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By Recall Management division at 3:55 pm, Dec 12, 2013

PART 573 Defect and Noncompliance Report

Date: December 11, 2013

This report serves as Eaton Corporation's notification to the U.S. Department of Transportation, National Highway Traffic Safety Administration that a defect related to motor vehicle safety exists in certain Eaton hybrid electric transmissions. Eaton decided that this defect existed in these vehicles on December 5, 2013.

I. Manufacturer, Designated Agent, and Other Chain of Distribution Information

Manufacturer's corporate name (49 C.F.R. § 573.6(c)(1)):

Eaton Corporation
1000 Eaton Blvd.
Cleveland, Ohio 44122

Equipment's brand or trademark name owner(s) (where applicable) (49 C.F.R. § 573.6(c)(1)):

The equipment that is the subject of this notification is branded as both "Eaton" and "Fuller". Both brand names are the property of Eaton Corporation.

Designated Agent (imported equipment) (49 C.F.R. § 573.6(c)(1)): Not applicable.

If this notification concerns equipment that was installed in new motor vehicles or new items of motor vehicle equipment, identify by name, address, and telephone number each vehicle manufacturer and equipment manufacturer who purchased that equipment (49 C.F.R. § 573(c)(2)(v)):

Navistar
4201 Winfield Road
Warrenville, Illinois 60555
Phone: 630-753-5000
Toll Free: 800-448-7825

Daimler Trucks North America, LLC
4747 N. Channel Ave.
Portland, OR 97217
Phone: (503) 745-8000

Freightliner Custom Chassis Corporation
552 Hyatt St.
Gaffney, SC 29341
Phone: (864) 487-1700
Fax: (864) 487-6400

Peterbilt Motors, Inc.
1700 Woodbrook St.
Denton, TX. 76205-7864
Phone: (940) 591-4000

Kenworth Truck Company
P.O. Box 1000
Kirkland, WA 98083-1000
Phone: (425) 828-5000

If this notification concerns a defective or noncompliant component that the above identified manufacturer did not manufacture, identify that component and provide the name, address, and phone number of the manufacturer of the component (if this manufacturer is unknown, provide this information as to the supplier of the component) (49 C.F.R. § 573(c)(2)(iv)):

Not applicable.

Name, address, email, and phone and fax numbers for the person(s) to whom inquiries about this report should be directed:

Kevin Schlosser
Eaton Corporation
13100 East Michigan Avenue
Galesburg, MI 49053

E-mail: KevinFSchlosser@Eaton.com
Phone: (269) 342-3621
Fax: (269)484-7169

II. Identification of the Recall Population and Its Size

Complete the tables below for each item of equipment subject to this notification. Additional tables may be necessary where there are more than three items subject to a notification. (49 C.F.R. § 573.6(c)(2)(iii)).

Type of equipment (e.g., tire, child restraint, headlamp): Transmission
Part/Model number: EH-6E606B-CD; EH-6E606B-U; EH-6E606B-UP; EH-6E706B-UPG; EH-6E606B-T; EH-6E606B-CDG; EH-6E606B-P; EH-6E606B-CDR; EH-6E606B-PBD; EH-6E706B-PSB; EH-6E606B-PBD
Size: Medium Duty 5/6 Speed for commercial vehicles of Class 5, 6 and 7
Function: Hybrid automated transmission for medium-duty commercial vehicles
Dates of Manufacture (month and year): August 2010 to December 2013
Brand Name: Eaton or Fuller
Model Name: Hybrid Transmission
Other Information Necessary to Describe the Equipment: The defective equipment is limited to those transmissions operating under Hybrid Control Module Software versions 5500682 or 5500683. The service tool, ServiceRanger, can be used to view the version number of the software installed on the equipment. There are no external markings indicating the software version number.

Provide the following information as to all the items of equipment ("the recall population") identified above:

Grand total number of items of equipment in the recall population (49 C.F.R. § 573.6(c)(3)): 569.

The percentage of the recall population you estimate actually contains the defect or noncompliance (49 C.F.R. § 573.6(c)(4)): 100%

Identify and describe how the recall population was determined (e.g., on what basis the recalled models were selected and how the inclusive dates of manufacture were determined) (49 C.F.R. § 573.6(c)(2)):

This defect arises in the above-referenced transmissions containing Hybrid Control Module software versions 5500682 or 5500683. Software version 5500682 was released on February 2, 2013 to Eaton's field service organization only for download to transmissions as a field software update. Eaton tracks electronically all downloads of these part numbers, by vehicle identification number (VIN). Eaton has included each VIN in the recall population.

Software version 5500683 was only: (1) downloaded to the transmission part numbers identified above during their manufacture in Eaton's manufacturing plant starting on August 23, 2013 and continuing until December 11, 2013; and (2) released to Eaton's field service organization for download to transmissions as field software updates. All affected transmissions produced by Eaton are known. Also, Eaton tracked electronically all downloads of this part in the field, by VIN. Eaton has included in the recall population each affected part produced by Eaton and each VIN to which the software was downloaded.

Describe how the recall population is different from any similar items of equipment not subject to this notification (49 C.F.R. § 573.6(c)(2)):

The recall population is identifiable by software version number, which is encoded electronically in each item of equipment. The software version number is identifiable by using Eaton's service tool, ServiceRanger.

III. Description of the Defect or Noncompliance and Chronology of Events

Describe the defect or noncompliance, including a summary and detailed description of the nature and physical location (if appropriate) of the defect or noncompliance. Graphic aids should be provided where necessary. (49 C.F.R. § 573.6(c)(5).)

Brief Summary:

Hybrid Control Module software versions 5500682 or 5500683 may command an increase in engine speed without driver input during downshifts, causing unintended vehicle acceleration.

Detailed Description:

This defect arises in downshifts of the Eaton Hybrid Transmission loaded with Hybrid Control Module software versions 5500682 or 5500683.

During downshifts where the current gear remains engaged or reengages due to a mechanical or system fault, the software logic in the Hybrid Control Module of the transmission can potentially increase engine speed to synchronize engine speed with the next lower gear. This can result in unintended acceleration during a downshift.

Describe the cause(s) of the defect or noncompliance condition.

The defect is caused by the shift logic of Hybrid Control Module software versions 5500682 and 5500683. During a downshift, the shift logic will synchronize engine speed with the speed of the next lower gear, even where the current gear is engaged. This can result in unintended acceleration during a downshift.

Describe the consequence(s) of the defect or noncompliance condition.

The defect can cause unintended acceleration during downshift.

Identify any warning(s) that may precede the defect or noncompliance condition.

This defect can cause a vehicle crash without prior warning.

***For defects*, provide a dated, chronological summary of all the principle events that were the basis for the determination that the defect is related to motor vehicle safety, including a summary of all warranty claims, field or service reports, and other information such as numbers of crashes, injuries and fatalities.**

On October 30, 2013, a customer complaint was filed with the Eaton Roadranger Call center regarding a hybrid vehicle having a Hybrid Transmission operating under Hybrid Control Module Software version 5500683. The driver of the vehicle stated, “When applying the brakes, vehicle lunges forward.”

From October 31, 2013 to November 13, 2013, Eaton Service corresponded with the complainant to review the complaint, determine vehicle details, remove and inspect the shift bar

housing, and acquire the historical event information stored in the Transmission Control Module for technical review.

On November 14 and 15, 2013, two Eaton engineers traveled to the complainant to investigate the complaint. They were unable to reproduce the event, but found that the event data in the Transmission Control Module confirmed the validity of the complaint.

On November 19, 2013, the affected vehicle was transported to Eaton's Proving Grounds in Marshall, Michigan for further investigation.

From November 20 to December 4, 2013, Eaton tested the vehicle to determine the cause of the defect.

On December 4, 2013, Eaton concluded that the defect was limited to the downshift logic in Hybrid Control Module Software 5500683.

On December 5, 2013, Eaton determined that the defect was related to safety.

From December 6, 2013 to Dec. 9, Eaton tested additional versions of the Hybrid Control Module Software for the defect.

On December 7, 2013, while testing additional versions of the Hybrid Control Module Software, Eaton discovered that the same defect may be experienced with Hybrid Transmissions that are running Hybrid Control Module Software version 5500682. Thus, Eaton decided to expand the scope of this recall to cover Hybrid Transmissions running software version 5500682.

There have been a total of two formal field complaints. No accidents or injuries have occurred as a result of the defect.

***For noncompliances*, identify the test results and other information considered in determining the existence of the noncompliance, and provide the date of each test and observation indicative of that noncompliance.**

Not applicable.

V. The Remedy Program and Its Schedule

Describe the program for remedying the defect or noncompliance, including the plan for reimbursing those owners and purchasers who may have incurred costs to remedy the defect or noncompliance before receiving the manufacturer's notification concerning that defect or noncompliance. Also include, where applicable, details with dates concerning any production remedy that was conducted or will be conducted. (49 C.F.R. § 573.6(c)(8)(i)).

Eaton will remedy the defect by removing Hybrid Control Module software versions 5500682 and 5500683 from all Hybrid Transmissions on which it is installed and replacing it with software version 5500689, which does not contain the faulty logic. Remedies can commence upon release of software version 5500689, which will occur on December 11, 2013.

Eaton is working cooperatively with vehicle manufacturers to identify the affected units and to remedy such units at no cost to vehicle owners. Specifically, Eaton has provided vehicle manufacturers with a listing of the VINS of the potentially affected units and dates of manufacture of affected units, which will be used to determine the location of such units. Eaton will then coordinate field corrective action with the respective vehicle manufacturer.

Provide the estimated date(s) on which owner and purchaser notifications will be issued and the estimated date(s) for completion of those notifications (49 C.F.R. § 573.6(c)(8)(ii)).

Eaton will provide this information upon completion of further investigation.

Provide the estimated date(s) on which dealer and distributor notifications will be issued and the estimated date(s) for completion of those notifications (49 C.F.R. § 573.6(c)(8)(ii)).

Eaton will provide this information upon completion of further investigation.

Describe the distinguishing characteristics of the remedy component/assembly versus the recalled component/assembly.

The new Hybrid Control Module Software, version 5500689, contains logic that eliminates the defect.