Ford Motor Company

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

November 21, 2008

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

Dear Ms. DeMeter:

Subject: EA08-018:NVS-213kmb

The Ford Motor Company (Ford) response to the agency's September 29, 2008, letter concerning reports of alleged front coil spring fractures in 2002 and 2003 Taurus and Sable vehicles is attached.

Ford believes that the fracture of a front coil spring (even with a tire puncture and rapid air loss) does not represent an unreasonable risk to motor vehicle safety. If a coil spring fractures without puncturing a tire, as it does in many cases, it will not impede vehicle performance and may not even be detected by the vehicle operator. If tire contact with air loss does occur, both Ford and NHTSA FMVSS testing has consistently shown that, even if that air loss is rapid, passenger cars like the Taurus and Sable, with their lower centers of gravity, remain controllable.

In July, 2004, Ford announced programs 04M04 and 04S17 in response to a known condition of corrosion pitting in front coil springs. These actions extended the warranty on front coil springs for the 1999 through 2001 model year Taurus and Sable vehicles (04M04) and provided spring catchers for vehicles in the 21 corrosion states plus Kentucky (04S17). Ford agreed to conduct the action as a safety recall to avoid a protracted dispute with the agency despite the benign consequence of this condition to vehicle control, supported by a complete absence of allegations of accidents or injuries attributed to the condition (despite a significant vehicle population and number of associated reports of spring fracture). At the time of those campaigns, and as verified in Ford's response to the agency's inquiry PE04-044, field data repeatedly supported the conclusion that a front spring fracture in these vehicles does not pose an unreasonable risk to motor vehicle safety.

Ford recognizes that front coil spring fracture in 2002 and 2003 Taurus and Sable vehicles has resulted in significant customer dissatisfaction, particularly in light of Ford's previous action providing coverage for fractured front coil springs on 1999 through 2001 model year Taurus and Sable vehicles. Even if spring fracture does not damage a tire, the cost of repair can be high. Ford is deeply committed to the satisfaction of all Ford customers and regrets any inconvenience

this condition may cause. However, years of real world data clearly supports a conclusion that fracture of a front coil spring in the subject vehicles, even in the unlikely event that it may puncture a tire at higher speeds, is not expected to result in any loss of vehicle control. The likelihood of a related accident or injury is extremely low. Despite the fact that front coil spring fractures have been addressed via safety recalls by Ford and other manufacturers in the past, there is no evidence to establish or support that this condition presents any unreasonable risk to motor vehicle safety in these vehicles.

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

Sincerely,

James P. Vondale

Attachment

ATTACHMENT
November 21, 2008

FORD MOTOR COMPANY (FORD) RESPONSE TO EA08-018

Ford's response to this Engineering Analysis 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 Analysis.

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.

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 29, 2008, the date of your inquiry. Ford has searched within the following offices for responsive documents: Environmental and Safety Engineering, Ford Customer Service Division, Marketing and Sales Operations, Purchasing, Quality, Research, Global Core Engineering, Office of the General Counsel, Vehicle Operations, and North American Car 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 records indicate that the approximate total number of subject Taurus and Sable 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 1,581,179.

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

Model	2002 MY	2003 MY	2004 MY	2005 MY	2006 MY	2007 MY
Taurus	321,694	334,487	203,260	201,861	156,929	114,650
Sable	105,423	64,483	42,253	36,139	N/A	N/A

The requested data for each subject vehicle is provided electronically in Appendix A (folder name: 2008-11-21 Appendix A) on the enclosed CD. Because of the size of the database, the information is provided on two discreet Microsoft Access files titled "Taurus Sable Vol 0203.mdb" and "Taurus Sable Vol 0407.mdb."

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;
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 Ford Customer Service Division (FCSD) and claim and lawsuit information maintained by Ford's Office of the General Counsel (OGC).

Descriptions of the FCSD owner and field report systems and the criteria used to search each of these are provided electronically in Appendix B (filename: 2008-11-21 Appendix B.pdf).

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

Category	Allegation
A1	Allegation of front coil spring fracture with loss of air in tire
A2	Allegation of front coil spring fracture with no loss of air in tire
B	Allegation that is ambiguous whether related to front coil spring fracture

Because this categorization was based on a good faith reading of verbatims, some A1s may have been categorized as A2s and vice versa.

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 Master Owner Relations Systems (MORS) database, 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 MORS III portion of the electronic database contained in Appendix C (filename: 2008-11-21 Appendix C.mdb). 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, Litigation Prevention. 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 Litigation Prevention section. Non-privileged documents for

files that were located that are related to the responsive owner reports are provided electronically in Appendix D (folder name: 2008-11-21 Appendix D.pdf). Ford notes that it was unable to locate two files (VIN 1FAFP58S62G215391 and VIN 1FAFP56S72G134466). The customer contacts are cataloged in the MORS portion of the electronic database contained in Appendix C.

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 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 CQIS portion of the electronic 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. In addition, field reports that are duplicative of owner reports are provided in Appendix C but are not included in the field report count.

VOQ Data: This information request had an attachment that included 363 non-duplicative Vehicle Owner's Questionnaires (VOQs). Ford made inquiries of its MORS database for customer contacts, and its CQIS database for field reports regarding the vehicles identified on the VOQs. Ford notes that in some instances where the VOQ does not contain the VIN or the owner's last name and zip code, it is not possible to query the databases for owner and field reports specifically corresponding to the VOQs. Any reports located on a vehicle identified in the VOQs related to the alleged defect are included in the MORS and CQIS portions of the electronic database provided in Appendix C and have been identified by a "Y" in the "VOQ Dup" field.

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, VOQs, and lawsuits and claims. A chart identifying potentially relevant allegations is being provided electronically as Appendix G (filename: 2008-11-21 Appendix G.pdf). Copies of all available reports related to these alleged incidents are provided in the MORS, CQIS, and Analytical Warranty System (AWS) portions of the electronic database provided in Appendix C. Ford's comments relating to these allegations are provided in response to Request 14.

Ford has identified six allegations of minor "accidents" (none involving collisions with other vehicles) associated with the alleged defect, including one minor allegation of an injury. Four of the reports have been identified through the Ford system and are included in Appendix C. Two reports were received, from the agency, as VOQs only. Since no contact has been made with Ford with respect to these two allegations, we have not included them in Appendix C.

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.

We are providing the requested detailed information, where available, on the one responsive claim in our Log of Lawsuits and Claims in Appendix C, in the Legal Claim/Lawsuits tab. The number of relevant claims identified (one) is also provided in this log. To the extent available, electronic copies of complaints, first notices, or MORS reports relating to the matter shown on the log is provided electronically as Appendix E (filename: 2008-11-21 Appendix E.pdf). Ford has not undertaken to contact outside law firms to obtain additional documentation related to this claim.

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 coil spring/ tire contact is alleged;
j. Whether a tire puncture is alleged;
k. Whether a crash is alleged;
l. Whether property damage is alleged;
m. Number of alleged injuries, if any; and
n. 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 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 the one claim, it is provided in the Legal Claims/Lawsuits tab in Appendix C.

Request 4

Produce electronic 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 database contained in Appendix C in response to Request 2. A copy of the complaint, first notice, or MORS report relating to the

matter shown on the Log of Lawsuits and Claims (Appendix C) is provided in Appendix D. 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 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;
k. Comment, if any, by dealer/technician relating to claim and/or repair.
l. Whether coil spring/ tire contact is alleged; and
m. Whether a tire puncture is alleged.

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, were reviewed for relevance and categorized 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 electronic database contained in Appendix C (filename: 2008-11-21 Appendix C.mdb). 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 also provided in Appendix C but are not included in the AWS count.

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 2002 through 2007 model year Taurus/Sable 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) were available to cover various vehicle systems, time in service and mileage increments. The details of the various plans are provided electronically in Appendix F (filenames: 2008-11-21 Appendix F (Taurus).pdf and 2008-11-21 Appendix F (Sable).pdf). As of the date of the information request, 148,923 new vehicle and 7,196 used ESP policies had been purchased on 2002 through 2007 model year Taurus and Sable 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 fractured front coil springs in Taurus and Sable vehicles, 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 identified no SSMs and no TSBs that may relate to the alleged defect in the subject vehicles.

Internal Service Messages: Ford has identified no ISMs that may relate to the alleged defect in the subject vehicles.

Field Review Committee: Ford has identified no field service action communications that may relate to the alleged defect in the subject vehicles. Ford is not providing documents relating to Ford's field service action relating to the earlier model year Taurus and Sable vehicles, as the agency is already aware of such actions

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 J (folder name: 2008-11-21 Appendix J).

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 K (folder name: 2008-11-21 Confidential Appendix K) with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR, Part 512.

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 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 L (filename: 2008-11-21 Appendix L.pdf). There are no planned modifications or changes to the subject component within the next 120 days.

Request 10

Produce the following parts and kits:

a. An exemplar sample of each design version of the subject component;
b. Three field return samples of subject components that fractured and punctured a tire;
c. Three field return samples of subject components that fractured but did not puncture a tire;

d. 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; and
e. Any kits that have been released, or developed, by Ford for use in service repairs to the subject component/assembly which relate to the subject recall.

Answer

An exemplar sample of a subject front coil spring that was produced prior to addition of the dual coat corrosion protection (vehicles manufactured prior to 9/30/2003), engineering part number YF1C 5310 CA, and a sample produced after the addition of the dual coat corrosion protection (vehicles manufactured after 9/30/03), engineering part number 4F13 5310 CA, are being provided to the agency with this response. Because service springs without the dual coat protection are no longer available, the exemplar sample provided with this response was obtained from a 2003 Taurus that saw service in Maine and Massachusetts. The spring was replaced for an undefined noise issue and not for coil spring fracture. Ford records show this spring is original equipment on the vehicle with approximately 84,000 accumulated miles.

Ford has initiated a program to collect field return samples of the subject components through the Ford Warranty Parts Analysis Center. However, because front coil spring fracture on the subject vehicles occurs primarily in the winter months, we have yet to receive representative samples of fractured springs as requested by the agency. Upon receipt of such samples by Ford, they will be provided to the agency.

Ford released two spring catcher kits in support of field service action 04S17, one for 1999 model year Taurus and Sable vehicles (except for SHO vehicles), service part number 5F1Z 5304 B, and one for 2000 through 2001 Taurus and Sable vehicles (plus all SHO vehicles), service part number 5F1Z 5304 AA. A sample of each kit is provided with this response.

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 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 for use in service repairs to the subject component/assembly.

For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number). Also, identify by make, model and model year, any other vehicles of which 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, Ford service parts are sold in the U.S. to authorized Ford and Lincoln-Mercury 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 Ford service replacement front coil springs by part number (both service and engineering) and month and year of sale, where available, in electronic form in Appendix H1 (filename: 2008-11-21 Appendix H1.pdf). Information pertaining to production and service usage for each part number, and supplier point of contact information, is included in Appendix H2 (filenames: 2008-11-21 Appendix H2 (Usage).pdf and 2008-11-21 Appendix H2 (Contact).pdf).

Request 12

Provide the following information concerning the alleged defect in the subject vehicles and in vehicles covered by the subject recall:

a. Identify and describe all design differences between the subject vehicles and recalled vehicles that could affect: (1) the likelihood of front coil spring fracture; (2) the location of coil spring fracture; or (3) the potential for tire damage resulting from coil spring fracture;
b. Provide Ford's assessment of the predominant location(s) of front coil spring fracture, referenced in degrees revolution from the end of the bottom coil, in the subject vehicles and in the recalled vehicles;
c. State the conditions for which a fracture coil spring is most likely to contact and puncture a tire (e.g. speed, coil spring fracture location, steering angle) in the subject vehicles and in the recalled vehicles; and
d. Describe, and provide copies of all documents relating to, all owner surveys, crash database analyses and vehicle testing conducted by, or on behalf of, Ford to assess the safety consequences associated with the alleged defect in the subject vehicles.

Answer

The front coil springs used on the 2002 model year Taurus and Sable vehicles are substantially similar to the front coil springs in the 1999 through 2001 model year Taurus and Sable vehicles. A manufacturing modification and design change was incorporated during the 2003 and 2004 model years, respectively, and is described below.

The root cause of front coil spring fracture is corrosion fatigue caused by localized removal of corrosion protection, in the presence of road salt, that leads to corrosion pitting of the steel. Fatigue cracks may form in the corrosion pits and can propagate until the spring fractures under fatigue.

Ford's review of field returns found that localized removal of corrosion protection on coil springs in these vehicles is often caused by sand/grit trapped between the bottom coil and the end of the rubber elastomer on the bottom spring seat, acting as an abrasive agent. Corrosion protection may also be locally compromised by occasional spring coil contact at approximately one and a half coils from the bottom end of the spring. Stone pecking resulting from loose aggregate in roads may also lead to localized removal of corrosion protection.

In September, 2002, the coil spring supplier (Mubea) added, as part of the spring manufacturing control plan, a 2 mm minimum allowable clearance requirement between the adjacent spring

coil and the lower spring seat flange when the spring is compressed to full jounce to minimize the potential for the corrosion protection to be removed. This was a post Job #1 action for 2003 model year Taurus and Sable vehicles. In September, 2003, as a post Job #1 action for 2004 model year, dual coat corrosion protection was incorporated for the coil springs on all subject vehicles to further minimize the potential for the corrosion protection to be compromised.

Front coil spring fracture typically occurs at approximately 270 to 360 degrees from the end of the bottom coil due to corrosion, either from the trapped sand/grit between the number one coil and the end of the rubber elastomer, or corrosion initiated by removal of the corrosion protection from coil contact. Ford does not have data to indicate the frequency of one failure mode versus the other. Once fractured, the upper portion of the coil may remain captive in the strut tower and not intrude into the wheel envelope. The breakage may not even be immediately detected by the vehicle operator. The fractured spring might intrude into the wheel envelope in a manner that causes noise or an odor from contact with the tire and not result in any immediate loss of air. Alternately, the spring may drop into the wheel envelope, contacting and puncturing the tire.

Front coil spring fracture is most likely to occur when compression in the spring increases, such as during the low frequency, vertical loading events created by low speed parking lot and driveway type maneuvers, including backing up. Ford notes that many of the reports of coil spring breakage are during these low speed types of events. Coil spring fracture is less likely to occur at higher speeds when vertical forces are lower.

Whether a broken coil spring drops and how it aligns itself after a fracture is not predictable. Because the spring is identical whether installed on the left or right side of the vehicle, a fractured coil will tend to always wrap clockwise (from the driver's vantage point) around the strut, due to the spring geometry, regardless of which side fractures. If it happens to position itself into the wheel envelope and contacts a tire, the broken end of the coil may simply rub against the inner sidewall of the tire or may puncture it, depending on which spring breaks and the direction of vehicle wheel travel (forward or reverse).

Ford analysis of responsive reports, within the subject vehicle population, found that coil spring contact with a tire resulting in loss of air was alleged in approximately 46 percent of the reports to Ford. Although most reports are not specific enough to determine the circumstances of the coil spring fracture, a significant portion of the contacts with the Ford Customer Assistance Center that did allege a tire puncture, specifically noted that the fracture occurred during a low speed maneuver (forward or reverse) or was observed some time after the vehicle had been parked.

Testing, as further discussed below, has consistently shown that passenger cars, such as the Taurus and Sable, with their lower centers of gravity are stable in the event of a tire failure. This is consistent with the agency's statement in the closing resume to PE00-040 "*that some classes of vehicles are more sensitive to loss of stability with catastrophic tire failures...*", in reference to larger vehicles rather than passenger cars. The agency further noted in the closing resume for PE00-046, related to Goodyear tires, that failures of [subject] tires other than of large vans "*have only rarely had serious safety consequences.*"

Request 13

Provide the following information regarding the safety consequences of tire failures in the subject vehicles:

a. Describe, and provide copies of all documents relating to, all testing conducted by, or on behalf of, Ford to assess the effects of a front tire puncture on vehicle dynamics in the subject vehicles;
b. Describe, and provide copies of all documents relating to, all owner surveys, crash database analyses and vehicle testing conducted by, or on behalf of, Ford to assess the safety consequences associated with the alleged defect in the subject vehicles;
c. Describe, and provide copies of all documents relating to, all owner surveys, crash database analyses and vehicle testing conducted by, or on behalf of, Ford to assess the safety consequences associated with front tire failure for any reasons in the subject vehicles or in the general population of light-duty vehicles;
d. Provide Ford's assessment of all vehicle attributes that may influence the vehicle response to: (1) front tire failure; and (2) rear tire failure; and
e. Provide Ford's assessment of all driver response characteristics that may influence the vehicle response to: (1) front tire failure; and (2) rear tire failure; and
f. Provide copies of all documents related to tests, studies, crash analyses and crash database analyses conducted by, or for, Ford related to 13.d and 13.e.

Answer

The scope of this request is so broad that it would require Ford to make an exhaustive search for materials unrelated to the subject vehicles or the subject defect of this information request. The request seeks information relating to "*front tire failure for any reasons.... In the general population of light duty vehicles.*" This by definition includes reasons and vehicles unrelated in any way to this investigation. Similarly, this request seeks Ford's assessment relating not only to front tire failure for any reason, but also for rear tire failure. Ford has not undertaken to conduct the comprehensively exhaustive search that the literal terms of this request would necessarily entail, but we are providing references to tire air pressure loss materials that may be informative.

For example, the agency's closing resume to EA02-018, dated August 23, 2003, documents testing conducted jointly by Ford and ODI engineers to evaluate the effects of rapid air loss relating to the valve stem, while the vehicle is in motion, in the front tires of larger F-Super Duty vehicles. While Ford acknowledges that air loss from a valve stem ejection may be different from that resulting from a coil spring fracture, it may be a reference when considering driver reaction to air loss. This testing, conducted with the agency's participation, at Ford's Michigan Proving Grounds, under a variety of conditions and air loss rates, led to the agency's conclusion, "*...the effect of a valve stem ejection on these vehicles is easily controlled.*" Because this information is already in the custody of the agency, we are not providing it with this response.

We also refer to FMVSS 110 performance requirements and Ford's related Corporate Engineering Test Procedure 04.04-R-802-US (Passenger Car Tire Retention Test). A copy of the test procedure is provided electronically as Appendix M1 (filename: 2008-11-21 Confidential Appendix M1.pdf), with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR, Part 512. This procedure evaluates vehicle performance to FMVSS 110, specifically, "*In the event of rapid loss of pressure at 97 kph, the deflated tire must be retained until the vehicle can be stopped with controlled braking.*" While the Ford acceptance criteria for this test procedure do not directly include a vehicle controllability assessment, it is nevertheless, a key element of the test. Ford's evaluation of a 2000 model year Taurus to this procedure found the vehicle to easily meet the requirements,

with no loss of control. A copy of Ford's test report for this evaluation, which is carryover for 2002 through 2004 model year Taurus and Sable vehicles, is provided electronically as Appendix M2 (filename: 2008-11-21 Appendix M2.pdf).

NHTSA's own Safety Compliance Testing for FMVSS 110, on a 2002 Taurus subject vehicle, showed that when a tire (front or rear) was blown by an explosive charge (creating a 2.54 cm diameter opening), and the vehicle brought to a stop within approximately 165 to 215 meters, the deviation from a straight line was reported to be zero. A copy of the pertinent portions of the referenced test is provided electronically as Appendix N (filename: 2008-11-21 Appendix N.pdf) on the enclosed CD. As the agency is aware, any FMVSS test requirement by law demonstrates meeting the need of motor vehicle safety.

Request 14

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 actual or projected rate of front suspension coil spring fracture in the subject vehicles at intervals of 3, 6, and 10 years in service;
e. The actual projected rate of front suspension coil spring fracture in the subject vehicles resulting in tire puncture;
f. The frequency distribution of vehicle speeds at time t_1, defined as the moment a subject vehicle experienced a tire puncture due to the alleged defect;
g. 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;
h. The frequency and severity of the alleged defect in the subject vehicles as compared to the subject recall vehicles at the time Ford first notified the agency of the subject recall;
i. The risk to motor vehicle safety that it poses; and
j. The reports included with this inquiry.

Answer

Ford believes that the fracture of a front coil spring (even with a tire puncture and rapid air loss) does not represent an unreasonable risk to motor vehicle safety. If a coil spring fractures without puncturing a tire, as it does in many cases, it will not impede vehicle performance and may not even be detected by the vehicle operator. If tire contact with air loss does occur, both Ford and NHTSA FMVSS testing has consistently shown that, even if that air loss is rapid, passenger cars like the Taurus and Sable, with their lower centers of gravity, remain controllable. NHTSA's own Safety Compliance Testing for FMVSS 110, on a 2002 Taurus subject vehicle, shows that the vehicle poses no unreasonable risk of accident or injuries and meets the need of motor vehicle safety when a rapid air loss due to a tire puncture occurs.

Ford acknowledges that it has received a significant number of reports of front coil spring fracture, some with allegations of tire interaction. This is not unexpected, given the similarity of springs on these subject vehicles to those on recalled vehicles for which Ford has provided free coverage. Customers whose vehicles have had a coil spring fracture for which financial

coverage is not available are understandably agitated at the prospect of paying hundreds of dollars in replacement expenses. Nevertheless, analysis of these reports supports the various tire related vehicle evaluations that find such vehicles remain easily controllable under these conditions. In fact, the number of reports received by Ford that even alleges any type of safety concern is extremely low. Even with a publicly announced campaign on similar vehicles, over 1.5 million subject vehicles sold (with tens of billions of cumulative miles) Ford has received only four allegations of minor "accidents." None of these involve collisions with other vehicles and no police reports were filed, insofar as Ford is aware, suggesting that the allegations are not really describing "accidents." Two other "accident" allegations were made to NHTSA, though no corresponding communication was made to Ford relating to either. In each one of the four "accident" allegations made to Ford, the primary purpose of the claimant's contact was to seek financial coverage for repair of the spring and tire.

In July, 2004, Ford announced programs 04M04 and 04S17 in response to a known condition of corrosion pitting in front coil springs. These actions extended the warranty on front coil springs for the 1999 through 2001 model year Taurus and Sable vehicles (04M04) and provided spring catchers for vehicles in the 21 corrosion states plus Kentucky (04S17). Ford agreed to conduct the action as a safety recall to avoid a protracted dispute with the agency despite the benign consequence of this condition to vehicle control, supported by a complete absence of allegations of accidents or injuries attributed to the condition (despite a significant vehicle population and number of associated reports of spring fracture). At the time of those campaigns, and as verified in Ford's response to the agency's inquiry PE04-044, field data repeatedly supported the conclusion that a front spring fracture in these vehicles does not pose an unreasonable risk to motor vehicle safety. It is most likely that current allegations of loss of control on these subject vehicles is related to customers' frustrations with lack of related financial coverage for spring repair when compared with earlier model year vehicles.

As previously stated, two of the claimants who alleged accidents filed only vehicle owner questionnaires (VOQs) with the agency and did not contact Ford. One of these claimants who alleged a passenger side front coil spring fracture, VIN 1FAFP53U42G172422, reported "*...the front of the vehicle dropped and the vehicle spun counter-clockwise about 90 degrees crossing the two south bound lanes, hopped over the curve (rounded corner) and struck a tree.*" While Ford does not question the claimant's recollection of events, the behavior of a vehicle that had a coil spring fracture and sudden air loss on the right front side of the vehicle would not be a spin in the counter-clockwise direction. It is quite possible that that this claimant experienced some other unrelated event and either fractured the spring during the incident, or an already fractured spring was only identified following the incident. Ford conducted an extensive search in local municipalities for police accident reports, tow or body shop repair records, etc. in an effort to better understand the circumstances surrounding this incident and found no such reports or records. There is no factual basis to conclude that a front coil spring fracture caused the phenomenon reported in this VOQ.

The other individual that filed a VOQ without contacting Ford, VIN 1FAFP55U62A255656, also reported the only injury ("*...struck her head and sustained whiplash.*"), alleged only that "*...the front end shook.*" She referenced the safety recall on the 1999 through 2001 Taurus in her contact with the agency. Since she did not contact Ford, further details of her concerns are not known.

Of the four "accident" allegations made directly to Ford, none reported to have filed insurance claims, and only one, VIN 1FAFP58S62G215391, indicated that a police report was filed (Ford was unable to locate the report). This claimant contended "*The engine assemble* (sic) *was damaged and replaced by customer.*" Months later, the claimant discovered a fractured front

coil spring on this vehicle. It was only at that time that he made contact with Ford and, citing program 04M04, alleged that the coil spring was the cause of his previous accident and requested a repair refund. Ford does not have enough information to determine whether the coil spring fracture occurred at the moment of the accident, was the result of the accident, or occurred during the ensuing months following the accident.

Another claimant alleging an "accident" in a report to Ford, VIN 1FAFP53U12G111335, stated in his initial contact with Ford's Customer Assistance Center that he was "*...not worried about it.*" (the coil spring fracture) and only requested reimbursement for repair costs. He noted that a family member with a 1999 model year Taurus had received coverage for the action on his earlier model year vehicle. It was only after Ford denied compensation for his vehicle repair that he filed a VOQ with the agency.

Another "accident" allegation to Ford, VIN 1FAFP53U72A170389, was non-specific in nature. The claimant reported "*No structural damage*" and requested $418 for the repair. Because this cost is roughly the cost of replacement simply for a spring and tire, it is quite likely that this claimant is calling a coil spring fracture and tire puncture event an accident. From the available information, there is no basis to conclude that the event reported resulted in any loss of control or accident.

The final "accident" allegation reported to Ford was from a claimant who allegedly went into a ditch due to coil spring fracture (VIN 1FAFP55S62G207425). The customer indicated he, "*...wanted to know why this wouldn't have been involved in the recall.*" "*Cust seeking reimbursement for the repairs on the veh-cust seeking to also have assistance in the possible replacement of other spring...*" The complainant stated that his cost of repair was $800, which after replacement of the spring and tire would leave limited dollars for collateral damage. It is unlikely that, beyond the spring and tire, any significant damage occurred to the vehicle.

An additional ambiguous allegation relates to a 2003 model year vehicle (provided in response to Request 2, but not counted as an accident). This ambiguous allegation stated, "*...caused wife a wreck...*" Ford does not have enough information to determine whether the claimant was alleging an accident or commenting on his wife's emotional state at the time of the incident. However, he did state that damage was repaired for $300. At that cost, it is unlikely that any damage extended beyond a coil spring and tire.

In an effort to better understand each of the accident allegations discussed in this response, Ford attempted to gather additional publicly available information. We were unable to locate any associated police reports, towing service records, or collision shop repair records that might have provided further insight into any of these allegations. With an absence of associated records, there was little opportunity for additional research or clarification surrounding these allegations.

Ford attempted to locate additional information to understand the condition reported in each of the "accident" reports we have received. However, in each instance there is nothing additional to reflect a loss of control as a result of a front coil spring fracture. Because the fracture of a coil spring is an unanticipated event, a strong reaction, or perception, might be expected. But a Taurus or Sable vehicle that experiences a front spring fracture, even with a tire puncture and rapid loss of air, even in the unlikely event that it occurs at higher speeds, remains controllable. Again, NHTSA's own Safety Compliance Testing for FMVSS 110, on a 2002 Taurus subject vehicle, showed that when a tire (front or rear) was blown by an explosive charge (creating a 2.54 cm diameter opening), and the vehicle brought to a stop within approximately 165 to 215 meters, the deviation from a straight line was reported to be zero.

The accident allegations discussed above do not contradict Ford's belief or the agency's FMVSS 110 testing that found that the subject vehicle remains controllable, even with rapid air loss in a front tire. Rather, the allegations suggest that customers are understandably aggravated by a condition that is covered under Ford warranty for certain customers, and not for others. It was only after the announcement of 04M04 and 04S17 that Ford began to receive a small number of allegations of minor "accidents" in other model year vehicles. And, even with the limited information available on these minor "accident" allegations, most can be questioned as to whether they were indeed accidents, or at least, raise suspicion that they were unrelated to a fractured coil spring.

As previously stated, the preponderance of real world data suggests front coil spring fracture and tire puncture, in these vehicles, presents no unreasonable safety risk. Ford recognizes that front coil spring fracture in 2002 and 2003 Taurus and Sable vehicles has resulted in significant customer dissatisfaction, particularly in light of Ford's previous action providing coverage for fractured front coil springs on 1999 through 2001 model year Taurus and Sable vehicles. Even if spring fracture does not damage a tire, the cost of repair can be high. Ford is deeply committed to the satisfaction of all Ford customers and regrets any inconvenience this condition may cause. However, years of real world data clearly supports a conclusion that fracture of a front coil spring in the subject vehicles, even in the unlikely event that it may puncture a tire at higher speeds, is not expected to result in any loss of vehicle control. The likelihood of a related accident or injury is extremely low. Despite the fact that front coil spring fractures have been addressed via safety recalls by Ford and other manufacturers in the past, there is no evidence to establish or support that this condition presents any unreasonable risk to motor vehicle safety in these vehicles.