

Safety Defect and Noncompliance Report Guide for Vehicles
AMENDED PART 573 Defect and Noncompliance Report

On March 24, 2010, Motor Coach Industries, Inc. decided that a defect which relates to motor vehicle safety exists in the motor vehicles listed below, and is furnishing notification to the National Highway Traffic Safety Administration in accordance with 49 CFR Part 573 Defect and Noncompliance Reports.

Date this report was prepared: **July 14, 2010**

Furnish the manufacturer's identification code for this recall (if applicable):

MCI Service Bulletin 344

1. Identify the full corporate name of the fabricating manufacturer of the vehicle being recalled. If the recalled vehicle is imported, provide the name and mailing address of the designated agent as prescribed by 49 U.S.C. §30164.

**Motor Coach Industries, Inc.
1700 E. Golf Road
Suite 300
Schaumburg, IL 60173**

Identify the corporate official, by name and title, whom the agency should contact with respect to this recall.

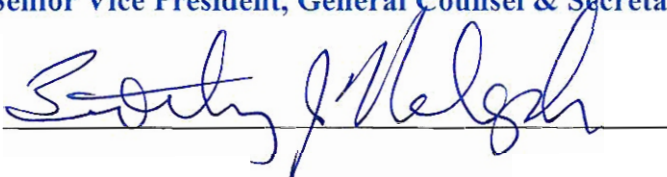
Jim Macdonald, Executive Director, Engineer

Telephone Number: **(204) 287-4949** Fax No.: **(204) 478-2877**

Name and Title of Person who prepared this report.

**Timothy J. Nalepka
Senior Vice President, General Counsel & Secretary**

Signed: _____



I. Identify the Vehicle Models Involved in the Recall

2. Identify the Vehicles Involved in the Recall, for each make and model or applicable vehicle line (provide illustrations or photographs as necessary to describe the vehicle), provide:

All E model and J model coaches equipped with a DOGA windshield wiper motor.

Make(s): MCI

Model Years and Models Involved:

1. 1999 – 2001, 2007 thru 2011 E4500
2. 2001 thru 2011 J4500

Production Dates:

1. 1999 thru 2001 E4500	Beginning: May 1999	Ending: July 2001
2. 2007 thru 2011 E4500	Beginning: September 2007	Ending: June 2010
3. 2001 thru 2011 J4500	Beginning: May 2001	Ending: June 2010

VIN Range:

1. 1999 thru 2001 E4500	Beginning: 60524	Ending: 61646
2. 2007 thru 2011 E4500	Beginning: 64046	Ending: 65645
3. 2001 thru 2011 J4500	Beginning: 61648	Ending: 65655

60524	60575	61252	61587	61646
61648	62030	63220	63323	63421-63422
63550-63569	63585	63732	63754	64046
64084	64162-64177	64179-64181	64277-64278	64287
64342-64343	64455 - 65655			

Descriptive information which characterizes /distinguishes the recalled vehicles from those model vehicles not included in the recall:

The windshield wiper motor has the brand name “DOGA” printed on two faces of the motor.

Identify the approximate percentage of the production of all the recalled models manufactured by your company between the inclusive dates of manufacture provided

above, that the recalled model population represents. For example, if the recall involved Widgets equipped with certain items of equipment from January 1, 1996 through April 1, 1997, then what was the percentage of the recalled Widgets of all Widgets manufactured during that time period.

The recall population is approximately 50% of the total E and J series coach population produced during the model years referenced above.

II. Identify the Recall Population

3. Furnish the total number of vehicles recalled potentially containing the defect or noncompliance.

<u>MODELS</u>	<u>MODEL YEARS</u>	<u>NUMBER OF VEHICLES POTENTIALLY INVOLVED</u>
E4500	1999	2
E4500	2000	1
E4500	2001	2
E4500	2007	1
E4500	2008	37
E4500	2009	36
E4500	2010	8
E4500	2011	3
J4500	2001	1
J4500	2003	1
J4500	2006	27
J4500	2007	25
J4500	2008	521
J4500	2009	406
J4500	2010	174
J4500	2011	16

Total Number Potentially Affected by the Recall: 1,261

4. Furnish the approximate percentage of the total number of vehicles estimated to actually contain the defect or noncompliance:

MCI is unable to estimate the percentage at this time.

Identify and describe how the recall population was determined--in particular how the recalled models were selected and the basis for the beginning and final dates of manufacture of the recalled vehicles:

The recall population is all MCI E and J model motor coaches equipped with a DOGA windshield wiper motor.

III. Describe the Defect or Noncompliance

5. Describe the defect or noncompliance. The description should address the nature and physical location of the defect or noncompliance. Illustrations should be provided as appropriate.

The DOGA windshield wiper motor may fail to operate properly while the wiper system is functioning. If this occurs, the windshield wipers may operate intermittently, operate at a single speed only, or completely stop operating. If the windshield wipers stop functioning, the driver's clear field of view may be reduced.

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

DOGA has identified two issues that contribute to the electrical armature wire failures in the DOGA wiper motors used in certain MCI coaches.

First, the wiper controller that controls the intermittent mode of the wiper system may switch the wiper motor into its high speed mode when the wiper system is under heavy load, such as when operating in high wind, heavy rain, or dry windshield conditions. This switching occurs as a result of the thermal protection system that is integral to the design of the controller. DOGA has found that this switching occurs at a much higher rate of occurrence than DOGA anticipated, and as a consequence is causing premature damage to the motor.

Second, DOGA has found the wiper system linkages that connect the drive motor to the wiper arms may be assembled incorrectly. The force required to move a wiper arm with such incorrectly-assembled linkages is higher than DOGA anticipated, and causes a higher load input to the motor and premature damage to the motor.

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

If the defect occurs the wiper may stop functioning, and the driver's clear field of view may be reduced.

Identify any warning which can (a) precede or (b) occur.

Defective motors may cause the wipers to operate intermittently, operate at a single speed only, or completely stop operating. Intermittent and single speed operation may be a symptom of a defective motor. However, there may be no warning if a motor stops operating.

If the defect or noncompliance is in a component or assembly purchased from a supplier, identify the supplier by corporate name and address.

DOGA USA Corporation
11131 Kiley Drive, Huntley, IL 60142-6940

Identify the name and title of the chief executive officer or knowledgeable representative of the supplier:

Juan Manuel Campo
Managing Director / DOGA USA Corp.
Tel: (847) 669-8529 Ext.1201 Fax: (847) 669-8694
juanm.campo@dogausa.com / www.dogausa.com

IV. Provide the Chronology in Determining the Defect/Noncompliance

If the recall is for a defect, complete item 6, otherwise item 7.

6. With respect to a defect, furnish a chronological summary (including dates) of all the principal events that were the basis for the determination of the defect. The summary should include, but not be limited to, the number of reports, accidents, injuries, fatalities, and warranty claims.

In November 2009, MCI began investigating a customer report of DOGA wiper motor failures during coach operations. Wiper drive motors from three coaches (VIN's 65349, 65422 and 65444) were removed and returned to DOGA for analysis. DOGA reported that two of the motors failed because of broken armature wires, and the third failed due to a mechanical fault in the gear mechanism.

DOGA further reported to MCI that DOGA had made a change to its manufacturing method to eliminate the mechanical fault, and would identify improved motors with a green dot or green stripe on the cap of the motor. The improved motor was cut in to production at MCI at VIN 65552.

MCI has subsequently reviewed all warranty claims for the DOGA wiper motor failures since the DOGA wiper motor was introduced at unit 64455. A total of 146 warranty claims have been made on DOGA wiper motors by MCI customers, representing 12.5% of the entire population. Of these claims, 98 motors have been analyzed by DOGA. 21 have been verified by DOGA to have failures related to the mechanical gear mechanism and housing bolts. This represents approximately 1.8% of the total population of the motors. 49 of these motors have been confirmed to have faults related to the electrical armature wires (39) or broken magnets (10). This represents 4.2% of the total population installed in motor coaches.

7. With respect to a noncompliance, identify and provide the test results or other data (in chronological order and including dates) on which the noncompliance was determined.

N/A

V. Identify the Remedy

8. Furnish a description of the manufacturer's remedy for the defect or noncompliance. Clearly describe the differences between the recall condition and the remedy.

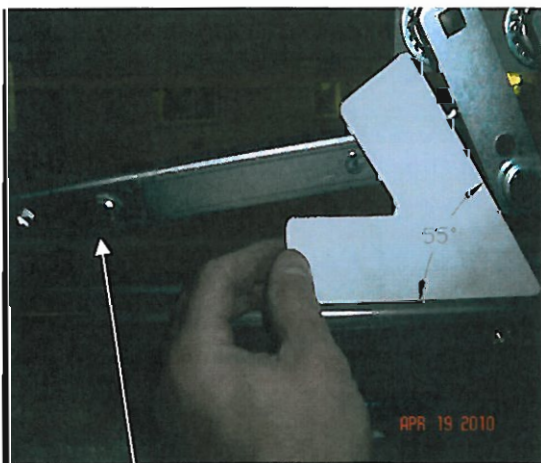
MCI will furnish the parts and labor required to implement the following DOGA-recommended remedies on the affected coaches:

1. Set the linkages of the arms to the recommended angle of 35 degrees from vertical as shown in the following photographs.
2. Install a bypass harness on the controller that prevents the controller from switching the motor to high speed. A schematic of this bypass harness is shown below.
3. Install a new DOGA model 259 motor in place of the model 258 motor. The 259 motor has a higher load capacity than the current 258 motor, which is intended to provide an additional safety margin to the wiper system.

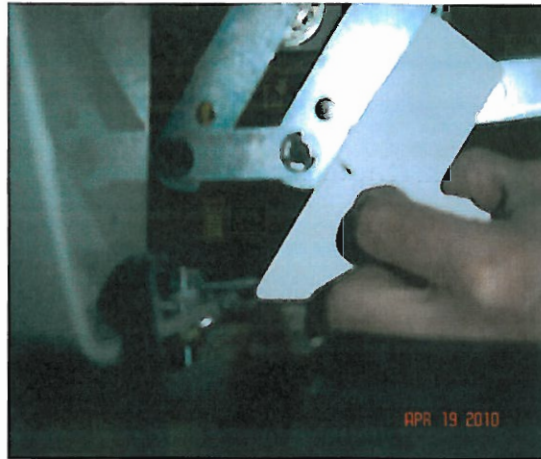
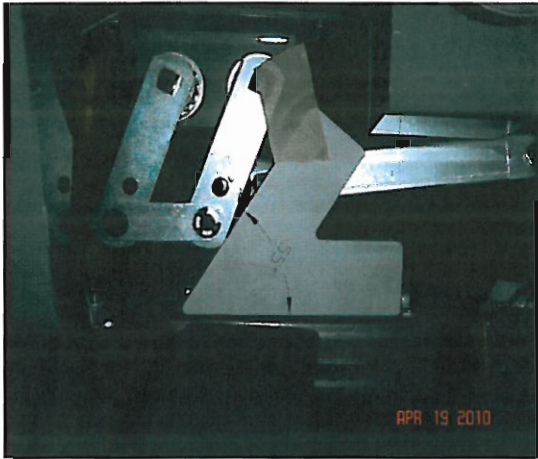
Clearly describe the distinguishing characteristics of the remedy component/assembly versus the recalled component/assembly.

1. Adjustment of linkages to reduce torque on the motor.

Adjustment to the main wiper linkages is required so that the arm swing angle from the wiper arm pivot is 35 degrees on both sides vertical, which provides the optimal torque on the motor. Using an adjustment gage, the angle measured from the frame member is 55 degrees as shown.



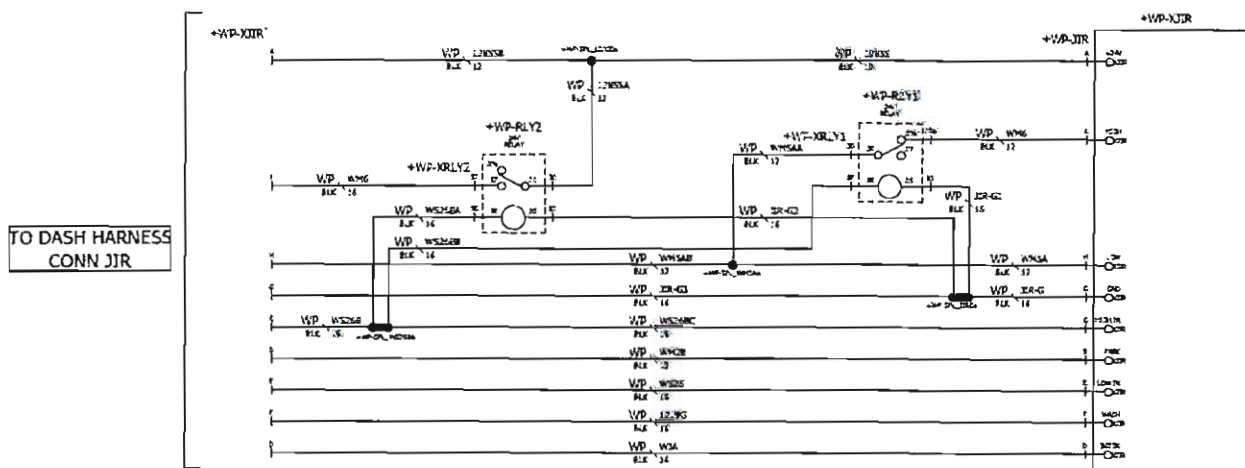
Road side wiper arms, before and after adjustment.



Curb side wiper arms, before and after adjustment.

2. Add a by-pass harness to by-pass high speed output of the wiper controller. Reduces the amount of time the wiper motor operates in high speed.

The by-pass harness interfaces between the wiper switch in the steering column, the wiper controller and the wiper motor. The harness is installed by disconnecting the plug to the wiper control module and installing it. This harness prevents the wiper controller from operating the wiper motor in high speed mode in the event of increased current draw. The high speed operation is powered through a relay controlled by the column switch. The harness also prevents the activation of both the high speed and low speed function of the motor at the same time.



Schematic of by-pass harness

Identify and describe how and when the recall condition was corrected in production. If the production remedy was identical to the recall remedy in the field, so state. If the product was discontinued, so state.

MCI anticipates that the production and field recall remedies will be identical.

VI. Identify the Recall Schedule

9. Furnish a schedule or agenda (with specific dates) for notification to other manufacturers, dealers/retailers, and purchasers. Please identify any foreseeable problems with implementing the recall.

MCI anticipates sending notifications to customers within one week after receiving approval by NHTSA of MCI's draft customer notification.

VII. Furnish Recall Communications

10. Furnish a final copy of all notices, bulletins, and other communications that relate directly to the defect or noncompliance and which are sent to more than one manufacturer, distributor, or purchaser. This includes all communications (including both original and follow-up) concerning this recall from the time your company determines the defect or noncompliance condition on, not just the initial notification. *A DRAFT copy of the notification documents should be submitted to this office by Fax (202-366-7882) for review prior to mailing.*

MCI's proposed customer notification letter and Service Bulletin 344 are attached.

Note that these documents are to be submitted separately from those provided in accordance with Part 573.8 requirements.