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February 28, 2008

Ms. Kathleen C. DeMeter, Director
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE/W45-302
Washington, DC 20590

Dear Ms. DeMeter:

Subject: EA07-012:NVS-213dlr

The Ford Motor Company (Ford) response to the agency's January 3, 2008, letter concerning reports of alleged failure of the front axle differential and/or front driveshaft in 2003 through 2005 model year Land Rover Ranger Rover vehicles is attached.

As stated in Ford's response to PE07-019, investigation by Land Rover has found that the primary cause for the majority of the reported front differential and/or driveshaft failures is misalignment of the joint between the front differential and the front driveshaft.

As discussed in our previous response, when the driveshaft joint splines shear there is a grinding noise and instrument cluster warning lights illuminate, providing a clear indication to the driver that the vehicle should be pulled to the roadside. The vehicle does not abruptly decelerate but rather coasts. The engine continues to run, providing the driver with fully functioning power steering, power assisted braking, and exterior vehicle lighting and signals, thus allowing the driver to safely maneuver to the shoulder and indicate to other drivers that the vehicle is stopped awaiting service. As stated in Ford's previous response, the fact that a driver is able to recognize that the vehicle has a concern and safely maneuver to the roadside continues to be supported by the more than 6,000 reports without any accidents or injuries. While it may be theorized that loss of motive power is an unreasonable risk to motor vehicle safety, the data relating not only to this investigation but also numerous other similar investigations does not substantiate this theory.

Ford continues to believe that this condition does not present an unreasonable risk to safety, and there remains no evidence to support that initiating a safety recall action would prevent even one accident or injury. In consideration of the understandable customer dissatisfaction that results from failure of the front differential or driveshaft, an improved front differential and driveshaft joint has been developed and is being released for service in the near future.

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

Sincerely,


James P. Vondale

Attachment



FORD MOTOR COMPANY (FORD) RESPONSE TO EA07-012

Ford's response to this Engineering Assessment information request was prepared pursuant to a diligent search for the information requested. While we have employed our best efforts to provide responsive information, the breadth of the agency's request and the requirement that information be provided on an expedited basis make this a difficult task. We nevertheless have made substantial effort to provide thorough and accurate information, and we would be pleased to meet with agency personnel to discuss any aspect of this Engineering Assessment.

The scope of Ford's investigation conducted to locate responsive information focused on Land Rover employees most likely to be knowledgeable about the subject matter of this inquiry and on review of Land Rover files in which responsive information ordinarily would be expected to be found and to which Ford ordinarily would refer. 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 or Land Rover does not exercise day-to-day operational control, we note that information belonging to such entities ordinarily is not in Ford's or Land Rover'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.

Ford notes that some of the information being produced pursuant to this inquiry may contain personal information such as customer names, addresses, telephone numbers, and complete Vehicle Identification Numbers (VINs). Ford is producing such personal information in an unredacted form to facilitate the agency's investigation with the understanding that the agency will not make such personal information available to the public under FOIA Exemption 6, 5 U.S.C. 552(b)(6).

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 January 3, 2008, the date of your inquiry. Ford has searched within the following Land Rover offices for responsive documents: Automotive Safety & Compliance Office, Purchasing, Marketing Sales and Service, Quality, Office of the General Counsel, Vehicle Operations, and Product Development.

Request 1

State, by model and model year, the number of subject 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. Date of manufacture;

- f. Date warranty coverage commenced; and
- g. 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 I, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Answer

Ford previously provided the requested information in our June 8, 2007, response to PE07-019. Land Rover has not manufactured any subject vehicles since that response and accordingly, information provided in that response remains appropriate.

Request 2

State the number of each of the following, received by Ford, or of which Ford are 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 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.

Answer

For purposes of identifying reports of incidents that may be related to the alleged defect and any related documents, Ford has gathered "owner reports" and "field reports" maintained by Land Rover's Customer Service Division and claim and lawsuit information maintained by Ford's Office of the General Counsel (OGC).

Descriptions of the owner and field report systems and the criteria used to search each of these are provided electronically in Appendix A (filename: 2008-02-28 Appendix A) on the enclosed CD.

As the agency is aware, Land Rover initiated a field service program (H121/B121) in 2005 to address a worn front driveshaft spline condition. The majority of reports identified in response to this information request relate to worn front differential/driveshaft splines. As the alleged defect is defined as "failure of the front axle differential and/or front driveshaft", some of the reports are ambiguous as to whether they relate to the worn differential/driveshaft spline condition or some other differential or driveshaft concern, though they still meet the broader definition of the alleged defect. Accordingly, the following categorizations were used in the review of reports located in each of these searches:

Category	Allegation
A	Allegation of front differential and/or driveshaft failure due to worn splines
B	Other or non-specific allegation of front differential and/or driveshaft failure

Owner Reports: Records identified in a search of the Land Rover Customer Assistance Tracking System (CATS), as described in Appendix A, were reviewed for relevance and categorized in accordance with the categories described above. The number and copies of relevant owner reports identified in this search that may relate to the agency's investigation are provided in the electronic databases contained in Appendix B (filenames: 2008-02-28 Appendix B-AWS-CQIS and 2008-02-28-Appendix B-CATS) on the enclosed CD. The categorization of each report is identified in the "Category" field.

When we were able to identify that responsive (i.e., not ambiguous) duplicate owner reports for an alleged incident were received, each of these duplicate reports was marked accordingly, and the group counted as one report. In other cases, certain vehicles may have experienced more than one incident and have more than one report associated with their VINs. These reports have been counted separately.

Legal Contacts: Ford is providing, in Appendix A, a description of Legal Contacts and the activity that is responsible for this information, Consumer Affairs. With regard to this specific inquiry, nine Consumer Affairs reports are included in the counts of owner reports above. When we were able to identify that duplicate reports for an alleged incident were received, each of these duplicate reports was marked accordingly and the group counted as one report. In other cases, certain vehicles may have experienced more than once incident and may have more than one report associated with their VINs. These reports have been counted separately.

Field Reports: Records identified in a search of the Land Rover Electronic Product Quality Reports (EPQR), Global Common Quality Indicator System (GCQIS), and Jaguar/Land Rover Critical Concern eTracker Database (JLRCCED) records, as described in Appendix A, were reviewed for relevance and categorized in accordance with the categories described above.

The number and copies of relevant field reports identified in this search that may relate to the agency's investigation are provided in the electronic databases contained in Appendix B on the enclosed CD. The categorization of each report is identified in the "Category" field. The search of EPQR and JLRCCED did not identify any potentially responsive reports in either of those databases following Ford's response to PE07-019.

When we were able to identify that responsive duplicate field reports for an alleged incident were received, each of these duplicate reports was marked accordingly, and the group counted as one report. In other cases, certain vehicles may have experienced more than one incident and have more than one report associated with their VINs. These reports have been counted separately. In addition, field reports that are duplicative of owner reports are provided in Appendix B but are not included in the field report count.

VOQ Data: This information request had an attachment that included 23 VOQs that were not previously provided in PE07-019. Ford made inquiries of Land Rover's owner report databases for customer contacts, its field report databases for field reports, and its warranty database for warranty claims concerning the vehicles identified in the VOQs. In some instances where the VOQ does not contain the VIN, or contains a partial VIN, it is not possible to query the databases for warranty, owner, or field reports specifically corresponding to the VOQs. All related reports located on a vehicle identified in a VOQ with a complete VIN are provided in the electronic databases provided in Appendix B. Ford notes that there was no customer contact with Land Rover or related report in the various databases for nine of these additional VOQs.

Crash/Injury Incident Claims: For purposes of identifying allegations of accidents or injuries that may have resulted from the alleged defect, Ford has reviewed responsive owner and field reports, and lawsuits and claims. Ford has not identified any owner reports, field reports, lawsuits, or claims alleging any accidents or injuries that may have resulted from the alleged defect.

Claims, Lawsuits, and Arbitrations: For purposes of identifying incidents that may relate to the alleged defect, Ford has 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 product liability lawsuits, no claims, and two consumer lawsuits.

Documents gathered in this manner were reviewed for relevance and those consumer lawsuits that may relate to the agency's request are provided for your review in Appendix C2 (filename: 2008-02-28 Appendix C2) on the enclosed CD. We are providing the requested detailed information, where available, in our Log of Lawsuits and Claims in Appendix C1 (filename: 2008-02-28 Appendix C1) on the enclosed CD. The number of relevant lawsuits and claims identified is also provided in this log. With regard to these lawsuits and claims, Ford has not undertaken to contact outside law firms to obtain additional documentation.

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 a crash is alleged;
- j. Whether property damage is alleged;
- k. Number of alleged injuries, if any; and
- l. Number of alleged fatalities, if any.

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.

Answer

Ford is providing owner and field reports in the electronic databases contained in Appendix B on the enclosed CD in response to Request 2. To the extent information sought in Request 3 is available for owner and field reports, it is provided in the database. To the extent information sought in Request 3 is available for lawsuits and claims, it is provided in the Log of Lawsuits and Claims in Appendix C1. For the CATS reports, in the databases contained in Appendix B, the "Source" field indicates the database source and the type of report (e.g., CATS-field, CATS-CA).

Request 4

Produce copies of all documents related to each item 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 owner and field reports in the electronic databases contained in Appendix B on the enclosed CD in response to Request 2. Copies of complaints, first notices, or CATS reports relating to matters shown on the Log of Lawsuits and Claims (Appendix C1) are provided in Appendix C2. To the extent information sought in Request 4 is available, it is provided in the referenced appendices.

Request 5

State, by model and model year, 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 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.

For purposes of this question, this request excludes any services rendered by Land Rover and its representatives involving Customer Satisfaction Campaigns H121 (Front Differential Alignment Check) and SB121 (Front Differential Inspection and Adjustment).

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

- a. Ford'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.

Answer

Records identified in a search of the AWS database, as described in Appendix A, were reviewed for relevance and categorized in accordance with the categories described below. An additional category, not included for field and owner reports, is included for warranty claims. The "C" category identifies all claims made for work completed under the H121/B121 "Front differential inspection and alignment" field service program.

Category	Allegation
A	Allegation of front differential and/or driveshaft failure due to worn splines
B	Other or non-specific allegation of front differential and/or driveshaft failure
C	Warranty claims for completion of customer satisfaction campaign H121/B121

The number and copies of relevant warranty claims identified in this search that may relate to the agency's investigation are provided in the AWS portion of the electronic database contained in Appendix B (filename: 2008-02-28 Appendix B-AWS-CQIS) on the enclosed CD. The categorization of each report is identified in the "Category" field.

When we were able to identify that duplicate claims for an alleged incident were received, each of these duplicate claims was marked accordingly and the group counted as one report. In other cases, certain vehicles may have experienced more than one incident and have more than one claim associated with their VINs. These claims have been counted separately. Warranty claims that are duplicative of owner and field reports are provided in Appendix B but are not included in the report count above.

Requests for "goodwill, field or zone adjustments" received by Land Rover to date that relate to the alleged defect that were not honored, if any, would be included in the owner reports identified above in response to Request 2. Such claims that were honored are included in the warranty data provided.

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 alleged defect in the subject vehicles. State, by make and model year, the terms of the new vehicle warranty coverage offered by Ford 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 Ford 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.

Answer

Detailed descriptions of the search criteria, including all pertinent parameters, used to identify the claims provided in response to Request 5 are described in Appendix A.

For 2003 through 2005 model year Land Rover Range Rover vehicles, the New Vehicle Limited Warranty, Bumper-to-Bumper Coverage begins at the warranty start date and lasts for 48 months or 50,000 miles, whichever occurs first.

Descriptions of the available extended warranty programs and the number of active extended warranties are provided electronically in Appendix D (folder: 2008-02-28 Appendix D) on the enclosed CD. As of the date of the information request, 9,670 extended warranties have been purchased on 2003 through 2005 model year Land Rover Range Rover vehicles. In Ford's response dated June 8, 2007, information pertaining to the certified pre-owned warranty coverage program for 24 months/25,000 miles was inadvertently omitted. This omission resulted in a significantly lower total for the number of extended warranties in the response dated June 8, 2007. The certified pre-owned warranty coverage for 24 months/25,000 miles accounts for 4,092 of the total number of extended warranties in effect on January 3, 2008, the date of this inquiry.

Request 7

State, by model and model year, 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 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.

For purposes of this question, this request includes only services rendered by Land Rover and its representatives involving Customer Satisfaction Campaigns H121 (Front Differential Alignment Check) and SB121 (Front Differential Inspection and Adjustment).

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

- a. Ford'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.

Answer

All claims made for work completed under the H121/B121 customer satisfaction campaign are provided in the AWS portion of the electronic database contained in Appendix B and provided in response to Request 5. The "C" category in the database identifies all claims made for work completed under the H121/B121 "Front differential inspection and alignment" customer satisfaction campaign. The field service program ended on September 1, 2007.

Request 8

Describe in detail the search criteria used by Ford to identify the claims identified in response to Request No. 7, 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 make and model year, the terms of the new vehicle warranty coverage offered by Ford 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 Ford 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.

Answer

Detailed descriptions of the search criteria, including all pertinent parameters, used to identify the claims provided in response to Request 7 are described in Appendix A.

Information related to new vehicle and extended warranty coverage is provided in response to Request 6.

Request 9

Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that Ford 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 Ford is planning to issue within the next 120 days.

Answer

For purposes of identifying communications to dealers, zone offices, or field offices pertaining, at least in part, to the alleged defect in the subject vehicles, Ford has reviewed the Land Rover Global Technical Reference (GTR) website, which is the general repository for all workshop manuals, technical service, and recall communications. In addition, the EPQR database was searched for Special Service Messages. We assume this request does not seek information related to electronic communications to Land Rover dealers regarding the order, delivery, or payment for replacement parts, so we have not included these kinds of information in our answer.

One technical information bulletin was identified based on these searches. No special service messages were identified that are relevant to this subject. A copy of the bulletin is provided electronically as Appendix E (filename: 2008-02-28 Appendix E) on the enclosed CD.

Request 10

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, Ford. 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.

Answer

Ford is construing this request broadly and is providing not only studies, surveys, and investigations related to the alleged defect, but also notes, correspondence, and other communications that were located pursuant to a diligent search for the requested information. Ford is providing the responsive non-confidential Land Rover documentation in Appendix F (filename: 2008-02-28 Appendix F).

To the extent that the information requested is available, it is included in the documents provided. If the agency should have questions concerning any of the documents, please advise.

Ford is submitting additional responsive documentation as Appendix G (folder: 2008-02-28 Appendix G) with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR, Part 512.

Ford does not construe this request to pertain to documents related to the development of a revised front differential and a revised front driveshaft that are presently being released for service, as the development of these revised components does not provide any insight into or evaluation of the alleged defect in the subject vehicles. Should the agency desire information or documents relating to the development of these revised service components, Ford will cooperate with the request.

In the interest of ensuring a timely and meaningful submission, Ford is not producing non-responsive materials or items containing little substantive information. Examples of the types of materials not being produced are meeting notices, raw data lists (such as part numbers or VINs) without any analytical content, duplicate copies, non-responsive elements of responsive materials, and draft electronic files for which later versions of the materials are being submitted. Through this method, Ford is seeking to provide the agency with substantive responsive materials in our possession in the timing set forth for our response. We believe our response meets this goal. Should the agency request additional materials, Ford will cooperate with the request.

Request 11

Describe all modifications or changes made by, or on behalf of, Ford 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 Ford is aware of which may be incorporated into vehicle production within the next 120 days.

Answer

A table of the requested changes is provided electronically as Appendix H (filename: 2008-02-28 Appendix H) on the enclosed CD.

Request 12

State the number of subject components that Ford 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 the sale (including the cut-off date for sales, if applicable).

- a. Subject components; and
- b. Any kits that have been released, or developed, by Ford, Land Rover, or by another party working on either Ford or Land Rover's behalf for use in service repairs to the subject components.

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 Ford is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

Answer

As the agency is aware, Land Rover service parts are sold in the U.S. to authorized dealers. Ford has no means by which to determine how many of the parts were actually installed on vehicles, the vehicle model or model year on which a particular part was installed, the reason for any given installation, or the purchaser's intended use of the components sold.

Ford is providing the total number of replacement front differentials and front driveshafts by part number and month/year of sale, where available, in electronic form in Appendix I (filename: 2008-02-28 Appendix I-Part Sales) on the enclosed CD. Information pertaining to supplier point of contact information, is included in Appendix I (filename: 2008-02-28 Appendix I-Supplier Contact).

Ford notes that the BMW Group owned Land Rover when the subject vehicle was designed. It is Ford's understanding that the BMW X5 was designed concurrently with the subject vehicle and may have incorporated a design that is the same or similar to that used in the subject vehicle. Further explanation is provided in response to Request 16.

Request 13

Provide Land Rover's analyses of the following:

- a. Failure rates for the subject components at 1, 2, and 3 years in service; and
- b. Using Weibull analysis or other appropriate statistical modeling method, the projected failure rates for the subject components at 6 and 10 years in service.

Provide a detailed explanation of the methods and assumptions used to perform these analyses and provide copies of all statistical modeling input data and results.

Answer

Ford conducted a Weibull analysis to estimate failure probabilities based on information associated with warranty repairs performed according to the four year/50,000 mile new vehicle warranty. The results are provided in Appendix J (filename: 2008-02-28 Appendix J) on the enclosed CD.

Request 14

Using the listing of VOQs, Ford-supplied consumer complaints and warranty claims provided in the enclosed Microsoft Excel File Attachment titled "EA07-012 Park Complaints," provide Ford and Land Rover's assessment of the alleged defect in the subject vehicles regarding allegations that a) the vehicle continues to move with the gearshift indicator showing the vehicle is in the Park position and b) the vehicle cannot be shifted into Park.

Answer

The alleged defect has no effect on the ability of the transmission to shift into "park." Ford's assessment of the allegations that the subject vehicles can move with the transmission in "park" is that the vehicles can move in "park" after experiencing the alleged defect if the driver does not apply the parking brake. The park pawl in the transmission locks the transmission output shaft, however the vehicles can move in "park" because the alleged defect "unlocks" the center differential allowing the front and rear driveshafts to rotate freely. This could potentially result in vehicle movement even if the transmission is in "park," though such movement would provide immediate and clear indication to the driver that the vehicle was not, in fact, held stationary, and that the parking brake should be applied. It is Ford's opinion that customer comments stating that they "can't shift into park" are basic miscommunications. The shift lever can be moved to the "park" position and the transmission is in "park" but the vehicle does not stay "parked" until the parking brake is engaged, therefore the customer believes that they "can't shift into park."

Request 15

What is the engineering basis for the operation of the differential system used in the subject vehicles? Please include in your response an explanation of why the system inhibits power from being supplied to the rear wheels when the alleged defect occurs.

Answer

The subject vehicle is equipped with a Torsen® Type B torque sensing and torque biasing center differential that is an integral feature of the transfer box. The torque biasing capability is instantaneous and does not require wheel slip and speed differentiation to be activated; it relies on torque saturation to sense when one driveshaft intends to rotate faster than the other driveshaft. The Torsen® differential reacts by modulating torque before wheel slip occurs, improving road grip.

The Torsen® differential is used to proportion torque to both the front and rear driveshafts. Under normal driving conditions, the Torsen® differential nominally splits the torque from the transmission output shaft 50:50 between the front and rear driveshafts. For off-road and extreme on-road conditions, the torque biasing functionality permits the Torsen® differential to bias the torque range from approximately 35:65 to 65:35 between the front and rear driveshafts.

The Torsen® differential requires a minimum level of torque from both the front and rear driveshafts to create thrust loads to produce the necessary locking effect within the differential for the torque biasing feature to properly function. If the alleged defect occurs, there is no torque reaction from the front driveshaft. When there is no torque reaction from the front driveshaft, no thrust loads are created in the differential, therefore the differential cannot lock, eliminating the ability of the system to bias torque to the rear driveshaft.

Request 16

What was the engineering basis for selecting the specific configuration of the front differential and front driveshaft used in vehicles manufactured after the subject vehicles? In responding to this question, please explain why Land Rover decided to include a flexible coupling between the front differential and driveshaft in vehicles manufactured after MY 2005.

Answer

Land Rover was under the ownership of BMW AG during the design and development of the subject vehicle. The specific configuration for the front differential and front driveshaft without a flexible coupling, on the subject vehicles, was selected by BMW engineers to meet vehicle packaging constraints. The configuration is very similar to that incorporated on the BMW X5, although the spline joint (front differential to front driveshaft) was located on the transfer box end of the front driveshaft instead of at the front differential.

Under Ford's ownership, a new powertrain was introduced for the 2006 model year Land Rover Range Rover. The new powertrain increased the available package space, permitting incorporation of a flexible coupling between the front differential and front driveshaft in accordance with Ford guidelines that recommend a flexible coupling for such installations.

Request 17

Please provide Ford and Land Rover's assessment of the incident depicted in Issue Id # 3386982, which is contained in Attachment "2007-06-08 Appendix C-JLRCCED.xls" to Ford's PE IR response letter (alleging that a rear impact occurred after a front differential or driveshaft failure) and identify the basis for this view.

Answer

Ford presumes that the Issue ID number referenced in Request 17 is in error. The incident involving a rear impact allegation has Issue ID number 3385879. For purposes of responding to the request, Ford will respond to the allegation cited in Issue ID number 3385879. Ford notes that, in addition to the JLRCCED report there is also a CATS report and an AWS report that correspond to this incident. The CATS report is available in attachment "2007-06-08 Appendix B-CATS.mdb" of the response dated June 8, 2007. The CATS report provides additional details surrounding the customer's allegation. The AWS report is available in attachment "2007-06-08 Appendix B-AWS-CQIS.mdb" of the response dated June 8, 2007.

The customer alleges that he heard a loud noise and the vehicle lost all power but he was able to pull the vehicle off the highway onto an exit ramp. He then got out of the vehicle to call for roadside assistance when the vehicle was struck from behind. As noted in the CATS report,

"The curious thing is that he has not contacted the ins[urance], police, or anyone else. He states that the damage is not noticeable. He is not even asking for an inspection." The AWS report is brief but provides no information to indicate that the vehicle was damaged or involved in a rear crash. The customer comment states, "Towed In, Trans will not shift into gear."

Based on the customer's indication that there is no noticeable damage and that he has not made any attempts to recover associated costs with the alleged accident or have the vehicle inspected, Ford finds that the available information does not support the driver's claim that there was an "accident" associated with this incident.

Request 18

Furnish Ford'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 posed by the alleged defect;
- e. The percentage of failures occurring at speeds of 40 miles per hour or above;
- f. What symptoms, if any, the operator and the other persons both inside and outside the vehicle would notice indicating that the alleged defect was occurring or subject component was malfunctioning;
- g. The average time that elapses between when symptoms involving the subject components first become noticeable to the operator and when the alleged failure occurs and the basis for that assessment;
- h. The instrumentation and/or signals (such as lights or sounds), if any, given to the operator by the vehicle (e.g. through warning lights or other means) after the alleged defect has manifested itself;
- i. Ford and Land Rover's assessment of the effectiveness of Customer Satisfaction Campaigns H121 (Front Differential Alignment Check) and SB121 (Front Differential Inspection and Adjustment) in preventing reoccurrences of the alleged defect and the basis for that assessment;
- j. The reports included with this inquiry; and
- k. With respect to items "a" through "h" and Ford's analyses responding to Request #11, the risk to motor vehicle safety posed by the alleged defect.

Answer

As stated in Ford's response to PE07-019, investigation by Land Rover has found that the primary cause for the majority of the reported front differential and/or driveshaft failures is misalignment of the joint between the front differential and the front driveshaft. Misalignment typically causes uneven loading and wear of the splines eventually shearing the splines and resulting in the inability of the driveshaft to transfer torque to the front differential.

As discussed in our previous response, when the driveshaft joint splines shear there is a grinding noise and instrument cluster warning lights illuminate, providing a clear indication to the driver that the vehicle should be pulled to the roadside. The vehicle does not abruptly decelerate but rather coasts. The engine continues to run, providing the driver with fully functioning power steering, power assisted braking, and exterior vehicle lighting and signals, thus allowing the driver to safely maneuver to the shoulder and indicate to other drivers that the vehicle is stopped awaiting service. As stated in Ford's previous response, the fact that a driver is able to recognize that the vehicle has a concern and safely maneuver to the roadside continues to be supported by the more than 6,000 reports without any accidents or injuries.

While it may be theorized that loss of motive power is an unreasonable risk to motor vehicle safety, the data relating not only to this investigation but also numerous other similar investigations does not substantiate this theory.

As the agency is aware, Land Rover previously initiated a field service program to address the potential for driveshaft misalignment in the vehicles built prior to the in-plant assembly process change. The field service program sought to properly align the joint between the front differential and driveshaft consistent with the in-plant actions taken. There were 15,290 vehicles built prior to the in-plant actions that were the subject of that field service program and of those, 14,869 were serviced based on the driveshaft joint condition in accordance with that program, a 97% completion rate. Of the 14,869 vehicles that were serviced, approximately 3,100 returned for a subsequent repair. It was recognized that this program would address the alignment condition in most vehicles but that further efforts would be required to develop a more robust driveshaft installation as a long term repair for all vehicles.

Ford continues to believe that this condition does not present an unreasonable risk to safety, and there remains no evidence to support that initiating a safety recall action would prevent even one accident or injury. In consideration of the understandable customer dissatisfaction that results from failure of the front differential or driveshaft, an improved front differential and driveshaft joint has been developed and is being released for service in the near future.

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