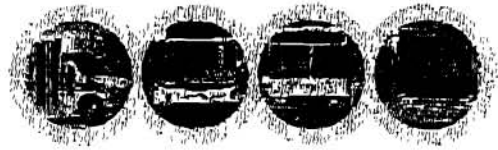


DAIMLERCHRYSLER
Commercial Buses North America



December 21, 2006

Daniel Smith
Associate Administrator for Enforcement
Recall Management Division,
National Highway Traffic Safety Administration
Fax: (202) 366-7882
Pages: 8 (Including this one)

06V-492
(8 pages)

Dear Daniel Smith,

Enclosed is a Defect and Non-Compliance Information Report describing an equipment defect affecting DaimlerChrysler Commercial Buses North America (DCCBNA), Orion buses.

Attached:

Part 573 - DCCBNA - Graham White Air Dryer



Part 573 - DCCBNA
- Graham Whi...

Attached letter from Graham White, dated December 19, 2006 to Joe Labonte.



Joe Labonte.pdf
(62 KB)

If you have any questions or concerns, please contact me.

Sincerely,

Joe Labonte
Compliance and Safety Officer
Member of American Society of Safety Engineers
DaimlerChrysler Commercial Buses North America
350 Hazelhurst Road
Mississauga, Ontario
L5J 4T8
Joe.Labonte@DCBUSNA.com
(905) 403-7807
Fax: (905) 403-8808

RECEIVED

2006 DEC 22 A 10:30

OFFICE OF DEFECTS
INVESTIGATION

Safety Defect and Noncompliance Report Guide for Vehicles

PART 573 Defect and Noncompliance Report

On December 21, 2006 , DaimlerChrysler Commercial Buses North America (DCCBNA) decided that a safety related defect 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: December 21, 2006

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

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.

DaimlerChrysler Commercial Buses North America

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

Joe Labonte

Compliance and Safety Officer

Telephone Number: (905) 403-7807 Fax No.: (905)403-8808

Name and Title of Person who prepared this report.

Joe Labonte

Compliance and Safety Officer

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:

Make(s): Orion **Model Years Involved:** 2004-2005 **Model(s):** VII

Production Dates: Beginning: August 11, 2005 **Ending:** June 29, 2006

VIN Range: Only certain vehicles are affected.

Vehicle Type: Bus **Bodystyle:** VII

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

Vehicle model Orion VII having a Graham White Brake Air Dryer model QBA15 manufactured after July 2006.

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.

TBD

II. Identify the Recall Population

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

Model	Year	Number of Vehicles Potentially Involved
<u>VII</u>	<u>2004</u>	<u>1</u>
<u>VII</u>	<u>2005</u>	<u>249</u>

Total Number Potentially Affected by the Recall: 250

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

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:

All buses manufactured having a Graham White Brake Air Dryer model QBA15.

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.

See attached letter from Graham White, dated December 19, 2006 to Joe Labonte.

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

See attached letter from Graham White, dated December 19, 2006 to Joe Labonte.

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

The Graham White Brake Air Dryer timer does not function properly. The air entering into the brake system may not have the moisture removed. If not properly drained, small ice crystals may form in the brake system preventing the system to operate the brakes properly. The bus may not perform as expected when stopping. A crash may occur if moisture in the system is not drained daily. Therefore the automatic water separation must be corrected.

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

Water is found in the air brake wet tank when manually drained.

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

Graham White Manufacturing Company
1242 Colorado Street
Salem, VA 24153

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

Lenny Wedge, P.E.
Manager of Engineering

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.

There are no reports of accidents, injuries or fatalities. An Investigation by Graham White Manufacturing Company and DCCBNA was initiated December 7th, 2006. A bus was reported to have brake air dryer failures in May, September, October and November 2006.

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. This is not a noncompliance matter.

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.

TBD

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

TBD

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.

TBD

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.

Graham White Manufacturing Company and DCCBNA are contacting the two affected customers. They are told that the brake air dryer may not function properly and that in cold temperatures, small ice crystals may form in the air system. Customers are recommended to inspect the wet brake air tank for moisture by using the manual drain. A final corrective action is currently being tested.

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.*

A recall notice is not required. Customers with potentially affected buses are being contacted directly.

Correction will be direct between Graham White Manufacturing Company and customers. Customers are made aware that the brake air dryer timer may not function properly and asked to ensure that the wet tank moisture is drained.

December 19, 2006

Joe Labonte
DCCBNA

Joe,

This is in reference to recent QBA15 air dryer failures experienced on Orion 7 buses at WMATA and TTC. While the search for the root cause of the problem is ongoing I can give you some details as to the nature and extent of the problem. The failures are to the timing circuit and solenoid valves that provide the pilot signal air to shift the inlet diverter and exhaust valves of the air dryer. The shifting of these valves effectively cycle the twin tower air dryer from side to side. The switching of towers allows one tower to reduce the effective dew point of the process air while the desiccant in the alternate side is being regenerated to allow the desiccant to be able to dehydrate the air when the cycle repeats. The failure of the timing circuit prevents the air dryer from cycling from side to side. As process air continues to flow through the air dryer it will reach a point where the desiccant can no longer reduce the dew point of the process air resulting in water in the process air lines. The majority of the liquid water in the air lines will settle in the first receiver tank downstream of the air dryer.

As I said, the investigation as to the root cause of the failure is ongoing. The failures in service have been sporadic and have occurred on buses with days to weeks to months in service. There are also air dryers that have been in service on buses in the fleet that have had no timer failures at all. We have only been able to reproduce the failures in the lab by introducing transient voltage spikes above 60 VDC. The failures are limited to air dryers manufactured after July of 2006 at which time a change was implemented to the timer circuit. The change was made to improve the low voltage operation of the circuit. While the change did improve the low voltage operation of the circuit, the change also allowed a transistor to be exposed to intermittent high voltage spikes that were below the clamping value of the on board transorb. We instrumented a bus at WMATA and monitored the voltage for several hours during operation of the bus and were not able to see any transient voltage spikes high enough to be of concern. The anecdotal data that there are timers in service for varying lengths of time before failure would indicate that the transient voltage spikes are outside the norm and may require extended monitoring of the incoming voltage to be able to detect a voltage spike that would ultimately cause the timer to fail.

We have developed an upgrade to the timer circuit that will improve the transient voltage protection to the circuit. The change involves a change to the transorb from a nominal 48 VDC value to a nominal 36 VDC value. The 36 VDC transorb will clamp at 44.2 VDC which is well within the voltage range of the affected transistor. We also plan to change the value of a resistor to affect the timing of the pulse width modulation to the solenoid coils. This change will allow the coils to operate steady state at a lower temperature which further improve the transient voltage spike protection.

The timers that are susceptible to failure when exposed to high voltage transient voltage spikes is limited to those QBA15 air dryers manufactured and shipped after July of 2006. It is our understanding that this is limited to Orion buses delivered to WMATA and TTC. We have been in constant communication with personnel at WMATA and TTC. At WMATA, a plan has been implemented to check the first receiver tank for water nightly. If water is found in the tank, it is fully drained and the timer on the air dryer is changed to allow the dryer to function properly. Spare timers have been delivered to both WMATA and TTC to allow them to replace them as failures are discovered.

Widespread failures of these timers were first reported in early November. Since that time, Graham White and our timer vendor have been working diligently with WMATA, TTC and DCCBNA to determine the cause of the timer failures, to develop a solution for the problem and finally to insure that the air dryers installed in buses are fully functional. Graham White will continue to assume responsibility for all parts and labor to see that the proper upgrade to insure reliable and operation of the air dryer is installed once fully approved by DCCBNA.

We appreciate all of the assistance and guidance provided by DCCBNA as we work through this issue. Please let me know if you need any further information.

Regards,

A handwritten signature in black ink, appearing to read "Lenny Wedge", with a long horizontal flourish extending to the right.

Lenny Wedge
Manager of Engineering
Graham White Manufacturing Co.