



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: PE 20-006
Date Opened: 05/01/2020
Investigator: Robert Nguyen
Approver: Stephen Ridella
Subject: Loss of Power Steering Assist
Reviewer: Bruce York-B

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: TRW Automotive Inc, ZF North America, Inc.
Products: Trucks Equipped with a ZF/TRW THP60 Steering Gear
Population: 25,000 (Estimated)
Problem Description: Excessive high temperatures of the power steering fluid affect the fluid viscosity, seals, and bearings in the steering gear resulting in pressure fluctuations that contribute to loss of power steering assist.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	15	TBD	TBD
Crashes/Fires:	0	TBD	TBD
Injury Incidents:	0	TBD	TBD
Number of Injuries:	0	TBD	TBD
Fatality Incidents:	0	TBD	TBD
Number of Fatalities:	0	TBD	TBD
Other*:	1	Confidential	Confidential

***Description of Other:** TSB and Field Reports supplied by ZF/TRW.

ACTION / SUMMARY INFORMATION

Action: Open a Preliminary Evaluation (PE).

Summary:

In a review of field reports submitted under Early Warning Reporting (EWR) 49CFR 579.22(c), over several years by three heavy truck manufacturers, the Office of Defects Investigation (ODI) identified an issue involving intermittent loss of power steering assist. The loss of power steering assist on the three manufacturers' vehicles all had a similar failure mode that resulted in the replacement of the THP60 steering gear box manufactured by ZF/TRW. Some reports claimed multiple steering boxes had been replaced on the same truck. Upon additional review of field report attachments and interviews with fleet drivers, it was alleged that the power steering fluid can reach high fluid temperatures causing internal seal and bearing failures. These failures can lead to a pressure variation affecting primarily left, but also right hand turn assist. In one field report, ZF/TRW confirmed with a manufacturer that excessive temperatures will severely diminish normal life expectancy of internal components increasing the probability of loss of assist. In 2017, ZF/TRW issued Technical Service Bulletins (TSB), TRW900A and TRW900B to assist technicians in proper diagnosis of steering gears, which were supplied to ODI by ZF/TRW upon request. The bulletins were identified in several field reports but were not provided to the Agency under the 49 CFR 579.5 reporting requirements.

This investigation has been opened to understand the failure mode, design, and longevity of the steering gear and its effect on the overall ability for the driver to control the vehicle and why ZF/TRW did not submit the referenced TSB under the 49 CFR 579.5 regulations.

The ODI reports cited above can be reviewed at:

<http://www-odi.nhtsa.dot.gov/owners/SearchNHTSAID>

using the following complaint identification numbers: 11195150, 11195150, 11195150, 11195150, 11195150,
11195150, 11195150, 11195150, 11195150, 11195150, 11195150, 11195150, 11195150, 11195150, 11195335, 11193866