U.S. Department of Transportation

National Highway Traffic Safety Administration

OFFICE OF DEFECTS INVESTIGATION

ODI RESUME

Investigation: EA26001
Prompted By: PE25002
Date Opened: 01/30/2026
Investigator: Joseph Geissler **Reviewer:** Peter Kivett
Approver: Tanya Topka
Subject: Unintended Transmission Downshift and Rear Wheel Lock-up

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: Ford Motor Company
Products: MY 2015 - 2017 F-150
Population: 1,270,970

Problem Description: Unexpected transmission downshift without warning or driver input, often accompanied by a temporary rear wheel lock-up.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	EWR D&I	Other	Total	EWR Field Reports
All Incidents:	329	226	0	444	999	0
Crashes/Fires:	0	1	0	0	1	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:
Mfr. Warranty Claims

ACTION/SUMMARY INFORMATION

Action: Open an Engineering Analysis

Summary:
On March 21, 2025, NHTSA's Office of Defects Investigation (ODI) opened a Preliminary Evaluation (PE25002) to investigate instances of unexpected transmission downshifting without driver input in model year (MY) 2015-2017 Ford F-150 vehicles (subject vehicles) manufactured by Ford Motor Company (Ford). The complaints allege that, without warning or driver input, the subject vehicles experienced a sudden and rapid deceleration often accompanied by temporary rear wheel lockup, seizure, or skidding, resulting in a loss of vehicle control that increases the risk of crash and injury to all motorists, including those not within the subject vehicles. The

MY 2015 and MY 2016 F-150 vehicles were equipped with the “6R80” transmission, while the MY 2017 vehicles were equipped with either the “6R80” transmission or the “10R80” transmission. This investigation was limited to MY 2015-2017 Ford F-150 with the “6R80” transmission.

ODI identified 329 Vehicle Owners Questionnaires (VOQs) related to this investigation and sixty percent of these consumers were interviewed to confirm the details of their allegations. Consumers reported that their vehicles’ transmission suddenly downshifted to a lower gear, often to 1st or 2nd gear, without driver input or advance warning. Consumers described the downshift events to be regular and repeated occurrences, with some consumers stating that they no longer drive the vehicle due to safety concerns. Forty-three percent of consumers reported experiencing at least one wheel lockup event, during which the rear tires locked, screeched, or skidded during the transmission downshift. ODI also found that 114 of the 329 consumers reported having their vehicle’s molded lead frame or valve body assembly (which comes with a molded lead frame) replaced, 80 of which were confirmed through consumer submitted repair invoices.

In its response to ODI’s Information Request, Ford provided an assessment of potential root cause of failure for the subject vehicles and how this failure is different from the failure associated with MY 2011-2014 Ford F-150 vehicles that was addressed by four safety recalls (16V-248, 19V-075, 19V-433, and 24V-444). Ford has identified that the defect in the recalled vehicle population involved lead frame supplier production issues resulting in signal loss from the Output Shaft Speed (OSS) sensor. Ford has identified that the alleged defect in the subject vehicle population involved degradation of electrical connections within the lead frame due to thermal cycling and vibration over extended time in service resulting in signal loss from the Transmission Range Sensor (TRS).

Signal loss from the TRS can result in an unintended shift to neutral, unintended upshift, or unintended downshift which are regulated by a gear “shift map” based on the vehicle’s speed at the time of signal loss. According to Ford’s “shift map”, at speeds between 35-64 mph, the maximum allowable downshift would be to 2nd gear (i.e. a 6th to 2nd gear downshift event) which Ford has designated to represent the worst-case scenario for subject vehicles. Ford has also acknowledged that the worst-case scenario may also involve temporary wheel lockup. However, Ford has stated that the failure mechanism in the MY 2011-2014 F-150 vehicles—previously addressed through recalls—primarily involved OSS sensor signal loss that could result in 6th to 1st gear downshift events. This OSS-related failure mode is distinct from the TRS-related signal loss identified in the subject vehicle population.

ODI has identified an additional potential safety defect associated with the alleged defect in the subject vehicles. Preliminary testing performed by NHTSA’s Vehicle Research Test Center (VRTC) showed that when the TRS experiences an intermittent signal loss, one possible outcome is a change in vehicle direction. Specifically, if a vehicle is operating in reverse up an incline when the TRS signal loss occurs, then the vehicle may shift into neutral causing the vehicle to change directions and roll forward.

ODI is opening this Engineering Analysis (EA) to, among other things, perform component-level testing and vehicle testing, as well as review additional technical information to better understand the alleged defect that has been identified. To review the reports cited in the Opening Resume ODI Report Identification Number document, go to NHTSA.gov.