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**TOYOTA MOTOR NORTH AMERICA, INC.**

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OFFICE OF DEFECTS  
INVESTIGATION

WASHINGTON OFFICE

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January 18, 2007

07V-013  
(5 pages)

Mr. Daniel C. Smith  
Associate Administrator for Enforcement  
National Highway Traffic Safety Administration  
400 Seventh Street, S.W., Room 5321  
Washington, D.C. 20590

Re: 2004 - 2006 MY Toyota Tundra / 2004 - 2007 MY Toyota Sequoia  
Front Suspension Lower Ball Joint  
Part 573, Defect Information Report

Dear Mr. Smith:

In accordance with the requirements of the National Traffic and Motor Vehicle Safety Act of 1966 and 49 CFR Part 573, on behalf of Toyota Motor Corporation ["TMC"], we hereby submit the attached Defect Information Report concerning a voluntary safety recall of certain Toyota Tundra and Sequoia vehicles to address an issue with the front suspension lower ball joint. Please note that some of the vehicles included in this report are the subject of your agency's investigation, EA06-014.

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

Sincerely,

TOYOTA MOTOR NORTH AMERICA, INC.



For Chris Tinto  
Vice President

CT:cs  
Attachment

## DEFECT INFORMATION REPORT

1. Vehicle Manufacturer Name:

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 90509

2. Identification of Affected Vehicles:

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

Make/ Car Line	Model Year	Manufac- turer	VIN		Production Period
			VDS	VIS	
Toyota/ Tundra	2004 through 2006	TMMI	BN411	4S434011 – 4S436017	September 15, 2003 through November 17, 2006
			BT411	4S439616 – 6S487311	
			BT481	4S439615 – 6S487137	
			DT441	4S433661 – 6S551880	
			DT481	4S433659 – 6S551872	
			ET341	4S433660 – 6S558022	
			ET381	4S433659 – 6S557961	
			JN321	4S436917 – 4S449757	
			JT321	5S447754 – 6S482450	
			JU321	5S442174 – 6S476212	
			KT421	4S446499 – 6S485871	
			KT441	4S439633 – 4S456072	
			RN341	4S436916 – 4S449758	
			RT341	4S439733 – 6S483472	
RT381	4S439739 – 6S483470				
RU341	5S442176 – 6S482178				
Toyota/ Sequoia	2004 through 2007	TMMI	BT44A	4S207535 – 7S282714	
			BT48A	4S207625 – 7S282708	
			ZT34A	4S208104 – 7S289438	
			ZT38A	4S208135 – 7S289422	

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

Component Containing Defect: Front suspension lower ball joint  
Manufacturer Name: SOMIC ISHIKAWA INC.  
Address: 500, Furukawa-cho, Hamamatsu-City, Shizuoka Pref., 435-8560 Japan  
Telephone: +81-53-425-2111

3. Total Number of Vehicles Potentially Affected:

533,124

4. Percentage of Vehicles Estimated to Actually Experience Malfunction:

Unknown

5. Description of Problem:

In the front suspension lower ball joint on the subject vehicles, due to possible improper finishing of the ball joint, such as the aspect of the ball stud surface, some ball joints may experience an incidental deterioration of the internal lubrication. This may cause the ball joint to wear and loosen prematurely, which could result in increased steering effort, reduced vehicle self-centering, and noise in the front suspension. In extreme cases, if the vehicle is continuously operated in this condition, the lower ball joint may separate from the knuckle and could cause a loss of vehicle control.

6. Chronology of Principal Events:

May 2005 – April 2006

Toyota initiated a safety recall campaign (05V-225) in May 2005 concerning front suspension lower ball joint separation on 2002 through early 2004 model year Tundra and Sequoia vehicles due to a manufacturing defect involving a surface scratch on the 35 mm ball stud. At that time, Toyota had received some field-return ball joints from 2004 model year Tundra vehicles that had experienced separation, but were outside of the scope of the recall described above. Toyota began an evaluation of those parts to identify the cause of the separations. In September 2005, Toyota received a field technical report which indicated that a ball joint separation had occurred on a 2004 model year Tundra vehicle. Toyota continued its investigation on the cause of the separations, which were mostly occurring on 2004 model year Tundra vehicles, based upon a number of field reports that had been received. As a result of the investigation, Toyota was not able to identify any single issue with the ball joints that would identify the root cause of the lower ball joint separations that had occurred in the field. However, to improve the lubrication of the ball joint, the amount of the grease was increased and the induction hardening process was discontinued.

April 2006 – July 2006

NHTSA opened a Recall Query (RQ06-005) regarding ball joint separation on 2004 model year Toyota Tundra vehicles in April 2006. At the time, Toyota had been investigating the issue but had not identified the root cause of the lower ball joint separation. Therefore Toyota responded to NHTSA's inquiry that, although design and process improvements were implemented and were believed to reduce the occurrence of ball joint separation in the field, Toyota was still investigating the issue. Toyota continued to monitor the field information to further the investigation in order to identify the root cause of the ball joint separation.

#### August 2006 – Early January 2007

Toyota continued its investigation to identify the root cause of the ball joint separation, and extended the investigation into changes made to the manufacturing process. During this time, NHTSA upgraded the Recall Query to an Engineering Analysis (EA06-014).

As a result of Toyota's comprehensive investigation, it was found that the finishing of the ball joint, such as the surface roughness of the ball stud surface, had been reduced excessively and that this may affect the lubrication of the ball joint. Therefore Toyota modified the ball stud to improve the lubrication of the ball joint in November 2006. In addition, Toyota started durability tests on the improved ball joints in order to confirm the effectiveness of this and other improvements, such as the amount of grease, induction hardening, and roughness of the ball stud surface.

#### Mid January 2007

Toyota completed its durability tests and, as a result, it was confirmed that the improved items are effective in maintaining the lubrication of the ball joint. Therefore, Toyota believes that while the items mentioned above may contribute to the deterioration of the lubrication in the ball joint, the improved ball joint can better reduce the possibility of a ball joint separation caused by deterioration of the internal lubrication. Toyota plans to continue its investigation in order to identify how the aforementioned items contribute to the deterioration of the lubrication, as well as to identify the actual failure mechanism of ball joint separation. To alleviate the concerns of NHTSA and our customers about safety, Toyota decided to conduct a voluntary safety recall campaign to replace the lower ball joints on all of the affected vehicles.

This safety recall campaign will also be conducted in Canada and Germany.

#### 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 any Toyota dealer for replacement of the front suspension lower ball joints.

#### Reimbursement Plan for pre-notification remedies

The owner letter will instruct vehicle owners that have had their front lower ball joint(s) replaced for a similar condition prior to this campaign to seek reimbursement by mailing a copy of their repair order, proof-of-payment, and proof-of-ownership for reimbursement consideration.

- (i) The beginning date of the Toyota reimbursement plan will be:  
The reimbursement plan will cover repairs made no earlier than September 15, 2003, when the first vehicles were manufactured.
- (ii) The ending date of Toyota reimbursement plan will be:  
The ending date shall be at least 10 calendar days after the date on which the last owner notification was mailed, however Toyota will further review requests for reimbursement from involved vehicle owners on a case-by-case basis.
- (iii) Toyota may exclude reimbursement, if:
  - a. the pre-notification repair was not of the same type (repair, replacement, or refund of purchase price) as the recall remedy;
  - b. the pre-notification repair was not reasonably necessary to correct the defect or noncompliance that led to the recall or a manifestation of the defect or noncompliance;

- c. the pre-notification remedy was not reasonably necessary to correct the defect or noncompliance; or;
  - d. the repair was conducted as a result of vehicle accident, debris or another reason not specifically related to the defect or noncompliance.
- (iv) Toyota will reimburse eligible customers for at least the cost of the front lower ball joint and the replacement labor. Other costs may be reimbursed on a case-by-case basis.
  - (v) Owners requesting reimbursement must submit the appropriate documentation: repair order, reason for replacement, proof-of-payment, and proof-of-ownership to Toyota for reimbursement consideration.

8. Recall Schedule:

Mailing of the owner notifications will commence in mid February, 2007 and be completed around mid June, 2007.

Copies of the owner notification and dealer instructions will be submitted as soon as they are available.

9. Distributor/Dealer Notification Schedule:

Notifications to distributors/dealers will be sent in late January, 2007.