



**Received**  
**June 26, 2007**  
**Recall Management Division**

June 19, 2007

Ms. Kelly Schuler  
NHTSA  
1200 New Jersey Avenue SE  
Washington DC 20590

Re: Dura Automotive Systems, Inc.  
Part 573 Defect and Non-Compliance Report – Mass Transit Window

Dear Kelly:

Enclosed for your further handling is Dura's Non-Compliance Report regarding certain bus windows supplied to Motor Coach Industries (MCI). .

The communications materials from MCI supplemental to this report are still in production.

If there are any questions, please advise. I can be reached at (248) 299-7226.

Sincerely,

A handwritten signature in black ink, appearing to read "Martha R. Moyer". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Martha R. Moyer  
Corporate Counsel

MRM/ac  
Enclosures

Safety Defect and Noncompliance Report Guide for Equipment  
**PART 573 Defect and Noncompliance Report**<sup>(1)</sup>

**Dura Automotive Systems, Inc. and Motor Coach Industries have completed investigations and have decided that a potential non-compliance with Federal Motor Vehicle Safety Standard #217 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.**

**Date this report was prepared:** June 18, 2007

**Furnish the manufacturer's identification code for this recall (if applicable):** V369LGR

**1. Identify the full corporate name of the fabricating manufacturer/brand name/trademark owner of the recalled item of equipment. If the recalled item of equipment is imported, provide the name and mailing address of the designated agent as prescribed by 49 U.S.C. §30164.**

Dura Automotive Systems, Inc.  
2791 Research Drive  
Rochester Hills, MI 48309

Dura Automotive Systems, Inc.  
2200 Helton Drive, PO Box 746  
Lawrenceburg, TN 38464

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

Bryan MacPhail-Fausey, Director of Engineering, Body Systems NA

**Telephone Number:** (248) 844-1615 **Fax No.:** (248) 844-1677

**Name and Title of Person who prepared this report.**

Bryan MacPhail-Fausey, Director of Engineering

Martha Moyer, Corporate Counsel

**Signed:**

## **I. Identify the Recalled Items of Equipment**

**2. Identify the Items of Equipment Involved in this Recall, *for each make and model or applicable item of equipment product line (provide illustrations or photographs as necessary to describe the item of equipment), provide:***

**Generic name of the item:** Side Body Egress Window, Side Body Lavatory Egress Window, Non Egress Side Body Window as supplied for Motor Coach Industries (MCI) D coach 'facelifts' as noted below.

**Model:** MCI D Coach 'Facelift' Models D4000, D4005, D4500, D4505

**Part Number:** V369Q3, V370Q3R, V371Q3L, V371Q3R, V390Q3, V400Q3R

**Size:** All windows have an exterior glass size of 57.69" length x 36.14" height.

**Function:** Side Body Glass – Visibility and Egress.

**Other information which characterizes/distinguishes the items of equipment to be recalled:** Bonded, Exterior Flush Appearance Window.

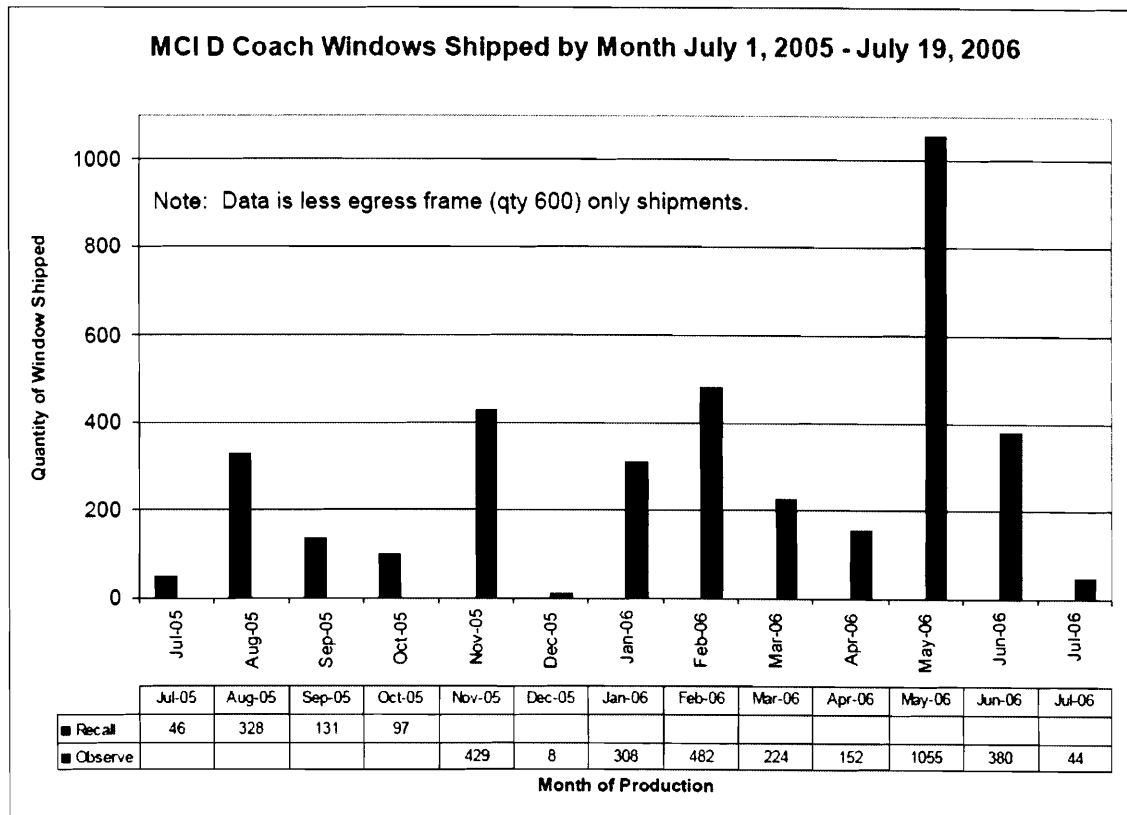
**Identify the approximate percentage of the production of all the recalled models manufactured by your company between the inclusive dates of manufacture provided above, that the recalled model population represents. For example, if the recall involved Widgets equipped with certain items of equipment 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.**

100% of the product identified above between the manufacturing dates of 7/1/2005 and 10/31/2005 has the potential to be affected under this recall. 100% of the product identified above between the manufacturing dates of 11/1/2005 and 7/19/2006 is recommended for observation as detailed in the remedy section.

## **II. Identifying the Recall Population**

**3. Furnish the total number of items of equipment recalled potentially containing the defect or noncompliance.**

Dura has identified that 3684 windows were shipped between July 1, 2005 and July 19, 2006. An additional 600 sub-assemblies (egress frames) were also shipped during a period overlapping the timeframe above. The breakdown of these shipments appears as follows:



Total Shipped 7/1/2005 - 7/19/06: 3684 + 600 Egress = 4284 Total

The attached spreadsheet (exhibit A) from MCI identifies all D series facelift coaches manufactured. The numbers highlighted in red and indicated by the 'Recall' status indicate the population build that ties in with windows manufactured between 7/1/2005 and 10/31/2005 and the numbers highlighted in blue indicate and indicated by the 'Observe' status the population build that ties in with windows manufactured between 11/1/2005 and 7/19/2006. Note that each coach contains between 14 and 16 of the subject windows.

**Total Number Potentially Affected by the Recall:** 4284

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

Dura estimates that less than 10% of the product identified above may contain the defect noted below. The estimate is based on the number of suspect windows found in field evaluations by MCI versus the total number of windows evaluated. This calculation has resulted in percentages between 8%-9.5% dependant on the number of windows per coach. The incidence field rate, calculated using all the known suspect parts (warranty + field evaluation) vs. the total number of windows shipped during the time frame in question yields a suspect rate of 0.75%.

**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 items of equipment:**

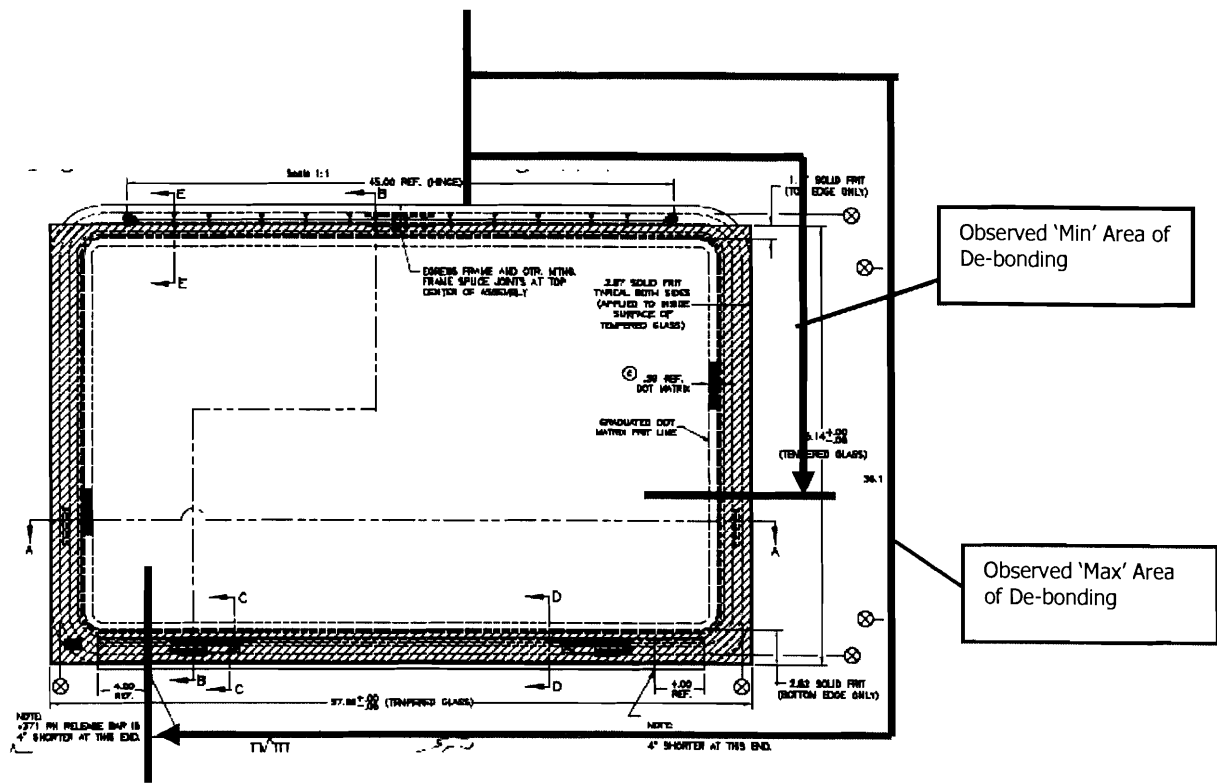
The recall population was established by a review of the manufacturing dates of suspect windows. Additional time was added to create a safety buffer zone on either side of this population. The observation population (11/1/2005-7/19/2006) was established via the cutoff of the recall population to a point of manufacturing process modification. MCI has identified the coaches in exhibit A with boundaries exceeding the window manufacturing date to allow for the transit and storage at their facility prior to installation in coaches.

**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.**

While no instances of complete separation have been reported and no health or safety hazard has developed, a small percentage of D-Coach Facelift Windows are experiencing de-bonding. The de-bonding represents itself as a partial separation of the insulated glass unit to the glass frame on both the inner and outer panes of glass. As a result, over time, some windows might not meet the retention requirements of FMVSS 217. Dura, however, has received no reports of windows separating from coaches, or any accidents, injuries or fatalities relating to this issue.

Representing the view below as looking from the inside of the window outward, the de-bonding conditions are largely represented as indicated in the sketch.



|                          |        |                                      |         |
|--------------------------|--------|--------------------------------------|---------|
| Window Months in Service | 14     | 15                                   | 16      |
| De-Bond Length (Inches)  | 25, 33 | 49, 78, 78, 85, 89, 89, 93, 103, 133 | 51, 103 |

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

The root cause of this issue has been determined to be inconsistent priming on the primary and secondary bond lines. Suspect priming may allow a certain percentage, estimated to be less than 10%, of the outer (tempered) panes of glass to begin to separate from the frame.

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

Once separation of the outer glass pane begins, it is suspected that movement of this pane transfers motion to the attached inner (laminated) pane of glass. The motion of the inner pane of glass then allows separation of the bond line to the frame. Under varying environmental conditions propagation of the de-bonding may occur until the issue becomes observable either through wind noise, water leak or visible separation. The mode of propagation is adhesive failure of the bonding urethanes to the frame in a suspected peel mode of loading. If allowed to propagate beyond a certain point of de-bonding, the window will reach a point of non compliance with the FMVSS 217 Retention requirements S5.1 by allowing the formation of an opening large enough to admit the passage of a 4" diameter sphere prior to reaching the objectives stated in S5.1 (a), (b) or (c).

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

Windows with de-bonding will exhibit observable symptoms (wind noise, water leak, visual separation). Due to the de-bonding being a gradual action, these symptoms will be observable

well in advance (several months) of potential compromise to the window's ability to meet the FMVSS 217 retention requirements.

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

Dura Automotive Systems, Inc.  
2791 Research Drive  
Rochester Hills, MI 48309

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

Bryan MacPhail-Fausey, Director of Engineering, (248) 417-9392

**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 principle 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.**

**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.**

32 cases of partially de-bonding windows have been reported spanning 8 coaches. 19 of the windows were reported directly by the customer (warranty claims), 13 of the windows were discovered by MCI either through field trial evaluation (5) or random vehicle review (8, Can Ar). **There are no reports of windows separating from coaches, accidents, injuries or fatalities.**

October 2006: 8 windows are returned to Dura for warranty. 6 windows were found to have partial de-bonding, 1 was reported as no trouble found (no de-bonding) and 1 was received broken hampering further evaluation. One window with de-bonding was tested in FMVSS 217 simulation and passed. A report dated October 26, 2006 is issued to MCI. Windows are scrapped.

Late 2006: Approximately 10 additional window are returned to Dura for partial de-bonding. As results are consistent with prior windows, no report is issued. Windows are scrapped.

December 2006: MCI performs field evaluation of customer coaches using a non destructive push test procedure. 5 windows are found with partial de-bonding.

January 9 - 11, 2007: MCI informs Dura via letter of additional de-bond discoveries based on a field evaluation. Dura requests these 5 windows to be returned for analysis.

January 18, 2007: Dura issues anticipated test plan for 5 returned field units to MCI. MCI concurs with test plan.

February 5 - 6, 2007: Dura receives 5 returned windows from MCI. Joint testing is scheduled for Feb 22-24, 2007.

February 8, 2007: Dura is made aware of 8 more de-bonding windows discovered at Can Ar by MCI field representative. Dura requests return of the 8 windows for analysis.

February 27, 2007: Complete test report (Lawrenceburg Test Lab Report 07-015) on the 5 field units issued by Dura.

March 5 - 6, 2007: Dura issues letter to MCI requesting time for further evaluation of the 8 Can Ar windows prior to making formal recommendations. Dura receives the 8 Can Ar windows for analysis.

March 8, 2007: Dura submits preliminary test plan on the 8 Can Ar windows to MCI.

March 14, 2007: Complete test report (Lawrenceburg Test Lab Report 07-029) on the 8 Can Ar windows tested between March 8<sup>th</sup> and 10<sup>th</sup> issued by Dura.

March 15, 2007: Dura submits summary report, conclusions and recommendations to MCI. (MCI D-Coach Facelift Window De-Bonding Summary Report and Engineering Recommendations March 15, 2007). The results of this testing have driven this report and recommended remediation.

March 15<sup>th</sup>, 2007 – Current: Dura and MCI continue discussions on reporting and remediation. Development of recall communications pending.

## **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.**

The apparent cause of the potential noncompliance has been identified as inconsistent application of primer. To date, all of the warranty returns and field evaluation returns have been identified with window manufacturing dates between 7/1/2005 and 10/31/2005. No windows with the primer anomalies have been identified after these dates. As such, the primary focus of the remedial actions is focused on windows within this timeframe that could be subject to inconsistent priming. To insure customer satisfaction additional product observation is recommended for windows manufactured up until 7/19/06 when Dura instituted additional process changes for bonding quality.

As of 7/19/06, Dura initiated new manufacturing processes along with a change in the primer systems for all applications. Dura implemented a single primer set for all glass and a single primer set for all frame applications. Further detail can be found in the 'distinguishing characteristics' section below. The implementation of the single system for the frame reduces probability of priming anomalies and allows proper bonding of the secondary stitching adhesive to act as a redundant bonding agent. The recall remedy is identical to the production remedy.

The following actions are proposed for field correction of this issue:

- Effect a recall of vehicles with windows manufactured between 7/1/2005 and 10/31/2005. Window manufacturing dates are identified via a sticker located on the underside of the release handle or simulated release handle on non egress windows. A field service review of all coaches with facelift windows using the non-destructive MCI 50lb push test should be conducted with the applied force moved to the corners of the window to accentuate any partial de-bonding. Vehicle owners/operators should be advised to pay particular attention for windows with signs of water leak, wind noise or visible partial de-bonding. Incidence of de-bonding should be scheduled for window replacement. Coaches with windows having more than 70" inches of de-bonding should be taken out of service until replacement windows are installed.

A subassembly of the complete window (called an 'Egress Frame Assembly') consisting of the glass panes, bonding frame and egress handle will be manufactured for replacement units. This assembly will allow for replacement of the affected portion of the window without having to completely remove the mounting frame structure from the vehicle.

- Effect a field service advisory for vehicles with windows manufactured between 11/1/2005 and 7/19/2006 to observe for signs of water leak, wind noise or visible partial de-bonding. Window manufacturing dates are identified via a sticker located on the underside of the release handle or simulated release handle on non egress windows. Incidence reports should be followed up by on site review with confirmation and scheduled replacement of windows exhibiting de-bonding condition. Coaches with windows having more than 70" inches of de-bonding should be taken out of service until replacement windows are installed.

Further ongoing actions:

1. Continue to evaluate any returned windows for consistency to this report or discovery of new findings.
2. Continue to monitor Dura manufacturing process for assurance of quality conformance.
3. Review assembly and installation process at MCI to determine potential for aggravating factors.

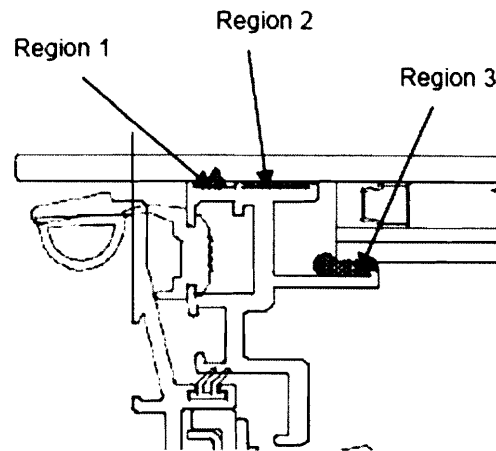
### **Clearly describe the distinguishing characteristics of the remedy component/assembly versus the recalled component/assembly.**

The image below shows the 3 regions of priming on the window frames.

Prior to 7/19/06 Region 1 was to be primed with a different primer than Regions 2 and 3. The analysis of windows exhibiting de-bonding, manufactured between 7/1/2005 and 10/31/2005

indicate either missing or incorrect placement of primer in Regions 1 & 2. All windows (including service replacement) are identified via applied sticker with the window manufacturing date.

Post 7/19/06, Region 1, 2 & 3 all use the same primer and this uniformity remedies any process inconsistencies. All windows (including service replacement) are identified via applied sticker with the window manufacturing date.



The primed regions identified above are not visible in a complete window assembly. The blackout surface on the glass prevents visual identification of the primed and bonding surface in a completed assembly. As such, it is not possible to identify inconsistent primer application until partial de-bonding is initiated. As the de-bonding is a gradual process there are ample warning indicators such as wind noise and water leak to prompt the owner/operator to seek remedy.

**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.**

The production remedy is identical to the recall remedy.

## **VI. Identify the Recall Schedule**

**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.**

A recall schedule is being developed with MCI and will be forwarded when complete.

Dura estimates that 225 of the 450 assemblies estimated as required for service replacement will be available by late June 2007 and the remaining 225 by mid July 2007.

## **VII. Furnish Recall Communications**

**9. 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.***

The subject communications are in development with MCI and will be forwarded in draft format for review prior to mailing.

**Note: These documents are to be submitted separately from those provided in accordance with Part 573.8 requirements.**

1. <sup>1</sup>Each manufacturer must furnish a report, to the Associate Administrator for Safety Assurance, for each defect or noncompliance condition which relates to motor vehicle safety.

This guide was developed from 49 CFR Part 573, "Defect and Noncompliance Reports" and also outlines information currently requested. Any questions, please consult the complete Part 573 or contact Mr. Jon White at (202) 366-5226 or by FAX at (202) 366-7882.

**The Privacy Act of 1974 - Public Law 93-579, As Amended:** *This information is requested pursuant to the authority vested in the National Highway Traffic Safety Act and subsequent amendments. You are under no obligation to respond to this questionnaire. Your response maybe used to assist the NHTSA in determining whether a manufacturer should take appropriate action to correct a safety defect. If the NHTSA proceeds with administration enforcement or litigation against a manufacturer, your response, or statistical summary thereof, may be used in support of the agency's action.*