

TOYOTA
TOYOTA MOTOR NORTH AMERICA, INC.

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June 23, 2004

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-213cat; PE04-040

Dear Mr. Quandt:

This letter is being sent in response to your April 24, 2004 letter regarding PE04-040. Per our agreement, Toyota is submitting its response to Questions 8, 9, and 14 of your inquiry under this cover, completing our response. Please note that the information included as "Attachment 10-1," "Attachment 10-2," and "Attachment 11," is to remain confidential. A confidential version of this submission is also being sent to the Chief Counsel's office.

Enclosed you will find two copies of this partial response with all confidential material removed. Please consult with the Chief Counsel's office in order to obtain any of the materials for which Toyota has requested confidential treatment. For your convenience, the Chief Counsel's office is being sent a set of documents that includes only the confidential material, which you may use to supplement your copy.

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

Sincerely,



Chris Tinto
Director
TOYOTA MOTOR NORTH AMERICA, INC.

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Attachment

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DEFECTS INVESTIGATION

1. State, by model year and drive type (two-wheel drive or four-wheel drive), the number of MY 2001-2003 Toyota Tundra vehicles Toyota has manufactured for sale or lease in the United States. Separately, for each MY 2001-2003 Toyota Tundra vehicle manufactured to date by Toyota, state the following:
 - a. Vehicle identification number (VIN);
 - b. Model year;
 - c. Drive type;
 - d. Date of manufacture;
 - e. Date warranty coverage commenced; and
 - f. 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 2001-2003 Toyota Tundra vehicles Toyota has manufactured for sale or lease in the United States by model, model year and drive type is as follows.

Tundra	2001	2-wheel	52,440	92,745
		4-wheel	40,305	
	2002	2-wheel	64,929	110,377
		4-wheel	45,448	
	2003	2-wheel	68,586	113,176
		4-wheel	44,590	
Total				316,298

In addition, detailed information for each vehicle is provided electronically on CD-ROM, in Microsoft Access 2000 format entitled "Attachment 1 PRODUCTION DATA(PE04-040).mdb".

2. State, by model year and drive 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 MY 2001-2003 Toyota Tundra 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 MY 2001-2003 Toyota Tundra 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, 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 29 consumer complaint reports (1 written, and 28 verbal complaint reports) that may relate to the alleged defect. Since some customers contacted Toyota more than once when complaining about the same incident, the total number of unique incidents in the consumer complaint list is 24. This includes 3 incidents which are duplicated with NHTSA's VOQs attached to the inquiry letter. These 24 incidents allegedly occurred on 21 unique vehicles, as 3 complaints referenced 2 incidents.

Please note that Toyota did not include any consumer complaints where the consumer did not actually experience the alleged defect, but had called to complain because they had heard about the issue from other sources. For clarification, the consumer complaint report that references a fleet of 15 Tundras was counted as 4 incidents occurring on 3 vehicles.

- b. There are two field reports that may relate to the alleged defect.
- c. In the consumer complaints, 3 incidents have been reported where a vehicle crash was alleged. In addition, Toyota has received 3 legal related claims (i.e. PL claims) involving a crash, that may relate to the alleged defect and one of the claims also alleged an injury occurred. All three claims are duplicated in the consumer complaint list. There are no reports alleging fatality.
- d. Toyota has received 4 property damage claims that may relate to the alleged defect. 3 of these claims are duplicated with the legal related claims involving a vehicle crash.
- e. There are no third party arbitration proceedings.
- f. There are no lawsuits in which Toyota is or was a defendant or codefendant.

In addition, Toyota has summarized the consumer complaints relating to the specific descriptions as requested under separate enclosure. Please see Attachment 2-2 stored on CD-ROM. Toyota provides this information on MY 2001-2003 Toyota Tundra vehicles in order to be consistent with the remainder of the response, even though the separate request is written for the subject vehicles only (MY 2002 Toyota Tundra vehicles).

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 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 pre-formatted 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 "Attachment 2-1 COMPLAINT DATA (PE04-040).mdb".

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

Copies of all consumer complaints stored in the database are provided electronically on CD-ROM, in Microsoft Excel 2000 format, and submitted as Attachment 3-1. In addition, a copy of the written consumer complaint that is listed in Attachment 3-1 with ID# 200402040716, copies of the legal related claims and the field reports are all submitted as Attachment 4. These documents are organized by category and within each category by order of reported date. Copies of the additional consumer complaints identified in Attachment 2-2 are included in Attachment 3-2.

5. State, by model year and drive 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 MY 2001-2003 Toyota Tundra 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 that may relate to the alleged defect in the MY 2001-2003 Toyota Tundra vehicles are as follows.

Tundra	2001	2-wheel	2	13
		4-wheel	11	
	2002	2-wheel	9	31
		4-wheel	22	
	2003	2-wheel	0	2
		4-wheel	2	
Total				46

The information for each claim is provided electronically on CD-ROM, in Microsoft Access 2000 format entitled "Attachment 5 WARRANTY DATA(PE04-040).mdb".

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 MY 2001-2003 Toyota Tundra vehicles. State, by model year, the terms of the new vehicle warranty coverage offered by Toyota on MY 2001-2003 Toyota Tundra 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 MY 2001-2003 Toyota Tundra vehicles and state by option 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 Attachment 6 stored on CD-ROM in Microsoft Word 2000 format. 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 provided in Attachment 6.

The terms that Toyota offers for new vehicle warranty coverage on MY 2001-2003 Toyota Tundra vehicles is 36 months or 36,000 miles from the vehicle's date-of-first-use (DFU), whichever occurs first.

There are some extended warranty coverage options that Toyota offered for purchase with MY 2001-2003 Toyota Tundra vehicles. Detailed information about these options is provided electronically on CD-ROM, in PDF format, and submitted as Attachment 7. The number of vehicles that are covered under each such extended warranty option is provided electronically on CD-ROM, in Microsoft Excel 2000 format, and submitted as Attachment 8.

7. Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in MY 2001-2003 Toyota Tundra 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, contractors, consultants, zone offices, vehicle owners, technicians, or field offices that relate to, or may relate to, the alleged defect in MY 2001-2003 Toyota Tundra vehicles.

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, Toyota provides this bulletin for your information electronically on CR-ROM, in PDF format as Attachment 9. It is important to note that this TSB was not issued solely with respect to the subject component on the subject vehicle, on the contrary this bulletin was issued for *all Toyota vehicles* for models years spanning 1989 to present to ensure that the dealer properly checks the ball joint.

8. For each drive type, 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 MY 2001-2003 Toyota Tundra 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 three field return parts investigations, including one of a lower ball joint recovered from a vehicle referenced in a VOQ. These are provided, in lieu of a summary, as Attachment 10-1. Also Toyota provides documentation from an investigation into a surface scratch on the ball end of the ball stud, which was generated during the production process, and its effect on the ball joint performance. In summary, the surface scratch was found through observation of the production process and, after a series of investigations and tests, Toyota concluded that the surface scratch had no discernable impact on the durability of lower ball joint and is not related to the alleged defect. The documents associated with this investigation are included as Attachment 10-2.

9. For each 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 MY 2001-2003 Toyota Tundra 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, and submitted as Attachment 11.

10. For each drive type, provide the design life and all material specifications (including revision histories) for the subject component in MY 2001-2003 Toyota Tundra vehicles. Explain why Toyota decided to use the type of ball joints selected for the upper and lower control arm assemblies used on the subject vehicle.

Response 10

Toyota drew upon its past experience in order to develop the front suspension ball joint of the subject vehicles. Toyota does not define design life in terms of mileage or time in service. Appropriate design life is confirmed through component and system level validation tests. Toyota's decision to use the ball joints in the front suspension of the Tundra was based on the fact that the Tundra adopts an existing suspension design, from that used on another model (Tacoma). Toyota confirmed the appropriateness of its adoption through a series of evaluations during the vehicle (Tundra) development.

For material specification and its revision histories, please refer Attachment 11.

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

Response 11

A free-body diagram of the curbside loads on the front suspension upper and lower ball joints for each drive type is provided electronically on CD-ROM, in Microsoft Excel 2000 format, and submitted as Attachment 12.

12. Produce two of each of the following:

- a. Exemplar samples of each design version of the subject component in MY 2001-2003 Toyota Tundra vehicles;
- b. An exemplar sample (disassembled) of each design version of the subject component in the subject vehicle;
- 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 MY 2001-2003 Toyota Tundra vehicles.

Response 12

Exemplar samples of the upper and lower ball joints, including disassembled samples and field return samples, are attached to this response. One of the field return samples was installed on the vehicle of VOQ.

13. State the number of each of the following that Toyota has sold that may be used in MY 2001-2003 Toyota Tundra 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):
- a. Front suspension upper ball joint;
 - b. Front suspension lower ball joint;
 - c. Front suspension upper control arm;
 - d. Front suspension lower control arm; and
 - e. Any kits that have been released, or developed, by Toyota for use in service repairs to the subject component/assembly.

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 13

The number of each the requested component that Toyota has sold that may be used in MY 2001-2003 Toyota Tundra vehicles by component name, part number, and month/year of sale is provided electronically on CD-ROM, in Microsoft Excel 2000 format, and submitted as Attachment 13.

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 in Attachment 13 includes the number of the component sold for use not only in MY 2001-2003 Toyota Tundra vehicles but also in the vehicles that contain the identical components installed in production or in service. The lists of any other vehicles that contain the identical components are also provided in Attachment 13.

The information on the supplier for each components parts number is also provided in Attachment 13.

14. 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; and
 - f. The reports included with this inquiry.

Response 14

After thorough review of the complaints supplied by NHTSA and those submitted directly to Toyota, Toyota believes that no specific trend indicates the existence of a safety related defect in the subject vehicles and subject components, which also is evidenced by the low rate of occurrence.

Toyota has submitted information on 29 consumer complaints that may relate to the alleged defect. This number includes all three of the VOQ's referenced in your letter. Since some consumers may report the same incident more than once, Toyota has determined that the 29 reports submitted reference a total of 24 unique incidents on 21 vehicles. As such, these 24 incidents would equal a rate of 7.6 per 100,000 vehicles. Of the 24 unique incidents, Toyota inspected the vehicles and determined that in 5 of these incidents, the separation of the ball joints was caused by impact damage. Removing these 5 incidents results in a rate of 6 per 100,000 vehicles. In comparison, NHTSA recently closed some investigations into competitor automaker's products with similar ball joints with similar or even higher failure rate.

In reviewing all of the reports referenced in this letter, it is clear that there is not a single failure mode, nor an unreasonable risk to safety in regards to the subject components and the subject vehicles. Per your request, Toyota has provided related reports that allege separations of upper ball joints, lower ball joints, and those that allege both occurred. In this submission, there are reports that could be related to:

1. prolonged wear-out/separation failure of the upper ball joint;
2. prolonged wear-out/separation of the lower ball joint;
3. impact damage separation of the lower ball joint, and;
4. impact damage separation of the lower ball joint assembly from the knuckle.

In most cases it is extremely difficult to identify exactly which failure mode has occurred. As with most manufacturers that utilize maintenance-free ball joints in their vehicles, Toyota recommends frequent inspection of the ball joints in order to assure vehicle safety. As such, ball joint separations that occur due to excessive wear of the ball joint occur only when some factor accelerates ball joint seat wear. This could result from water intrusion/internal corrosion, or an excessive impact force that damages the ball joint seat. Drivers then ignore warning signs created by the worn out seat and subsequent metal contact and excessive wear of the ball or socket, and continue to operate their vehicles. Some of the reports included in this report show that the operators complained of unusual noise and difficulty with steering effort prior to the separation. Some of the consumers state that they ignored routine maintenance schedules.

As we outlined in Response 8, in spite of the extremely low rate of ball joint separation, Toyota and its suppliers have diligently been investigating recovered parts from the field and the manufacturing process for potential problems. As evidence of this, Toyota has submitted an investigation into a surface flaw found on the ball of the ball joint stud. Validation testing has confirmed that even ball joints with the surface flaw meet all design and in-use expectations, and therefore pose no unusual or additional risk to vehicle safety.

In conclusion, based on the low rate of occurrence, the lack of a common failure mode, the warning signs in the event of ball joint wear out, and the evidence supplied with this report, Toyota has not

identified any single issue with any of the front suspension ball joints that would indicate a safety defect trend, and therefore we strongly believe that no unreasonable risk to highway safety exists.

* * *

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 2 through 4:

Owner reports (May 5, 2004)

Crash, injury and property damage claims (May 21, 2004)

Response 5: Warranty, goodwill, extended warranty claims (May 12, 2004)

Response 7: Dealer communications (May 12, 2004)

Response 8: Investigation reports (May 20, 2004)

Response 9: Modifications or changes (May 14, 2004)

Response 13: Number of parts sales (May 12, 2004)

CONFIDENTIAL (Entire Pages)

Attachment 10-1

Investigation Reports of field return parts

CONFIDENTIAL (Entire Pages)

Attachment 10-2

Investigation Reports of a surface scratch on the ball joint

CONFIDENTIAL (Entire pages)

Attachment 11

All modifications or changes in the design, material, installation, etc.