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October 1, 2007

Ms. Kathleen C. DeMeter, Director  
Office of Defects Investigation  
National Highway Traffic Safety Administration  
1200 New Jersey Avenue, S.E.  
Washington, D.C. 20590

Dear Ms. DeMeter:

Subject: PE07-036:NVS213aan

The Ford Motor Company (Ford) response to the agency's August 15, 2007, letter concerning reports of alleged fuel pump failure resulting in engine stall in 2003 model year Land Rover Freelander vehicles is attached.

As the agency is aware, there are a variety of fuel pump-related malfunctions on vehicles of any manufacturer that may result in various engine performance symptoms, such as no-start, hard start, hesitation, stumble or even stall. These fuel pump-related symptoms can result from, among other things, poor fuel quality, fuel contamination, electric motor brush/commutator contact wear or erosion, or fuel sender related issues. Based on review of the information and data provided in this response and analysis of a representative field return fuel pump, Ford believes that the majority of the stalling-related reports and claims on the subject vehicles relate to gradual, progressive clogging of the internal fuel pump filter, resulting in some degree of reduced fuel pressure output from the fuel pump. Fuel filter clogging typically results in reduced engine power, stumble, or hesitation.

If the engine performance symptoms that occur as a result of progressive filter clogging or brush/commutator wear or erosion are ignored, and the engine ultimately stalls, the vehicle will not abruptly decelerate, but rather will coast. Electrical and lighting function and foundation braking and steering function are maintained, allowing ample opportunity for the driver to easily maneuver in a controlled manner to the roadside, and provide indication to other drivers via the turn signals and/or hazard flashers so they can take appropriate action.

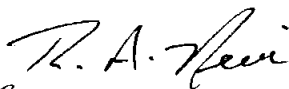
Land Rover has received only eight contacts from customers and one field report relating to this subject. The customer complaint rate relating to the subject of this investigation is extremely low and is, in fact, substantially lower than the complaint rate for vehicles with shorter time in service that were the subject of EA05-018, a stalling-related defect investigation recently closed by NHTSA. Unlike EA05-018, no accidents or injuries have been attributed to the subject of this investigation.




As is typical in stalling-related events, there is no evidence to suggest that vehicles that may stall as a result of a fuel pump-related issue present an unreasonable risk of accident or injury. A vehicle that stalls remains readily controllable and can be easily maneuvered and stopped. The stalls that are occurring as a result of the alleged defect are typically preceded by driveability issues, which serve as an overt indication to an operator that the vehicle needs service. The lack of claims of accident or injury supports the conclusion that the condition being investigated does not present an unreasonable risk of accident or injury. While it is possible to hypothesize or make conjectures about how any one of these events could have resulted in some sort of accident or injury, the evidence shows that these events do not, in fact, lead to accidents or injuries. As the agency is aware, vehicles may stall for any number of reasons and Ford believes that each individual cause of stalling must be considered separately for its potential effect on the safe operation of the vehicle. For the alleged defect that is the subject of this investigation, Ford is neither aware of any reports of customers alleging that they were unable to maintain control of their vehicle, nor any allegations of accidents or injuries claimed to have occurred as a result of the alleged defect. Therefore, there is no evidence of any kind that suggests that a fuel pump-related issue in the subject vehicles presents an unreasonable risk of accident or injury.

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 PE07-036

Ford's response to this Preliminary Evaluation 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 Preliminary Evaluation.

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 August 15, 2007, the date of your inquiry. Ford has searched within the following Land Rover offices for responsive documents: Automotive Safety & Compliance Office, Marketing Sales and Service, Office of the General Counsel, and Product Development.

Request 1

State 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 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

#### Answer

Records indicate that the approximate total number of 2003 Land Rover Freelander 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 Virgin Islands) is 9,985.

The requested data for each subject vehicle is provided electronically in Appendix A (filename: 2007-10-01 Appendix A) on the enclosed CD.

The response to subpart "a" includes two VIN columns labeled; "Global VIN" and "North America VIN". The Land Rover Global VIN contains information unique to Land Rover's business needs and is referenced in the provided records. The North America VIN is the FMVSS Part 565 compliant VIN that is found on each vehicle.

#### Request 2

State 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 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. Reports involving a fire, 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 the subject vehicle, property damage claims, consumer complaints, or field reports;
- e. Property damage claims;
- f. Third-party arbitration proceedings where Ford is or was a party to the arbitration; and
- g. Lawsuits, both pending and closed, in which Ford is or was a defendant or codefendant.

For subparts "a" through "e," 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 "g," 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 "f" and "g," 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 B (filename: 2007-10-01 Appendix B) on the enclosed CD.

The following categorizations were used in the review of reports located in each of these searches:

Category	Allegation
A	Alleged stall due to fuel pump failure
B	Alleged stall but ambiguous if due to fuel pump failure

We are providing electronic copies of reports categorized as "B" as "non-specific allegations" for your review because of the broad scope of the request. Based on our engineering judgment, the information in these reports is insufficient to support a determination that they pertain to the alleged defect.

Owner Reports: Records identified in a search of the Land Rover Customer Assistance Tracking System (CATS), as described in Appendix B, 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 C1 (filename: 2007-10-01 Appendix C1) 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.

Legal Contacts: Ford is providing, in Appendix B, a description of Legal Contacts and the activity that is responsible for this information, Consumer Affairs. With regard to this specific inquiry, one Consumer Affairs report is included in the count of owner reports above and is included in Appendix C1. When we were able to identify that responsive (i.e., not ambiguous) duplicate reports for an alleged incident were received, each of these duplicate reports was marked accordingly and the group counted as one report. An additional two ambiguous reports were not available in a database compatible format and are provided separately in Appendix C2 (folder: 2007-10-01 Appendix C2).

Field Reports: Records identified in a search of the Land Rover Electronic Product Quality Reports (EPQR), Infotrail based Electronic Product Reports (EPR's), Global Common Quality Information System (GCQIS) and Jaguar/Land Rover Critical Concern eTracker Database

(JLRCCED) records, as described in Appendix B, 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 C1 and Appendix C3 (filename: 2007-10-01 Appendix C3) on the enclosed CD. The categorization of each report is identified in the "Category" field.

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 addition, field reports that are duplicative of owner reports are provided in Appendices C1 and C3 but are not included in the field report count.

VOQ Data: This information request had an attachment that included three Vehicle Owner's Questionnaires (VOQs). Ford made inquiries of Land Rover's owner report databases for customer contacts, and its field report databases for field reports concerning the vehicles identified in these VOQs. Any reports located on a vehicle identified in the VOQs related to the alleged defect are included in the CATS portion of the electronic database provided in Appendix C1 and have been identified by a "Y" in the "VOQ Dup" field.

Ford notes that in the opening resume for this investigation the agency refers to an alleged incident (VOQ# 10191485) where "... a police cruiser had to push the vehicle out of an intersection to a safe location ...", perhaps implying that the vehicle may have been stopped in the middle of an intersection, possibly in the path of oncoming traffic. However, the summary statement for this VOQ states that the customer was exiting a freeway and in the customer's words "... with momentum I made it to the first light." Based on the VOQ summary, Ford believes that the driver was able to bring the vehicle to a controlled stop, was not in an accident, and did not cause an accident. Further it appears that the vehicle had not stopped in the middle of an intersection and was not in the path of oncoming traffic.

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. No reports alleging crash or injury resulting from the alleged defect were identified.

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.

Lawsuits and claims gathered in this manner were reviewed for relevance and categorized in accordance with the categories described above. Ford located no responsive lawsuits or claims as a result of this search. Ford located one consumer breach of warranty lawsuit that is ambiguous as to whether it meets the alleged defect criteria. We have included this lawsuit as a "non-specific allegation" for your review because of the broad scope of the request. Based on our engineering judgment, the information in this lawsuit is insufficient to support a determination that it pertains to the alleged defect.

We are providing the requested detailed information, where available, on the one ambiguous lawsuit in our Log of Lawsuits and Claims, in Appendix C3 in the Legal Claim/Lawsuits tab on the enclosed CD. To the extent available, electronic copies of complaints, first notices, or CATS reports relating to the matter shown on the log are provided on the enclosed CD in Appendix D

(filename: 2007-10-01 Appendix D). With regard to this lawsuit, 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 a fire is alleged;
- k. Whether property damage is alleged;
- l. Number of alleged injuries, if any; and
- m. 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 pre-formatted table which provides further details regarding this submission.

### Answer

Ford is providing owner and field reports in the electronic databases contained in Appendices C1 and C3 and in PDF format in Appendix C2 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 these appendices. 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 C3. For the CQIS and CATS reports in the databases contained in Appendices C1 and C3, the "Source" field indicates the database source and the type of report (e.g., CQIS-owner, CQIS-field, CATS-owner, CATS-field).

### 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 Appendices C1 and C3 and in PDF format in Appendix C2 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 in Appendix C3 are provided in Appendix D. To the extent information sought in Request 4 is available, it is provided in the referenced appendices.

Request 5

State 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 component 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. 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 B, are provided in the AWS portion of the electronic database contained in Appendix C3 on the enclosed CD. Because the agency has requested all warranty claims that relate to, or may relate to, the subject component, irrespective of whether or not they relate to, or may relate to, the alleged defect, Ford is providing the warranty claims uncategorized.

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 CATS reports identified 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 6, and a list of all AWS problem codes and problem code descriptions are included in Appendix B.

For 2003 model year Land Rover Freelander 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 are provided electronically in Appendix E (filename: 2007-10-01 Appendix E) on the enclosed CD. As of August 15, 2007, 1,679 extended warranties have been purchased on 2003 model year Land Rover Freelander vehicles.

Request 7

Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles that 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 response.

One technical information bulletin was identified that is relevant to this subject. A Copy of this bulletin is provided electronically in Appendix F (folder: 2007-10-01 Appendix F) on the enclosed CD. Land Rover has no plans to issue any communications within the next 120 days.

Request 8

Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, 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 G (folder: 2007-10-01 Appendix G).

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.

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 9

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 number(s) (service and engineering) of the original component;
- e. The part number(s) (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

No modifications or changes to the subject part which relate to, or may relate to, the alleged defect in the subject vehicles were identified.

Request 10

Produce one each of the following:

- a. Exemplar samples of each design version of the subject component;
- b. Field return samples of the subject component exhibiting the subject failure mode; and
- c. Any kits that have been released, or developed, by Ford for use in service repairs to the subject component/assembly which relate, or may relate, to the alleged defect in the subject vehicles.

Answer

One exemplar sample of the subject component, Fuel Pump Assembly part number WFX000210, is included with this submission. Also, one field return sample, a fuel pump assembly from VIN# SALLNABG23A265455, has been requested from the supplier and will be provided to the agency upon receipt. Records and claims associated with this field return sample are included in Appendices C1 and C3. Although the supplier's report of the analysis of this field return sample was completed after the cutoff date for this response, a copy is provided in Appendix G for the agency's review.

Ford has identified one kit that has been released, or developed, by Ford for use in service repairs to the subject component on the subject vehicles. One exemplar sample of the part included in this kit, Fuel Filter part number WFL000080, is included with this submission.

Request 11

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).

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. Land Rover 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.

The total number of replacement fuel pump assemblies by month and year of sale from January 1, 2002, through August 15, 2007, is provided electronically in Appendix H (filename: 2007-10-01 Appendix H) on the enclosed CD. Supplier name and point of contact information is also included in Appendix H. The identical fuel pump assembly, part number WFX000210, is also used on certain 2002 Land Rover Freelander vehicles in addition to 2004 and 2005 model year Freelander vehicles.

Request 12

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 failure rates associated with each failure mechanism identified in 12.b at the following service intervals 12, 36 and 60 months in service – use actual data where available and provide Ford's statistical model of the data (e.g., Weibull analysis with slope, characteristic life and correlation coefficient parameters stated);
- e. The percentage of subject component failures attributed to each failure mechanism identified in 12.b that result in stall while driving;
- f. The risk of stall while driving at highway speeds (50 miles per hour or greater);
- g. The ability of the operator to restart a subject vehicle that has stalled due to the alleged defect;
- h. The risk to motor vehicle safety that it poses;
- i. 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
- j. The reports included with this inquiry.

Answer

The majority of the "reports" gathered in preparation of the response to this information request are simply warranty claims to address a variety of customer satisfaction concerns. Land Rover has received very few customer complaints related to this subject and, as with other similar stalling related investigations, those customer complaints that have been received predominantly relate to cost of repair. In addition, Ford is not aware of any allegations of accidents or injuries that have been claimed to be related to the alleged defect.

In this inquiry, the agency requested all warranty claims that relate to, or may relate to, the fuel pump assembly, irrespective of whether or not they relate to, or may relate to, engine stall. Our analysis has found that over 70% of the fuel pump assembly warranty claims provided in response to this request are not related to engine stall, but rather relate to a variety of non-stalling engine driveability symptoms, such as engine runs rough, hesitates, or lacks power, or to engine starting symptoms such as hard start or no start, and to erratic fuel gauge operation.

As the agency is aware, there are a variety of fuel pump-related malfunctions on vehicles of any manufacturer that may result in various engine performance symptoms such as no-start, hard start, hesitation, stumble or even stall. These fuel pump-related symptoms can result from, among other things, poor fuel quality, fuel contamination, electric motor brush/commutator contact wear or erosion, or fuel sender-related issues. Based on review of the information and data provided in this response and analysis of a representative field return fuel pump, Ford believes that the majority of the stalling-related reports and claims on the subject vehicles relate to gradual, progressive clogging of the internal fuel pump filter, resulting in some degree of reduced fuel pressure output from the fuel pump, with associated driveability symptoms. In addition, a large portion of the non-stalling related claims may be related to wear or erosion of the fuel pump electric motor brushes/commutator.

Under circumstances where fuel pump flow begins to become restricted due to a clogged filter, a gradual fuel pressure decrease will result in difficulty starting the engine, or in various driveability symptoms, such as stumble, hesitation, or reduced engine power. Should the fuel filter not be serviced, it may eventually become sufficiently clogged, over time, to cause the engine to not start, or the engine may hesitate or stumble and eventually stall after it has been started. Separately, should there be wear or erosion of the brushes/commutator due to poor fuel quality, the most likely outcome is that the engine will not start because the fuel pump electric motor will not operate. If the vehicle successfully starts, the pump will likely continue to operate during that ignition cycle even with wear or erosion of the brushes/commutator. Experience has shown that a worn or eroded brush/commutator condition most likely will not carry electrical power at vehicle start-up creating a no-start condition. Commutator wear or erosion can result from Ultra Low Sulfur fuel, which creates an environment where a chemical reaction between the copper commutator and free radical sulfur occurs. Fuel filter clogging (26%) and commutator erosion (20%) account for some 46% of the total fuel pumps analyzed by the part supplier.

If the engine performance symptoms that occur as a result of progressive filter clogging or brush/commutator wear or erosion are ignored, and the engine ultimately stalls, the vehicle will not abruptly decelerate, but rather will coast. Electrical and lighting function, and foundation braking and steering function are maintained, allowing ample opportunity for the driver to easily maneuver in a controlled manner to the roadside, and provide indication to other drivers via the turn signals and/or hazard flashers so they can take appropriate action.

As is typical of stalling-related complaints, none of the reports provided in this response express any type of safety concern relating to this subject. Rather, owners are primarily expressing their dissatisfaction related to repair expense, and are requesting financial assistance with repair related costs. Other owners express concern for their inconvenience or express lost confidence in the overall quality of their vehicle, and some are requests for buyback of their vehicle because of a wide variety of repairs and the number of days that their vehicle was in for service.

To address part availability and repair expense, Land Rover issued a Technical Information Bulletin in February 2003, a copy of which is provided in Appendix F, advising technicians of the availability of a serviceable fuel pump filter. Previously, the internal filter on the fuel pump was not serviceable as a separate item. As a result, the entire fuel pump assembly would typically have to be replaced in order to remedy a partially clogged fuel filter condition. As explained in the Technical Information Bulletin, replacement of the entire fuel pump assembly to simply remedy a clogged filter resulted in limited spare parts availability of the fuel pump assemblies in addition to being a significantly more expensive repair.

Consistent with the above analysis, Ford believes that the primary source of dissatisfaction of the owners that submitted the three Vehicle Owner's Questionnaires to the agency is most likely financial. Ford was unable to locate warranty claims that would indicate that any of these three vehicles had fuel pumps repaired or replaced under warranty during the associated time periods, which suggests that all three customers were required to pay for their fuel pump repairs. Particularly, with respect to VOQ #10191485, according to available records, the alleged stalling event occurred in June 2006. The customer contacted Land Rover's Customer Assistance Center (CAC) in August 2006, requesting financial compensation for fuel pump repairs that had been performed at an independent repair facility. This request for financial compensation was denied by the CAC in September 2006. A VOQ was eventually submitted to the agency the following May. That VOQ suggests that the driver was able to bring the vehicle to a controlled stop, was not in an accident and did not cause an accident. Further it appears that the vehicle had not been stopped in the middle of an intersection and was not in the path of oncoming traffic.

Land Rover has only received eight contacts from customers and one field report relating to this subject. The customer complaint rate relating to the subject of this investigation is extremely low and is, in fact, substantially lower than the complaint rate for vehicles with shorter time in service that were the subject of EA05-018, a stalling related defect investigation recently closed by NHTSA. Unlike EA05-018, no accidents or injuries have been attributed to the subject of this investigation.

As is typical in stalling related events, there is no evidence to suggest that vehicles that may stall as a result of a fuel pump related issue present an unreasonable risk of accident or injury. A vehicle that stalls remains readily controllable and can be safely maneuvered and stopped. In addition, the stalls that are occurring as a result of the alleged defect are typically preceded by driveability issues, which serve as an overt indication that the vehicle needs service. The lack of claims of accident or injury supports the conclusion that the condition being investigated does not present an unreasonable risk of accident or injury. While it is possible to hypothesize or make conjectures about how any one of these events could have resulted in some sort of accident or injury, the evidence shows that these events do not, in fact, lead to accidents or injuries. As the agency is aware, vehicles may stall for any number of reasons and Ford believes that each individual cause of stalling must be considered separately for its potential effect on the safe operation of the vehicle. For the alleged defect that is the subject of this investigation, Ford is neither aware of any reports of customers alleging that they were unable to maintain control of their vehicle, nor any allegations of accidents or injuries claimed to have occurred as a result of the alleged defect. Therefore, there is no evidence of any kind that suggests a fuel pump-related issue in the subject vehicles presents an unreasonable risk of accident or injury.



