

MERITOR WABCO

Meritor Wabco Vehicle Control Systems
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September 30, 2011

By Electronic Mail (rmd.odi@dot.gov) and Certified Mail

Mr. Claude H. Harris
Acting Associate Administrator for Enforcement
National Highway Traffic Safety Administration
Attention: Recall Management Division (NVS-215)
1200 New Jersey Avenue
Washington, D.C. 20590

Re: Defect Information Report Relating to Meritor WABCO Pneumatic Electronic Stability Control Systems

Mr. Harris:

Meritor WABCO Vehicle Control Systems submits this Defect Information Report in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act of 1966 and NHTSA's implementing regulations, 49 CFR 573. The enclosed Report corresponds to the subparagraphs of 49 CFR Section 573.6(c) and covers approximately 10,700 Meritor WABCO Electronic Stability Control Modules shipped to various OEM customers for installation as original equipment on commercial vehicles manufactured between August 2005 and September 2011. The ESC module may cause the ESC system to activate unnecessarily when the vehicle is driven in a particular manner on certain unique road conditions.

We trust that the information in this document is fully responsive to the requirements of 49 CFR §573.6. If there are any questions, please contact the undersigned.

Respectfully Submitted,



Patrick Kealy
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Enclosure

Cc: Ms. Kelly Schuler, NHTSA RMD (Fax: 202-366-7882)

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Defect Information Report – Section 573.6

September 30, 2011

§573.6(c)(1) – This report is submitted by:

Meritor WABCO Vehicle Control Systems
 2135 West Maple Road
 Troy, Michigan 48064-7186

§573.6(c)(2) – Identification of vehicle or items of motor vehicle equipment:

This report covers all Meritor WABCO pneumatic Electronic Stability Control (ESC) systems equipped with one of the ESC Modules listed below, shipped to a variety of North American OEMs from August 2005 through September 2011. The relevant part numbers of the affected ESC Modules are:

446 065 020 0	446 065 027 0
400 850 179 0	400 850 185 0
400 850 195 0	

The ESC Module is a component of the Meritor WABCO Electronic Stability Control System. This module contains a yaw rate sensor, a lateral accelerometer and stability control software that provides the ESC system with necessary inputs to enable the ESC to determine the stability status of the vehicle in regards to rollover and loss of control (oversteer/understeer).

§573.6(c)(3) – Total number of vehicles or items of motor vehicle equipment affected:

Meritor WABCO estimates approximately 10,700 ESC Modules were shipped between August 2005 and September 2011. A list of affected customers and quantities is contained in Appendix A of this report.

§573.6(c)(4) – Percentage of vehicles or items of motor vehicle equipment affected:

Meritor WABCO has determined that 100% of the subject population contains the original ESC module that could produce an unnecessary ESC actuation as described in the following paragraph. However, because of the unique road and driving conditions necessary to trigger the performance anomaly, the unnecessary ESC actuation is rarely expected to occur. To date, Meritor WABCO is aware of only two reports, both of which occurred under the road/driving conditions described below.

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§§573.6(c)(5) – Description of the defect:

Under certain unique road and driving conditions involving tight, successive, highly banked curves in opposite directions, vehicle body roll and road inclination characteristics may adversely affect the slip angle calculation by the ESC Module. This might cause the ESC to perceive an oversteering situation and therefore apply the front axle outer wheel service brake until the vehicle is perceived to be stable by the ESC. This unnecessary brake intervention may pull the vehicle out of the curve, requiring the driver to counter steer to keep the vehicle on its intended path. If the driver is slow to react during this described unnecessary ESC intervention, the vehicle may deviate from its intended path. All known occurrences of this described condition have occurred on tight, S-type curves that are highly banked above 6 degrees. The faster the vehicle is driven on this unique road condition, the tighter the curves and the higher the bank, the more likely the occurrence of unnecessary oversteer brake activation by the ESC.

The ESC Module contains software utilized to compute the vehicle's slip angle. This module is usually mounted near the rear of the cab of a tractor or straight truck or on a cross member located near the center of a motorcoach.

§§573.6(c)(6) – Chronology of principal events:

- **August 2010** – First driver report of an unnecessary ESC activation on a particular portion of California HWY 41 between Oakhurst and Fish Camp. This road consists of tight, successive, highly banked curves in opposite directions. After discussion and describing system operation to the respective fleet, the ESC appeared to be operating normally.
- **September 2010** – Installed a data logger on the vehicle experiencing the issue due to continued driver complaints. After a two week period, no ESC brake interventions were recorded.
- **November 2010** – Meritor WABCO personnel traveled to the fleet and accompanied the driver on the specific route in question. No ESC events occurred though the road was wet and lightly snow covered. Previous interventions were assumed to be caused by an aggressive driving style.
- **December 2010 – June 2011** – The actual vehicle experiencing the issue was evaluated at a test track on dry roads, on winter roads (snow and ice covered) and in a mountainous environment. No ESC performance issues were identified.
- **June 2011** – Vehicle returned to fleet and driver again complained about unnecessary ESC activations on the same particular section of California HWY 41. Testing on the actual road in a dry condition was able to duplicate the issue, an unnecessary ESC activation in response to a perceived oversteer condition.
- **July - September 2011** – Continued testing on the particular portion of California HWY 41 indicated the issue could occur on other vehicle types equipped with

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Meritor WABCO ESC. A second complaint was received from a fire truck operating on similar mountainous road conditions in Ventura California. Root cause of this issue is believed to be similar to what occurred on Highway 41.

- **September 30, 2011** – Although Meritor WABCO is unaware of any accidents or injuries related to this issue and only two customer complaints have been received (both of which occurred under the unique road/driving conditions described above), a decision based on caution was made to initiate this campaign to notify potentially affected OEMs and provide a remedy.

§573.6(c)(7) – Test results or data supporting non-compliance:

Not applicable.

§573.6(c)(8) – Description of remedy:

The corrective action is to replace the currently installed ESC module with a new version containing updated software capable of resolving the issue described. Following the replacement of the ESC module, the ESC system will require varying levels of calibration depending on the software level of the ABS ECU. Certain older level ESC systems may also require replacement of the ABS ECU as well.

The following is an approximate time schedule for the program:

By October 15, 2011:	Meritor WABCO notification to affected OEM customers
By November 30, 2011:	Complete service instructions and procurement of replacement ESC modules

§573.6(c)(9) – Remedy program involving replacement of tires:

Not applicable

§573.6(c)(10) – Representative copy of notices, bulletins, etc.

Representative copies of all notices, bulletins and other communications sent to more than one manufacturer, distributor, dealer or purchaser will be sent to NHTSA within five days.

§573.6(c)(11) – Manufacturers Campaign Number: TBD

Part 577 Owner Notification Letter and Schedule:

Meritor WABCO will formally notify affected OEM customers and support each as necessary and applicable, with respect to owner notification and remedy. The content and timing of owner notification will be determined by each OEM.

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What Should the Vehicle Manufacturer Do?

If the subject products were installed as original equipment on vehicles you manufactured, and you decide that they contain a defect, you must notify the NHTSA in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act of 1966 and NHTSA's implementing regulations, 49 CFR 573. It is critical that the NHTSA guidelines are followed in a timely manner and that your customers are notified to conduct the remedy described below.

The corrective action is to replace the currently installed ESC Module with a new version containing updated software capable of resolving the described issue. Following the replacement of the ESC Module, the ESC system will require varying levels of calibration depending on the software level of the ABS ECU. Certain older level ESC systems may also require replacement of the ABS ECU as well.

The following is an approximate time schedule for the program:


By November 30, 2011: Complete service instructions and procurement of replacement ESC Modules available. Initiate distribution.

What will Meritor WABCO do?

Meritor WABCO will provide additional information regarding the replacement parts, removed material disposition and service instructions prior to November 30, 2011.

We apologize for any inconvenience that this situation may cause. Meritor WABCO wants to assure you that we are concerned for customer safety and endeavor to insure your continued satisfaction with our products. The necessary support will be provided to resolve this issue as quickly as possible.

Sincerely,



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Attachments:

1. MW 573 ESC Defect Notification