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November 7, 2011

Mr. Frank S. Borris, Director
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Avenue SE, Room W45-302
Washington, DC 20590

Dear Mr. Borris:

Subject: PE11-033:NVS-212lh

The Ford Motor Company (Ford) response to the agency's September 27, 2011, letter concerning reports of alleged service jack failure in 2004 through 2005 Ford Freestar, and Mercury Monterey vehicles is attached.

Based on all of the available information received from the field, and testing conducted in support of this response, the reports of alleged jack failure are believed to be related to using the jack improperly, resulting in a vehicle roll-off condition. The testing described in the attached response demonstrates that a roll-off condition can result if customers do not follow instructions provided with the vehicle and on the jack or if the vehicle service jack is used for purposes other than changing a tire in an emergency situation. Ford has found no evidence suggesting there is any defect in the design or construction of the jack. In addition, despite customer misuse and disregard of the many warnings provided with the service jack, the rate remains low at 0.66 R/1000 compared to another investigation closed by the agency without action. Based on the testing performed and the review of field reports, there is no evidence demonstrating a defect in the service jack.

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

Sincerely,

Steven M. Kenner

Attachment

ATTACHMENT
November 7, 2011

FORD MOTOR COMPANY (FORD) RESPONSE TO PE11-033

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 a 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 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. 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.

In an October 4, 2011, telephone conversation, the agency indicated to Ford personnel that the subject vehicles should include any vehicles using the same jack as that used in the 2004 and 2005 model year Ford Freestar and Mercury Monterey vehicles identified as subject vehicles in the information request. Accordingly, 2006 and 2007 model year Ford Freestar and Mercury Monterey vehicles and certain 2003 model year Ford Windstar vehicles produced shortly after Job #1 are included as "subject vehicles." Ford notified the agency via telephone on October 14, 2011, that Ford would include information pertaining to these additional vehicles in this response.

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 September 27, 2011, the date of your inquiry. Ford has searched within the following offices for responsive documents: Sustainability, Environment and Safety Engineering, Ford Customer Service Division, Purchasing, Quality, Research, Global Core Engineering, Office of the General Counsel, Vehicle Operations, and North American 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 2007, or a compatible format, entitled "PRODUCTION DATA."

Answer

Ford records indicate that the approximate total number of Ford Windstar, Freestar and Mercury Monterey vehicles sold in the United States, (the 50 states and the District of Columbia) protectorates, and territories (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and Virgin Islands) was 428,498.

The number of subject vehicles sold in the United States by model and model year is shown below:

Model	2003 MY	2004 MY	2005 MY	2006 MY	2007 MY
Windstar	147,954	0	0	0	0
Freestar	0	105,251	72,661	51,133	18,591
Monterey	0	20,640	6,700	4,015	1,553

The requested data for each subject vehicle is provided in Appendix A.

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;
b. Field reports, including dealer field reports;
c. Reports involving an 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 component;
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 "c" through "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 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 in Appendix B. Any reports received relating to the prior Windstar service jack design that was installed in a 2003 model year Windstar because of inventory balance out were not included in this response.

Ford interprets the phrase "while it is in use" in the alleged defect to mean while the vehicle is raised. Accordingly, Ford is not providing reports of a binding, rusted, seized, or otherwise unusable service jack where it is unable to function as intended to raise the vehicle. The following categorizations were used in the review of reports located in each of these searches:

Category	Allegation
A	Jack buckled/bent/collapsed/failed/damaged while in use
B	Jack bent/broken/damaged - ambiguous if while in use

We are providing electronic copies of reports categorized as "B" 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 Master Owner Relations Systems (MORS) database, as described in Appendix B, were reviewed for relevance and sorted 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 MORS III portion of the database contained in Appendix C. 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 B, a description of Legal Contacts and the activity that is responsible for this information. To the extent that responsive (i.e., not ambiguous) owner reports indicate that they are Legal Contacts, Ford has gathered the related files from the Office of General Counsel (OGC). Non-privileged documents for files that were located that are related to the responsive owner reports are provided in Appendix D. Ford notes that it was unable to locate three files.

Field Reports: Records identified in a search of the Common Quality Indicator System (CQIS) database, as described in Appendix B, were reviewed for relevance and sorted 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 CQIS portion of the database contained in Appendix C. 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 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.

VOQ Data: This information request had an attachment that included five Vehicle Owner Questionnaires (VOQs), three of which were duplicative of reports received by Ford. Ford made inquiries of its MORS database for customer contacts, its CQIS database for field reports, and its lawsuit and claim information regarding the vehicles identified on the VOQs. Any reports located on a vehicle identified in the VOQs related to the alleged defect are included in the database provided in Appendix C.

Claims, Lawsuits, and Arbitrations: For purposes of identifying incidents that may relate to the alleged defect in a subject vehicle, 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 sorted in accordance with the categories described above.

We are providing the requested detailed information, where available, on the responsive lawsuits and claims in our Log of Lawsuits and Claims, provided in Appendix C in the Legal Claim/Lawsuits tab. The number of relevant lawsuits and claims identified is also provided in this log. To the extent available, copies of complaints, first notices, or MORS reports relating to matters shown on the log are provided in Appendix E. With regard to these lawsuits and claims, Ford has not undertaken to contact outside law firms to obtain additional documentation.

Injury/Fatality Incident Claims: For purposes of identifying allegations of fatalities or injuries that may have resulted from the alleged defect, Ford has reviewed responsive owner and field reports, and lawsuits and claims. Copies of reports corresponding to these alleged incidents are provided in the MORS, CQIS, and Analytical Warranty System (AWS) portions of the database provided in Appendix C, or within the appropriate lawsuit or claim contained in Appendix E.

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 2007, or a compatible format, entitled "REQUEST NUMBER TWO DATA."

Answer

Ford is providing owner and field reports in the database contained in Appendix C 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 provided in Appendix C in the Legal Claim/Lawsuits tab.

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 database contained in Appendix C in response to Request 2. Copies of complaints, first notices, or MORS reports relating to matters shown on the Log of Lawsuits and Claims provided in Appendix C in the Legal Claim/Lawsuits tab are provided in Appendix E. 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.

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 or replacement 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. Whether the claim occurred subsequent to a recall repair;
k. Concern stated by customer; and
l. Comment, if any, by dealer/technician relating to claim and/or repair or replacement.

Provide this information in Microsoft Access 2007, or a compatible format, entitled "WARRANTY DATA."

Answer

Records identified in a search of the AWS database, as described in Appendix B, were reviewed for relevance and sorted in accordance with the categories described in the response to Request 2. 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 database contained in Appendix C. 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 C but are not included in the report count above.

Requests for "goodwill, field, or zone adjustments" received by Ford to date that relate to the alleged defect that were not honored, if any, would be included in the MORS 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 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 B.

For 2003 through 2007 model year Ford Windstar, Freestar and Mercury Monterey vehicles, the New Vehicle Limited Warranty, Bumper-to-Bumper Coverage begins at the warranty start date and lasts for three years or 36,000 miles, whichever occurs first. Optional Extended Service Plans (ESPs) are available to cover various vehicle systems, time in service, and mileage increments. Ford notes that none of the ESPs available on the subject vehicles offered extended coverage for the service jack.

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 service jack failures, Ford has reviewed the following FCSD databases and files: The On-Line Automotive Service Information System (OASIS) containing Technical Service Bulletins (TSBs) and Special Service Messages (SSMs); Internal Service Messages (ISMs) contained in CQIS; and Field Review Committee (FRC) files. We assume this request does not seek information related to electronic communications between Ford and its dealers regarding the order, delivery, or payment for replacement parts, so we have not included these kinds of information in our answer.

A description of Ford's OASIS messages, ISMs, and the Field Review Committee files and the search criteria used are provided in Appendix B.

OASIS Messages: Ford has not identified any SSMs or TSBs that may relate to the agency's request.

Internal Service Messages: Ford has not identified any ISMs that may relate to the agency's request.

Field Review Committee: Ford has not identified any field service action communications that may relate to the agency's request.

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 Ford documentation in 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.

In the interest of ensuring a timely and meaningful submission, Ford is not producing materials or items containing little or no 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.

Included in the documents provided in Appendix F is a survey that was conducted to assess the effectiveness of jacking location markers on Ford vehicles in July of 2004. Coincidentally, this survey was conducted using a Ford Freestar vehicle. Ford notes that the jacking location along the pinch weld flange of the rocker is important in preventing possible damage to the vehicle body during jacking but does not affect service jack performance when otherwise properly used.

Request 9

Describe all modifications or changes made by, or on behalf of, Ford in the design, material composition, manufacture, quality control, supply, warnings or instructions for use of the subject component(s) that may impinge on or affect the subject components, 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.
i. The supplier of each modified component;
j. The models and model years of vehicles affected by the modification.

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 in Appendix G.

Request 10

Produce or provide one of each of the following:

a. One unused sample of each version of every subject component/service jack supplied with the subject vehicles or supplied to Ford dealers as replacement jacks for the subject vehicles;
b. Engineering drawings, including material specifications, of all service jacks used on the subject vehicles.

Answer

Ford notes that there has been one version of the subject component. Ford has shipped one unused sample of the subject service jack to Mr. Lawrence Hershman's attention.

Ford is providing the requested information with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR, Part 512. The documents related specifically to this request are located within Confidential Appendix H.

Request 11

State the number of each of the following 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 sale (including the cut-off date for sales, if applicable).

a. Subject jacks; and
b. Any kits that have been released, or developed, by Ford for use in service repairs or replacements to the subject jacks.

For each jack design, 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 jack, whether installed in production or in service, and state the applicable dates of production or service usage.

Answer

As the agency is aware, Ford service parts are sold in the U.S. to authorized Ford and Lincoln dealers. Ford has no means 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 Ford service replacement jacks by part number (both service and engineering) by year and month/year (last three years only) of sale, where available, in Appendix I. Information pertaining to production and service usage for each part number, and supplier point of contact information, is included in Appendix I.

Request 12

Furnish Ford's assessment of the alleged defect in the subject vehicles, including:

a. The causal or contributory factor(s);
b. The failure mechanism(s);
c. The failure mode(s);
d. The risk to motor vehicle safety that it poses;
e. What warnings, if any, the operator and other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning; and
f. The reports included with this inquiry.

Answer

Nature of Reports

Based on a review of the information and data gathered in the preparation of this response and prior analysis of reports alleging jack "failures" in the subject vehicles, Ford has not identified a defect in the design or construction of the jacks used in the subject vehicles. Rather, we believe that misuse of the jack is the most likely cause for these reports. Such misuse relates to use of the jack in a manner in which it is not intended, such as raising an improperly secured vehicle during an emergency tire repair, performing routine vehicle maintenance, or performing repairs other than an emergency tire repair such as brake service.

It is vitally important that the proper usage procedure be followed in order for the service jack to function as intended on any vehicle. Ford emphasizes this importance by providing vehicle owners multiple instructions relating to the proper procedure when using the service jack, and multiple warnings to prevent misuse that could result in serious injury or death. For the 2003 model year Ford Windstar, and 2004 through 2007 model year Ford Freestar and Mercury

Monterey, these instructions and warnings are located in the vehicle Owner's Guide, on a large placard stored with the jack in the vehicle, and on the jack itself. Because of the injury risk associated with jack misuse, Ford's explicit tire changing instructions in the Roadside Emergencies section of the Owner's Guide and on the service jack placard include the following:

- Park on a level surface
- Set the parking brake
- Place the gearshift in Park
- Block the diagonally opposite wheel
- Loosen the wheel lug nuts before the vehicle is raised

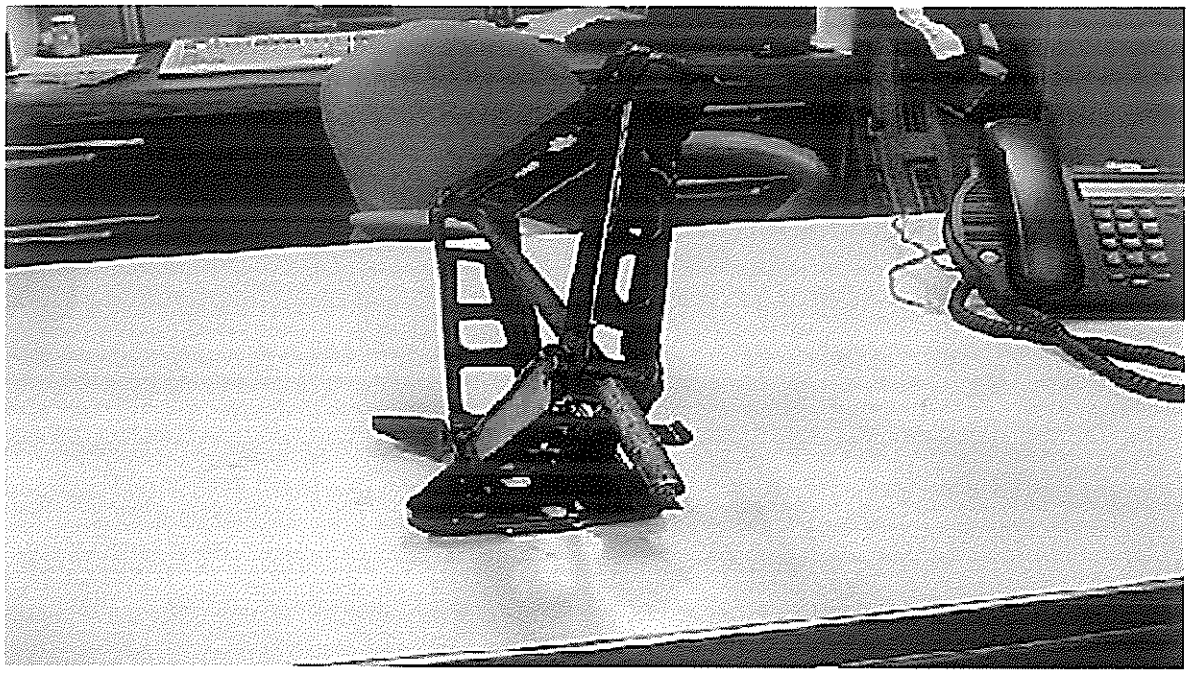
The instructions also state that the service jack provided with these vehicles is only meant for emergency use and only for changing the tire. In addition, Ford warns "To lessen the risk of personal injury, do not put any part of your body under the vehicle..." and that "Failure to follow these instructions may result in serious injury or death" while using the service jack. Copies and/or photos of these documents from a 2004 model year Ford Freestar vehicle are provided in Appendix J.

Despite these explicit warnings, review of the reports provided in this response finds that customers have ignored these instructions and warnings. For example, dealer comments contained in MORS report 1506831237 state that the dealer has "...seen similar jack damage when a driver attempts to change a tire without setting the emergency [parking] brake. The vehicle will move if the emer. (sic) brake is not set."

In addition, despite the warnings of potential injury, some of the reports also indicate that some customers are using the jack outside of its intended purpose and putting themselves at risk. For example, the customers associated with MORS reports 1396231191 and 403802747 both stated that they were servicing the brakes when the incident occurred. The customer associated with MORS report 378263075 states that the jack collapsed and the vehicle "...came down on top of cust while he was under the veh..." Information contained in the lawsuits and claims indicates similar circumstances associated with those incidents.

Analysis of Reports

As with nearly all vehicle components or systems, Ford routinely monitors its numerous data systems for reports suggesting that certain components may not be performing as intended. As part of this process, Ford has previously reviewed reports of jack failure on these vehicles to ascertain the nature of the reports. For each case in which Ford was able to obtain either the jack itself, or photos of the jack after the "failure," the damage is consistently similar to that shown below:



Ford's experience is that this type of damage is caused by vehicle movement when the jack is in use. Such vehicle movement results from improper jack use or improperly securing the vehicle as previously mentioned. We understand that photos and/or actual "failed" jacks obtained by the agency also exhibit very similar types of damage.

To evaluate conditions that could cause the type of jack damage seen in the parts from the field, Ford conducted a variety of tests using proper procedures as well as simulating misuse of the jack. These tests were conducted as part of Ford's analysis to support this response. A total of four tests, A, B, C, and D were conducted using a combination of new and used jacks. Detailed testing procedures for each of these tests are provided below. These tests clearly demonstrate that neither a vehicle roll off condition nor any other service jack failure could be duplicated when using the proper jacking procedure. Ford notes that while performing each of these tests that were specifically conducted to evaluate the propensity for, and consequences of, vehicle movement, the diagonally opposite wheel was not blocked. Ford's jacking procedure instructions to customers include blocking the diagonally opposite wheel as an added measure to further minimize the potential for vehicle movement. Following is a summary of the results of the tests:

Test A

The following test procedure was performed on a level surface using a 2004 model year Ford Freestar using the original service jack:

1. The vehicle was shifted into Park.
2. The parking brake was applied.
3. The front passenger side wheel lug nuts were loosened with the emergency service wrench provided.
4. The service jack was placed in the proper jacking location for the front passenger tire.
5. The vehicle was jacked up until the tire was approximately one-half inch off the ground.
6. The loosened lug nuts and tire were removed from the vehicle.
7. The spare tire was installed and lug nuts hand tightened.

8. The vehicle was lowered.
9. The lug nuts were fully tightened using the emergency service wrench provided.

Photographs of the used jack following completion of Test A are provided in appendix K. The service jack functioned as intended when using the above test procedure.

Test B – Neutral, No Parking Brake
The following test procedure was performed on a level surface using a 2004 model year Ford Freestar using a new service jack:

1. The vehicle was shifted into Neutral.
2. The parking brake was not applied.
3. The spare tire installed from Test A was deflated to simulate a flat tire condition.
4. The service jack was placed in the proper jacking location for the front passenger tire.
5. The vehicle was jacked up until the tire was approximately one-half inch off the ground.
6. A load was applied to the rear of the vehicle pushing it forward until the vehicle rolled off of the service jack.

Photographs of the service jack following completion of Test B are provided in appendix K. The force applied in step six, above, was considerably greater than the 55 pounds that the readily available instrumentation was able to measure. In this particular test, a steady pushing motion was not sufficient to result in a vehicle roll off; it was necessary to rock the vehicle prior to applying a load sufficient to move the vehicle off of the jack.

Test C – Park, No Parking Brake
The following test procedure was performed on a level surface using a 2004 model year Ford Freestar using a new service jack:

1. The vehicle was shifted into Park.
2. The parking brake was not applied.
3. The same deflated spare tire installed from Test A was again used to simulate a flat tire condition.
4. The service jack was placed in the proper jacking location for the front passenger tire.
5. The vehicle was jacked up until the tire was approximately one-half inch off the ground.
6. A load was applied to the rear of the vehicle, pushing it forward until the vehicle rolled off the jack.

Photographs of the service jack following completion of Test C are provided in appendix K. Once again, a steady pushing motion was not sufficient to result in a vehicle roll off, and it was necessary to rock the vehicle prior to applying a similar load as that in Test B before the vehicle once again rolled off the jack.

Test D
The following test procedure was performed on a level surface using a 2004 model year Ford Freestar using a used service jack obtained from a salvage yard:

1. The vehicle was shifted into Park.
2. The parking brake was applied.
3. The same deflated spare tire installed from Test A was again used to simulate a flat tire condition.

4. The service jack was placed in the proper jacking location for the front passenger tire.
5. The vehicle was jacked up until the tire was approximately two inches off the ground.
6. Load was applied to the front, rear, and side of the vehicle.
7. The parking brake was released.
8. Load was applied to the front of the vehicle pushing it rearward until the vehicle rolled off the jack.

Photographs of the service jack following completion of Test D are provided in appendix K. The vehicle was raised much higher than necessary to change a tire, thereby extending the service jack and possibly producing a more unstable condition. This condition might exist if a jack were misused to raise a vehicle in order to perform some type of maintenance or service other than replacing a tire. With the vehicle in Park and the parking brake applied, a considerable load was applied in both a steady and rocking motion from the front, rear, and side by two adult individuals. This was not sufficient to result in a vehicle roll off condition or any other jack failure. It was not until the parking brake was released in step 7, above, and a considerable load applied to the vehicle (similar to Test C) that the vehicle rolled off of the service jack.

The testing described above was conducted to verify the service jack function and performance under several scenarios.

- Test A demonstrated that the service jack functioned as intended to perform a tire change when using the original service jack provided with the 2004 model year Ford Freestar and properly following the jacking procedure (except that the diagonally opposite tire was not even blocked).
- The condition of the bent service jack from Test B, in which the transmission was in Neutral and the parking brake was not applied, demonstrates that if a vehicle roll off condition occurs while using the service jack, it results in the same damage to the jack as seen in the photographs provided from customers in the field.
- Similarly, the condition of the bent service jack from Test C again demonstrates that the same roll off condition and subsequent service jack damage can occur when the transmission is in Park, if the parking brake is not applied and considerable load is applied to the vehicle.
- Test D confirms the importance of setting the parking brake by demonstrating that neither a vehicle roll off condition nor any other service jack damage could be duplicated with the parking brake properly applied even with considerable force applied to the vehicle with the jack raised much higher than necessary to change a tire. It was only after the parking brake was released that a vehicle roll off and jack damage could be duplicated.

The test results described above clearly indicate the importance of following Ford's instructions for proper jack usage, including properly setting the parking brake.

Rate of Reports/Number of Reports

The report rate pertaining to the alleged defect in these vehicles is low (0.66 R/1000) relative to the agency's investigation into similar jack failure complaints on various 1990 through 1991 model year General Motors vehicles (PE91-107/EA91-049). The report rate associated with that investigation was approximately 1.06 R/1000 for a population of vehicles that had been in service for less than approximately 24 months. In contrast, the vehicles that are the subject of this investigation have been in service between four and nine years.

Summary

Based on all of the available information received from the field, and based on the testing described, the reports of jack "failure" are believed to be related to using the jack improperly, resulting in a vehicle roll off condition. The testing described above demonstrates that a roll off condition can result if customers do not follow instructions provided with the vehicle and on the jack or if the vehicle service jack is used for purposes other than changing a tire in an emergency situation. Ford has found no evidence or indication to suggest there is any defect in the design or construction of the jack. In addition, despite customer misuse and disregard of the many warnings provided with the service jack, the rate remains low at 0.66 R/1000 compared to another investigation closed by the agency without action. Based on the testing provided and the review of field reports, there is no evidence demonstrating a defect in the service jack.

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