

## Defect Information Report

(Section 573.6)

### **FL-782**

**Date of Submission:** *July 27, 2018*

**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:** *2012* **Model Yr. End:** *2015*

**Make:** *Freightliner & Western Star*

**Models:** *Cascadia, Coronado, Business Class M2, 114SD, 4900*

**Production Dates: Begin:** *July 1st 2011*

**End:** *January 30th 2014*

#### **Descriptive Information:**

*Certain vehicles built with a specific combination of front axle, brake lining, and brake spider within the above referenced dates.*

**Number potentially involved:** *1,256.* **Estimated percentage involving defect:** *1%*

### **Defect / Noncompliance Description**

#### **For this Defect/Noncompliance:**

##### **Describe the defect or noncompliance:**

*In certain circumstances, high brake vibrations may occur due to a combination of front axle, brake lining, and brake spider. Under certain circumstances, these vibrations may lead to a reduced fatigue life of the tie-rod tube, particularly if the component is subject to corrosion.*

**If a noncompliance, provide the applicable FMVSS:** *N/A*

##### **Describe the safety risk:**

*Separation of the tie-rod may lead to a disconnect between the front wheels of the vehicle and reduce the ability to steer the vehicle, which could increase the risk of a crash.*

**If applicable, identify the manufacture of the defective or noncompliant component:** *N/A*

## **Chronology of Defect / Noncompliance Determination**

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

*January 2017 DTNA Service Engineering received a report from a customer of tie-rod failures on vehicles out of warranty coverage. Two failed parts were supplied to Detroit Axle for inspection.*

*February 2017, metallurgical analysis found heavy corrosion and evidence of road salt inside the tie rod tubes. The original failure was believed to be isolated to one customer due to a non-typical operating environment.*

*May 2017, DTNA received a report of tie-rod tube failure from a second customer. The failed tube and a tube that had not failed were provided to DTNA for inspection. DTNA began an extensive investigation to determine the scope and potential impact of the issue. The primary tie-rod supplier, whose products had failed, provided DTNA with its material specifications and proposed vibration as a potential root cause.*

*June 2017, metallurgical analysis of the tubes from the second customer found corrosion only in the failed tube. The report concluded that the crack was caused by the heavy corrosion inside of the tube.*

*June 2017, DTNA conducted a field inspection of vehicles to identify the corrosion issue, inspecting tie rods on the first affected fleet, then other vehicles in the same region, and then vehicles in a dry climate.*

*July 2017 to February 2018, DTNA continued to do an extensive investigation into root cause of the failures which included instrumenting a vehicle with a failed tie-rod. DTNA coordinated with the second customer to arrange a visit to investigate the root cause of the failures. During the on-site investigation vibration data was collected while the truck was both stationary idling and while driving. The results were inconclusive and failed to identify the root cause.*

*April 2018, DTNA received a report of a second tie-rod failure from the second customer that had reported a failure. A meeting was held in Design Engineering and possible sources of vibration that could excite tie-rod natural frequency were identified and discussed.*

*May 2018, the second customer reported a third tie-rod failure.*

*May 2018 to July 2018, DTNA performed additional testing, including testing to assess vibration during braking events. DTNA found that transient braking chatter could cause resonant vibration in the tie-rod. The brake chatter is random and hard to identify with the standard instrumentation used for measuring steady state continuous vibration that commonly causes fatigue failures, and therefore the transient vibration was not observed in previous studies.*

*July 2018, with an abundance of caution, DTNA decided to initiate a voluntary recall.*

## Identify the Remedy

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

*Certain brake linings, brake spider and tie-rod will be replaced. Repairs will be performed by Daimler Trucks North America authorized service facilities. Copies of the reimbursement plan will be submitted as a supplemental report when available.*

## Identify the Recall Schedule

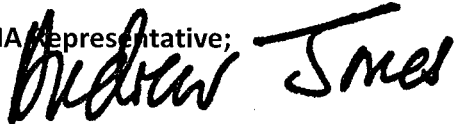
**Describe the recall schedule for notifications:**

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

<b>Planned Dealer Notification Begin Date:</b>	<i>September 24, 2018</i>
<b>Planned Dealer Notification End Date:</b>	<i>September 24, 2018</i>
<b>Planned Owner Notification Begin Date:</b>	<i>September 24, 2018</i>
<b>Planned Owner Notification End Date:</b>	<i>September 24, 2018</i>

**Manufacture's identification code for this recall (if applicable):** *FL-782*

DTNA Representative;



Andy Jones  
Manager  
Compliance and Regulatory Affairs