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OFFICE OF
DEFECTS INVESTIGATION

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June 3, 2004

Kenneth N. Weinstein
Associate Administrator for Safety Assurance (NSA-01)
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

04V-271
(6 pages)

**Re: Defect Information Report FL-428,
Boech Zero Offset Pin Slide (ZOPS) Hydraulic Brake Calipers**

Mr. Weinstein:

In accordance with Part 573 of Title 49 of the Code of Federal Regulations, Freightliner LLC herewith reports a safety campaign to recall approximately 300 Freightliner Custom Chassis MB-45 and MB-55 shuttle bus chassis manufactured January 1999 through June 2002 with a defect Boech Zero Offset Pin Slide (ZOPS) hydraulic brake calipers.

Attached is Freightliner's Defect Information Report.

Please contact me if you have any questions.

Sincerely yours,

Timothy Blubaugh

Cc: Michael Mason, CAL-OSHA
DOSH, Legal Unit
10th Floor
455 Golden Gate Avenue
San Francisco, CA 94102

Enclosure

Certified Mail Article Number:

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A DaimlerChrysler Company

Defect Information Report (Section 573.6)

June 3, 2004

(c)(1) Manufacturer: Freightliner LLC
P.O. BOX 3849
Portland, Oregon 97208
(503) 745-5218

Brands: Freightliner Custom Chassis

(c)(2) Vehicles Identification:
Model(s) affected: MB-45 and MB-55 Shuttle Bus Chassis
Manufacture Dates: January 1999 through June 2002
Basis for determining population: Chassis manufactured with Bosch Zero Offset Pin Slide (ZOPS) hydraulic brake calipers.
Component manufacturer if other than the vehicle manufacturer:
Robert Bosch Corporation
2800 South 25th Avenue
Broadview, IL 60155-4594

(c)(3) Total number of vehicles potentially affected: approximately 300

(c)(4) Percentage of vehicles estimated to contain the defect: unknown

(c)(5) Description of the defect: See attached Defect Information Report from Bosch, ref EA02-035

(c)(6) Chronology of principal events: See attached Defect Information Report from Bosch

(c)(7) Noncompliance-test or other data: not applicable

(c)(8) Remedial program: Repairs will be performed by Freightliner dealerships and Direct Warranty customers, i.e., customers approved by Freightliner to do their own warranty repairs.

Estimated Owner Notification Date: Customer notification will be by first class mail using Freightliner records to determine the customers affected. This will be completed approximately July 23, 2004

Reimbursement Plan: Copies will be submitted as a supplemental report when available.

(c) (9) Communications sent to dealers and owners: Copies will be submitted as a supplemental report when available.

(c) (10) Copy of proposed owner notification letter: A draft will be sent for ODI review when available.

(c) (11) Manufacturer's campaign number: FL-428



Chassis Division

Robert Bosch Corporation
401 North Bendix Drive
South Bend, IN 46828

Telephone (874) 337-2100

www.boschusa.com

December 16, 2003

Ms. Kathleen DeMeter
Director, Office of Defects Investigation
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

RE: EA02-035
Bosch Zero Offset Pin Slide Caliper

Dear Ms. DeMeter:

In June 2002, Bosch was notified that NHTSA had opened PE02-046 to evaluate reports of overheated brake components. In May 2003, Bosch was notified that NHTSA had upgraded the Preliminary Evaluation to an Engineering Analysis, EA02-035.

When NHTSA opened its investigation, Bosch was already in the midst of an internal investigation of performance issues and performance improvement opportunities related to certain brake components it supplies. After an increase in warranty activity involving the Bosch Zero Offset Pin Slide (ZOPS) caliper in Model Year 2000 (July 1999 to June 2000) at Bosch's largest ZOPS customer (International), Bosch devoted substantial resources to the investigation of the customer issues reported to be associated with the ZOPS caliper, including premature lining wear, loose/broken bolts and thermal events (fire/burn/smoke, hereafter referred to as f/b/s). This investigative effort was intensified upon the opening of NHTSA's Preliminary Evaluation (PE) and NHTSA's upgrade of the PE to an Engineering Analysis (EA). Bosch estimates that it has devoted more than 28 staff years and spent more than \$1 million in this effort, including both the investigation and the development of performance improvements.

Notwithstanding this effort, Bosch has not identified any defect in design or manufacturing of the ZOPS caliper. Bosch has concluded that the increased f/b/s incident rate at International in MY 2000 (and to a lesser degree in MY 2001 in some truck units) was attributable to a variety of causes, many of which were not directly attributable to the component caliper and some of which are still unidentified. Moreover, Bosch believes that the performance of its ZOPS caliper does not present an unreasonable risk to motor vehicle safety.

With respect to the presence of a "defect" in the caliper, Bosch believes that the widely disparate performance of the caliper in different applications confirms that there is no inherent "defect" in design or manufacturing of the caliper assembly. The caliper has performed



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acceptably in many applications, but has been associated with an elevated rate of f/b/s in some applications. Although several theories have been advanced by Bosch, NHTSA and others that might explain the elevated incident rate in some vehicles, no data has been developed that explains fully why some vehicle applications had higher incident rates than others.

Nevertheless, in order to resolve the agency's concerns about the performance of the ZOPS caliper and to avoid further disputes about this issue, Bosch is willing to support the affected OEM customers - International, Monaco, and WRV - that have determined that a safety-related defect exists in their vehicles equipped with ZOPS calipers. Bosch has not admitted liability to those customers or any other person or entity. Specifically, Bosch will support a notification and remedy campaign directed toward the vehicles of interest at these customers identified by NHTSA: school buses, other passenger transporting buses, recreational vehicles, emergency vehicles (including ambulances and fire trucks), and full time transporters of hazardous cargo. Bosch will also support an extended warranty for wreckers (both rollback and conventional towaway) that have experienced f/b/s incidents or excessive drag incidents. Bosch will support a remedy package that includes inspection for caliper corrosion (and replacement where appropriate) on calipers built before October 1, 2001, as well as an inspection of the slide pin (with repair or replacement as appropriate) for pin assemblies built before June 2, 2002. Details of this package are contained in the Defect Information Report attached to this letter.

Bosch notes that the vehicle manufacturers who decided to make a defect determination related to their vehicles' performance are responsible for choosing a remedy that is adequate to reduce the alleged safety risk to a reasonable level, pursuant to 49 U.S.C. §30120(c). Bosch believes that its support for the remedy package described in this communication will adequately respond to the seal land corrosion and slide pin performance issues of concern to NHTSA related to the component ZOPS caliper performance in the field.

Bosch will be working with its affected OEM customers to address the incidents of seal land corrosion and slide pin performance that are identified in the field in the vehicles of interest as defined by NHTSA. This action should reduce the risk of fire/burn/smoke, to the extent that the corrosion and/or slide pins were contributing to that risk in the first place. It is Bosch's understanding from the June 26, 2003 meeting with NHTSA and subsequent discussions with your staff that this commitment supersedes the need to respond to the Information Request issued to Bosch on May 2, 2003.

Please let us know if you have any questions or would like additional information. The information required by your regulations is attached.

Sincerely,

Keith Kondratko



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DEFECT INFORMATION REPORT

1. Manufacturer's name/address: Robert Bosch Corporation, 2800 South 25th Avenue; Broadview, IL 60155-4594.

2. Vehicles/Equipment involved in this defect notification: Vehicles built by International, Monaco and Western RV that are equipped with the Bosch Zero Offset Pin Slide (ZOPS) caliper in any of the following five vehicle type categories: school buses, other passenger-transporting buses, recreational vehicles, emergency vehicles (including ambulances and fire/rescue vehicles), and full time hazardous cargo transporters (including compressed gas and fuel oil transporters). Rollback and other wreckers will be offered an extended warranty through the OEM (International) for eighteen months to cover repairs necessitated by fire/burn/smoke or excessive drag involving the component ZOPS caliper on their vehicles. These three manufacturers have already made their own safety-related defect determinations and filed Part 573 reports with respect to their vehicles.

3. Total number of vehicles or items of equipment: Bosch does not have information to identify the number of ZOPS-equipped vehicles manufactured by the three manufacturers in the five vehicle type categories identified in Item 2, plus the wreckers that will be offered the extended warranty. Bosch will request this information from the three manufacturers, and will supplement this report if the information is provided to Bosch.

4. Approximate percentage of vehicles or equipment estimated to actually contain the defect: Bosch is unable to estimate how many of the subject vehicles could experience the problem.

5. Description of the defect: Bosch has not identified a design or manufacturing defect in the ZOPS caliper. Bosch has decided that the presence of corrosion in the vicinity of the caliper seal land can contribute to reduced piston mobility in some cases, which could lead to performance issues, such as overheated brake components and, potentially, fire/burn/smoke incidents. The vehicles identified in Item 2, above, have experienced fire/burn/smoke incidents in the field at a rate that is elevated above peer vehicles, at least for Model Year 2000. Bosch acknowledges that NHTSA is also concerned about slide pin performance in the vehicles of interest, and has thus included a slide pin inspection as part of its proposed remedy.

6. Chronological summary of events leading to this determination: Bosch has been working since late 2000 to understand the reason why warranty claims (including, but not limited to, fire/burn/smoke incidents) increased at International in mid-1999 (the beginning of MY 2000). On May 2, 2003, Bosch received an extensive Information Request from NHTSA regarding the ZOPS caliper. On June 26, 2003, Bosch met with NHTSA to discuss the issues related to the ZOPS caliper. Since that date, Bosch has been working closely with NHTSA to resolve issues of concern to the agency and to define an adequate remedy for these issues.

7. Description of proposed remedy: Bosch will support a campaign through the affected OEM's that will invite owners of ZOPS-equipped vehicles in the five categories of interest to bring their vehicles in for an inspection to determine (1) the presence or absence of corrosion in the seal land vicinity for calipers built before October 1, 2001, and (2) the adequacy of the slide pin movement on pin assemblies built before June 2, 2002. If the inspection reveals corrosion in the seal land, the corroded caliper will be replaced with a new caliper that incorporates the design and manufacturing improvements associated with the ZOH-T caliper. If the inspection reveals difficulty in the caliper slide movement, the



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pins will be adjusted. If pin adjustment does not improve the caliper slide sufficiently, the pins will be replaced with ZOH-T pins. Bosch's model inspection protocol is attached at Attachment A.

With respect to wreckers, Bosch will support through International an extended warranty to service fire/burn/smoke and excessive drag incidents without charge for eighteen months from the date of notice to the wrecker owners, if the fire/burn/smoke/drag incidents are traced to caliper corrosion or inadequate caliper slide movement in a ZOPS caliper, with details to be worked out with International.

8. **Program for remedy campaign (including program for reimbursing any consumer who obtained the remedy at his/her own expense within one year of the opening of the EA, or within one year of this 573 report, whichever is earlier):** As a component supplier who is supporting defect determinations already made by the three vehicle manufacturers identified in Item 2, above, Bosch expects that the vehicle manufacturers will develop a remedy campaign program that will include the inspection protocol described in Item 7.

Bosch will work with the affected OEM's to reimburse owners of vehicles identified in Item 2, above, who incurred out-of-pocket expenses to repair a ZOPS caliper for fire/burn/smoke or excessive drag incidents related to seal land corrosion or inadequate caliper slide movement on or after December 6, 2002. Consistent with §573.13 of NHTSA's regulations, Bosch will require adequate documentation of the claimant's name and address; identification of the affected vehicle as one identified in Item 2, above; proof of the claimant's ownership of that vehicle; and evidence (such as a receipt) of the pre-notification repair. The receipt (or other supporting information, such as a dealer work order) must document that the repair was conducted to address the consequences of seal land corrosion or inadequate pin slide on the ZOPS caliper, and must identify the total cost paid for the repair. Bosch will not reimburse an owner for costs incurred within the vehicle manufacturer's warranty period, nor will Bosch reimburse an owner for costs incurred to repair the caliper for reasons unrelated to fire/burn/smoke or excessive drag involving seal land corrosion or caliper slide movement issues.

Bosch will work with its three customers to implement the Bosch participation in the vehicle manufacturers' reimbursement plans. Bosch expects that it will be the vehicle manufacturers, rather than Bosch, that will produce and distribute the customer notification materials. For this reason, Bosch has not prepared a draft customer notification. In the event that one or more of the vehicle manufacturers identified in Item 2, above, elects to have the customer notification distributed directly by Bosch, and provides Bosch with the customer list and other information needed to allow Bosch to conduct that notification, Bosch will provide the agency with a draft customer notification, consistent with Part 577, for the agency's review.