



2/16/10

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February 12, 2010

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

Dear Ms. DeMeter:

Subject: PE09-055:NVS-214bby

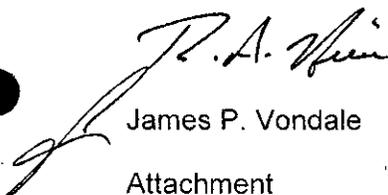
The Ford Motor Company (Ford) response to the agency's December 14, 2009, letter concerning reports of alleged blower motor control switches, dash materials, or related wiring harness fires in 1997 through 2008 model year E350 and E450 vehicles is attached.

The subject vehicles have performed successfully under heavy use for a long period of time and do not pose a risk to motor vehicle safety. The subject vehicles number nearly 1.1 million and average over six years in service; many of them have well over a decade of service. Within the reports reviewed to respond to this inquiry several vehicles were identified with over 500,000 odometer miles. We reasonably estimate that the subject vehicles, as a group, have accumulated over 118,800,000,000 miles. Many of the subject vehicles are used in severe-duty applications such as airport shuttle service or public transit where the vehicles are operated nearly constantly in all weather conditions. Despite the typical usage, age, mileage, and/or hours of operation of the subject vehicles, the report data indicate they have performed extremely well. There are only three fires alleged to relate to the front blower motor switch and evidence indicates that these fires were minor as each of these vehicles was repaired and returned to service.

No trends were identified in the responsive reports. The remarkably low rate (less than 0.003 R/1000 fire allegations) for these vehicles given their usage profile, coupled with the benign nature of the alleged fires, indicate that the front blower motor switch does not pose an unreasonable risk to motor vehicle safety.

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

Sincerely,


James P. Vondale
Attachment



FORD MOTOR COMPANY (FORD) RESPONSE TO PE09-055

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

The scope of Ford's investigation conducted to locate responsive information focused on Ford employees most likely to be knowledgeable about the subject matter of this inquiry and on review of Ford files in which responsive information ordinarily would be expected to be found and to which Ford ordinarily would refer. Ford notes that although electronic information was included within the scope of its search, Ford has not attempted to retrieve from computer storage electronic files that were overwritten or deleted. As the agency is aware, such files generally are unavailable to the computer user even if they still exist and are retrievable through expert means. To the extent that the agency's definition of Ford includes suppliers, contractors, and affiliated enterprises for which Ford does not exercise day-to-day operational control, we note that information belonging to such entities ordinarily is not in Ford's possession, custody, or control.

Ford has construed this request as pertaining to vehicles manufactured for sale in the United States, its protectorates, and territories.

In a January 5, 2010, telephone conversation, Bruce York of the agency informed Ford personnel that the scope of the investigation is the front blower motor control switch and components that service the instrument panel and windshield areas of the vehicle. Additionally Mr. York indicated that Request 1 should be modified to delete references to air conditioning, that request "h" should be deleted, and that items "i" and "j" should state:

- i. List the HVAC blower motor control switch manufacturer and part number,
- j. List the AC blower motor manufacturer and part number.

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 December 14, 2009, the date of your inquiry. Ford has searched within the following offices for responsive documents: Sustainability, Environment and Safety Engineering, Ford Customer Service Division, Marketing and Sales Operations, Global Core Engineering, Office of the General Counsel, Vehicle Operations, and North American Product Development.

Request 1

State, by model and model year, the number of subject vehicles Ford has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Ford, state the following:

- a. Vehicle identification number (VIN);
- b. Make;
- c. Model;
- d. Model Year;
- e. Date of manufacture;
- f. Date warranty coverage commenced.; and
- g. The plant where the vehicle was produced;
- h. If air conditioning was installed as original equipment (Y/N);
- i. If air conditioning was installed as original equipment, list the HVAC blower motor control switch manufacturer and part number;
- j. If air conditioning was installed as original equipment, list the AC blower motor manufacturer and part number; and
- k. 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 2003, 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 1997 through 2008 model year E350/450 vehicles sold in the United States, (the 50 states and the District of Columbia) protectorates, and territories (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and Virgin Islands) is 1,076,975.

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

Model	1997 MY	1998 MY	1999 MY	2000 MY	2001 MY	2002 MY
E350	68,807	73,728	71,363	61,797	57,812	60,158
E450	16,768	17,194	20,622	17,980	17,782	23,716

Model	2003 MY	2004 MY	2005 MY	2006 MY	2007 MY	2008 MY
E350	70,734	56,536	51,808	102,610	50,826	55,550
E450	28,218	24,181	24,514	52,269	27,164	24,838

The "Plant" field contained in Appendix A contains a letter designation for the assembly plant. A "D" designates the Ohio Assembly Plant in Avon Lake, Ohio, and an "H" designates the Lorain Assembly Plant in Lorain, Ohio. For items i. and j. please see Ford's response to

Request 10 and Request 15. Ford records indicate that the blower motor manufacturer is Brose and the blower motor control switch manufacturer is Indak.

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

Request 2

State the number of each of the following, received by Ford, or of which Ford are otherwise aware, where the subject vehicle was alleged to have experienced the alleged defect:

- 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. 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 for each model and model year. 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

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

Descriptions of the FCSD owner and field report systems and the criteria used to search each of these are provided in Appendix B.

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

Category	Allegation
A1	Alleged fire due to front blower motor control switch
A2	Alleged smoke due to front blower motor control switch
A3	Alleged melting due to front blower motor control switch
A4	Alleged smoke/melt in other components due to front blower motor control switch
B1	Alleged dash fire, source ambiguous
B2	Alleged fire, source and location ambiguous
B3	Alleged switch issue, unable to determine which switch
R	Report of front blower motor control switch replacement without additional description

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 sorted in accordance with the categories described above. The number and copies of relevant owner reports identified in this search that may relate to the agency's investigation are provided in the MORS II and MORS III portion of the database contained in Appendix C. The categorization of each report is identified in the "Category" field.

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

Legal Contacts: Ford is providing, in Appendix B, a description of Legal Contacts and the activity that is responsible for this information. To the extent that responsive (i.e., not ambiguous) owner reports indicate that they are Legal Contacts, Ford has gathered the related files from the Office of General Counsel (OGC). Non-privileged documents for files that were located that are related to the responsive owner reports are provided in Appendix D.

Field Reports: Records identified in a search of the Common Quality Indicator System (CQIS) database, as described in Appendix B, were reviewed for relevance and sorted in accordance with the categories described above. The number and copies of relevant field reports identified in this search that may relate to the agency's investigation are provided in the CQIS portion of the database contained in Appendix C. The categorization of each report is identified in the "Category" field.

When we were able to identify that responsive duplicate field reports for an alleged incident were received, each of these duplicate reports was marked accordingly, and the group counted as one report. In other cases, certain vehicles may have experienced more than one incident and have more than one report associated with their VINs. These reports have been

counted separately. 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 one Vehicle Owner Questionnaire. Ford was unable to further analyze the allegations or vehicle information relating to the VOQ due to the nature of the information contained within that report. Please see Ford's response to Request 17 for clarification.

Crash/Injury Incident Claims: For purposes of identifying allegations of accidents or injuries that may have resulted from the alleged defect, Ford has reviewed responsive owner and field reports, and lawsuits and claims. One report related to VIN 1FTSS34L04H [REDACTED] alleged that a person suffered smoke inhalation related to the alleged defect. Copies of reports corresponding to this alleged incident are provided in the MORS, portion of the database provided 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 sorted in accordance with the categories described above. Ford has also located other lawsuits, claims, or consumer breach of warranty lawsuits, each of which is ambiguous as to whether it meets 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 E1. The number of relevant lawsuits and claims identified is also provided in this log. To the extent available, copies of complaints, first notices, or MORS reports relating to matters shown on the log are provided in Appendix E2. Documents that are protected by Attorney – Client Privilege and that are not being provided with this response are listed in the Privilege Log provided in Appendix E3. With regard to these 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 files and, therefore, is unable to determine if the cases are related to the alleged defect.

One report to Ford, relating to VIN 1FDXE45P76D [REDACTED], was categorized as an ambiguous report due to the limited information provided to Ford. Ford was subsequently invited to attend an inspection of the vehicle and, in preparation for that inspection, was informed that the claimant felt that the fire may have originated in the instrument panel near the center of the vehicle. On February 4, 2010, Ford personnel attended an inspection of the vehicle. A review of the evidence for the burned vehicle as well as statements from the operator do not support the blower motor control switch as the source or origin for the fire.

Review of an exemplar vehicle within the same fleet that was described as representative of the burned vehicle identified extensive aftermarket wiring modifications from multiple sources. Modifications were observed that appear to not follow the instructions issued by Ford in its Body Builders Layout Book (please see information provided in response to Request 14). These aftermarket wiring modifications and a large quantity of cigarette butts in the vehicle

remains, in combination with the observed burn patterns, strongly suggest a source for the fire other than the blower motor switch. In addition, the operator reported observing smoke coming from the area where the engine compartment cover (internal to the vehicle) met the instrument panel. Burn patterns indicate fire activity in this area, which is well below the location of the front blower motor switch.

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. Incident state;
- i. Report or claim date;
- j. Whether a crash is alleged;
- k. Whether a fire is alleged;
- l. Whether property damage is alleged;
- m. Number of alleged injuries, if any;
- n. Number of alleged fatalities, if any;
- o. Ford component and system codes;
- p. Component that is alleged to have failed;
- q. If a fire is alleged, indicate the alleged area of the dashboard where the fire started (left, right, center, or unknown);
- r. Whether the incident occurred with the engine "OFF" or the engine "ON;"
- s. Whether or not Ford received a subrogation claim regarding the incident (Y/N);
- t. If a fire is alleged, whether a fire investigation was performed by any party, that Ford is aware of, to determine the origin and cause (if so, please provide a copy of the report);
- u. If a fire is alleged the alleged cause of the fire;
- v. Complaint summary;
- w. Consumer comments; and,
- x. Ford's assessment of the allegation;

Provide this information in Microsoft Access 2003, or a compatible format, entitled "REQUEST NUMBER THREE 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 database contained in Appendix C in response to Request 2. To the extent information sought in Request 3 is available for owner and field reports, it is provided in the database. To the extent information sought in Request 3 is available for lawsuits and claims, it is provided in the Log of Lawsuits and Claims as Appendix E1.

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 database contained in Appendix C in response to Request 2. Copies of complaints, first notices, or MORS reports relating to matters shown on the Log of Lawsuits and Claims (Appendix E1) are provided in Appendix E2. 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 where either subject component was replaced in the subject vehicles or a subject vehicle was repaired for the alleged defect: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

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

- a. Ford's claim number;
- b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
- c. VIN;
- d. Repair date;
- e. Vehicle mileage at time of repair;
- f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- g. Labor operation number;
- h. Problem code;
- i. Causal part (if identified);
- j. Whether smoke, melting or fire is identified (if fields exist in warranty data);
- k. Replacement part number(s) and description(s);
- l. Concern stated by customer; and
- m. Comments, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2003, 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 sorted in accordance with the categories described in the

response to Request 2. The number and copies of relevant warranty claims identified in this search that may relate to the agency's investigation are provided in the AWS portion of the database contained in Appendix C. The categorization of each report is identified in the "Category" field.

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

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

Ford assumes that providing the warranty claims in the electronic database format meets the requirements of this request because the agency can review or order the claims as desired.

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.

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.

Request 7

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

For 1997 through 2008 model year E350/450 vehicles, the New Vehicle Limited Warranty, Bumper-to-Bumper Coverage begins at the warranty start date and lasts for three years or 36,000 miles, whichever occurs first. Optional Extended Service Plans (ESPs) are available to cover various vehicle systems, time in service, and mileage increments. The details of the various plans and the number of contracts currently purchased for each plan are provided in Appendix F.

Request 8

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 any smoke, fire, melting, or ignition of blower motor control switches, 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 aware of any forthcoming communications related to the alleged defect in the subject vehicles.

Request 9

By model and model year describe all of the circuits that contain the subject components in the subject vehicles. Include in this description the other components that are powered on these circuits and their current ratings. Also include a description of the power, fusing, relays, or other current limiting devices that are in the circuits.

Answer

The circuits that contain the front blower motor control switch in the subject vehicles are limited to the front ventilation blower (defrost, heat, A/C system) that controls HVAC airflow in the instrument panel (IP) area. As the agency is aware, there was an optional rear compartment system in the vehicle (auxiliary heater or auxiliary heater and A/C system) on certain vehicles within the subject vehicle population. The auxiliary system could contain a switch in the IP that controls the rear blower motor fan, or if an optional "prep" package was

chosen (for incomplete vehicles), wiring from the switch is provided and terminated with a connector at the B-pillar for use by vehicle modifiers. The two switches, front system and rear system, are different because the switch for the rear system has an additional "off" position (and in some model years may have an additional "rear" control position) that the front switch does not.

Ford understands that the agency's request relates to the front system servicing the IP and this description will focus on that system accordingly. Power to the blower motor is supplied through a 50 amp fuse and passes current through a "blower motor relay." The relay is energized (passing current) when the ignition key is in the "run" position and the HVAC mode selector switch is in any position except "off." When the relay is energized, current passes from the fuse to the blower motor, the blower motor control switch and a blower motor resistor package. The resistor package places different resistances in series with the switch, depending on switch position, to regulate the blower motor speed. The resistor package is protected from overheating by a thermal limiting device. Note that the front blower motor system does not have an "off" position. Whenever the blower motor relay is energized, the blower motor fan operates at some speed. No current passes through the switch (all current passes through the resistor package) when the blower motor switch is in the "low" position. The control current for the blower motor relay and HVAC temperature mode selector switch is supplied through a 15 amp fuse.

Maximum current flow through the switch occurs when the blower motor speed selector switch is in the "high" position. The blower motor is expected to draw a maximum of 27.3 amps under normal conditions. The blower motor switch is designed to operate at 35 amps continuously. The wiring connecting the blower motor and switch circuitry utilizes a combination of 10 gauge and 12 gauge wiring.

There are many factors that determine current carrying capacity for wire, including the wire length, operating environment, and type of wire insulation. Ford provides general guidance to vehicle modifiers that 12 gauge wire has a maximum current capacity of 30 amps and 10 gauge wire has a maximum current capacity of 40 amps.

Request 10

Identify by manufacturer and part number all of the subject components used on the subject vehicles. Also identify the model and model year vehicles each of the subject components have been installed in. Include not only subject vehicles but also any other vehicles manufactured by Ford.

Answer

Ford records indicate that the front blower motor switch is identified by engineering part number F49H-19A642-AA, service part number E6DZ-19986-A and is manufactured by Indak. Additional supplier information is provided in response to Request 15.

Ford records indicate that this switch is utilized in:

1987 – 1993 model year Ford Mustang vehicles
1986 – 1991 model year Ford Taurus vehicles
1986 – 1991 model year Mercury Sable vehicles
1992 – 1997 model year Ford Aerostar vehicles
1997 – 2010 model year Ford E150 – E550 vehicles

Request 11

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 G.

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

Ford is submitting additional responsive documentation in Appendix H 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 12

Describe why the wiring pigtail kit (Part #1U2Z-14S411-BA) was developed. In this description include any analyses that were completed and why the pigtail wire size was made larger than the original wire on the vehicle.

Answer

As the agency is aware, replacement of vehicle wiring harnesses can be a costly repair. Wiring harnesses can cost several hundred to over one thousand dollars and can require several hours of labor to remove, replace and then verify all of the related functions. Replacement is also often burdensome due to the number of connections and complexity of optional equipment. There is sometimes extensive verification and troubleshooting. In an effort to address these complexities, Ford has made available over 700 wiring harness connectors and pigtails to simplify the repair of wiring harnesses and to reduce the need for unnecessarily replacing entire wiring harnesses for repairs such as collision, abuse, or damage from aftermarket modifications.

The subject pigtail for example, can be utilized for several vehicle lines (including both cars and trucks) from the 1992 model year through the 2010 model year for applications ranging from blower motor switch connectors to power window module connectors. Since the pigtail kits cover multiple applications they must accommodate the largest gauge wire for all of the applications for which they may be utilized. The larger gauge wiring does not provide, nor is it intended to provide, any protection or functionality beyond making the repair kit available for as many applications in as many vehicles as possible. Original system electrical limitations remain unchanged after a repair of this nature because the majority of the original wiring remains.

Request 13

Identify and 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 or the corresponding electrical connector and wiring harness it is attached to from the start of production to date. For each such modification or change provide the following information:

- a. The model and model year vehicles that the design applies to;
- b. The date or approximate date on which the modification or change was incorporated into production;
- c. A detailed description of the modification or change;
- d. The reason(s) for the modification or change;
- e. The part numbers (service and engineering) of the original component;
- f. The part number (service and engineering) of the modified component;
- g. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
- h. When the modified component was made available as a service component; and
- i. Whether the modified component can be interchanged with earlier production components.

Answer

Ford records indicate that no modifications or changes have been made to the front blower motor control switch during the time period involving the subject vehicles.

Modifications unrelated to the subject of this investigation were made to the switch wiring harness during that time period. Prior to the 2004 model year the wiring harness to the switch connector contained four 12 gauge wires. Beginning in the 2004 model year the wiring harness contained two 10 gauge wires and two 12 gauge wires. These changes were the

result of a Ford Climate Control System Design Specification change to improve HVAC ventilation performance that required a smaller voltage drop across the HVAC Control Head (including the blower motor switch). In order to meet the reduced voltage drop specification, larger gauge wires were required. This change was a corporate specification change, and was not related to this subject or limited to the subject vehicles.

Ford is not aware of any forthcoming modifications related to the subject components in the subject vehicles.

Request 14

In the event that a subject vehicle is an incomplete vehicle, does Ford provide any instructions to the final stage manufacturer concerning modification of or tapping of the circuit that contains the subject component?

Answer

Ford provides instructions to final stage manufacturers and modifiers by way of a Body Builders Layout Book. As an example, a portion of the electrical section of the 2002 and 2010 model year Body Builders Layout Book is being provided in Appendix J. Ford provides instructions concerning quality of wiring, wiring insulation, and circuit protection among other attributes, for any electrical components added by final stage manufacturers and modifiers. Periodically Ford's Special Vehicle Engineering – Body Builders Advisory Service (SVE) also issues bulletins to highlight model year changes, general practices, or address common concerns. A sample bulletin that provides general practices information related to interfacing with the factory provided wiring system is provided as Appendix K. Note that the SVE bulletins contain extensive contact information to Ford's technical support resources (including email, telephone, fax, and web access) for vehicle modifiers that might have questions.

In short, Ford expects any modifications or additions made by final stage manufacturers or modifiers to be completed following accepted engineering standards and practices, and that no circuitry provided by Ford is modified or supplemented except as provided within the instructions as described. Ford recommends that no additional components to be added to or controlled by the front blower motor and switch circuit.

Request 15

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 components/assemblies.

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 same part number component, whether installed in production or in service, and state the applicable dates of production or service usage.

Provide this information in Microsoft Access 2003, or a compatible format, entitled "REQUEST NUMBER FIFTEEN DATA." See Enclosure 1, Data Collection Disc, for a preformatted table designed for this submission.

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 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 blower motor control switches by part number (both service and engineering) and year of sale, where available, in Appendix L. For the most recent time period that monthly sales information is available, Ford is also providing that in Appendix L. Information pertaining to production and service usage for each part number, and supplier point of contact information, is included in Appendix L.

Request 16

State whether Ford has ever conducted, or is aware of, any returned part analyses in subject vehicles related to the alleged defect or failure of the subject components. If so, describe, and provide electronic copies of all documents relating to, any and all returned part analyses of subject components. Include in your description the total number of such parts returned, the number analyzed, a description of how they were analyzed. Include any and all material showing the frequencies of failed components as a function of service life or mileage.

Answer

Ford is not aware of any returned parts analysis conducted by Ford on the subject parts.

Request 17

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

- a. All causal or contributory factors;
- b. Any warning symptoms;
- c. The failure mode;
- d. The root cause of the failures;
- e. Its potential effect on occupant safety;
- f. The potential for future occurrences of the alleged defect in the subject vehicles;
- g. The risk of dashboard fires in the subject models as a function of time in comparison to other passenger vehicles at similar ages; and,
- h. The relative contribution of the subject components to the incidence of dashboard fires in the subject models over the service life of the vehicle and state the basis for the assessment.

Answer

The subject vehicles have performed successfully under heavy use for a long period of time and do not pose a risk to motor vehicle safety. The subject vehicles number nearly 1.1 million

and average over six years in service; many of them have well over a decade of service. Within the reports reviewed to respond to this inquiry several vehicles were identified with over 500,000 odometer miles. We reasonably estimate that the subject vehicles, as a group, have accumulated over 118,800,000,000 miles. Many of the subject vehicles are used in severe-duty applications such as airport shuttle service or public transit where the vehicles are operated nearly constantly in all weather conditions. Despite the typical usage, age, mileage, and/or hours of operation of the subject vehicles, the report data indicate they have performed extremely well. There are only three fires alleged to relate to the front blower motor switch, and evidence indicates that these fires were minor as each of these vehicles was repaired and returned to service.

A review of the reports located to prepare this response identified that the vast majority of responsive reports indicated only that a switch was replaced after observing some blower motor or switch function issue. The issues were typically reported as a loss of a particular blower motor operating speed, loss of tactile feedback between switch position detents, a switch knob that was warm to the touch, or loss of retention of the switch knob. Of the responsive reports identified, approximately 67% indicate that a switch was replaced without any further description. Approximately 30% reported that they observed melting at the time of switch replacement. For example, many of these reports indicate that the customers reported a loss of some switch functionality and the service technician observed that the switch was melted after it was removed. Approximately two percent of the responsive reports indicated smoke was observed at or near the switch; none of these reports describe any additional damage to the vehicle or surrounding components.

Ford identified three allegations of fire (approximately one-tenth of one percent of responsive reports) related to the alleged defect out of a population of over one million vehicles, many of which are heavily modified. In all three instances the vehicles were repaired and returned to service. In fact, one of the reports alleging a fire is a warranty claim and the customer comments recorded in the claim do not mention a fire. A fire is only mentioned by the technician who reported in the repair claim that the switch "... causes[d] an electrical fire...repair[ed] wire harness." Information in another of the reports alleging a fire indicates that no fire department was called and an insurance company was not involved. The third report alleging a fire also reports that "one person suffered from smoke inhalation." Ford has indication that this vehicle was still in service as of December, 2009, (alleged fire date is February, 2005) and a search of information located no claims related to this vehicle.

The subject vehicles represent a very diverse customer base with widely varying usage profiles. The vehicles may be purchased and used directly as equipped from Ford as vans or wagons, or may be modified, for example, for use as campers, shuttles, conversion vans or box-type cargo vans. When the vehicles are modified for their intended use, the electrical system is quite often heavily modified. Those modifications may be made by the vehicle modifier and/or by the final customers and can cause inappropriate electrical loads. The electrical load may be increased due to the addition of, for example, navigation systems, alarm systems, fuel monitoring systems and public announcing systems. In fact, the vehicle mentioned in response to Request 2 (VIN 1FDXE45P76D [REDACTED]) was found to have substantial electrical system modifications that had been made by multiple sources. Furthermore, campers or recreational vehicles (RVs) have extensive auxiliary electrical components that can include rear viewing cameras and entertainment systems (including data players and televisions), refrigerators and even electrical generating systems. In some of the ambiguous reports that Ford is providing in response to this inquiry, the non-OEM modifications are often implicated in fires, but, without cause and origin determinations, Ford

cannot determine with certainty that these reports are not responsive; therefore, they are provided as ambiguous reports.

The agency provided one VOQ with the Opening Resume. That VOQ contained no VIN. Ford located supporting material on the agency's website related to the VOQ provided. Within this supporting information we found two letters to Ford, from a single fleet, neither of which provided a VIN or contained an allegation that a fire had occurred. The letters only mentioned switches overheating. Consequently, it is very difficult for Ford to locate any additional information. Nonetheless we did conduct an exhaustive search of our systems and found a single owner report. That contact with Ford, dated November 10, 2008, also does not mention any fires. We believe it is noteworthy that we have been unable to locate any fire allegations to Ford from this fleet.

Also within the supporting information in the agency's database we found a "Blower Switch Failure Report" by Schaefer Engineering. Ford did not locate a copy of that report within its files. A color photograph on page two of that report appears to show four blower motor switches from fleet vehicles that had reportedly been replaced due to failure. We believe the wiring shown in the photo does not correspond to the OEM wiring harness because our wire harness did not have some of the wire insulation coloring shown; however, it is difficult to know for certain based only on the coloring in a photograph. Additionally, the wiring for the switches appears to have crimped wiring splices attached, which we did not use. These two observations raise questions concerning the history of the wiring and switches after being placed in service.

Ford presumes the second fleet mentioned in the opening resume is a fleet in Iowa based on VINs provided to Ford by the agency and on Ford's contact with a fleet in Iowa concerning issues related to the blower motor switches. Documents provided in response to Request 11 show several email chains between a fleet, various Iowa governmental agencies, Ford, and agency personnel. The basis for the discussion appears to be related to a fire that reportedly occurred on or about April 1, 2007. This incident appears to be referenced in the email information and one email reports that "... suspect that the 4/1/07 bus fire might be traced back to the dash blower fan switch, resistor, and/or wiring thereof." A review of the fire report apparently related to this incident found that the operator reported "... the heater was not working properly, the heat was working but the fan was not blowing right. I turned off the heater and black smoke started to come out of the vents on the left side of the steering wheel." A fire department investigator reported that the "Dash area was looked at. Area was completely destroyed. ... Most probable cause was a faulty heater." The information as reported does not support a blower motor switch source or origin for the fire based on the location of the observed smoke, no mention of observation of heating at the switch knob, and escalation of the event after removing power from the circuit. Other reports provided in response to this inquiry that mention observation of smoke clearly indicate smoke was observed in the vicinity of the switch, and not emanating from the vents. The panel and components that house the switch in the instrument panel are close fitting, but not airtight, and any smoke originating at the switch would be expected to be observed in the vicinity of the switch. Other reports included also indicate the operator noticed the switch was "hot" to the touch when the switch was moved to the "off" position. That observation was not mentioned in this incident. Lastly, the blower motor switch has no electrical current passing through it when it is in the "low" position (often referred to as "off" by operators), the ignition switch is not in "run" or the HVAC mode selector switch is in the "off" position. The actions reported by the operator as "I turned off the heater ...," whether that meant either the blower motor control switch or the HVAC control switch, would have removed current flow from the switch and likely eliminated any additional electrical heat generation. The observation reported by the operator

appears to indicate an escalation of the smoke observation after deactivating the heating system, and the location of the observed smoke is clearly distant from the switch location. The ignition key position is not known during this event.

No trends were identified in the responsive reports. The remarkably low rate (less than 0.003 R/1000 fire allegations) for these vehicles given their usage profile, coupled with the benign nature of the alleged fires, indicate that the front blower motor switch does not pose an unreasonable risk to motor vehicle safety.

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