



U.S. Department
of Transportation
National Highway
Traffic Safety
Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

JAN 27 2003

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Lyndon R. Lie, Director
Product Investigations
General Motors Corporation
Mail code 480-106-304
30500 Mound Road
Warren, MI 48090-9055

NVS-213
EA02-031

Dear Mr. Lie:

As you are aware, on November 15, 2002, the Office of Defects Investigation (ODI) of the National Highway Traffic Safety Administration (NHTSA) upgraded Preliminary Evaluation PE02-054 of alleged steering column lockup in model year (MY) 1997-2001 Chevrolet Corvette vehicles to Engineering Analysis EA02-031. As part of this investigation, this letter requests additional information from General Motors Corporation (GM).

The basis for upgrading this investigation is 344 consumer complaints submitted to ODI and GM, including 25 crashes and 10 injuries, and over 24,000 warranty claims. The warranty claims cited here are all claims submitted outside of the GM's Customer Service Campaign (CSC) 1044. A copy of 161 ODI reports, which do not include any of the reports previously provided in PE02-054, are enclosed for your information (Enclosure 1).

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

- **Subject vehicles:** all MY 1997-2001 Chevrolet Corvette vehicles manufactured for sale or lease in the United States.
- **Subject component:** all electronic column lock (ECL) assemblies manufactured for use on the subject vehicles.
- **GM:** General Motors, all of its 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,



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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 GM (including all business units and persons previously referred to), who are or, in or after January 1, 1994, 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:** the lockup of the steering column while the vehicle is in motion (regardless of cause).
- **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-builts, 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 GM, 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 the manufacturer 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 GM has previously provided a document to ODI, GM 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 GM'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 vehicles GM has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by GM, state the following:
 - a. Vehicle identification number (VIN);
 - b. Model Year;
 - c. Transmission Type;
 - d. Date of manufacture;
 - e. Date warranty coverage commenced; and
 - f. 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 2, EA02-031 Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

2. State the number of each of the following, received by GM, or of which GM 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. Property damage claims; and,
- e. Third-party arbitration proceedings where GM is or was a party to the arbitration; and,
- f. Lawsuits, both pending and closed, in which GM is or was a defendant or codefendant.

For subparts "a" through "f," 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 GM'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. GM'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 model year;
 - e. Vehicle's VIN;
 - f. Incident date;
 - g. Report or claim date;
 - h. Vehicle's mileage at time of incident;
 - i. Vehicle's speed at time of incident;
 - j. Whether a crash is alleged;
 - k. Number of alleged injuries, if any;
 - l. Number of alleged fatalities, if any;
 - m. System/component codes; and
 - n. Summary of the complaint/report.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 2, EA02-031 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 excluding those submitted in GM's September 13, 2002 response to PB02-054. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method GM used for organizing the documents.

5. State, by model year, a total count for all of the following categories of claims, collectively, that have been paid by GM 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. GM's claim number;
 - b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
 - c. VIN;
 - d. Repair date;
 - e. Vehicle mileage at time of repair;
 - f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
 - g. Labor operation number;
 - h. Problem code;
 - i. Replacement part number(s) and description(s);
 - j. Concern stated by customer; and
 - k. 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 2, EA02-031 Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

6. Describe in detail the search criteria used by GM 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.
7. State, by model year, the terms of the new vehicle warranty coverage offered by GM 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) related to the alleged defect that GM offered for the subject vehicles and state by option and model year, the number of vehicles that are covered under each such extended warranty.
8. Provide a chart showing electronic column lock warranty incidents per thousand vehicles by build month and by time in service. Provide all charts in full color, or in an electronic format that contains full color.
9. Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that GM has issued to any vehicle owners, dealers, regional or zone offices, field offices, fleet purchasers, or other entities, other than those identified in GM's September 13, 2002 response to PE02-054. 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 GM is planning to issue within the next 120 days.

10. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, GM, other than those identified in GM's September 13, 2002 response to PE02-054. 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 and for each document provided, state the source of the document and the date the action was or will be completed.

11. State by model year and transmission type all modification(s), component(s), or kit(s) that would be required to retrofit the MY 2001 ECL assembly onto MY 1997-2000 subject vehicles, including all modifications required in the Passenger Zone Module (PZM). For each component or kit required, state the part number(s), the component or kit application, and the modifications made to the component or kit from the earlier vehicle. State whether any new or additional service or maintenance processes are required to retrofit or maintain the component(s) or kit(s) on earlier vehicles.
12. Provide a chronological description of all modifications or changes, other than those identified in GM's September 13, 2002 response to PE02-054, made by, or on behalf of, GM in the design, material composition, manufacture, quality control, supply, or installation of the subject component, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:
 - a. The date or approximate date on which the modification or change was incorporated into vehicle production;
 - b. A detailed description of the modification or change;
 - c. The reason(s) for the modification or change;
 - d. The part numbers (service and engineering) of the original component;
 - e. The part number (service and engineering) of the modified component;
 - f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;

- g. Disposition of unused pre-modified parts;
- 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.

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

13. Furnish each of the following:

- a. Field return samples of the subject component exhibiting each subject failure mode GM has identified, including subject components exhibiting the following:
 - i. Failure of actuator;
 - ii. Short circuiting of ECL;
 - iii. Binding of worm/worm gear;
 - iv. Excessive lock bolt rebound; and
 - v. Any other failure mode.
- b. One assembled steering column (without steering wheel) per Enclosure 3; General Motor's 1998 Chevrolet Corvette Service Manual - Steering Column - Disassembled View; and
- c. Two exemplar samples of the Shaft Lock Shield Assembly.

14. Produce GM's design specifications and testing requirements for the subject component used on the subject vehicle, including:

- a. The original GM specification;
- b. A chronological listing of all specification modifications or additions, including the date the change was incorporated into the production of the subject vehicle and the reason for the change;
- c. The original testing requirements and a description of how each testing process was conducted, including the name and description of each type of testing and measurement equipment;
- d. The test results used to validate how the subject component met the design specifications for each testing requirement;
- e. A chronological listing of any testing requirement modification or addition, including a description of the modified or additional testing procedure, if applicable, the date the change was incorporated into the production of the subject vehicle, and the reason the change was made; and
- f. The test results used to validate how the subject component met the design specifications for each modified testing requirement.

15. The following questions refer to the summary table provided on Bates pages GM622 Att. 10 16 through 18 in Attachment "10" of GM's September 13, 2002 response to PE02-054.

- a. State the source and date of the document.
- b. Produce copies of all reference documents cited, including:
 - i. Reference Document B-2;
 - ii. Reference Document C-1;
 - iii. Reference Document D-1;

- iv. Reference Document E-4;
 - v. Chart: Appendix S;
 - vi. Reference Documents J-1, J-3, and J-4;
 - vii. Reference Document N; and
 - viii. Reference Document K-1.
- c. Explain the terminology "PPAP", "Interim A", "Interim D", and "engineering permit", as it applies to the subject component.
 - d. Explain the PPAP approval process and requirement specifications for the steering column as it relates to the subject component in the subject vehicle.
 - e. Explain the requirements and testing procedures necessary to validate the ECL actuator and provide the test results used to substantiate its validation prior to the start of production of the subject vehicles.
 - f. Explain the ECL durability requirements and the specific durability requirements referenced in the 12/19/96 modification description, which Fasco (Invensus) could not meet.
 - g. Explain each action that Fasco (Invensus) has taken to meet the specific durability requirements that it could not meet in question 14f.
 - h. Describe failure mode referenced in the 04/1998 modification description and the vehicle mechanism GM changed to address this failure mode.
 - i. Describe the purpose and requirement specifications of the relay referenced in the 04/1998-12/1999 modification description, which GM added in April 1998.
 - j. Produce all documents and drawings that relate to, or may relate to, the relay referenced in question 14i.
 - k. Provide GM's detailed opinion of how and why the relay referenced in question 14h adversely affected the performance of the BCL.
 - l. Describe the "out of print" condition experienced with the stainless steel actuator referenced in the 12/16/98 modification description and the procedure used to rectify this issue in the subject vehicles containing the subject component.
16. Provide the following product validation and quality assurance (SQA) data relating to the subject component in the subject vehicles:
- a. All Invensus product validation data;
 - b. All Delphi product validation data;
 - c. All GM product validation data;
 - d. All Invensus quality assurance (SQA) data;
 - e. All Delphi quality assurance (SQA) data; and
 - f. All GM quality assurance data.

Include all documents relating to this data. For each document provided, state the source of the document, identify any testing performed, the entity that performed the tests, and the date each test was performed, state the testing procedure for each test, and state the results of the tests. Identify any problems, non-conformance to technical requirements, or other exceptions contained within this data and describe the corrective action taken.

17. Provide copies of all communications between GM and the first and second tier suppliers relating to the subject component. If any communications were oral or were conducted

electronically, provide a written transcript or summary of each such communication, and include a statement that identifies the participants and the date of the communication.

18. Identify, by make, model and model year, all other vehicles manufactured by GM which contain the subject component used in the subject vehicles. For each vehicle, state the following:
 - a. Make;
 - b. Model;
 - c. Model year;
 - d. The GM part number of the subject component;
 - e. The manufacturer part number of the subject component;
 - f. The number of vehicles sold; and
 - g. The electrical schematic and/or wiring diagram detailing the ECL circuit in the vehicle.
19. Furnish GM'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.

This letter is being sent to GM 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. GM's failure to respond promptly and fully to this letter could subject GM 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.) Please note that maximum civil penalties under 49 U.S.C. § 30165 have increased as a result of the recent enactment of the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act, Public Law No. 106-414 (signed November 1, 2000). Section 5(a) of the TREAD Act, codified at 49 U.S.C. § 30165(b), provides for civil penalties of up to \$5,000 per day, with a maximum of \$15 million for a related series of violations, for failing or refusing to perform an act required under 49 U.S.C. § 30166. This includes failing to respond to ODI information requests.

If GM 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, GM does not submit one or more requested documents or items of information in response to this information request, GM 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.

GM's response to this letter, in duplicate, together with a copy of any confidentiality request, must be submitted to this office by **March 28, 2003**. Please refer to EA02-031 in GM's response to this letter. If GM finds that it is unable to provide all of the information requested within the time allotted, GM must request an extension from Jeffrey Quandt at (202) 366-5207 no later than five business days before the response due date. If GM 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 GM then has available, even if an extension has been granted.

If GM 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, GM must submit supporting information together with the materials that are the subject of the confidentiality request, in accordance with 49 CFR Part 512, to the Office of Chief Counsel (NCC-113), National Highway Traffic Safety Administration, Room 5219, 400 Seventh Street, S.W., Washington, D.C. 20590. GM 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.

If you have any technical questions concerning this matter, please call Cheryl Tuosto of my staff at (202) 366-1869.

Sincerely,

A handwritten signature in black ink, appearing to read 'K. Demeter', with a long horizontal flourish extending to the right.

Kathleen C. Demeter, Office Director
Office of Defects Investigation
Vehicle Safety

Enclosure 1, 161 Consumer Complaints

Enclosure 2, one CD ROM titled EA02-031 Data Collection Disc containing three files

Enclosure 3, General Motor's 1998 Chevrolet Corvette Service Manual - Steering Column -
Disassembled View