U.S. Department of Transportation

National Highway Traffic Safety Administration

ODI RESUME

OFFICE OF DEFECTS INVESTIGATION

NHTSA

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Investigation: PE 10-042
Date Opened: 11/04/2010 **Date Closed:** 04/27/2011
Investigator: Peter Kivett **Reviewer:** Bruce York-B
Approver: Frank Borris
Subject: Failing 5th wheel attachment bolts

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: MACK TRUCKS, INC
Products: 2009 - 2011 MACK CXU and CHU trucks
Population: 808

Problem Description: Bolts that clamp the 5th wheel mount to the frame of the subject trucks may fail.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	2	2	2**
Crashes/Fires:	0	0	0
Injury Incidents:	0	0	0
Fatality Incidents:	0	0	0
Other*:	0	11	11

***Description of Other:** Warranty

** Count indicates duplicate reports received by ODI and manufacturer.

ACTION / SUMMARY INFORMATION

Action: This Preliminary Evaluation is closed. Mack Trucks submitted Safety Recall 11V-209.

Summary:

On October 3rd 2010 the Office of Defects Investigation (ODI) received two complaints on 2009 - 2010 Mack CXU612 and CXU trucks for failing bolts that clamp the 5th wheel to the frame of the truck. On January 19, 2011 ODI opened this Preliminary Evaluation.

During the course of the investigation ODI took possession of fasteners from the field. These fasteners, taken off subject complaint vehicles, exhibited 'hourglass like stretching' indicating plastic deformation. This same source supplied ODI with new fasteners (for the subject vehicle) that were recently purchased and never used. The bolts supplied by the manufacturer are M16 x 2 Class 10.9 bolts. Per SAE J1199, these bolts should have a proof load 130 kN (~29,000 lbf) and tensile strength of 163 kN (~36,600 lbf). These bolts are not designed to be torque to yield. ODI took possession of these field samples and sent them to (VRTC) Vehicle Research and Testing Center for testing. Some of the new and used fasteners from the field were tested to the SAE J1199 standard and all passed. Other tests at VRTC indicated that the stretched bolts were likely the result of over torque during installation or maintenance. VRTC tested other methods to pre-tension the bolts and found that load indicating washers and turn-of-the-nut method both gave better clamping load control than a torque wrench.

In February 2011 Mack started to perform field inspections associated with this investigation in an attempt to understand the cause of the bolt failures. During these inspections, Mack discovered that there was an interference with the bolts used to secure the fifth wheel to the frame. This interference can prevent the bolts from being torqued to specification. If this occurs, the bolt(s) may fail and in extreme cases may result in the fifth wheel coming loose causing the trainer to separate from the tractor.

Mack has issued a voluntary Safety Recall 11V-209 for (failure of fifth wheel mounting bolts). However, claims in the field suggest the manufactured supplied fasteners are inferior and stretch regardless of interference. ODI will continue to monitor this issue and follow the completion progress. If failures continue, ODI may open another investigation to investigate future failures.

Mack Truck's recall action resolves the issues raised by this investigation and, therefore, this investigation is closed.