U.S. Department of Transportation
National Highway Traffic Safety Administration

ODI RESUME

Investigation: PE05-009
Date Opened: 02/10/2005 Date Closed: 06/15/2005
Principal Investigator: Kyle Bowker
Subject: Vacuum Brake Booster Failure

Manufacturer: Toyota Motor North America, Inc.
Products: 2004 Lexus RX330
Population: 43,791

Problem Description: Alleged loss of brake power-assist.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	34	133	146
Crashes/Fires:	2	4	6
Injury Incidents:	1	0	1
# Injuries:	1	0	1
Fatality Incidents:	0	0	0
# Fatalities:	0	0	0
Other*:	0	3,466	3,466

*Description Of Other: Warranty claims paid by the manufacturer to replace the vacuum brake booster assembly.

Action: This Preliminary Evaluation has been closed.

Engineer: *Kyle M. Bowker* KMB Date: *06/15/2005*
Div. Chief: *Jeffrey L. Quandt* Date: *06/15/2005*
Office Dir.: *Kathleen C. DeMeter* Date: *06/15/2005*

Summary: On February 10, 2005, the Office Of Defects Investigation (ODI) opened a Preliminary Evaluation to investigate alleged loss of brake power-assist in certain 2004 model year (MY) Lexus RX330 vehicles built through approximately June 30, 2004. The subject vehicles were manufactured at Toyota Motor Manufacturing Canada, Inc.'s Cambridge, Ontario assembly plant and were equipped with vacuum brake booster assemblies sourced from Aisin Seiki Co., Ltd (Aisin) subsidiary ADVICS North America, Inc. (ADVICS-NA). To date, ODI is aware of 146 non-duplicative reports that allege loss of brake power-assist and 6 crashes allegedly caused by loss of brake power-assist (resulting in 1 minor injury) on the subject vehicles.

The subject vehicles use a conventional brake booster assembly that contains a rubber diaphragm to separate the fore and aft pressure chambers. The outer edge of the rubber diaphragm is held in place via a retaining groove on the brake booster body. If the booster loses vacuum (e.g., operator depletes the vacuum by pressing the brake pedal several times while the engine is off), it may cause the diaphragm to deform in the area of the retaining groove to the point that insufficient seal exists between the diaphragm and booster body, thus causing a momentary loss of brake power-assist. The ADVICS-NA supplied diaphragm has slightly different material properties compared to the diaphragm inside brake boosters supplied by ADVICS Japan, Corp. (ADVICS-J) and used on 2004MY Lexus RX330 vehicles manufactured at Toyota Motor Kyushu, Inc.'s assembly plant. The softer rubber used in the ADVICS-NA diaphragm allows greater deformation and is less resilient when compared to the ADVICS-J diaphragm.

Loss of brake power-assist most often occurs at vehicle start-up and appears to be more prevalent in colder temperatures. Most owners report that brake system operation returns to normal within a few seconds after vehicle start-up. Testing conducted by the manufacturer indicates that the ADVICS-NA diaphragm's reduced ability to return to shape is exacerbated by colder temperatures and that loss of brake power-assist at start-up may last for a maximum of 95 seconds at temperatures below –20 degrees Celsius. However, the subject vehicles have a back-up system that can sense a loss of brake power-assist and enable the ABS actuator for brake hydraulic pressure support (i.e. brake pedal force assist).

The manufacturer will conduct a service campaign (Lexus Special Service Campaign #5LA) to replace the vacuum brake booster assembly on all affected subject vehicles. The action taken by the manufacturer is sufficient to resolve the issues raised by this investigation. Accordingly, this investigation is closed. The closing of this investigation does not constitute a finding by NHTSA that a safety-related defect does not exist. The agency will take further action if warranted by the circumstances.

KMB
6/16/05

TOYOTA
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June 15, 2005

Ms. Kathleen DeMeter
Director, Office of Defects Investigation – NVS-210
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

Re: Lexus RX330 Brake Booster Service Campaign 5LA

Dear Ms. DeMeter:

As per the discussion at our May 12, 2005, meeting with the agency, this letter is to inform you that Toyota Motor Corporation ["TMC"] has decided to conduct a service campaign to replace the brake booster on certain 2004 Model Year Lexus RX330 vehicles. Those affected, 43,791 vehicles, were produced at Toyota Motor Manufacturing Canada (TMMC) prior to June 30, 2004. A listing of the range of vehicle identification numbers (VIN) for the affected vehicles is attached to this letter.

The diaphragms of the affected vehicles' brake boosters are softer and do not have the same ability to return to shape as those built at Toyota Motor Kyushu (Japan). In cold weather, and in conjunction with actuation of the brake pedal prior to engine start-up, the vacuum reservoir of the affected brake boosters may be depleted, causing a loss of power assist for a maximum of 95 seconds. Although the vehicle will still have some power assist due to the functionality of the ABS actuator, Toyota has decided to replace the brake boosters of the affected vehicles.

All known owners of the affected vehicles will be notified by first class mail to return their vehicles to a Lexus dealer to replace the brake booster assembly. Mailing of the owner notifications has begun and will be completed before the end of July 2005. Toyota plans on conducting a re-notification of owners who have not had the repair completed prior to October 2005.

Should you have any questions about this letter, please contact me or Mr. Chris Santucci at (202) 775-1707.

Sincerely,

TOYOTA MOTOR NORTH AMERICA, INC.

Chris Tinto
Vice President

CT:cs
Attachment

Director, Office of Defects Investigation
June 15, 2005
Attachment

Affected Vehicle VIN Range

Make/ Car Line	Model Year	Manufac-turer	VIN		Production Period
			VDS	VIS	
Lexus RX330	2004	TMMC	GA31U	C001001-C016494	September 19, 2003 through *June 30, 2004
			HA31U	C001002-C032369	

Note : Although the involved vehicles are within the above VIN ranges, not all vehicles in these ranges were sold in the U.S.

*: We reported in the PE-IR response that the introduction date of the brake booster production countermeasure was approximately June 17, 2004. Since Toyota cannot determine the exact date that the brake boosters were introduced into vehicle production, Toyota has selected the date of June 30, 2004 for the limit of the service campaign.