

**TOYOTA**  
**TOYOTA MOTOR NORTH AMERICA, INC.**

*Handwritten:* 6/28/06

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June 21, 2006

Mr. Jeffrey Quandt  
Chief – Vehicle Controls Division  
Office of Defects Investigation  
National Highway Traffic Safety Administration  
400 Seventh St., SW  
Washington, DC 20590

Re: NVS-213aan; RQ06-005

Dear Mr. Quandt:

This letter is being sent in response to your April 18, 2006 letter regarding RQ06-005, an investigation into the Toyota Tundra. This completes our response to your inquiry.

Enclosed you will find two copies of this response and two CD-ROM's containing electronic versions of the attachments. Please note that the information included in the attachments to responses 8, 9, and 10 is confidential. A request for confidential treatment has been sent to the Office of Chief Counsel. Should you have any questions about this response, please contact Mr. Chris Santucci at (202) 775-1707.

Sincerely,

*Handwritten signature:* K. S. Pinto

*Handwritten initials:* for

Chris Tinto  
Vice President  
TOYOTA MOTOR NORTH AMERICA, INC.

CT:cs  
Attachment

*Faint stamps:*  
JUN 22 2006  
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1. State, by model year, the number of subject vehicles Toyota has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Toyota, state the following:
  - a. Vehicle identification number (VIN);
  - b. Body Type;
  - c. Drive Type;
  - d. Model Year;
  - e. Date of manufacture;
  - f. Date warranty coverage commenced; and
  - g. Completion date of subject recall, if applicable – if not applicable, indicate “n/a” and if applicable but not completed, indicate “not completed”;
  - h. The mileage of the vehicle when the subject recall was complete, if applicable; and
  - i. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

Provide the table in Microsoft Access 2000, or a compatible format, entitled “PRODUCTION DATA.” See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

**Response 1**

The number of MY 2003-2006 (until May 8, 2006) Toyota Tundra vehicles Toyota has manufactured for sale or lease in the United States by model year is as follows.

Model	Model Year	Total
Tundra	2003	113,176
	2004	106,346
	2005	114,480
	2006	96,750
Total		430,752

In addition, detailed information for each vehicle is provided electronically on CD-ROM, in Microsoft Access 2000 format entitled “PRODUCTION DATA(RQ06-005).mdb” stored in the folder “Attachment-Response 1”.

2. State, by model year and body type, the number of each of the following, received by Toyota, or of which Toyota is otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:
  - a. Consumer complaints, including those from fleet operators;
  - b. Field reports, including dealer field reports;

- c. Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
- d. Property damage claims; and
- e. Third-party arbitration proceedings where Toyota is or was a party to the arbitration; and
- f. Lawsuits, both pending and closed, in which Toyota is or was a defendant or codefendant.

For subparts "a" through "d," state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "f," provide a summary description of the alleged problem and causal and contributing factors and Toyota's assessment of the problem, with a summary of the significant underlying facts and evidence. For items e and f, identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

In a separate enclosure, provide a tabulation of the total complaint counts by category (complaints, field reports), model year, body type and drive type for all other complaints and field reports related to the subject components. Use the following complaint categories for this tabulation: (1) wear; (2) noise; (3) loose steering; (4) uneven tire wear; (5) cost of repair; (6) other; and (7) unknown.

## **Response 2**

- a. Using the counting methodology described in your question, there are 60 consumer complaint reports that may relate to the alleged defect in the subject vehicles. Since some customers contacted Toyota more than once when complaining about the same incident, or about multiple incidents, the total number of unique vehicles in the consumer complaints is 54. This includes 4 vehicles which are duplicated with the NHTSA VOQ's attached to the inquiry letter.
- b. There are 10 field reports that may relate to the alleged defect in the subject vehicles.
- c. In the consumer complaints, 16 unique incidents have been reported where a vehicle crash was alleged. 7 of these crash incidents alleged an injury had occurred. In addition, Toyota has received 2 legal related claims (i.e. PL claim) and one property damage claim involving a crash, which may relate to the alleged defect, and one of two legal related claims involved an injury and a fatality.
- d. Toyota has received 17 property damage claims that may relate to the alleged defect. 14 of these claims are duplicated with the consumer complaints and 2 claims are duplicated with the legal related claims involving a crash. In addition, one of the 14 claims (duplicated with the consumer complaints) is duplicated with one of the NHTSA VOQ's attached to the inquiry letter.

- e. There are no third party arbitration proceedings.
- f. There are two lawsuits in which Toyota is defendant. These incidents involved a crash and alleged that some property damage occurred.

The total count of the unique incidents for each item by model year and body type is provided electronically on CD-ROM in Microsoft Excel 2000 format entitled "Total Number" stored in the folder "Attachment-Response 2".

In addition, a tabulation of the total complaint counts by category (complaints, field reports), model year, body type and drive type for all other complaints and field reports which relate to the specific descriptions as requested under separate enclosure is provided electronically on CD-ROM, in Microsoft Excel 2000 format entitled "Other Complaints and Field Reports.xls", stored in the folder "Attachment-Response 2". Please note that multiple phenomena complained in one contact were counted separately.

- 3. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:
  - a. Toyota's file number or other identifier used;
  - b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
  - c. Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
  - d. Vehicle's VIN;
  - e. Vehicle's make, model and model year;
  - f. Vehicle's mileage at time of incident;
  - g. Incident date;
  - h. Report or claim date;
  - i. Whether a crash is alleged;
  - j. Whether property damage is alleged;
  - k. Number of alleged injuries, if any;
  - l. Number of alleged fatalities, if any; and
  - m. A summary description of the incident

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a preformatted table which provides further details regarding this submission.

### **Response 3**

The information for each item (complaint, report, claim, notice, or matter) is provided electronically on CD-ROM, in Microsoft Access 2000 format entitled "REQUEST NUMBER TWO DATA(RQ06-005).mdb stored in the folder "Attachment-Response 3".

4. Produce copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by model year and category (i.e., consumer complaints, field reports, etc.) and describe the method Toyota used for organizing the documents.

**Response 4**

A list of all of the consumer complaints stored in the database is provided electronically on CD-ROM, in Microsoft Excel format, stored in the folder "Attachment-Response 4". In addition, copies of the field reports, and documents related to the property damage claims and lawsuits are all provided electronically on CD-ROM in PDF format stored in the folder "Attachment-Response 4".

(The list of the consumer complaints is stored in sub-folder "a. Consumer Complaint." Copies of the field reports are stored in sub-folder "b. Field Report". Copies of the documents for the property damage claims are stored in the sub-folder "d. Property Damage" and the documents for the lawsuits are stored in the sub-folder "f. Lawsuits".)

5. State, by model year and body type, a total count for all of the following categories of claims, collectively, that have been paid by Toyota to date that relate to, or may relate to, the alleged defect in the subject vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

Separately, for each such claim, state the following information:

- a. Toyota's claim number;
- b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
- c. VIN;
- d. Repair date;
- e. Vehicle mileage at time of repair;
- f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- g. Labor operation number;
- h. Problem code;
- i. Replacement part number(s) and description(s);
- j. Concern stated by customer; and
- k. Comment, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

### **Response 5**

The total counts of warranty claims, extended warranty claims, and claims for good will services paid by Toyota for the subject vehicles that may relate to the alleged defect by model year and body type are provided electronically on CD-ROM, in Microsoft Excel 2000 format entitled "Total Count for Claims.xls" stored in the folder "Attachment-Response 5".

The detailed information for each claim is provided electronically on CR-ROM, in Microsoft Access 2000 format entitled "WARRANTY DATA(RQ06-005).mdb" stored in the folder "Attachment-Response 5".

6. Describe in detail the search criteria used by Toyota to identify the claims identified in response to Request No. 5, including the labor operations, problem codes, part numbers and any other pertinent parameters used. Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to the alleged defect in the subject vehicles. State, by model year, the terms of the new vehicle warranty coverage offered by Toyota on the subject vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Describe any extended warranty coverage option(s) that Toyota offered for the subject vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.

### **Response 6**

The search criteria used by Toyota to identify the claims is the following:

Toyota searched the warranty database for those claims that replaced any of the parts identified in Microsoft Excel file entitled "Search Criteria, Operation & Problem Codes.xls" stored in the folder "Attachment-Response 6" on CD-ROM. Toyota then reviewed the claim comments to determine if the claims may be related to the alleged defect. In addition, a list of all labor operations, labor operation descriptions, problem codes and problem code descriptions identified in these warranty claims are also provided in the same Microsoft Excel file described above.

The terms that Toyota offers for new vehicle warranty coverage on the subject vehicles is 36 months or 36,000 miles from the vehicle's date-of-first-use, whichever occurs first.

There are some extended warranty coverage options that Toyota offered for purchase with the subject vehicles. Detailed information about these options is provided electronically on CD-ROM, in PDF format, entitled "Extended Warranty Option.pdf" stored in the folder "Attachment-Response 6".

The number of vehicles that are covered under each such extended warranty option, by option, model, and model year is as follows.

Model	MY	Gold	Platinum	Powertrain	Total
Tundra	2003	7,519	15,399	26	22,944
	2004	4,506	15,196	26	19,728
	2005	2,987	14,106	28	17,121
	2006	1,274	6,915	8	8,197
Total		16,286	51,616	88	67,990

7. Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that Toyota has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that Toyota is planning to issue within the next 120 days.

**Response 7**

Toyota has not issued any service or technical bulletins, advisories, or other communications to dealers, regional or zone offices, field offices, fleet purchasers, or other entities that relate to, or may relate to, the alleged defect in the subject vehicles, except for the documents that relates to the subject recall (NHTSA recall number: 05V-225).

However, Toyota has issued one service bulletin pertaining to the “subject components”. Although Toyota believes that this bulletin does not relate to the alleged defect defined by NHTSA and Toyota submitted this bulletin in our response to NHTSA’s inquiry letter regarding PE04-040, Toyota provides this bulletin again for your information electronically on CD-ROM, in PDF format stored in the folder “Attachment-Response 7”. It is important to note that this Technical Service Bulletin was not issued solely with respect to the subject component on the subject vehicle. This bulletin was issued for all Toyota vehicles to ensure that the dealer properly checks the ball joint.

8. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, “actions”) that relate to, or may relate to, the alleged defect in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, Toyota. For each such action, provide the following information:
- a. Action title or identifier;
  - b. The actual or planned start date;
  - c. The actual or expected end date;
  - d. Brief summary of the subject and objective of the action;
  - e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
  - f. A brief summary of the findings and/or conclusions resulting from the action.

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

### **Response 8**

Toyota provides nine investigation reports for the front lower ball joints returned as warranty claim parts from the field. These are provided electronically in CD-ROM, in PDF format, stored in the folder "Attachment-Response 8". In summary, during the investigation on warranty claim returned ball joints, Toyota could not identify a root cause of the wear of the ball seat. Also, Toyota provides a report of the condition of the ball joints requested to be returned from 2004 model year Tundra vehicles which have not experienced separation. A document associated with this report is also stored in the folder "Attachment-Response 8".

9. For each body and drive type, describe all modifications or changes made by, or on behalf of, Toyota in the design, material composition, manufacture, quality control, supply, or installation of the subject component, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:
- a. The date or approximate date on which the modification or change was incorporated into vehicle production;
  - b. A detailed description of the modification or change;
  - c. The reason(s) for the modification or change;
  - d. The part numbers (service and engineering) of the original component;
  - e. The part number (service and engineering) of the modified component;
  - f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
  - g. When the modified component was made available as a service component; and
  - h. Whether the modified component can be interchanged with earlier production components.

Also, provide the above information for any modification or change that Toyota is aware of which may be incorporated into vehicle production within the next 120 days.

### **Response 9**

All modifications or changes made by Toyota, or on behalf of Toyota in the design, material composition, manufacture, quality control or installation, which relate to the subject component are provided electronically on CD-ROM, in Microsoft Excel 2000 format, stored in the folder "Attachment-Response 9".



10. For each body and drive type, provide a free-body diagram of the curbside loads on the front suspension upper and lower ball joint.

**Response 10**

A free-body diagram of the curbside loads on the front suspension upper and lower ball joints for each body and drive type is provided electronically on CD-ROM, in Microsoft Excel 2000 format entitled "Free-Body Diagram [CONFIDENTIAL].xls", stored in the folder "Attachment-Response 10".

11. Produce two of each of the following:

- a. Exemplar quarter-sectioned samples of each design version of the subject component (without lubricating grease);
- b. An exemplar sample (disassembled) of each design version of the subject component in the subject vehicles;
- c. Field return samples of the subject component exhibiting the subject failure mode; and
- d. Any kits that have been released, or developed by Toyota for use in service repairs to the subject component/assembly which relate, or may relate, to the alleged defect in the subject vehicles.

**Response 11**

Exemplar samples of the lower ball joints, including samples from which a quarter is cut off, disassembled samples, a field return sample and samples for use in the service repairs as well as the subject recall on the 2002 through early 2004 model year Tundra vehicles are included with this response.

12. State the number of subject components that Toyota has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used and month/year of sale (including the cut-off date for sales, if applicable). Exclude sales associated with completion of the subject recall.

For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number). Also identify by make, model and model year, any other vehicles of which Toyota is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

## **Response 12**

The number of subject components that Toyota has sold that may be used in 2003 through 2006 model year Toyota Tundra vehicles by component name, part number, and month/year of sale is provided electronically on CD-ROM, in Microsoft Excel 2000 format entitled "Number of components sold in the US.xls", stored in the folder "Attachment- Response 12". Please note that Toyota's part sales database does not have the data on the model and model year of the vehicle in which the sold component is used, therefore, the sales data includes the number of components sold for use not only in 2003 through 2006 model year Toyota Tundra vehicles but also in the vehicles that contain the identical components installed in production or in service. The lists of other vehicles that contain the identical components are also provided electronically on CD-ROM, in Microsoft Excel 2000 format entitled "Other vehicles using identical parts.xls", stored in the folder "Attachment- Response 12".

The information on the supplier for each component parts number is provided electronically on CD-ROM, in Microsoft Excel 2000 format entitled "Supplier Information.xls", stored in the folder "Attachment-Response 12".

13. Furnish Toyota's assessment of the alleged defect in the subject vehicle, including:

- a. The causal or contributory factor(s);
- b. The failure mechanism(s);
- c. The failure mode(s);
- d. The risk to motor vehicle safety that it poses;
- e. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning;
- f. State the maximum specified end-play, any other service replacement specifications, and the design service life/mileage for the subject components;
- g. The reports included with this inquiry; and
- h. An explanation as to why all of MY 2004 Toyota Tundra as well as all applicable MY 2005 Toyota Tundra vehicles were not included in the subject recall.

## **Response 13**

Toyota has received a number of field reports and customer complaints which may relate to the alleged defect. Toyota recognizes that these reports were made in regards to vehicles which are out of the scope of the subject recall which we initiated in May 2005. Toyota has been thoroughly investigating the cause of front lower ball joint separations, mostly occurring on 2004 model year Tundra vehicles, and has been analyzing lower ball joints recovered from the field that have and have not separated in use. As noted in our "Defect Information Report," included with the filing of the aforementioned safety campaign, Toyota identified a manufacturing defect involving a surface scratch on the 35 mm

ball stud which, under specific operating conditions, could accelerate the wear of the ball seat and lead to separation if regular inspections were neglected.

Toyota and our supplier have been diligently studying returned ball joints that were installed on 2004 model year Tundra vehicles which experienced both ball joint separation or abnormal noise from the ball joint. As a result, it was determined that, except for the excessive wear of the ball stud and the ball joint seat, the dimensions of the component parts and the hardness of the socket and ball stud were within the design specification. No abnormal conditions were found on the ball joint. However, Toyota did find some ball joints (installed on the opposite side of the suspension where a ball joint separation had occurred) that had a small scratch on the ball stud. However, those scratches were significantly smaller than the ones on the ball stud identified in the subject recall and, Toyota believes; do not contribute to premature wear of the ball joint seats. In the reports, Toyota identifies various other issues found with the ball joint, such as boot damage, sealing ring damage, and contaminated grease, but no single clear factor or defect trend. Therefore, Toyota has not been able to identify the cause of the ball joint separation in those investigations.

In addition, in order to study the performance of the 38 mm ball joint which was newly designed and implemented on all models when the Tundra double cab model was added to production in October 2003, Toyota initiated (in early 2005) a field recovery program. This program collected ball joints from 2004 model year Tundra vehicles which had not experienced any separations of the ball joints, any unusual noise from the front suspension, or any reports of loose steering or uneven tire wear. In these vehicles, we found that some ball joint seats had worn slightly and the color of the grease in some ball joints had changed. However, we found that the level of these conditions varied greatly among the samples. Toyota has been analyzing the factors that contribute to the differences noted; however, at this time we have not identified any specific causes.

As the agency has already recognized in its past investigations into ball joint separations, there are several factors under which such failures may occur. One of the major factors is driving conditions in which a large force is repeatedly applied to the ball joints. Driving daily over extremely rough roads or repeated curb strikes can cause damage which leads to premature wear. Physical damage to the boot, dust cover, or sealing ring can cause a loss of lubrication and lead to premature wear. Some drivers may then ignore the warning signs created by the worn out ball seat and subsequent metal-to-metal contact and degradation of the ball or socket, and continue to operate their vehicles. Some of the reports included in this response show that the operators complained of unusual noise or loose steering prior to the separation. Some of the vehicles are used in commercial duty (traditionally a more severe environment), or operated with less regard to regular maintenance. Toyota believes that some ball joint separations occurred for these reasons, but we have not yet verified this in our investigation.

As we mentioned above, at this time Toyota has not identified any single issue with the front suspension lower ball joints that would identify the actual cause of the ball joint separations which have occurred in the field. Included in the range of subject vehicles are different designs and sizes of ball joints, as well as different cab configurations, curb weights, and drivelines. These factors, as well as

the process improvements we have made, further differentiate the 2004 MY Tundra vehicles from the population of the subject recall. Such design and process improvements are believed to reduce the occurrence of ball joint separation in the field, but at this time Toyota is still investigating the issue and has yet to reach any conclusion. Therefore Toyota will continue to monitor all field information and further our investigation in order to identify the actual cause of the ball joint separation. Toyota will inform you of the findings when our investigation is completed.

\* \* \*

Regarding privileged documents that may be responsive to this information request, Toyota understands that it is acceptable to the Agency at this stage for Toyota to identify categories of privileged documents rather than any specific document within those categories. These categories include (a) communications between outside counsel and employees of Toyota's Law Department, other Toyota employees, or employees of parties represented by Toyota in litigation or claims; (b) communications between employees of Toyota's Law Department and other Toyota employees or employees of parties represented by Toyota in litigation or claims; (c) notes and other work product of outside counsel or employees of Toyota's Law Department, including work product of employees or consultants done for or at the request of outside counsel or Toyota's Law Department. For any privileged documents that are not covered by these categories, if any, Toyota will provide a privilege log identifying any such documents under separate cover. Toyota is not claiming a legal privilege for any documents provided with this response; however, Toyota does not waive the legal privilege or work product protection with respect to other documents that may have been prepared in connection with a specific litigation or claim. In addition, Toyota may assert the attorney client privilege or claim protection under the work-product doctrine for analyses or other documents that may be prepared in connection with litigation or claims in the future.

Toyota understands that NHTSA will protect any private information about persons that is contained in the Attachments to this response, based on privacy policy considerations. Such private information includes data such as names, addresses, phone or fax numbers, email addresses, license plate numbers, driver's license numbers and last 4 digits of the vehicle's VIN.

Data provided in this document is current as of the following dates:

Response 1 : Production Data (May 8, 2006)  
Response 2 - 4 : Consumer Complaint (April 26, 2006)  
Field Report (May 17, 2006)  
Lawsuit (May 8, 2006)  
Response 5 : Warranty claims (May 12, 2006)  
Goodwill & Extended warranty claims (May 5, 2006)  
Response 7 : Dealer communications (May 31, 2006)  
Response 8 : Investigation (June 7, 2006)  
Response 9 : Modifications/changes (June 12, 2006)  
Response 12 : Parts sales (June 16, 2006)