



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

1200 New Jersey Avenue SE.
Washington, DC 20590

JUN 18 2015

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

David Robertson, Group Manager
Environmental and Safety Engineering
Mazda North American Operations
1025 Connecticut Ave., NW
Washington, DC 20036

NVS-213ps
PE15-022

Dear Mr. Robertson:

This letter is to inform you that the Office of Defects Investigation (ODI) of the National Highway Traffic Safety Administration (NHTSA) has opened Preliminary Evaluation PE15-022 to investigate allegations of front suspension lower ball joint (LBJ) separations in certain model year (MY) 2007 through 2008 Mazda CX-9 vehicles manufactured by Mazda, and to request certain information.

The Office of Defects Investigation (ODI) has received six (6) complaints (VOQs) alleging incidents of front suspension LBJ separation in MY 2007 through 2008 Mazda CX-9 vehicles. The reports appear to show an increasing trend. The first report was received in October 2013, followed by 2 reports in late 2014 and 3 reports in the first 5 months of 2015. Four of the reports are from states using high volumes of road salts ("salt states") and a fifth report is from a state bordering the "salt states" (Virginia).

Unless otherwise stated in the text, the following definitions apply to these information requests:

- **Subject vehicles:** all 2007 through 2008 Mazda CX-9 vehicles manufactured for sale or lease in the United States and federalized territories.
- **Peer vehicles:** all other Mazda CX-9 vehicles originally equipped with the same front suspension LCA (LCA) assemblies as the subject vehicles.
- **Subject component:** right and left front suspension LCA assemblies used as original equipment or service parts in the subject vehicles.
- **Mazda:** Mazda North American Operations, and its parent, Mazda Motor Corporation, all of past and present officers and employees, whether assigned to its principal offices or any of its field or other locations, including all of its divisions, subsidiaries (whether or not incorporated) and affiliated enterprises and all of their headquarters, regional, zone and other

offices and their employees, and all agents, contractors, consultants, attorneys and law firms and other persons engaged directly or indirectly (e.g., employee of a consultant) by or under the control of Mazda {including all business units and persons previously referred to), who are or, in or after January 1, 2005, were involved in any way with any of the following related to the alleged defect in the subject vehicles:

- a. Design, engineering, analysis, modification or production (e.g. quality control);
 - b. Testing, assessment or evaluation;
 - c. Consideration, or recognition of potential or actual defects, reporting, record-keeping and information management, (e.g., complaints, field reports, warranty information, part sales), analysis, claims, or lawsuits; or
 - d. Communication to, from or intended for zone representatives, fleets, dealers, or other field locations, including but not limited to people who have the capacity to obtain information from dealers.
- **Alleged defect:** Front suspension lower ball joint separation.
 - **Document:** "Document(s)" is used in the broadest sense of the word and shall mean all original written, printed, typed, recorded, or graphic matter whatsoever, however produced or reproduced, of every kind, nature, and description, and all non-identical copies of both sides thereof, including, but not limited to, papers, letters, memoranda, correspondence, communications, electronic mail (e-mail) messages (existing in hard copy and/or in electronic storage), faxes, mailgrams, telegrams, cables, telex messages, notes, annotations, working papers, drafts, minutes, records, audio and video recordings, data, databases, other information bases, summaries, charts, tables, graphics, other visual displays, photographs, statements, interviews, opinions, reports, newspaper articles, studies, analyses, evaluations, interpretations, contracts, agreements, jottings, agendas, bulletins, notices, announcements, instructions, blueprints, drawings, as-built, changes, manuals, publications, work schedules, journals, statistical data, desk, portable and computer calendars, appointment books, diaries, travel reports, lists, tabulations, computer printouts, data processing program libraries, data processing inputs and outputs, microfilms, microfiches, statements for services, resolutions, financial statements, governmental records, business records, personnel records, work orders, pleadings, discovery in any form, affidavits, motions, responses to discovery, all transcripts, administrative filings and all mechanical, magnetic, photographic and electronic records or recordings of any kind, including any storage media associated with computers, including, but not limited to, information on hard drives, floppy disks, backup tapes, and zip drives, electronic communications, including but not limited to, the Internet and shall include any drafts or revisions pertaining to any of the foregoing, all other things similar to any of the foregoing, however denominated by Mazda, any other data compilations from which information can be obtained, translated if necessary, into a usable form and any other documents. For purposes of this request, any document which contains any note, comment, addition, deletion, insertion, annotation, or otherwise comprises a non-identical copy of another document shall be treated as a separate document subject to production. In all cases where original and any non-identical copies are not available, "document(s)" also means any identical copies of the original and all non-identical copies thereof. Any document, record, graph, chart, film or photograph originally produced in

color must be provided in color. Furnish all documents whether verified by Mazda or not. If a document is not in the English language, provide both the original document and an English translation of the document.

- **Other Terms:** To the extent that they are used in these information requests, the terms “claim,” “consumer complaint,” “dealer field report,” “field report,” “fire,” “fleet,” “good will,” “make,” “model,” “model year,” “notice,” “property damage,” “property damage claim,” “rollover,” “type,” “warranty,” “warranty adjustment,” and “warranty claim,” whether used in singular or in plural form, have the same meaning as found in 49 CFR 579.4.

In order for my staff to evaluate the alleged defect, certain information is required. Pursuant to 49 U.S.C. § 30166, please provide numbered responses to the following information requests. Insofar as Mazda has previously provided a document to ODI, Mazda may produce it again or identify the document, the document submission to ODI in which it was included and the precise location in that submission where the document is located. When documents are produced, the documents shall be produced in an identified, organized manner that corresponds with the organization of this information request letter (including all individual requests and subparts). When documents are produced and the documents would not, standing alone, be self-explanatory, the production of documents shall be supplemented and accompanied by explanation.

Please repeat the applicable request verbatim above each response. After Mazda’s response to each request, identify the source of the information and indicate the last date the information was gathered.

1. State, by model year, the number of subject and peer vehicles Mazda has manufactured for sale or lease in the United States and federalized territories. Separately, for each subject vehicle manufactured to date by Mazda, state the following:
 - a. Vehicle identification number (VIN);
 - b. Make;
 - c. Model;
 - d. Model Year;
 - e. Date of manufacture;
 - f. Date warranty coverage commenced; and
 - g. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

Provide the table in Microsoft Access 2010, 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.

2. State, by model year, 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 and peer vehicles:

- a. Consumer complaints, including those from fleet operators;
- b. Field reports, including dealer field reports;
- c. Reports involving a crash, rollover, injury or fatality;
- d. Property damage claims;
- e. Third-party arbitration proceedings where Mazda is or was a party to the arbitration; and
- f. Lawsuits, both pending and closed, in which Mazda is or was a defendant or codefendant.

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

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

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

Provide this information in Microsoft Access 2010, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

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.
5. State, by model year, total counts for all of the following categories of claims, collectively, that have been paid by Mazda to date that relate to, or may relate to, LBJ wear related failures (e.g., excessive ball joint end-play or radial-play) 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) and telephone number;
- c. Vehicle's VIN;
- d. Vehicles model and model year;
- 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. Diagnostic trouble code(s) identified during the repair;
- m. Cause and Correction stated by dealer/technician; and
- n. Additional comments, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2010 or a compatible format, entitled "WARRANTY DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

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. Indicate which extended service plans provide coverage for the subject component.
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.
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.

The response to this request should include a detailed description of all past, present and future actions by any and all engineering working groups (e.g., vehicle dynamics control task force) of which Mazda is an active member or is otherwise aware. This includes, at a minimum, all of the information requested in items "a" through "f."

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.

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 number(s) (service and engineering) of the original component;
 - e. The part number(s) (service and engineering) of the modified component;
 - f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when; and
 - g. When the modified component was made available as a service component.

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.

10. State the number of subject components that Mazda has sold for use 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, sales region (e.g., regional parts distribution center) and month/year of sale (including the cutoff 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. Provide Mazda's estimate of the approximate percentage of subject vehicles registered in each parts distribution center.

11. Produce samples of each of the following front suspension LCA assemblies used in MY 2007 through current production CX-9 vehicles:
 - a. One sample of each version of LCA assembly with the ball joints quarter-sectioned; and
 - b. For the subject components, three samples of worst case field returns of LBJs exhibiting excessive wear (e.g., end-play or lateral play), if available (please do not send entire LCA assemblies for these samples).

Please use greaseless ball joints for the samples requested in 11.a. Unless there are differences in ball joint design between left and right side control arms, only left side parts are sufficient for the parts requested in 11.a.

12. Provide the following information about the front suspension designs and LCA assemblies used in MY 2008 CX-9 vehicles that relate to the loading environment of the LBJ assemblies:
 - a. Provide free body diagrams of the left front suspension assembly (from wheel hub to suspension body mounts) of the subject vehicles showing the loading environments (loads and moments in all axes) of the LCA assembly and strut, including input loads at the wheel mount and attachment loads at the body mounts under the following conditions: (1) static load; and (2) dynamic load ranges for nominal and maximum load conditions (state operating conditions for each);
 - b. In the same diagrams and conditions provided in 12.a, show the loads and moments at the LBJs; and
 - c. State the material composition of the LCA assembly.
13. Provide the following information about the LBJ assemblies used in MY 2007 through current production CX-9 vehicles:
 - a. Provide cross-sectional views of the each design version of LBJ assemblies used in MY 2007 through current CX-9 vehicles, identifying all components (e.g., housing, ball stud, bearing, cap, boot, etc.) and the material composition and/or design specifications for each component;
 - b. State the maximum axial and lateral play for the LBJ;
 - c. Description of service procedures for evaluating/measuring LBJ play;
 - d. State the specified tensile strength and cam-out strength of the LBJ assemblies when new and at the maximum wear conditions identified in 13.b;
 - e. Describe and provide copies of all tensile and cam-out strength bench testing performed by, or for, Mazda on new and field return samples of LBJs, including strength when the LBJ is at maximum wear condition (i.e., exceeds Mazda play specification);
 - f. Describe, and provide copies of all documents relating to, all durability requirements of the LBJ assembly for both vehicle and bench testing;
 - g. Provide copies of all testing performed to compare durability of the LBJ assemblies used in the subject vehicles and LBJ assemblies used in current production CX-9 vehicles;

- h. State the design life of the LBJs;
 - i. Provide Mazda's assessment of mechanism(s) associated with compromised LBJ seal integrity, if any, in the field failures of the subject components;
 - j. Provide Mazda's assessment of mechanism(s) associated with LBJ corrosion, if any, in the field failures of the subject components; and
 - k. Provide Mazda's assessment of all design, vehicle (e.g., LCA bushing aging), service use and environmental factors that may influence ball joint durability.
14. Furnish Mazda's assessment of the alleged defect in the subject vehicle, including:
- a. The causal (root cause analysis) or contributory factor(s);
 - b. The failure mechanism(s);
 - c. The failure mode(s);
 - d. The risk to motor vehicle safety that it poses; and
 - e. What warnings, if any, the operator would have that the alleged defect was occurring or subject component was malfunctioning.

Legal Authority for This Request

This letter is being sent to Mazda pursuant to 49 U.S.C. § 30166, which authorizes NHTSA to conduct any investigation that may be necessary to enforce Chapter 301 of Title 49 and to request reports and the production of things. It constitutes a new request for information.

Civil Penalties

Mazda's failure to respond promptly and fully to this letter could subject Mazda to civil penalties pursuant to 49 U.S.C. § 30165 or lead to an action for injunctive relief pursuant to 49 U.S.C. § 30163. (Other remedies and sanctions are available as well.) The Vehicle Safety Act, as amended, 49 U.S.C. § 30165(b), provides for civil penalties of up to \$7,000 per day, with a maximum of \$35,000,000 for a related series of violations, for failing or refusing to perform an act required under 49 U.S.C. § 30166. *See* 49 CFR 578.6 (as amended by 77 Fed. Reg. 70710 (November 27, 2012)). This includes failing to respond completely to ODI information requests. The maximum civil penalty of \$7,000 per violation per day is established by 49 CFR 578.6(a)(3). The maximum civil penalty of \$35,000,000 for a related series of daily violations of 49 U.S.C. § 30166 is authorized by 49 U.S.C. § 30165(a)(3) as amended by § 31203(a)(1)(B) of the Moving Ahead for Progress in the 21st Century Act, Public Law 112-141.

If Mazda cannot respond to any specific request or subpart(s) thereof, please state the reason why it is unable to do so. If on the basis of attorney-client, attorney work product, or other privilege, Mazda does not submit one or more requested documents or items of information in response to this information request, Mazda must provide a privilege log identifying each document or item withheld, and stating the date, subject or title, the name and position of the person(s) from, and the person(s) to whom it was sent, and the name and position of any other recipient (to include all carbon copies or blind carbon copies), the nature of that information or material, and the basis for the claim of privilege and why that privilege applies.

Confidential Business Information

All business confidential information must be submitted directly to the Office of Chief Counsel as described in the following paragraph and should not be sent to this office. In addition, do not submit any business confidential information in the body of the letter submitted to this office. Please refer to PE15-022 in Mazda's response to this letter and in any confidentiality request submitted to the Office of Chief Counsel.

If Mazda claims that any of the information or documents provided in response to this information request constitute confidential commercial material within the meaning of 5 U.S.C. § 552(b)(4), or are protected from disclosure pursuant to 18 U.S.C. § 1905, Mazda must submit supporting information together with the materials that are the subject of the confidentiality request, in accordance with 49 CFR Part 512, as amended, to the Office of Chief Counsel (NCC-111), National Highway Traffic Safety Administration, Room W41-227, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590. Mazda is required to **submit two copies of the documents containing allegedly confidential information (except only one copy of blueprints) and one copy of the documents from which information claimed to be confidential has been deleted.** Please remember that the phrase "ENTIRE PAGE CONFIDENTIAL BUSINESS INFORMATION" or "CONTAINS CONFIDENTIAL BUSINESS INFORMATION" (as appropriate) must appear at the top of each page containing information claimed to be confidential, and the information must be clearly identified in accordance with 49 CFR 512.6. If you submit a request for confidentiality for all or part of your response to this IR, that is in an electronic format (e.g., CD-ROM), your request and associated submission must conform to the new requirements in NHTSA's Confidential Business Information Rule regarding submissions in electronic formats. *See* 49 CFR 512.6(c) (as amended by 72 Fed. Reg. 59434 (October 19, 2007)).

If you have any questions regarding submission of a request for confidential treatment, contact Otto Matheke, Senior Attorney, Office of Chief Counsel at otto.matheke@dot.gov or (202) 366-5253.

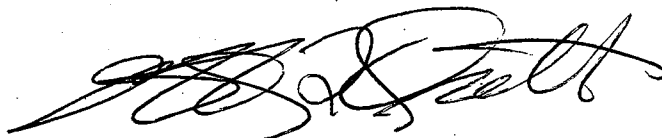
Due Date

Mazda's response to this letter, in duplicate, together with a copy of any confidentiality request, must be submitted to this office by **August 4, 2015**. If Mazda finds that it is unable to provide all of the information requested within the time allotted, Mazda must request an extension from me at (202) 366-5207 no later than five business days before the response due date. If Mazda is unable to provide all of the information requested by the original deadline, it must submit a partial response by the original deadline with whatever information Mazda then has available, even if an extension has been granted.

Please send email notification to Paul Simmons at paul.simmons@dot.gov and to ODI_IRresponse@dot.gov when Mazda sends its response to this office and indicate whether there is confidential information as part of Mazda's response.

If you have any technical questions concerning this matter, please call Paul Simmons of my staff at (202) 366-2315.

Sincerely,

A handwritten signature in black ink, appearing to read "J. L. Quandt", written in a cursive style.

Jeffrey L. Quandt, Chief
Vehicle Control Division
Office of Defects Investigation

Enclosure 1: one CD-ROM, titled Data Collection Disc, containing five files

The VOQs associated with this information request are: 10717510, 10714469, 10695142, 10668978, 10640541, and 10546535.