant is low for the subject vehicles. Ford further states it believes that it has not identified any other related unreasonable risk to motor vehicle safety due to loss of motive power due to coolant loss or engine overheat.

In addition to analyzing the vast amount of responsive data provided by Ford, ODI worked with NHTSA’s Vehicle Research and Test Center to review 1,462 VOQs with 1,347 unique VINs that were potentially related to this investigation. ODI found that 997 VOQs were relevant post-recall complaints. Of these, 161 VOQs included instances of stalling, sometimes preceded by warnings (low engine coolant message, audible/beeping sound, engine malfunction indicator lamp (MIL) illumination, etc.) and/or drivability issues (reduced power, vehicle jerking or shuddering, etc.). The other categories of complaints/failures were less severe or unrelated/undetermined: 73 related limp mode, nine related stall while vehicle stationary, 21 stalls unknown if related, 271 coolant failure without allegation of stalling, 64 engine MIL with no allegation of stalling, 267 not

related to this investigation, 116 unknown if related, and 15 fires (including the initial 5 reports) that were ultimately determined to not be related to this investigation. ODI found that a relatively small percentage of the post-recall complaints involved loss of motive power (161 out of 997 VOQs; and 222 out of 3,865 Ford reports), while the remaining complaints involved vehicles in the early stages of FMEM mode, or were unrelated or undetermined if related to this investigation. ODI has further found that the number of complaints has declined significantly since mid-2021. Based on the analysis of the failure data indicating a declining trend of VOQs of loss of motive power, and in consideration of the remedy for Recall 13V-583 and NHTSA's ongoing consent order with Ford, ODI is closing this Preliminary Evaluation. The agency will continue to monitor this issue under the heightened oversight pursuant to the consent order and the agency reserves the right to take additional action if warranted. To review the reports cited in the Closing Resume ODI Report Identification Number document, go to NHTSA.gov.