Ford Motor Company



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

October 27, 2003

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

Dear Ms. DeMeter:

Subject: EA02-025:NVS-213bby

The Ford Motor Company (Ford) response to the agency's July 30, 2003 letter requesting information concerning speed control deactivation switches on certain 1993-1995 model year Lincoln Town Car, Mercury Grand Marquis, and Ford Crown Victoria vehicles is attached. Complete responses to Requests 1, 7-9, 11-13, and 15-19 and partial responses to Requests 2-6 and 14 were provided in Ford's September 30, 2003 and October 6 and 8, 2003 letters to the agency. Answers to all remaining requests are included in this response.

Analysis of the information and documents provided in this response and our other responses to the agency concerning this subject demonstrates that there is not a defect trend related to safety in the speed control deactivation switch in vehicles outside the scope of Ford's Safety Recall 99S15. Ford continues to believe that the remedy and scope of Safety Recall 99S15 are appropriate.

Ford's investigation of the alleged underhood fire incidents in the subject vehicles revealed striking similarities between these alleged incidents and those reported during the investigation leading to the recall where the vehicles were not even equipped with the suspect switch. For example, one lawsuit brought against both Ford and Texas Instruments (the manufacturer of the switch) involving a 1992 model year Town Car ended after a U.S. District Judge found in favor of Ford and Texas Instruments when it became apparent that the vehicle was not equipped with the subject speed control switch.

We believe that following Ford's Safety Recall 99S15, the speed control deactivation switch has been erroneously identified as the cause of vehicle fires. As the agency is aware there are many potential causes of underhood fires in all makes and models of vehicles, including poor maintenance practices, modifications, improper servicing at independent repair facilities, externally caused fires, arson, etc., and the root cause of alleged engine compartment fires is very difficult to determine. The subject vehicles, which have been in service on average over 9.3 years, are subject to the same causes as all these other makes and models.

Unfortunately, many of the lawsuits, claims, and other reports alleging a vehicle fire due to the speed control deactivation switch do not include any substantiating documentation. Frequently, the only documents provided to Ford, particularly in the subrogation claims, are the stated allegations and financial estimates of property damage losses due to the fire. Typically, there is little, if any, credible information to support the allegations. In fact, in the majority of these reports, there is substantial credible evidence to the contrary. Ford's review of the lawsuit and claims files shows that Ford experts determined that some of the alleged vehicle fires actually were caused by external sources. For example, the allegation involving VIN: 1LNLM82W8RY685277 involved a fire resulting from shorted garage electrical wiring that set fire to a riding lawn mower located in front of the vehicle and that the fire subsequently spread to a subject vehicle; the alleged fire involving VIN: 1LNLM81W9PY709035 was most likely caused by a radar detector installed in the vehicle. Although unable to identify the exact source of the fire involving VIN: 2MELM75W8RX642468, Ford's expert determined that the fire source was external to the vehicle and proceeded from the rear of the vehicle to the front. Still, in another incident the plaintiff first alleged that the fire was caused by the ignition switch. The plaintiff later changed his allegation to indict the speed control deactivation switch (VIN: 1LNLM81W2PY773417). In fact, neither the ignition switch nor the speed control deactivation switch caused the fire. Upon investigation, Ford's expert determined that the fire originated from a short in the electrical wiring in the house. Further, in some cases the vehicles were scrapped or the alleged fire scenes were repaired or otherwise altered prior to Ford being notified of the alleged occurrences.

Still other reports concern vehicles that had undergone electrical repairs shortly before the alleged fires. Examples of these electrical repairs include the following:

- Service records for VIN: 1LNLM81W1PY776828 state that "Mac the Mechanic" tested the brake interlock system and installed a circuit breaker approximately two weeks prior to the alleged fire. Brake light fuses on this vehicle were also replaced three times over the three-month period prior to the alleged fire;

- Owner reports for VIN: 1LNLM81W8PY668722 state that the owner took her vehicle to an independent service facility several times for problems with the brake lights "which kept blowing" prior to the alleged fire;

- Ford's expert inspection of VIN: 1LNLM81W4PY668926 revealed that the fuse in the speed control deactivation circuit had been replaced with a larger fuse prior to the alleged fire;

- Inspections of VIN: 1LNLM81W7PY777649 and VIN 2FALP74W8RX136810 revealed that after-market wiring and incorrect fuses had been installed prior to the alleged fires;

- Owner report for VIN: 2MELM75W9PX670674 states that the vehicle was repaired at Walmart the day of the alleged fire, but a description of the repair was not included in the file;

- The specified 15 amp fuse in one vehicle (VIN: 1LNLM82W4PY668618) had been replaced with a 30 amp circuit breaker because fuses of the original rating kept blowing;

- VIN: 1LNLM81W9PY721905 had the brake light switch replaced by an independent service facility two months prior to the alleged fire; and

- VIN: 2FALP74W8RX108711 had the brake light fuse replaced just hours before the alleged fire.

In most of the above instances where fuses were replaced, there is no record that the mechanics attempted to diagnose the cause of the blown brake light fuse before making the repair.

The alleged defect also includes any malfunction of the speed control deactivation switch resulting in loss of the speed control function. A trend analysis of speed control failures attributed to the subject component shows a rise in reported events from model years 1993 through 1995, while an opposite trend is seen in underhood fires attributed to the subject component with a decline in events from model years 1993 through 1995. Ford has no reason to believe the two trends are connected by an inverse relationship, but is confident that the two are not related. For example, the Safety Recall 99S15 population had a significantly higher frequency of underhood fires than the vehicles built afterwards, without any prior upward trend in speed control malfunction reports. This clearly shows that switch "failures" relating to the loss of speed control function are not leading to switch fires.

Based upon the substantially lower report rate of the subject vehicles compared to those produced during the Safety Recall 99S15 period and the results of our analysis of a large volume of information in the preparation of this response, Ford concludes that there is no safety defect trend related to the speed control deactivation switch in the subject vehicles and that the remedy and scope of Safety Recall 99S15 were appropriate. Additionally, based upon the inverse trends of increasing speed control function complaints and decreasing underhood fire allegations across the 99S15 and subject vehicles, Ford also concludes that there is no correlation between reports of loss of speed control and a safety defect trend related to underhood fires.

Sincerely,

R. A. Nevi

James P. Vondale

Attachment

ATTACHMENT
October 27, 2003

FORD MOTOR COMPANY (FORD) RESPONSE TO EA02-025

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

In a July 31, 2003 telephone conversation with Messrs. Jeffrey Quandt and Bruce York of the agency, several requests in the inquiry were revised: Requests 1 and 4 now request information as to the type of speed control system installed on the subject vehicle (vacuum, electronic, or none); Request 2 was clarified to exclude consumer cases (Lemon Law) as a source of alleged defects in the subject vehicles; the category "Ford component and system codes" was removed from Request 3m; Request 10 was clarified to include only material incremental to our October 19, 2001 RQ01-002 submission; Universal Database (UDB) data was agreed as an alternate source of information for the Pareto analysis in Request 14; the 1991 model year was removed from the scope of Request 20a; and, the category defined as "shortly after the engine is turned OFF" was removed from Request 20e.

Additionally, in an August 20, 2003 telephone conversation, Mr. Jeffrey Quandt of the agency informed Ford personnel that the 1996-1997 model year Lincoln Town Car, Mercury Grand Marquis, and Ford Crown Victoria vehicles were removed from the scope of the investigation.

Responses to your specific Requests 1, 7-9, 11-13, 15-19 as well as partial responses for Requests 2-5 and 14 were provided in our September 26, 2003 response to the agency. An extension of time was requested and granted for responding to Requests 6, 10, and 20 and the remaining portions of Requests 2-5 and 14. Responses to these specific requests follow. Unless otherwise stated, Ford has undertaken to provide responsive documents dated up to and including July 30, 2003, the date of your inquiry. Ford has searched business units and/or affiliates within the following offices for responsive documents: Ford Customer Service Division, Global Core Engineering, Environmental and Safety Engineering, Lincoln Mercury Product Development, North American Car Product Development, North American Engineering, North American Truck Product Development, Office of the General Counsel, Product Development, Purchasing, Quality, Research, and Vehicle Operations.

As requested, after each numeric designation, we have set forth verbatim the request for information, followed by our response to it.

Request 2

State the total number of each of the following, received by Ford, or of which Ford is otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:

a. Consumer complaints, including those from fleet operators;
b. Field reports, including dealer field reports;
c. Reports from any source involving allegations of fire, injury, or fatality;
d. Third-party arbitration proceedings where Ford is or was a party to the arbitration; and,
e. Lawsuits, both pending and closed, in which Ford is or was a defendant or codefendant.

For subparts "a" through "e," state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "e," 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 "d" and "e", 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

Information concerning the alleged speed control deactivation switch issues potentially related to the alleged defect as contained in "owner reports" and "field reports" maintained by Ford Customer Service Division (FCSD), Intensified Customer Concern Definition (ICCD) data maintained by Ford's Quality Office, and fleet reports maintained in a Fleet Test Database was provided in our September 26, 2003 response to the agency. Claim and lawsuit information and legal contacts were not provided with that response, in accordance with our September 19, 2003 letter requesting an extension of time to respond to certain of the requests.

Claims, Lawsuits, and Arbitrations: To complete our response to this request, Ford has searched claim and lawsuit information and any related documents maintained by Ford's Office of the General Counsel (OGC) for purposes of identifying incidents potentially related to the alleged defect. Ford's OGC is responsible for handling product liability lawsuits and claims, and arbitrations against the Company. As noted above, this request was clarified by the agency to exclude consumer cases (Lemon Law) as a source of reports of alleged defects in the subject vehicles.

The following categorizations were used in the review of claim and lawsuit information located in this search:

| Category | Allegation |
|---|---|
| A1 | Alleged underhood fire, non-crash, key-off, alleged speed control deactivation switch failure |
| A2 | Alleged underhood fire, non-crash, key-on, alleged speed control deactivation switch failure |
| A3 | Alleged underhood fire, non-crash, unknown key position, alleged speed control deactivation switch failure |
| A4 | Alleged smoke/melt - no fire, alleged speed control deactivation switch failure |
| A5 | Alleged loss of speed control function, alleged speed control deactivation switch failure |
| B1 | Alleged smoke/melt - no fire, ambiguous or unidentified source* |
| B2 | Alleged repair of speed control deactivation switch, unknown reason* |
| B3 | Alleged loss of speed control function, unknown reason* |
| B4 | Alleged repair of speed control deactivation switch – stuck in park, brake lamp, leak, dead battery* |
| FB1 | Alleged underhood fire, non-crash, key-off, ambiguous as to alleged speed control deactivation switch failure* |
| FB2 | Alleged underhood fire, non-crash, key-on, ambiguous as to alleged speed control deactivation switch failure* |
| FB3 | Alleged underhood fire, non-crash, ambiguous key position, ambiguous as to alleged speed control deactivation switch failure* |
| FB4 | Ambiguous alleged fire source, non-crash; ambiguous as to alleged fire source, ambiguous as to alleged crash* |

* We are providing information concerning these claims and lawsuits as "non-specific allegations" for your review because of the broad scope of the request. Based on our engineering judgment, the information in these claims and lawsuits is insufficient to support a determination that they pertain to the alleged defect.

Based on a reasonable and diligent search, Ford located 13 lawsuits, 27 claims, and no arbitrations that may relate to alleged malfunction of the speed control deactivation switch resulting in loss of speed control, melting of switch materials, smoke, fire, or ignition of engine

compartment materials in the subject vehicles. There are also three claims that are duplicates of responsive owner reports that are not included in the count above. As will be discussed in our response to Request 20, there is seldom any credible evidence to support the allegation of a fire caused by a speed control deactivation switch, and frequently credible evidence demonstrating that such allegations are incorrect.

Ford has also located other lawsuits or claims which are ambiguous as to whether they meet the alleged defect criteria. We have included these lawsuits and claims as "non-specific allegations" for your review because of the broad scope of the request. Based on our engineering judgment, the information in these lawsuits and claims is insufficient to support a determination that they pertain to the alleged defect. We are providing the requested detailed information, where available, on the responsive and ambiguous lawsuits and claims in our Log of Lawsuits and Claims, as Appendix L (file:2003-10-27_Appendix_L) on the enclosed CD. The information in Appendix L contains two worksheets: one worksheet titled "Known Subject Veh" that contains incidents from vehicles known to be subject vehicles; and a second worksheet titled "Possible Subject Veh" that contains incidents from Crown Victoria, Grand Marquis and Town Car vehicles that could not be confirmed to be subject vehicles due to missing model year or VIN information. With respect to any of the provided lawsuits and claims, Ford has not undertaken to contact outside law firms to obtain additional documentation. Ford notes that it was unable to locate four claim or lawsuit files and, therefore, we are unable in some instances to determine if the cases are related to the alleged defect.

Legal Contacts: Ford has provided a description of Legal Contacts and the activity that is responsible for this information, Litigation Prevention, in Appendix B of our September 26, 2003 response to this request. To the extent that responsive (i.e., not ambiguous) owner reports reflect that they are Legal Contacts, Ford has gathered pertinent documents (first notices, MORS reports, vehicle reports, service and maintenance records, police and fire reports, witness statements, photographs, and non-privileged inspection reports) from the related files from the Litigation Prevention section. Based on this search, documents from 27 files were located. Ford notes that it was unable to locate 14 files.

VOQ Data: This information request had an attachment that included 28 Vehicle Owner's Questionnaires (VOQs) concerning 27 unique vehicles. In our September 26, 2003 response, we described eight VOQs involving vehicles that were found not to meet the subject vehicle criteria and five (two of which concern 1993 model year vehicles) that did not provide accurate, or any, VIN or owner information to facilitate a detailed review or allow us to determine if those 1993 model year vehicles were in the subject vehicle range. The remaining 15 VOQs are discussed below.

Ford's search of its records on VOQ (VIN 2FALP74W2PX160642, ODI number 722271) alleging loss of speed control function located no information regarding a subsequent underhood fire. Five VOQs (VINs: 2MELM75W3PX653226, 2FALP73W2RX137984, 2FALP74W5RX137584, 2FALP74W7RX126232, and 2MELM74W5RX636502; ODI numbers 8009329, 801587, 718709, 978243, and 8021069, respectively) alleged a vehicle fire, but no information was located in Ford's records to identify the source or location of the fire. Claims or suits were filed on three of these vehicles, but a defective component was not specified. Six VOQs (VINs: 2MELM75W0PX643988, 1LNLM81W5PY743456, 2FALP74W3RX126440, 1LNLM82W6RY687206, 1LNLM81W6RY625290, and 1LNLM83WXRY637570; ODI numbers 8003770, 823462, 742095, 844994, 891171, and 8020028, respectively) alleged an underhood fire, but Ford located no information to determine the source of the alleged fire, and no claims or suits were filed that may have provided additional information. Three VOQs (VINs:

2MELM75W6RX641724, 1LNLM82W0RY769352, and 1LNLM82W8RY743338; ODI numbers 565812, 8012434, and 8002036, respectively) alleged underhood fires due to defective speed control deactivation switches. Again, Ford located no information to confirm the source of the alleged fires, and no claims or suits were filed that may have provided additional information. The difficulty in determining the source of an underhood fire will be discussed in detail later in this response. Given the lack of information typically provided in many of these unsubstantiated allegations of vehicles fires, it is impossible for Ford to determine the source or location of the fire or the validity of the allegation that a fire did, in fact, occur.

Injury Incident Claims: For purposes of identifying alleged accidents or injuries potentially related to the alleged defect, Ford has reviewed responsive (i.e., not ambiguous) owner and field reports, lawsuits and claims, and warranty claims. As stated in our September 26, 2003 response, based on a reasonable and diligent search, Ford has not located any owner (MORS) reports, field (CQIS) reports, or warranty claims alleging an injury that may be related to the alleged defect. One lawsuit (VIN: 1LNLM81W9PY709035) alleges an unspecified injury that resulted from a fire allegedly caused by the speed control deactivation switch. Ford experts, however, believe that the vehicle fire was caused by the radar detector installed in the vehicle.

Request 3

Separately for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request 2, state the following information:

a. Ford's file number or other identifier used;
b. The category of the item, as identified in Request 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. Incident state;
i. Report or claim date;
j. Whether a fire is alleged;
k. Number of alleged injuries, if any;
l. Number of alleged fatalities, if any;
m. Ford component and system codes;
n. Complaint summary;
o. Consumer comments; and
p. Ford's assessment of the allegation.

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 designed for this submission.

Answer

As described in the response to Request 2, Ford is providing the requested detailed information, where available, concerning the responsive and ambiguous lawsuits and claims in Appendix L on the enclosed CD.

Request 4

State the number of reports from any source (e.g., complaints, field reports, subrogation claims, lawsuits) received by Ford, or of which Ford is otherwise aware, which relate to non-crash related underhood fires in the subject vehicles. Provide this information by model, model year, speed control usage, and whether the fire initiated when the engine was running or stopped.

Answer

Incidents potentially involving non-crash related underhood fires in the subject vehicles gathered from "owner reports" and "field reports" maintained by Ford Customer Service Division (FCSD), Intensified Customer Concern Definition (ICCD) data maintained by Ford's Quality Office, and fleet reports maintained in a Fleet Test Database were discussed in our September 26, 2003 response to the agency. As previously noted, claim and lawsuit information and legal contacts were not provided with that response.

Claims, Lawsuits, and Arbitrations: To complete our response to this request, Ford has searched claim and lawsuit information and any related documents maintained by Ford's Office of the General Counsel (OGC) for purposes of identifying reports of incidents potentially involving non-crash related underhood fires in the subject vehicles. Ford's OGC is responsible for handling product liability lawsuits and claims, and arbitrations against the Company. As noted above, this request was clarified by the agency to exclude consumer cases (Lemon Law) as a source of reports of alleged defects in the subject vehicles.

The following categorizations were used in the review of claim and lawsuit information located in this search:

| Category | Allegation |
|---|---|
| A1 | Alleged underhood fire, non-crash, key-off, alleged speed control deactivation switch failure |
| A2 | Alleged underhood fire, non-crash, key-on, alleged speed control deactivation switch failure |
| A3 | Alleged underhood fire, non-crash, ambiguous key position, alleged speed control deactivation switch failure |
| F1 | Alleged underhood fire, non-crash, key-off, no alleged speed control deactivation switch failure |
| F2 | Alleged underhood fire, non-crash, key-on, no alleged speed control deactivation switch failure |
| F3 | Alleged underhood fire, non-crash, unknown key position, no alleged speed control deactivation switch failure |
| FB1 | Alleged underhood fire, non-crash, key-off, ambiguous as to alleged speed |

control deactivation switch failure

FB2 Alleged underhood fire, non-crash, key-on, ambiguous as to alleged speed control deactivation switch failure

FB3 Alleged underhood fire, non-crash, ambiguous key position, ambiguous as to alleged speed control deactivation switch failure

FB4 Ambiguous alleged fire source, non-crash; ambiguous as to alleged fire source, ambiguous as to alleged crash*

* We are providing information concerning these claims and lawsuits as "non-specific allegations" for your review because of the broad scope of the request. Based on our engineering judgment, the information in these claims and lawsuits is insufficient to support a determination that they pertain to the alleged defect.

Based on a reasonable and diligent search, Ford located 26 lawsuits, 62 claims, and no arbitrations that appear to relate to non-crash related underhood fires in the subject vehicles. There are also ten claims and one lawsuit that are duplicates of responsive owner reports and are not included in the count above. Ford has also located other lawsuits or claims each of which is ambiguous as to whether it meets the identified criteria. We have included these lawsuits and claims as "non-specific allegations" for your review because of the broad scope of the request. Based on our engineering judgment, the information in these lawsuits and claims is insufficient to support a determination that they pertain to the alleged defect. We are providing the requested detailed information, where available, on the responsive and ambiguous lawsuits and claims in our Log of Lawsuits and Claims, as Appendix L. With respect to any of the provided lawsuits and claims, Ford has not undertaken to contact outside law firms to obtain additional documentation. Ford notes that it was unable to locate four claim or lawsuit files and, therefore, in some instances is unable to determine if the cases involve non-crash related underhood fires.

Legal Contacts: Ford has provided a description of Legal Contacts and the activity that is responsible for this information, Litigation Prevention, in Appendix B of our September 26, 2003 response to this request. To the extent that responsive (i.e., not ambiguous) owner reports reflect that they are Legal Contacts, Ford has gathered pertinent documents (first notices, MORS reports, vehicle reports, service and maintenance records, police and fire reports, witness statements, photographs, and non-privileged inspection reports) from the related files from the Litigation Prevention section. Based on this search, documents from 37 files were located. Ford notes that it was unable to locate 16 files. Some of these documents may also meet the category criteria of Request 2.

Request 5

Provide the following information for each record counted in your response to Request 4:

a. Ford's file number or other identifier used;
b. The category of the item, as identified in Request 2 (i.e., consumer complaint, filed report, subrogation claim, lawsuit, etc,);
c. Vehicle owner or fleet name (and fleet contact person), address, and

telephone number;
d. Vehicle VIN;
e. Make, model and model year;
f. Vehicle incident mileage;
g. Incident date;
h. Incident state;
i. Report or claim date;
j. The quadrant of the engine compartment where the fire started (left rear, left front, right rear, right front);
k. Whether the incident occurred with the engine running or stopped;
l. Whether or not Ford received a subrogation claim regarding the incident (Y/N);
m. The alleged cause of the fire;
n. Complaint summary;
o. Consumer comments; and
p. Ford's assessment of the allegation and cause of the fire.

Answer

As stated in the response to Request 2, Ford is providing the requested detailed information, where available, on the responsive and ambiguous lawsuits and claims in our Log of Lawsuits and Claims, as Appendix L.

With regard to subpart "j" and the identification of the quadrant of the engine compartment where the fire started, an accurate assessment of the starting location of alleged underhood fires often requires knowledgeable and experienced fire investigators who may or may not be able to make an accurate determination depending on the magnitude of vehicle damage that may be associated with such an event. A consolidation of estimated underhood fire starting locations from various data sources revealed an inconsistent method of quadrant definition. The point-of-view of the incident evaluators varied such that the location of the subject component was defined as the "right-rear" quadrant if the evaluator's point-of-view was standing at the front of the vehicle looking into the engine compartment, or the "left-rear" quadrant if the evaluator's point-of-view was sitting in the driver's seat. Other evaluators located the subject component in the "left-front" quadrant. The various interpretations of location quadrants led to difficulties in comparing reports that did not mention a component, only a quadrant. Because of the various interpretations of location quadrants, a meaningful consolidation of alleged fire starting locations from historical reports could not be developed or provided to the agency. Ford is providing the quadrant information, to the extent it is available, in Appendix L and advises caution when making comparisons in quadrants due to these point-of-view issues.

Request 6

Produce copies of all documents related to each item within the scopes of Requests Nos. 2 and 4 that have not previously been submitted by Ford. Organize the documents separately by request number and category (i.e., consumer complaints, field reports, etc.) and describe the method Ford used for organizing the documents.

Answer

To the extent available, copies of complaints, first notices, MORS reports, vehicle reports, service and maintenance records, police and fire reports, deposition transcripts and witness statements, photographs, and non-privileged inspection reports relating to lawsuits and claims are provided in Appendix M. The shipment of a small number of documents will be delayed due to copying difficulties. As agreed in a July 31, 2003 telephone conversation with Messrs. Jeffrey Quant and Bruce York of the agency, complete ancillary information relating to property damage losses related to an alleged underhood fire are not provided.

Request 10

Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect or any of the subject components installed 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 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 documents in Appendix N. (Appendix N contains documents provided electronically on CD's and paper documents.) Ford is not providing documents responsive to this request that contain information protected by the attorney-client privilege and/or work-product doctrine. Such documents are described in a privilege log and will be provided at a later date under separate cover as Appendix O (file: 2003-10-24_Appendix_O).

Ford will be submitting additional documents with a request for confidentiality under separate cover as Appendix P to the NHTSA's Office of the Chief Counsel pursuant to 49 CFR, Part 512.

Request 14

Provide copies of all documents relating to Failure Mode and Effects Analyses of the subject components. Provide Pareto analyses of the relative proportions of

each causal factor in the total number of subject component failures represented by: (a) warranty claims data; and (b) part sales data.

Answer

Documents relating to a Failure Mode and Effects Analysis of the subject component were provided in Appendix I of our October 6, 2003 confidential submission and our October 8, 2003 supplemental submission. Two additional Failure Mode and Effects Analysis documents were located during our recent review of legal documents and are provided in Appendix Q of this response.

Request 20

Furnish Ford's assessment of the alleged defect in the subject vehicles, including a detailed comparison of the alleged defect in the subject vehicles and the condition addressed by the subject recall. Include in your assessment the following information:

a. Provide updates of the graphs showing non-crash related underhood fire incidence, for both engine ON and engine OFF, by vehicle production month that were included in Ford's 14-D reports related to the subject recall. In the updated graphs, show the data for one model year of production before the subject recall production range, the recall production range, and the production range of the subject vehicles. Include in the graphs the number of events that include symptoms associated with the alleged defect condition and also vehicle production implementation date information regarding all design or manufacturing process changes that Ford considers relevant to the alleged defect condition.

b. Identify all differences in design, manufacturing, or use conditions between the subject recall population and subsequent production vehicles that may influence: (1) seal integrity of the Kapton diaphragms; (2) the aging/durability of the Kapton diaphragms; (3) failure frequencies of the Kapton diaphragms; and (4) the risk of fire in a switch with a failed/leaking Kapton diaphragm.

c. Provide Ford's assessment of the failure rates of the subject components at the following service intervals: (1) 36-months; (2) 60-months; and (3) 96-months. Include in this assessment a review of warranty and complaint data at these intervals, as well as a discussion of how Ford reconciles part sales data with the failure estimates at each interval. Regarding the latter, provide a summary of all information concerning the subject component from the UDB system over the last three years binned by failure mode (include "Burned/Melted," "Internal Leak," "Internal Short," and "Unknown" in the failure mode categories).

d. Provide Ford's assessment of the relative contribution of Kapton diaphragm failures to the total number of subject component failures, including how this changes over the service life of the parts (e.g., state whether it is considered a greater contributor later in life than it is early in life).

e. Provide Ford's assessment of the risk of non-crash related underhood fire in each of the subject models as a function of time in comparison to other medium to large-sized passenger cars at similar ages. Include separate assessments of

key "OFF" fires and fires that occur when the engine is running (or shortly after the engine is turned "OFF").

f. Provide Ford's assessment of the relative contribution of the subject component in the incidence of non-crash related underhood fires in the subject models over the service life of each subject model and state the bases for those assessments.

Answer

A defect trend in the speed control deactivation switch has not been identified. Ford compared the alleged incidents to those events included in the recall. Ford's comparison reveals a distinct difference in the performance of the switch in the subject vehicles to those included in the recall. Ford's investigation of the alleged underhood fire incidents in the subject vehicles revealed striking similarities between these alleged incidents and those reported during the recall investigation where the vehicles were not even equipped with the suspect switch.

While reports alleging failure of the switch leading to heat, smoke, melting or fire exist, there is little, if any, credible information to support the allegations. In fact, in many of these reports, there is substantial credible evidence to the contrary. Ford's review of the lawsuit and claims files shows that Ford experts determined that some of the alleged vehicle fires actually were caused by external sources. For example, the allegation involving VIN: 1LNLM82W8RY685277 involved a fire resulting from shorted garage electrical wiring that set fire to a riding lawn mower located in front of the vehicle that subsequently spread to the vehicle; the alleged fire involving VIN: 1LNLM81W9PY709035 was most likely caused by a radar detector installed in the vehicle. Although unable to identify the exact source of the fire involving VIN: 2MELM75W8RX642488, Ford's expert determined that the fire source was external to the vehicle and proceeded from the rear of the vehicle to the front. Still, in another incident the plaintiff first alleged that the fire was caused by the ignition switch. The plaintiff later changed his allegation to indict the speed control deactivation switch (VIN: 1LNLM81W2PY773417). In fact, neither the ignition switch nor the speed control deactivation switch caused the fire. Upon investigation, Ford's expert determined that the fire originated from a short in the electrical wiring in the house.

Inspection of other alleged vehicle fires found that the subject vehicles underwent electrical repairs shortly before the alleged fires. Examples of these electrical repairs include the following:

- Service records for VIN: 1LNLM81W1PY776828 state that "Mac the Mechanic" tested the brake interlock system and installed a circuit breaker approximately two weeks prior to the alleged fire. Brake light fuses on this vehicle were also replaced three times over the three-month period prior to the alleged fire;

- The owner reported for VIN: 1LNLM81W8PY688722 that the owner took her vehicle to an independent service facility several times for problems with the brake lights "which kept blowing" prior to the alleged fire;

- Ford's expert inspection of VIN: 1LNLM81W4PY686926 revealed that the fuse in the speed control deactivation circuit had been replaced with a larger fuse prior to the alleged fire;

- Inspections of VINs: 1LNLM81W7PY777849 and 2FALP74W6RX136810 revealed that after-market wiring and incorrect fuses had been installed prior to the alleged fires;

- The owner reported for VIN: 2MELM75W9PX670874 that the vehicle was repaired at Walmart the day of the alleged fire, but a description of the repair was not included in the file;

- VIN: 1LNLM81W6PY721905 had the brake light switch replaced by an independent service facility two months prior to the alleged fire; and

- VIN: 2FALP74W6RX106711 had the brake light fuse replaced just hours before the alleged fire.

In most of the above instances where fuses were replaced, there is no record that the mechanics attempted to diagnose the cause of the blown brake light fuse before making the repair.

There also is an alleged event involving a limousine with VIN: 1LNLM81W7PY787693. The limousine was insured the day prior to the alleged fire, and the owner of the vehicle reported that he stored $5000 in cash below the ashtray of the vehicle. In a string of bad luck, the owner's home was reportedly burglarized just three weeks prior to this alleged incident.

Unfortunately, many of the lawsuits, claims, and other reports alleging a vehicle fire due to the speed control deactivation switch do not include any substantiating documentation. The only documents provided to Ford in many of these cases, particularly the subrogation claims, are the stated allegations and financial estimates of property damage losses due to the fire. While some cases do include outside expert opinions, the opinion is expressed by stating that the alleged fire "probably" started from the subject switch, but a final expert opinion cannot be offered without further investigation. Such a report is contained in the fire investigation report on VIN: 1LNLM81W1PY755720. Thus, the purported "expert" opinion is no more than speculation. In other cases, the vehicles were scrapped or the alleged fire scenes were repaired or otherwise altered prior to notifying Ford of the alleged occurrences. Finally, other reports concern vehicles in which the circuit fuse rating had been substantially exceeded. For example, the specified 15 amp fuse in one vehicle (VIN: 1LNLM82W4PY666618) had been replaced with a 30 amp circuit breaker because the original fuses of the original rating kept blowing.

In addition we have identified seven reports alleging that the speed control deactivation switch was responsible for a fire in vehicles that were not even equipped with the switch.

It appears that the publicity surrounding the original recall, the RQ investigation and the instant engineering analysis has created a public perception that any fire (or other thermal event) occurring in or near the subject vehicle or any similar vehicle, i.e., those produced before incorporation of the switch, must be the result of a speed deactivation switch problem irrespective of the factual circumstances and information to support such an allegation.

**Subject Switch Failures**

To better understand the reports of alleged underhood fires related to the switch, Ford used the categories defined in our response to Request 4 and developed a consolidated file of MORS, CQIS, VOQ, UDB, and AWS incidents from our September 26, 2003 response that have been categorized as A1-A5, F1-F3, or FB1-FB4 and the corresponding lawsuits and claims incidents

discussed in this response. This file is provided as Appendix R (file: 2003-10-24_Appendix_R) on the enclosed CD. Appendix R contains two worksheets: one worksheet titled "Known Subject Veh" that contains incidents from vehicles known to be subject vehicles; and a second worksheet titled "Possible Subject Veh" that contains incidents from Crown Victoria, Grand Marquis and Town Car vehicles that could not be confirmed to be subject vehicles due to missing model year or VIN information.

Ford reviewed the reports of alleged underhood fires involving the subject component in the subject vehicles in Appendix R. All the available information for each incident was reviewed and cross-checked among the different data sources, if present (e.g., an owner report with a related lawsuit). As noted above, many incidents had circumstances demonstrating potentially erroneous allegations of a defective switch. Given the lack of factual information frequently associated with the direct allegation of a defective switch, Ford believes ambiguous allegations of underhood fires that may possibly relate to the switch would be substantially more difficult to validate.

Ford also reviewed its warranty data, UDB data, and service part sales information to evaluate the replacement rates of the subject component at the requested month in service intervals. UDB data is gathered from selected dealers throughout the United States and provides Ford with a sampling of post-warranty vehicle repair information. While the subject component service part sales span the 36, 60, and 96 months in service (MIS) ranges requested, Ford does not have a single database system that tracks vehicle repairs across all of the requested service intervals. We relied upon warranty (AWS) data for the 36 MIS analysis and UDB data for the 60 and 96 MIS analysis. The data collected from these systems does not provide sufficient detail to validate the failure of a specific component. However, the data does show the replacement of one or more parts involved in the resolution of a vehicle's symptoms. Warranty claims involving the subject component during the first 36 months of service life averaged 0.49 claims per 1,000 vehicles. For comparison, warranty claims involving the subject component in the Safety Recall 99S15 population averaged 1.01 claims per 1,000 vehicles during the first 36 months of service, which were several years before the recall announcement.

Based on analysis of UDB data discussed in the response to Request 14 of our September 26, 2003 response, the replacement rate of the subject component is extremely small prior to 60 MIS. The small number of records is due, in part, to the fact that the UDB system did not come online until the 4th quarter of 1998, which is 60 months after the end of the 1993 model year and only shortly before Ford announced Safety Recall 99S15. Accordingly, UDB would not include accurate data for vehicles included in the recall population, and comparisons cannot be made. In addition, the participation of each of Ford dealerships in the update of UDB records can vary greatly over time and has the potential to make trend analysis difficult. However, Ford has taken UDB data related to the replacement of the subject component and has segmented it into the requested vehicle service intervals. The available data indicates the replacement rate of the subject component peaks in the 60-96 MIS interval and begins to decline afterwards. Every subject vehicle has passed through the 60-96 MIS window as of July 2003, with the average subject vehicle having 111 MIS (9 years and 3 months) at that point. A chart of the requested data is provided in Appendix S.

As discussed in our September 26, 2003 response, a pareto analysis of the subject component failure symptoms was constructed using the UDB system, a specialized form of post-warranty repair data gathered from September 9, 1998 through July 29, 2003. The comments input into UDB by the service technicians were grouped into vehicle-level and component-level symptoms similar to those used in the June 10, 1999 Field Service Action Evaluation Paper. The pareto

analysis indicates the largest portion (36.0%) of the subject components were replaced without any issue such as melted or burned switches which the vehicle service technician would have likely mentioned if such conditions were present. Inoperative speed control was the most frequent failure symptom (34.6%). A potential subject component failure mode associated with this symptom is an open circuit, which could result from a loose electrical connector, a binding transfer pin, contact corrosion due to internal leakage or water intrusion, or failure of the spring arm that supports the movable contact. Thermal events allegedly related to the subject component were 3.6% of the 597 UDB records reviewed, and included 19 smoke/melt claims (3.2%) and two alleged switch fires (0.3%). One of the alleged switch fires (VIN 1LNLM81W5PY770984) appears to be related to an attempted consumer repair, which was later brought to a dealer for final repair. The level of damage is believed to be low, because the dealer was able to repair the vehicle.

A copy of the UDB data pareto chart was provided in Appendix J of our September 26, 2003 response. The requested component-level failure modes of "Internal Leak" and "Internal Short" were not recorded in the service technician's comment field (service technicians would not be expected to diagnose an internal component issue) in UDB records reviewed by Ford and could not be used as categories in the pareto analysis. Vehicle-level symptoms attributed to the subject component such as inoperative speed control, difficulty shifting out of park, and brake warning lamp illuminated, were more prevalent in the UDB data and were therefore used in the pareto analysis. These symptoms also correlate well with the symptoms noted in the June 10, 1999 Field Service Action Evaluation Paper.

A comparison of overall service part sales of the subject component to the requested MIS intervals shows a low sales rate prior to the recall announcement, with all the subject vehicles in excess of 36 MIS. This is followed by a spike in sales during the initial recall announcement, as would be expected. The majority of the subject vehicles had accumulated 60 MIS by this point in time. As the subject vehicles accumulated 96 MIS, the sales of the subject component had already returned to a low, slightly declining rate with no indication of an adverse trend. See Appendix T for a graphic illustration of the subject component sales trend versus the requested time-in-service intervals.

**Speed Control Function Issues**

The alleged defect also includes any malfunction of the speed control deactivation switch resulting in loss of the speed control function. A trend analysis of speed control failures attributed to the subject component shows a rise in reported events from model years 1993 through 1995, while an opposite trend is seen in underhood fires attributed to the subject component with a decline in events from model years 1993 through 1995. Ford has no reason to believe the two trends are connected by an inverse relationship, but is confident that the two are not related. For example, the Safety Recall 99S15 population had a significantly higher frequency of underhood fires than the vehicles built afterwards, without any prior upward trend in speed control malfunction reports. This clearly shows that switch "failures" relating to the loss of speed control function are not leading to switch fires. A graph of this trend is provided in Appendix U.

The root cause of the reports of loss of speed control function attributed to the subject component cannot be determined from the information available. According to the speed control system FMEA, one of the reasons for loss of the speed control function is an open circuit in the subject component circuit. This circuit can be open for many reasons, including:

- Failure of the spring arm that supports the movable contact;

- Binding of the transfer pin inside the switch, which results in the switch staying in the "open" position after the driver releases the brake pedal. Several switches analyzed by Ford have exhibited this phenomena;
- A faulty connection between the connector in the end of the switch and the wiring harness due to a partially seated connector or unintentional damage from a prior repair that allowed water to corrode the connector pins over time; and
- Corroded contacts inside the subject component from water intrusion though the connector end of the switch leaking or Kapton seals.

Reports of the repair of the subject component typically do not include detail sufficient to determine if the internal switch contacts, spring arm, transfer pin, the connector in the end of the switch, or perhaps another factor was the root cause of the open circuit which led to the alleged loss of speed control function.

**Assessment of the Subject Vehicles**

The requested graphs showing alleged non-crash related underhood fire incidents by key position and vehicle production month are provided in Appendix V. The graphs show a marked decline in the number of incidents of alleged underhood fires for vehicles produced after the Safety Recall 99S15 period. A detailed graph showing the number of allegations of an underhood fire related to a defective switch on vehicles produced during the calendar quarter following the end of the 99S15 period shows only a small number of allegations of a defective switch. This graph is provided in Appendix W. The two graphs discussed above illustrate that the remedy and scope of the Safety Recall 99S15 action were correct and appropriate.

A comparison between the vehicles in the 99S15 population and those produced after it (the subject vehicles) was also conducted through a review of the vehicle design drawings, vehicle assembly processes, and the application of the subject component. We have determined that the physical location, installation process, and use of the subject component have not changed between vehicles in the recall population and subsequently produced subject vehicles.

With regard to subject vehicles equipped with the subject component, the only change in the subject component communicated to Ford was made to reduce the audible clicking noise the switch made during application of the vehicle's brake pedal. A change was made to the base material and the internal disc that resulted in a softer "snap" when the switch was triggered. Production of the quieter switches began during the second quarter of 1992 (1992 model year), during the Safety Recall 99S15 period, and continued throughout production of the subject vehicles. Vehicles produced during the recall period and the subject vehicles would have been built with a mixture of the "louder" and "quieter" switches. Ford does not have data detailed enough to make a confident determination of the proportion of alleged defects applicable to either switch design, however the chart discussed above shows the number of alleged defect complaints was significantly higher for vehicles built during the recall period than for the subject vehicles. Therefore, the differences between the two switch designs do not appear to be a significant factor relating to the alleged defect.

The lack of any vehicle or part changes that could either contribute to or remedy the alleged defect in the subject vehicles again demonstrates the scope of the Safety Recall 99S15 was appropriate. The substantially lower report rate for vehicles produced after the recall population demonstrates there is no safety defect trend related to the speed control deactivation switch in the subject vehicles.

The requested assessment of the risk of non-crash underhood fires in the subject vehicles in comparison to other Ford models would require an investigation into those models of equal scope and depth as this response. The resources and time required to perform such an investigation are prohibitive in the context of this response.

An accurate assessment of the root cause of alleged underhood fires is difficult to determine due to the damage to underhood components and wiring often associated with such an event. Also, the age of the subject vehicles limits Ford's ability to obtain accurate information regarding vehicle maintenance, service records, vehicle modifications, and details surrounding the alleged event that may assist in any current-day root cause analysis of historical underhood fire allegations. These factors have been shown to have a direct causal relationship with underhood fires, and the lack of such information is a significant obstacle to root cause analysis. In addition, access to subject vehicles and subject components currently experiencing the alleged defect has also proved to be very difficult due to the extremely low frequency of reported switch replacements at Ford facilities.

However, Ford has analyzed a large volume of information pertaining to the subject vehicles and components as well as to vehicles and components included in the Safety Recall 99S15. There are many potential causes of underhood fires in all makes and models of vehicles, including poor maintenance practices, modifications, improper servicing at independent repair facilities, externally caused fires, arson, etc. The subject vehicles, which have been in service on average over 9.3 years, are subject to the same causes as all these other makes and models. Even though replacement switches continue to be sold, very few alleged underhood fires have been attributed to the subject vehicles.

As previously noted, the publicity concerning Safety Recall 99S15 alone is believed to be responsible for many erroneous allegations of switch related underhood fires. In fact, Ford has identified seven such allegations on vehicles that were not equipped with the subject component. For example, one lawsuit brought against both Ford and Texas Instruments (the manufacturer of the switch) involving a 1992 model year Town Car ended after a U.S. District Judge found in favor of Ford and Texas Instruments when it became apparent that the vehicle was not equipped with the subject speed control switch.

Based upon the substantially lower report rate of the subject vehicles compared to those produced during the Safety Recall 99S15 period and the results of our analysis of a large volume of information in the preparation of this response, Ford concludes that there is no safety defect trend related to the speed control deactivation switch in the subject vehicles and that the remedy and scope of Safety Recall 99S15 were appropriate. Additionally, based upon the inverse trends of increasing speed control function complaints and decreasing underhood fire allegations across the 99S15 and subject vehicles, Ford also concludes that there is no correlation between reports of loss of speed control and a safety defect trend related to underhood fires.

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