

Defect Information Report

(Section 573.6)

FL-855

Date of Submission: **March 19, 2021**

Manufacturer: Daimler Trucks North America LLC
P.O. BOX 3849
Portland, Oregon 97208

Type of Report: Safety Defect Non-Compliance

Vehicle Information

Model Yr. Start: 2017 Model Yr. End: 2021

Make: *Freightliner*

Model: *Cascadia*

Production Dates: Begin: 03/08/2016

End: 06/30/2020

Descriptive Information:

Vehicles equipped with suspect modulator valves within the suspect build dates

Number potentially involved: 164,326

Estimated percentage of involve with defect: 1%

Defect / Noncompliance Description

For this Defect/Noncompliance:

Describe the defect or noncompliance:

On certain vehicles, chemical corrosion could affect the functionality of the single brake modulator valve, which may result in slow release timing of brakes on the affected side. Regular service brakes are unaffected.

Describe the safety risk:

A slow release of the brake on one side during an active brake request (ie. automatic braking events) could lead to a brake pull resulting in a sudden change in vehicle direction due to uneven braking on the front axle increasing the risk of a motor vehicle crash.

Identify any warning which can precede or occur: N/A

If applicable, identify the manufacture of the defective or noncompliant component:

Wabco USA LLC

Involved Components

Component Name: SOLENOID ABS MODULATOR VALVE

Component Description: Solenoid, ABS Modulator Valve, Quick Release

Component Part Number: WAB472 196 025 0

Chronology of Defect / Noncompliance Determination

Provide the chronology of events leading up to the defect decision or test data for the noncompliance decision.:

May 2019, DTNA received a report of a vehicle pulling to the right, due to an unknown cause, during a brake event. Upon repairing the vehicle, the dealer was able to isolate the failure to the right single modulator valve. May 2019-July 2019, DTNA performed a preliminary population and warranty seek. Warranty indicated 6 claims of a vehicle pull event during an external brake request, where 3 claims were from a single customer. DTNA had requested parts to be returned for further review. July 2019, DTNA notified NHTSA Office of Defects Investigation (ODI) of an ongoing investigation relating to brake pull during an active brake request. August 2019, DTNA received the returned parts and began an electrical and functional test. Testing indicated parts were within specification. During a functional evaluation, a pressure differential in air release timing was observed. The parts were shipped to the supplier for component breakdown and further evaluation. August – September 2019, Supplier evaluated the returned parts and found blockage of the inlet solenoid from magnesium chloride corrosion deforming the O-ring. October 2019, DTNA and supplier began reviewing vehicle routes and chemical wash processes, with ongoing corrosion testing with magnesium chloride and requests to the field for additional returned parts. 34 valves returned for review from single customer. Failed valves appear to be isolated to only the right valve and a single route. November 2019, DTNA shared an update of the ongoing investigation with NHTSA ODI, including the low claim rate. While the investigation continued, the modulator valves in production vehicles were spaced away from the frame rails to potentially reduce opportunity of corrosion. January 2020, DTNA provided a status update to NHTSA ODI on testing to understand detectability and severity. Ongoing corrosion testing and analysis continued by DTNA and supplier. Corrosion testing with MgCl₂ and NaCl was unable to replicate failures observed in field. February 2020 – April 2020, DTNA worked with customers in various locations to randomly sample parts to inspect. Twelve valves were returned outside of the salt belt region and 12 inside the salt belt region of the Northeastern United States and shipped to the supplier for further evaluation. There were no indications of a valve malfunction on the returned parts. There were still no reports of vehicle pull during active brake request since mid-2019. May 2020, an additional field service report indicated 13 additional failures on a separate fleet. DTNA provided a status update with NHTSA ODI on the additional field report with pending review of returned parts. Customer provided 13 valves from different trucks for review and these were sent to the supplier for further evaluation. June 2020, DTNA continued corrosion testing and began analyzing chemical wash and thermal impacts to the valve. Supplier provided a report

of one returned valve that appeared to share a similar failure mode as the initial parts returned from mid-2019. The remaining 12 valves are under review. From the returned valves prior to May, it was believed the issue to be isolated to a single customer because there were no confirmed reports from other customers at this time. The additional field complaint and data obtained in May/June 2020 suggested that additional customers are also impacted in different locations. With eight claims of failures experienced in the field, even though the failure mode is not fully understood, the issue appeared to be more systemic, and therefore DTNA, with an abundance of caution, decided to initiate a voluntary recall campaign to address potential vehicle pull during an active brake request. September 1, 2020, DTNA amended 573 filing to include phase release plan for repairing of FL855. March 2021 population and manufacturing dates updated.

Identify the Remedy

Describe the defect/noncompliance remedy program, including the manufacture's plan for reimbursement.

Affected vehicles will receive a new valve. Repairs will be released in phases based on locations of the vehicle and performed by Daimler Trucks North America authorized service facilities. Details of the reimbursement plan will be included in the owner's notification letter.

Identify the Recall Schedule

Describe the recall schedule for notifications.:

Customer notification will be made by first class mail using Daimler Trucks North America records to determine the customers affected.

Planned Dealer Notification Begin Date:	<i>08/30/2020</i>
Planned Dealer Notification End Date:	<i>08/30/2020</i>
Planned Owner Notification Begin Date:	<i>08/30/2020</i>
Planned Owner Notification End Date:	<i>08/30/2020</i>

Manufacture's identification code for this recall (if applicable): *FL-855*

DTNA Representative;



Larissa Stoffels
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Compliance and Regulatory Affairs

