

February 2, 2016

DEFECT INFORMATION REPORT

1. Vehicle Manufacturer Name:

Toyota Motor Corporation [“TMC”]
1, Toyota-cho, Toyota-shi, Aichi 471-8571, Japan

Toyota Motor Manufacturing, Indiana, Inc. [“TMMI”]
4000 Tulip Tree Dr., Princeton, IN, 47670-4000

Affiliated U.S. Sales Company

Toyota Motor Sales, USA, Inc. [“TMS”]
19001 South Western Avenue, Torrance, CA 90501

Manufacturer of the Airbag Sensor Assembly (Airbag Control Module)

DENSO CORPORATION
1-1, Showa-cho, Kariya-city, Aichi-pref., 448-8661, Japan
Telephone: +81-566-25-5511

Country of Origin: Japan

DENSO Manufacturing Tennessee, Inc.
1720 Robert C. Jackson Drive, Maryville, TN 48086
Telephone: +1-248-350-7500

Country of Origin: U.S.

2. Identification of Involved Vehicles and Affected Components:

Based on production records, we have determined the involved vehicle population as in the table below.

Make/Car Line	Model Year	Manufacturer	Production Period
Toyota Land Cruiser	2003 - 2006	TMC	July 30, 2002 through June 7, 2006
Toyota Tundra	2005 - 2006	TMMI	August 19, 2004 through July 11, 2006
Toyota Sequoia	2005 - 2006	TMMI	August 9, 2004 through July 24, 2006
Toyota 4Runner	2004 - 2006	TMC	August 1, 2003 through June 15, 2006
Lexus LX470	2003 - 2006	TMC	July 30, 2002 through June 7, 2006
Lexus GX470	2004 - 2006	TMC	October 24, 2003 through June 9, 2006

Applicability	Part Number	Part Name	Component Description
MY2003-2006 Toyota Land Cruiser/ Lexus LX470	89170-60150 89170-60260 89170-60280	Airbag Sensor Assy	Airbag control module
MY2005-2006 Toyota Tundra	89170-0C210 89170-0C220 89170-0C260		
MY2005-2006 Toyota Sequoia	89170-0C140		
MY2004-2006 Toyota 4Runner	89170-35190 89170-35220		
MY2004-2006 Lexus GX470	89170-60250 89170-60240		

- (1) Although the involved vehicles are within the above Production Period range, not all vehicles in this range were sold in the U.S.
- (2) Certain MY2005-2006 Toyota Highlander and Lexus RX330 vehicles are equipped with curtain shield airbags and have an airbag control module with the same programming. However, for the reason explained in Section 6 in this report, these vehicles are not involved in this recall.
- (3) Other Toyota and Lexus vehicles equipped with curtain shield airbags do not have the airbag control module with the same programming. Therefore, other Toyota and Lexus vehicles are not included in this recall.

3. Total Number of Vehicles Potentially Involved:

Land Cruiser	: 22,506
Tundra	: 29,152
Sequoia	: 71,250
4Runner	: 74,554
LX470	: 34,524
GX470	: 88,423
TOTAL	: 320,409

4. Percentage of Vehicles Estimated to Actually Contain the Defect:

Unknown

5. Description of Problem:

The subject vehicles are equipped with side Curtain-Shield-Airbags (CSA) which deploy from the roof rails in the event of certain types of crashes. Due to improper programming of the airbag system in the Airbag Sensor Assembly (airbag control module), there is a possibility that the zero-point for the roll rate sensors (angular velocity sensor) in the module may not be properly calibrated if the vehicle experiences a body roll motion at approximately the fourth second after the ignition is turned to the "ON" position. In this condition, the Airbag Sensor Assembly may erroneously detect a rollover if the vehicle subsequently experiences another body roll motion soon thereafter, causing both of the CSAs and the seat belt pre-tensioners to be activated. Unexpected activation of the CSAs could increase the risk of minor injury to the occupant.

6. Chronology of Principal Events:

August 2005 – June 2006:

Toyota received a field report from the European market indicating that the curtain shield airbags (CSAs) inadvertently deployed on a Land Cruiser vehicle when the vehicle was driven out of a construction site and onto a main road. The airbag control module was returned and investigated. As a result of the analysis of the data stored in the module, it was found that the module detected a rollover event, which triggered activation of the CSAs and the seat belt pre-tensioners. Further analysis of the data revealed that the vehicle's roll angle before and after the activation of the airbags differed from the actual angles experienced by the vehicle, which was found to be continuously operating with one side of the vehicle significantly higher than the other side. In addition, it was confirmed that this incident occurred soon after the vehicle was started and operated. Toyota theorized that the zero-point for the roll rate sensors (angular velocity sensor) in the module may not have been properly identified when a roll motion input in the roll rate sensors was received, such as the vehicle being operated on uneven ground, within the first few seconds of the vehicle being started.

Up to February 2006, Toyota received one field report from the U.S. and three field reports from markets outside of North America. Toyota recovered the airbag control modules from these vehicles, and an investigation found that the data stored in the modules showed a similar pattern when compared to the first field incident. The airbag system programming in the module was revised to eliminate the possibility of improper calibration of the roll rate sensors.

Based on the investigation of recovered parts and analysis of incident descriptions within the field reports, it was determined that this issue could only occur in very limited circumstances and only under certain conditions. At this time, there was no evidence of any trend. In addition, the limited circumstances and conditions under which this phenomenon was likely to occur were not believed to create a risk of significant injury. Therefore, Toyota concluded that the issue did not pose an unreasonable risk to motor vehicle safety.

June 2015 – Early January 2016:

Prior to June 2015 Toyota had sporadically over time received customer complaints and field reports from the U.S., Canada, and other countries, along with the recovered airbag modules relating to CSA activation in certain models, but not others which have an airbag control module with the same programming. To deal with potential customer satisfaction concerns, Toyota reopened the investigation on this issue, focusing on other potential contributing factors which may cause inadvertent deployment of the curtain shield airbags and seat belt pre-tensioners in some models but not others. For example, Toyota had received no reports for Highlander or Lexus RX vehicles.

As a result of Toyota's earlier investigation and the current one, it was confirmed that the CSAs may inadvertently deploy in certain models which experience a body roll motion at approximately the fourth second after the ignition is turned to the "ON" position, and subsequently experience a second body roll motion soon thereafter. Toyota also confirmed that the reason why Highlander and Lexus RX models did not have any reported cases was due to their lower ground clearance as compared to other models; the body of these vehicles could not generate a large enough body roll motion during the calibration of the roll rate sensors because their lower body clearances would cause ground interference with the body of the vehicle, and not cause an inaccurate zero-point calibration that would result in inadvertent CSA deployment in a subsequent body roll motion soon thereafter. Therefore, based on the evaluation, and as evidenced by no field reports on Highlander and Lexus RX vehicles, Toyota believes that this issue will be unlikely to occur on these vehicles in the field.

For other models it was concluded that this phenomenon only occurs in very limited circumstances within tens of seconds after the vehicle is started and operated under the specific conditions described above. In such circumstances, Toyota continues to believe that no unreasonable risk to motor vehicle safety is presented.

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Due to the possibility of continued random events occurring in the future, with the associated potential for customer dissatisfaction, Toyota decided to proceed with a field action to minimize this concern. Because an air bag system is involved, and after discussion with NHTSA, Toyota decided to conduct this field action as a voluntary safety recall campaign.

As of January 26, 2016, Toyota is aware of 38 Toyota field reports and 17 warranty claims that have been received from the U.S. that relate to, or may relate to, this condition. Multiple counts of the same incident are counted separately.

7. Description of Corrective Repair Action:

All known owners of the subject vehicles will be notified by first class mail to return their vehicles to a Toyota or Lexus dealer. The dealers will replace the airbag control module with one which has an improved programming.

Reimbursement Plan for pre-notification remedies

The owner letter will instruct vehicle owners who have paid to have this condition remedied prior to this campaign to seek reimbursement pursuant to Toyota's General Reimbursement Plan.

8. Recall Schedule:

Notifications to owners of Toyota/ Lexus models will occur by April 2, 2016. A copy of the draft owner notification letter(s) will be submitted as soon as available.

9. Distributor/Dealer Notification Schedule:

Notifications to distributors/dealers were sent on February 2, 2016. Copies of dealer communications will be submitted as they are issued.

10. Manufacturer's Campaign Number:

Toyota: G0C

Lexus: GLB