

Mazda North American Operations



**Mr. Jeffrey L. Quandt, Chief
Vehicle Control Division
Office of Defects Investigations
Room 5326
National Highway Traffic Safety Administration
400 Seventh Street, SW
Washington, DC 20590**

May 9, 2007

Re: PE07-015, NVS-213swmc

Dear Mr. Quandt:

Enclosed, in duplicate, is Mazda Motor Corporation's (Mazda) response to NHTSA's Preliminary Evaluation PE07-015 regarding engine and transmission mounts for the 2007 MY MazdaSpeed3 vehicles. The enclosed CD's contain the information requested in the formatted Access database.

If you have any questions regarding the enclosed response, please let me know. My telephone number is (313) 594-7778 and my e-mail address is drobertson@mazdausa.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Robertson', written over a horizontal line.

**David Robertson, Group Manager
Environmental, Safety and Powertrain
Engineering**

Encl: Two CD-R titled PE07-015, Mazda Response, 5/09/07

Mazda's response: NHTSA Inquiry NVS-213swmc, PE07-015

Request 1

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

- a. Vehicle Identification number (VIN);
- b. Date of manufacture;
- c. Date warranty coverage commenced; and
- d. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

Provide the table in Microsoft Access 2000, or a compatible format, entitled "PRODUCTION DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Answer 1

Mazda records indicate that the approximate total number of subject MazdaSpeed3 vehicles manufactured for sale or lease in the United States (the 50 states and the District of Columbia) and its protectorates and territories (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, US Minor Outlying Islands, and Virgin Islands) is 4,587.

The requested data for each subject vehicle is provided electronically in Appendix 01 (filename: PRODUCTION DATA (PE07-015).mdb) on the enclosed CD.

Request2

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

- a. Consumer complaints, including those from fleet operators;
- b. Field reports, including dealer field reports;
- c. Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
- d. Reports involving a fire, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
- e. Property damage claims; and
- f. Third-party arbitration proceedings where Mazda is or was a party to the arbitration; and
- g. Lawsuits, both pending and closed, in which Mazda is or was a defendant or codefendant.

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

In addition, for items "c" through "g," provide a summary description of the alleged problem and causal and contributing factors and Mazda's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "f" and "g," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

Answer 2**Consumer complaints:**

Records identified in a search of Mazda's Customer Assistance Center (CAC) files maintained by the Technical Service Department (TSD) in Mazda North America Operations (MNAO), that relate or may relate to the alleged defect are provided electronically in Appendix 02 (filename: 2007-05-10 Appendix02.doc) on the enclosed CD.

Field Reports:

Records identified in a search of Mazda's Technical Hotline (HL) files and Product Quality Information (PQI) files maintained by the TSD in MNAO that relate or may relate to the alleged defect are provided electronically in Appendix 02.

Reports Involving a crash, injury, fatality and fire:

There were no records identified through the search of CAC, HL and PQI files.

Property Damage Claims, Third-party arbitration and Lawsuits:

There were no records identified in a search of Mazda's legal files maintained by the Office of Counsel and Customer Mediation in MNAO, and the Office of Legal Affairs of Mazda that relate or may relate to the alleged defect.

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. Mazda'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 model and model year;
- f. Vehicle's mileage at time of incident;
- g. Incident date;
- h. Report or claim date;
- i. Whether a crash is alleged;
- j. Whether a fire is alleged;
- k. Whether property damage is alleged;
- l. Number of alleged injuries, if any; and
- m. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a preformatted table which provides further details regarding this submission.

Answer 3

The requested information, to the extent it is available, for the consumer complains and field reports in response to Request 2 is provided electronically in Appendix 03 (filename: REQUEST NUMBER TWO DATA (PE07-015).mdb) on the enclosed CD.

Request 4

Produce copies of all documents related to each item within the scope of Request No. 2.

Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method Mazda used for organizing the documents.

Answer 4

Information responsive to this information request related the consumer complaints and field reports in the NNS (*) database at MNAO identified in response to Request 2 is provided electronically in the folder named Appendix 04 (filename: 2007-05-10 Appendix 04a.xls for consumer complaints and 2007-05-10 Appendix 04b.xls for field reports) on the enclosed CD.

(*) NNS: New National System is a database system maintained by MNAO. It is core information system and supports various customer service activities such as customer relation, repair inquiry, warranty claim submission and the others.

Request 5

State a total count for all of the following categories of claims, collectively, that have been paid by Mazda to date that relate to, or may relate to, the alleged defect in the subject vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

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

- a. Mazda's claim number;
- b. Vehicle owner or fleet name (and fleet contact person);
- c. Vehicle owner's telephone number;
- d. VIN;
- e. Repair date;
- f. Vehicle mileage at time of repair;
- g. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- h. Labor operation number;
- i. Problem code;
- j. Replacement part number(s) and description(s);
- k. Concern stated by customer;
- l. Cause and correction of the concern; and
- m. Comment, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Answer 5

Records located during a search of Mazda's warranty records, that relate or may relate to the alleged defect, are provided electronically in Appendix 05 (filename: 2007-05-10 Appendix05.doc) on the enclosed CD.

Mazda notes that it is difficult to accurately determine from each warranty claim whether it relates to the alleged defect. Please note that the warranty claims are submitted to Mazda by dealers to seek payment for repairs, which they have made, and often contain insufficient information to accurately determine why a repair was made, if the repair was appropriate, or even if the repair was necessary. In our opinion, the information provided in these warranty claims is insufficient to support a determination if they relate to the alleged defect in the subject vehicles.

To the extent that the requested information is available, it is included in the reports provided electronically in Appendix 05 (filename: WARRANTY DATA (PE07-015).mdb) on the enclosed CD.

Request 6

Describe in detail the search criteria used by Mazda to identify the claims identified in response to Request No. 5, including the labor operations, problem codes, part numbers and any other pertinent parameters used. Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to the alleged defect in the subject vehicles. State, by make and model year, the terms of the new vehicle warranty coverage offered by Mazda 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 Mazda 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 6

Information provided in response to this information request is provided electronically in Appendix 05.

For 2007 model year MazdaSpeed3 vehicles, Mazda provides warranty coverage of three years or 36,000 miles, whichever occurs first. Especially for Powertrain components of 2007 model year MazdaSpeed3 vehicles, Mazda provides warranty coverage of five years or 60,000 miles, whichever occurs first.

The information in response to the request of extended warranty coverage option(s) is provided electronically in Appendix 6 (filename: 2007-05-10 Appendix 6.xls) on the enclosed CD.

Request 7

Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that Mazda 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 Mazda is planning to issue within the next 120 days.

Answer7

Mazda has not issued any service documents that relate to, or may relate to, the alleged defect in the subject vehicles. Also there are no drafts of service documents planned to issue within the next 120 days.

Request 8

Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, Mazda. 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 8

The following investigations and analyses have been initiated:

- A summary of the problems which relate to, or may relate to the alleged defect in the field has been assembled. The summary is provided electronically in Appendix 08a (filename: 2007-05-10 Appendix08a.pdf) on the enclosed CD.
- In order to estimate the magnitude of the forces on the engine mounts, the deformation of the engine mounts which were returned from field were measured. The summary is provided electronically in Appendix 08b (filename: 2007-05-10 Appendix08b.pdf) on the enclosed CD.
- In order to better understand the operation environment in which the engine mount failures occur, Mazda surveyed owners of the subject vehicles to learn how they use their vehicles. We learned that owners of vehicles in which engine mount failures occurred tended to drive their vehicles very aggressively. The summary is provided electronically in Appendix 08c (filename: 2007-05-10 Appendix08c.pdf) on the enclosed CD.

Mazda is continuing its investigation of this matter. However, the cause of the problem has yet to be identified.

Request 9

Describe all modifications or changes made by, or on behalf of, Mazda in the design, material composition, manufacture, quality control, supply, or installation of the subject components, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:

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

Also, provide the above information for any modification or change that Mazda is aware of which may be incorporated into vehicle production within the next 120 days.

Answer 9

The information in response to this request is provided electronically in Appendix 09 (filename: 2007-05-10 Appendix09.pdf) on enclosed CD.

Request 10

State the number of subject components that Mazda has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used and month/year of sale (including the cut-off date for sales, if applicable): 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 Mazda is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

Answer 10

The information in response to this request is provided electronically in Appendix 10 (filename: 2007-05-10 Appendix10.pdf) on enclosed CD.

Request 11

Provide the following information relating to the alleged defect in the subject vehicles;

- a. A description of the in-plant assembly procedure for the subject component, including all torque specification verification processes involved in the assembly of the subject component, the dynamic torque specification, information about any bonding agents that are used to secure the bolt (e.g., Loctite) and any verification/quality control processes relating to the subject component;
- b. A diagram showing the placement and location of the subject component;
- c. A copy of the recommended dealership replacement procedure for the subject components;
- d. A video showing the assembly and any verification/quality control procedures relating to the subject component; and
- e. Copies of any photos sent from dealers or owners to Mazda, with any accompanying information, regarding the alleged defect in the subject vehicles.

Answer 11

- a. The information about in-plant assembly procedure is provided electronically in Appendix 11a (filename: 2007-05-10 Appendix11a (No1).pdf for No.1 mount, 2007-05-10 Appendix11a (No3).pdf for No.3 mount and 2007-05-10 Appendix11a (No4).pdf for No.4 mount) on enclosed CD.

No bonding agent is used in the process of engine mount tightening. But a friction stabilizing chemical called "NEOTORQUER" is applied to the bolt(s). NEOTORQUER reduces friction and minimizes the friction variability, which produces a consistent level of axial tension of the retention bolt(s).

The information about inspection for tightening of engine mounts is provided electronically in Appendix 11a (folder: 11a - Inspection) on enclosed CD.

- b. The diagram showing the placement and location of subject component are provided electronically in Appendix 11b (filename: 2007-05-10 Appendix11b.pdf) on enclosed CD.
- c. A copy of recommended dealership replacement procedure for the subject components is provided electronically in Appendix 11c (filename: 2007-05-10 Appendix11c.pdf) on enclosed CD.
- d. Videos showing the assembly procedures relating to the subject component are provided electronically in Appendix 11d-1 (folder: 11d1 - Assembly) on enclosed CD. For inspection procedures, videos are provided in Appendix 11d-2 (folder: 11d2 - Inspection) on enclosed CD.
- e. Photos sent from dealers to Mazda are provided electronically in Appendix 11e (filename: 2007-05-10 Appendix11e.xls) on enclosed CD.

Request 12

Furnish Mazda's assessment of the alleged defect in the subject vehicle, including:

- a. The causal or contributory factor(s);
- b. The failure mechanism(s);

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

Answer 12

2007 Model Year MazdaSpeed3 vehicle is FWD with 4-cylinder transverse engine. The transmission is connected to the engine on the vehicle left side (driver's side). There are three engine/transmission mounts. The mount located behind of the engine is called "No.1 mount", connecting the engine to the front suspension cross member via a bracket. Another mount located on the right side is "No.3 mount", connecting the engine with the right side of the body frame. The final engine mount, "No.4 mount" connects the transmission with the left side of the body frame via a bracket.

In some vehicles a loose retention bolt was found on the No. 4 mount. The bolt was pulled out of the bracket or was broken and as a result, the engine and transmission were disconnected. Further, in some cases this also resulted in damage to the drive shaft so that the vehicle could not be driven. In several cases, it was reported that this problem was accompanied by unusual noises occurring when shifting. But in every case, the vehicle was brought to a safe stop. We have no reports of any accidents. We believe that the agency's VOQs represent these types of incidents.

Returned parts were examined and in some cases mount rubber was found caught between the No.4 mount and mount bracket for the transmission. Also, in some cases the No.4 mount has been deformed.

We are now conducting an investigation to determine the root cause of this problem, but we have not yet reached any conclusion. We have, however learned that owners who reported engine mount failures tend to drive their vehicles very aggressively.

We will continue our investigation and will notify NHTSA when we have a better idea of what is causing the problem and what remedies, if any, might be appropriate.