

MOTOR COACH INDUSTRIES

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July 13, 2005

OFFICE OF  
DEFECTS INVESTIGATION

BY TELEFAX AND  
BY UPS

National Highway Traffic Safety Administration  
400 Seventh Street, S.W.  
Washington, D.C. 20590

05V-322  
(13 pages)



**RE: NOTIFICATION OF DEFECT**

This report is being sent to you in compliance with 49 CFR Part 573 – Defect and Non-Compliance Reports.

1. **Manufacturer's Name:**  
Motor Coach Industries Limited  
1475 Clarence Ave.  
Winnipeg, MB R3T 1T5
  
2. **Vehicle potentially containing the defect:**  
  
MCI 2004 through 2006 model J4500 motor coaches manufactured at Motor Coach Industries, Winnipeg, Canada facility utilizing an FH941 model steer axle prior to unit 63246.
  
3. **Number of vehicles potentially containing the defect:**  
  
Up to 156 coaches
  
4. **Percentage of vehicles potentially containing the defect:**  
  
38.5% of the coaches
  
5. **Description and Determination of Defect:**  
  
In June of 2005, Motor Coach Industries Limited (MCI) was notified by ZF Sales & Service North America, LLC (ZF) that it had supplied MCI with 156 pieces each of two steering system intermediate shafts (I-shaft) that could potentially possess a defect. Failure of one of these two shafts could result in complete loss of steering control of the vehicle.

No occurrences of this defect have been reported to MCI.

ZF has estimated that only 0.0052% of the I-shafts shipped during the affected timeframe could contain the defect, and the 156 pieces provided to MCI represents 38.5 percent of the J4500 model coaches manufactured with these components.

Please see attached notification letter from ZF.

6. Program for Remedy:

ZF had asked MCI to schedule a meeting at MCI's facilities by early August to propose and obtain agreement on a field action plan. In the meantime, MCI has requested from ZF information regarding date codes so that coaches being delivered from the factory can be checked to ensure that the I-shafts are not from the affected production.

As soon as a meeting is held and field action plan can be formulated, notification of defect letters will be mailed to owners of coaches in the affected range.

MCI would appreciate NHTSA's prompt response in the assignment of a campaign number so that MCI can proceed with the release of a formal Field Change Program service bulletin and customer letter.

Yours truly,

MOTOR COACH INDUSTRIES LIMITED



Virgil Hoogestraat  
Vice President Engineering

cc. Timothy Nalepka

Ø Hr. Ranger



Eingang VZR  
17. JUNI 2005

ZF Group NAO - 15811 Centennial Drive  
Northville, MI 48167

Kenneth N. Weinstein, Associate Administrator  
for Enforcement

National Highway Traffic Safety Administration  
400 Seventh Street, S.W. (NSA-01)  
Washington, D.C. 20590

Dept.

From

Phone

Fax

E-mail

Your Ref.

Our Ref.

Corporate

Beth Walker

734-207-2823

734-454-1063

elizabeth.walker@zf.com

Date

June 10, 2005

### Part 573 Notification to NHTSA

Dear Mr. Weinstein,

On June 6<sup>th</sup>, 2005, ZF decided that a defect which relates to motor vehicle safety exists in items of motor vehicle equipment listed below, and is furnishing notification to the National Highway Traffic Safety Administration in accordance with 49 CFR Part 573 Defect and Noncompliance Reports.

#### 573.6 (c)(1): Manufacturer's Name of the item of equipment

ZF Lenksysteme GmbH, plant Berlin, Lange Enden 1, 13437 Berlin, Germany

ZF Heavy Duty Steering Inc., 50 Harwill Road, St. Thomas ON N5P 4M6, Canada

Contact person for both:

Dave Peno,  
Business Unit Manager - Steering Technology,  
ZF Sales & Service North America, LLC  
777 Hickory Hill Drive  
Vernon Hills, IL 60061  
Tel: 847-478-6754  
Mobile: 847-997-0964  
Fax: 847-478-6774

President: Julio Caspari  
www.zf.com

ZF Group NAO  
15811 Centennial Drive  
Northville, MI 48167 - USA  
Phone 1-734-416-6200  
Fax 1-734-416-6331



573.6 (c)(2)(iii): Identification of Items of Motor Vehicle Equipment

Generic Name of item	Model
Shaft	I-Shaft

Supplier	Customer	Part number	Date of supply
ZF Lenksysteme	Newell Coach Cooperation	7025974718 7025974729	Mar 10, 2004 - Oct 04, 2004
ZF Lenksysteme	Freightliner LLC Portland	7025974743	Apr 20, 2004 - Jun 23, 2004
ZF Lenksysteme	Motor Coach Industries Winnipeg	7025974759 7025974765 7025974774 7025974775	Mar 24, 2004 - Aug 09, 2004
ZF Heavy Duty	Sterling Truck St. Thomas, Canada	7025974685	May 12, 2004 - Sep 09, 2004
ZF Heavy Duty	Freightliner Daimler Chrysler Vehiculos, Santiago, Mexico	7025974730 7025974731 7025974724 7025974726	May 11, 2004 - Aug 17, 2004 Apr 14, 2004 - Oct 13, 2004 Apr 20, 2004 - Oct 15, 2004 Apr 08, 2004 - Oct 15, 2004
ZF Heavy Duty	Freightliner Corp. Cleveland	7025974730 7025974731 7025974724 7025974703 7025974704	Apr 08, 2004 - Oct 13, 2004 Apr 08, 2004 - Oct 15, 2004 Apr 13, 2004 Apr 10, 2004 - Oct 01, 2004 Apr 10, 2004 - Oct 04, 2004
ZF Heavy Duty	Freightliner Corp. Portland	7025974730 7025974731 7025974732	Sep 16, 2004 Apr 14, 2004 - Oct 14, 2004 Apr 27, 2004 - Oct 15, 2004



Supplier	Customer	Part number	Date of supply
ZF Heavy Duty	Freightliner (FCCC), Gaffney	7025974741 7025974742 7025974752	Apr 20, 2004 - Oct 07, 2004 Apr 27, 2004 - Oct 18, 2004 Apr 06, 2004 - Oct 08, 2004
ZF Heavy Duty	Workhorse (Autocar LLC, Hagerstown)	7025974723	May 05, 2004 - Sep 29, 2004
ZF Heavy Duty	Workhorse Protoshop, Indiana	7025974723	Jul 30, 2004
ZF Heavy Duty	Trolley Boats Holly Hill	7025974723	May 13, 2004 - Aug 20, 2004
ZF Heavy Duty	Spartan Motors Inc, Charlotte	7025974744 7025974747	Apr 01, 2004 - Jul 30, 2004 Apr 13, 2004
ZF Heavy Duty	Motor Coach Industries Winnipeg	7025974759 7025974765	Jul 21, 2004 - Oct 13, 2004 Jul 21, 2004 - Oct 13, 2004

573.6 (c)(2)(v) Manufacturer that purchase the component

- Newell Coach Cooperation, North Highway 69, Miami OK 74365, USA
- Freightliner LLC Cooperate II Test Center, 4300 N. Commerce, 97217 Portland, OR, USA
- Motor Coach Industries, Fort Gary Warehouse, 1475 Clarence Av., Winnipeg, Manitoba R3T 1T5, Canada
- Sterling Truck, 350 South Edgeware Road, St. Thomas, Ontario, N5P 4C4, Canada



- Freightliner / Daimler Chrysler Vehiculos, Comerciales Mexico, KM 23.7, Location 065, Carretera, Lamarquesa, CP 52800 , Santiago, Mexico
- Freightliner Corp, 1150 Statesville Street, Cleveland, NC, 27013, USA
- Freightliner Corp, 6936 North Fathom Street, Portland, Oregon, 97217. USA
- Freightliner (FCCC), 552 Hyatt Street, Gaffney, SC, 29341, USA
- Workhorse (Autocar LLC, 551 East Main Street, Hagerstown Indiana, 47346, USA)
- Workhorse Protopshop, 2741 North Arba Pike, Union City, Indiana, 47390, USA
- Trolley Boats, 406 Walker Street, Holly Hill, Florida, 32117, USA
- Spartan Motors Inc, 1549 Mikesell Road, Charlotte, Michigan, 48813, USA

573.6 (c)(3): Total Number of Parts Containing the Defect

Supplier	Customer	Part number	Number of parts potentially involved
ZF Lenksysteme	Newell Coach Cooperation	7025974718	28
		7025974729	28
ZF Lenksysteme	Freightliner LLC Portland	7025974743	8
ZF Lenksysteme	Motor Coach Industries Winnipeg	7025974759	32
		7025974765	32
		7025974774	2
		7025974775	2
ZF Heavy Duty	Sterling Truck St. Thomas, Canada	7025974685	173
ZF Heavy Duty	Freightliner Daimler Chrysler	7025974730	300
		7025974731	3750



Supplier	Customer	Part number	Number of parts potentially involved
	Vehiculos, Santiago, Mexico	7025974724 7025974726	1190 999
ZF Heavy Duty	Freightliner Corp. Cleveland	7025974730 7025974731 7025974724 7025974703 7025974704	1000 26100 2 142 219
ZF Heavy Duty	Freightliner Corp. Portland	7025974730 7025974731 7025974732	50 1700 450
ZF Heavy Duty	Freightliner (FCCC), Gaffney	7025974741 7025974742 7025974752	1050 647 357
ZF Heavy Duty	Workhorse (Autocar LLC, Hagerstown)	7025974723	58
ZF Heavy Duty	Workhorse Protoshop, Indiana	7025974723	4
ZF Heavy Duty	Trolley Boats Holly Hill	7025974723	2
ZF Heavy Duty	Spartan Motors Inc, Charlotte	7025974744 7025974747	127 4
ZF Heavy Duty	Motor Coach Industries Winnipeg	7025974759 7025974765	156 156

573.6 (c)(4): Percentage of parts estimated to contain the defect

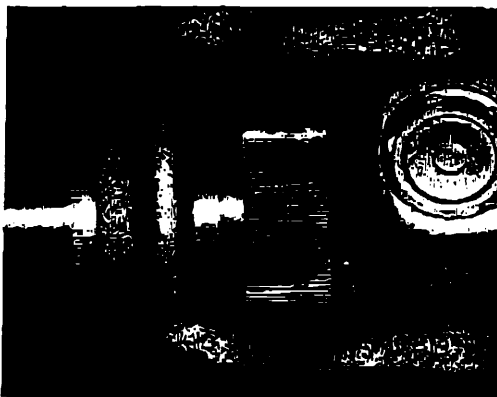
Approximately 52 ppm of the Parts ( 0.0052 %) identified pursuant to 573.6 (c) (3)



573.6 (c)(5): Description of the Defect

**- Defect**

The I-Shaft is the mechanical linkage between steering wheel and the steering gear. At the non welded side of the I-Shaft there is the universal joint. There are possibilities that the fork / shaft connection may get lost.



**- Causes**

Employee failure: The Fork was broached twice. Consequently the press fit connection between the Fork and the Shaft may get lost.

**- Consequences**

In case of fork / shaft connections get lost the steering ability of the vehicle gets lost.



**- Any warning?**

With increasing damage of the I-Shaft an increasing clearance at the steering wheel can be felt. This clearance can also be felt by shaking the I-Shaft manually (accessibility depending on mounting position in the vehicle).

**- Supplier of the Defect component**

Bohn Gesellschaft für mechanische Fertigung mbH, Motzener Straße 24, 12277 Berlin, Germany, Mr. Wolfgang Scheer

573.6 (c)(8) Chronology of all principal events

October 18<sup>th</sup>, 2004: 0-mileage failure at customer, corrective actions implemented

April 21<sup>st</sup>, 2005: Field failure / breakdown of a Highway tractor; no injuries

573.6 (c)(8)(i) Remedy Program:

Correction in Production line:

100% control of force and stroke during press fit connection fork / shaft, starting October 20<sup>th</sup>, 2004.

Field:

Verification of parts with special created tool (parts with less than 13kN pull-of force will be clearly identified as beyond specification and automatically destroyed).



**573.6 (c)(8)(ii) Schedule**

**-Notification to the customers**  
**Begin of notification: June 3<sup>rd</sup> 2005**  
**End of notification: June 8<sup>th</sup> 2005**

**-Schedule for recall is not determined, yet.**

**573.6 (c)(9) Copy of all notices bulletins and communications**

**See attachment (presentation; notification letters to customers)**

**If you or your staff has any questions, please feel free to contact me.**

**Sincerely,**

A handwritten signature in cursive script that reads "Beth Walker".

**Beth Walker**

June 3, 2005

Mr. Paul Murphy  
Director Regulatory Compliances  
Motor Coach Industries  
1475 Clarence Avenue  
Winnipeg, Manitoba R3T 1T5  
Canada

Dear Mr. Murphy:

The purpose of this covering letter and information packet is to officially notify Motor Coach Industries that ZF Lenksysteme is proposing a field action program dealing with I-Shaft assemblies produced for Motor Coach Industries between March 10, 2004 and October 20, 2004.

There is a possibility that the steering wheel could turn without engaging the steering gear, due to a possible production error on the I-Shaft assembly.

According to our records this is a total of 312 units based on your part numbers 11-02-1097 and 11-02-1096. Please see attached the shipment date and delivery note information.

This precautionary field action stems from a single (non-injury) incident in the field dealing with another vehicle OEM utilizing the same design I-Shaft. The other OEMs who are affected are currently being informed. The attached presentation clearly presents the history, findings, root cause analysis and recommended field program in more detail.

With such an incident, ZF Lenksysteme (Germany) will of course be officially notifying NHTSA / TREAD accordingly. However, in order to capture all necessary information for the Non-Compliance / Product Recall application, we need Motor Coach Industries Assistance in completing some of the information as it relates to the vehicle manufacturer.

Attached you will also find a copy of this application. We are asking that MCI please fill in as much data as possible based on the data provided and return to my attention (via email) ASAP. We are sure you are aware of government time limitations in these matters.

At the moment we are preparing the NHTSA message. If you engage in correspondence with NHTSA first, please send immediate notification of this to my attention via telephone or email as presented below.

Based on our prior telephone communication is understood that you will be the main contact for dealing with this issue. It should be noted that I will be your primary contact dealing with this issue and you should always feel free to contact me if you have a question or concern. If you wish, I will prepare a meeting to discuss the further steps involved in this issue.

Upon receipt and review of this letter, presentation or TREAD application, please feel free to contact me.

Respectfully,

*David E. Peno*

David Peno  
Business Unit Manager – Steering Technology  
ZF Sales & Service North America, LLC  
777 Hickory Hill Drive  
Vernon Hills, IL 60061  
Tel: 847-478-6754  
Main: 847-478-6868  
Mobile: 847-997-0964  
Fax: 847-478-6774  
Email: [david.peno@zf.com](mailto:david.peno@zf.com)

Attachment : (see next page)

(Shipment Date & Delivery Note Data)

<u>Customer P/N</u>	<u>ZFLS P/N</u>	<u>Delivery Note</u>	<u>Qty</u>	<u>Date</u>
11-02-1097	7025974759	81007410	1	7/21/2004
		81007661	30	8/18/2004
		81007740	30	8/25/2004
		81007990	25	9/24/2004
		81008025	20	9/27/2004
		81008186	50	10/13/2004
			<u>156</u>	
11-02-1096	7025974765	81007409	1	7/21/2004
		81007660	30	8/18/2004
		81007739	29	8/25/2004
		81007956	26	9/20/2004
		81008024	20	9/27/2004
		81008185	50	10/13/2004
			<u>156</u>	