

Ford Motor Company

James P. Vondala, Director
Automotive Safety Office
Environmental & Safety Engineering

April 15, 2005

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

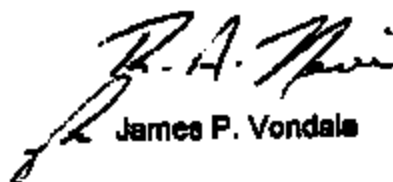
Dear Ms. DeMeter:

Subject: EA04-024:NVS-213cat

The Ford Motor Company (Ford) response to the agency's March 11, 2005 peer vehicle information request concerning allegations of the front suspension lower ball joints allegedly separating and/or a front wheel separating while the vehicle is being driven on 2001 through 2003 model year F-150 vehicles, manufactured for sale or lease in the United States is attached. We understand these vehicles are being used as a peer comparator in the agency's investigation of 2001-2003 Toyota Tundra vehicles allegedly experiencing front lower ball joint separations.

If you have any questions concerning this response, please contact me.

Sincerely,


James P. Vondala

Attachment

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FORD MOTOR COMPANY (FORD) RESPONSE TO EA04-024

Ford's response to this peer vehicle information request, dated March 11, 2005, was prepared pursuant to a diligent search for the information requested. We have made every effort to provide thorough and accurate information, and we would be pleased to meet with agency personnel to discuss any aspect of this peer vehicle information request.

The scope of Ford's investigation conducted to locate responsive information focused on Ford employees most likely to be knowledgeable about the subject matter of this inquiry and on review of Ford files in which responsive information ordinarily would be expected to be found and to which Ford ordinarily would refer, as more fully described in this response. Ford notes that although electronic information was included within the scope of its search, Ford has not attempted to retrieve from computer storage electronic files that were overwritten or deleted. As the agency is aware, such files generally are unavailable to the computer user even if they still exist and are retrievable through expert means. To the extent that the agency's definition of Ford includes suppliers, contractors and affiliated enterprises for which Ford does not exercise day-to-day operational control, we note that information belonging to such entities ordinarily is not in Ford's possession, custody or control. Ford has construed this request as pertaining to vehicles manufactured for sale in the United States, its protectorates and territories.

Answers to your specific questions are set forth below. As requested, after each numeric designation, we have set forth verbatim the request for information, followed by our response. Unless otherwise stated, Ford has undertaken to provide responsive documents dated up to and including February 23, 2005, the date of your initial inquiry. Ford has searched business units and/or affiliates within the following offices for responsive documents: Ford Customer Service Division, Quality, Global Core Engineering, Office of the General Counsel, and North American Truck Product Development.

Request 1

State, by model, model year, and drive type (two-wheel drive or four-wheel drive), the number of subject peer vehicles Ford has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Ford, state the following:

- a. Vehicle Identification number (VIN);
- b. Make;
- c. Model;
- d. Model Year;
- e. Drive Type;
- f. Date of manufacture;
- g. Date warranty coverage commenced; and
- h. 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 "FORD PEER PRODUCTION DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Answer

Ford records indicate that the approximate total number of subject peer vehicles sold in the United States (the 50 states and the District of Columbia) and its protectorates and territories (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and the Virgin Islands) are as follows:

	2001 MY	2002 MY	2003 MY
F-150 4x2	353,940	310,695	301,553
F-150 4x4	233,291	187,760	189,176

The specific vehicle information requested by the agency has been provided electronically in Appendix A (file: 2005-04-15_Appendix_A.zip) on the enclosed CD.

Request 2

State by model, model year, and drive type, the number of each of the following, received by Ford, or of which Ford is otherwise aware, which relate to, or may relate to, the subject condition 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 peer vehicle, property damage claims, consumer complaints, or field reports;
- d. Property damage claims;
- e. Third-party arbitration proceedings where Ford is or was a party to the arbitration and;
- f. Lawsuits, both pending and closed, in which Ford 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 Ford'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 source (complaints, field reports), model, model year, drive type, and complaint category for all other complaints and field reports related to the subject peer components.

Answer

For purposes of identifying reports of incidents potentially involving alleged separation of the front suspension lower ball joint and/or alleged front wheel separation from the vehicle that occurred as a result of an alleged separation of a front lower ball joint while a vehicle was being driven and any related documents associated with this "subject condition", Ford has gathered "owner reports" and "field reports" maintained by Ford Customer Service Division (FCSD) and claim and lawsuit information maintained by Ford's Office of the General Counsel (OGC). Descriptions of the FCSD owner and field report systems and the criteria used to search each of these are provided electronically in Appendix B (file: 2005-04-15_Appendix_B.doc) on the enclosed CD.

The following category/allegation was used in the review of reports located in each of these searches to identify related reports:

Category Allegation

A1	Alleged front suspension ball joint separation while a vehicle was being driven
A2	Alleged front suspension lower ball joint separation with no indication that the alleged separation occurred while a vehicle was being driven

We are providing two categories of potentially responsive allegations although "A2" does not meet the specific definition of the "subject condition" because there is no allegation of a separation while a vehicle was being driven. Because Ford designed these joints to be in compression on the subject peer vehicle, actual separation is an uncommon occurrence. The small number of claims in category "A2" shows that even in the unlikely event that a lower control arm ball joint does "separate", the control arm will likely remain in position and provide some warning to the driver.

Owner Reports: The search and review of the Ford Master Owner Relations Systems (MORS) database records, as described in Appendix B, identified two owner reports in accordance with the category "A1" described above.

Copies of these owner reports are provided in the MORS portion of the electronic database contained in Appendix C (file: 2005-04-15_Appendix_C.mdb) on the enclosed CD. The categorization of each report is identified in the "Category" field.

Legal Contacts: Ford is providing in Appendix B a description of Legal Contacts and the activity that is responsible for this information, Litigation Prevention. Ford searched the related files from the Litigation Prevention section and found no legal contacts related to the "subject condition".

Field Reports: The search and review of the Ford Common Quality Indicator System (CQIS) records, as described in Appendix B, identified no field reports in accordance with the categories described above:

Unified Database: The Unified Database (UDB) was created to facilitate parts availability by tracking part sales and is not intended as a problem reporting system. However, because a small percentage of the records may contain verbatim comments that could potentially relate to

the agency's inquiry, we searched UDB for reports responsive to Request 2 as described in Appendix B. No potentially relevant reports were identified.

Crash/Injury Incident Claims: For purposes of identifying alleged accidents or injuries potentially related to the "subject condition", Ford reviewed owner and field reports, lawsuits and claims, and warranty claims. Based on a reasonable and diligent search, Ford located no owner (MORS) reports, no field (CQIS) reports, no legal claims, and no lawsuits alleging any incident of front lower ball joint separation resulting in an accident or injury.

Claims, Lawsuits, and Arbitrations: For purposes of identifying incidents potentially related to the subject condition, Ford gathered claim and lawsuit information maintained by Ford's OGC. Ford's OGC is responsible for handling product liability lawsuits, claims, and consumer breach of warranty lawsuits and arbitrations against the Company.

Based on a reasonable and diligent search, Ford located no lawsuits, no legal claims, and no arbitrations that appear to relate to the subject condition in the subject vehicles.

Total Complaint Count by Source: The agency has requested a tabulation of the total complaint count by source (complaints, field reports) for all other complaints and field reports related to the front suspension lower ball joint. For purposes of identifying owner reports that may relate to this peer vehicle information request, Ford searched its owner report (MORS) database for potentially related reports. Due to the nature of this database as a repository for owner contact information, the reports contained therein are not categorized by a specific part number, but rather they are categorized by symptom code. As further described in Appendix B, searches of this database are performed utilizing a symptom categorization that may be associated with a particular condition that may be experienced by a vehicle operator (e.g. the wear, suspension noise, etc.) Consequently the reports that meet our broad search criteria typically relate to a wide variety of components rather than to a single component, requiring manual review to determine whether they relate to the particular item of interest (in this case, front suspension lower ball joint). As a consequence, Ford is unable to reply to the agency's request for total owner complaint count for all other complaints related specifically to the front suspension lower ball joint as this would require extensive, manual review of a large number of reports to make any type of determination whether they may relate specifically to the front suspension lower ball joint.

For purposes of identifying field reports that may relate to this peer vehicle information request, Ford searched its field report (CQIS) database for potentially related reports as described in Appendix B. The Ford CQIS system is primarily symptom code based and may or may not include a service part number. Where such reports contain a related front suspension lower ball joint part number, we are providing a tabulation of such reports by model, model year and drive type in Appendix D (file: 2005-04-15_Appendix_D.xls) on the enclosed CD.

Request 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. Ford'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 the prior impact damage is alleged;
- j. Whether a crash is alleged;
- k. Whether property damage is alleged;
- l. Number of alleged injuries, if any; and
- m. Number of alleged fatalities, if any; and
- n. Complaint summary.

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

Answer

Ford is providing owner and field reports in the electronic database contained in Appendix C on the enclosed CD in response to Request 2. To the extent that the information requested in Request 3 is available, it is provided in that database.

Request 4

Produce copies of all documents related to each item (FRONT SUSPENSION LOWER BALL JOINT SEPARATIONS ONLY) within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method Ford used for organizing the documents.

Answer

Ford is providing electronic copies of owner and field reports in the database contained in Appendix C on the enclosed CD in response to Request 2.

Request 5

State, by model, model year, and drive type, a total count for all of the following categories of claims, collectively, that have been paid by Ford to date that relate to, or may relate to, the subject condition 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. Ford's claim number;
- b. Whether the warranty claim is related to the alleged defect in the subject or peer vehicles;

- c. Vehicle owner or fleet name (and fleet contact person) and telephone number;
- d. VIN;
- e. Repair date;
- f. Vehicle mileage at time of repair;
- g. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- h. Labor operation number;
- i. Problem code;
- j. Replacement part number(s) and description(s);
- k. Whether the vehicle was towed to the dealer within 3 days of vehicle repair (y/n);
- l. Concern stated by customer; and
- m. Comment, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "FORD PEER WARRANTY DATA." See Enclosure 1, EA04-011 Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

Answer

In responding to this information request, Ford electronically searched its Analytical Warranty System (AWS) for all claims meeting the criteria described in Appendix B. The resulting claims were then reviewed individually for allegations that may relate to the subject condition. This search and review of the Ford AWS database records identified 14 "A1" non-duplicative warranty claims in accordance with the categories described above for the 1.5 million subject peer vehicles.

Electronic copies of these claims are provided in the AWS portion of the electronic database contained in Appendix C. The categorization of each report is identified in the "Category" field. Ford assumes that providing the warranty claims in the electronic database format meets the requirements of this request, because the agency can review or order the claims as desired.

The requested customer concern codes and the warranty condition codes are provided in Appendix B. Requests for "goodwill, field or zone adjustments" received by Ford to date that relate to the subject condition that were not honored, if any, would be indicated in the MORS reports identified above in response to Request 2.

Ford does not have a process to identify vehicle tow information as part of its warranty claim system. In order to determine whether a vehicle was towed to the dealer because of the subject condition, Ford first reviewed the text in the warranty claim. Six of the 14 "A1" claims noted towing in the technician's comments. The remaining eight "A1" claims were searched through Ford's independent towing service (contracted to provide towing services to the owners of Ford vehicles under warranty). This search found four additional records of the vehicle being towed within three days of the warranty repair. A summary of the responsive "A1" claims and those that have a record of being towed within three days of the warranty repair are contained in Appendix E (file: 2005-04-15_Appendix_E.xls) on the enclosed CD.

Request 6

Describe in detail the search criteria used by Ford 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 subject condition in the subject peer vehicles and all labor operation codes Ford used to identify vehicles that have been towed. State, by make and model year, the terms of the new vehicle warranty coverage offered by Ford on the subject peer 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 Ford offered for the subject peer vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.

Answer

The criteria used for searching Ford's Analytical Warranty System (AWS) are described in Appendix B. All claims coded under the selected part numbers were included in this search regardless of labor operation or problem codes. The resulting claims were then reviewed individually for allegations that may relate to the subject condition. As noted in response to Request 5, Ford does not have a process to identify vehicle tow information as part of its warranty claim system.

The standard new vehicle warranty coverage for 2001 through 2003 model year Ford vehicles is three years or 36,000 miles, whichever occurs first. The various extended warranty options and the approximate number of subject peer vehicles covered under them are provided in Appendix F (file: 2005-04-15_Appendix_F.xls) on the enclosed CD.

Request 7

Produce one exemplar sample (disassembled) of the current design version(s) of the subject peer component in MY 2002 (two-wheel drive and four-wheel drive) subject peer vehicles.

Answer

The lower control arm ball joints used on both the 4x2 and 4x4 model subject peer vehicles are of the same design. Two new lower control arm ball joints, which are available as service parts through dealerships, have been provided with this response. Ford does not have access to a disassembled sample.

Request 8

Provide the following ball joint specific information for MY 2002 (two-wheel drive and four-wheel drive) subject peer vehicles:

- a. For each drive type, provide the design life and all material specification (including revision histories) for the subject peer component including, but not limited to ball joint stud, the ball joint socket, and the plastic bearing, in subject peer vehicles.
- b. Describe any differences, by model, between the two-wheel drive and four-wheel drive front suspension geometry on subject peer vehicles.
- c. For each drive type, provide a free-body diagram of the curbside loads on the front suspension upper and lower ball joints.

Answer

- a. Ford durability requirements (including design life and material specifications) are described in Ford engineering specification ES-2L34-3395-AA (to be provided with a request for confidentiality in response to request 10). The ball joints and all attachment hardware, as well as torque specifications for each drive type (4x2 and 4x4) are identical. The engineering drawing for the subject peer component is submitted under a request for confidentiality in Appendix G. A design change log for the subject peer component is included in Appendix H (file: 2005-04-15_Appendix_H.xls) on the enclosed CD.
- b. The front suspension design is a short-long-arm configuration (SLA) with a coil spring (attached to the lower control arm) on the 4x2 and a torsion bar on the 4x4 model. Also, the lower control arm is stamped steel for 4x2 and cast steel for 4x4. Regardless of drive type, the ball joints, the attachment hardware, and the torque specification for the attachment of the lower control arm to the spindle (4x2) or knuckle (4x4) are the same. In each design the ball joint is a compression joint.
- c. Ford searched the activity most likely to have the requested information and was unable to locate it. In the March 3, 2005 teleconference with the agency, the agency indicated that Ford was not required to generate new data for this peer inquiry. As such, Ford did not attempt to recreate the necessary engineering information to respond to this request.

Request 9

State the Lightly Loaded Vehicle Weight (LLVW), Gross Vehicle Weight Rating (GVWR), and payloads, by model, model year, and drive type, for MY 2002 (two-wheel drive and four-wheel drive) subject peer vehicles. List regular cab and extended cab body styles separately. In addition, state the maximum and minimum payload combinations for each model and body style.

Answer

For vehicles with a GVWR of 10,000 lb. or less (which includes the subject peer vehicle), Ford Product Development estimates LLVW as unloaded vehicle weight plus 400 lb. (including driver and any test instrumentation). Ford does not publish this value. However, adding 400 lb. to the base curb weight approximates LLVW.

A summary of the subject peer vehicle GVWR, base curb weight, and minimum and maximum payloads by model and drive type, for 2002 model year, is included in Appendix I (file: 2005-04-15_Appendix_I.xls).

Request 10

For MY 2002 (two-wheel drive and four-wheel drive) subject peer vehicles, state the following as it refers to the tests Ford or the subject peer component manufacturer and/or assembler has conducted in accordance with SAE J491, Steering Ball Studs and Socket Assemblies, J193, Ball Stud and Socket Assembly-Test Procedures (Reaffirmed 1996-06), Section 5.2, or any similar test procedures:

- a. The test procedures, measurements, and/or metrics used, if different from SAE J491 and SAE J193;

- b. The tension, compression and cam-out loads applied and the angles used for the cam-out strength test (Section 5.2.4.2) for the subject peer component;
- c. The peak loads and cycle life (Section 5.2.4.2.1) for the subject peer component;
- d. The load and cycle life used for the endurance test (Section 5.2.4.2.2);
- e. The predicted endurance life indicated by the endurance test (Section 5.2.4.2.2) conducted;
- f. The pull-out and push-out strength (Section 5.2.5); and
- g. The maximum angularity required for the subject peer component considering full jounce and full rebound.

Answer

Ford has developed extensive requirements and test procedures for its suspension components that exceed the referenced SAE specifications. Specifically, Ford engineering specification (ES-2L34-3395-AA) applies to ball joints used in the suspension lower control arms on the subject peer vehicles. A copy of this specification is being submitted under a request for confidentiality in Appendix J (file: 2005-04-15_Appendix_J.pdf) on the enclosed CD.

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