

7/21/06
[Signature]

September 15, 2006

Jeffrey L. Quandt, Chief
Vehicle Control Division
Office of Defects Investigation
NHTSA Enforcement
Room #5326
400 Seventh Street, S.W.
Washington, D.C. 20590

GM-690

NVS-213cla
PE06-021

Dear Mr. Quandt:

This letter is General Motors' (GM) response to your information request (IR), dated July 31, 2006, involving the corrosive failure of the front suspension cross-member, the corrosive failure of the steering box mounts and the corrosive failure of the front control arm attachment on all MY 1999 through 2001 Chevrolet Tracker vehicles manufactured for sale or lease in the United States. The subject vehicles were designed and developed by Suzuki Motor Corporation (Suzuki) and manufactured by CAMI Automotive Inc., a joint venture between Suzuki Motor and General Motors of Canada.

Your questions and our corresponding replies are as follows:

1. **State, by model year and drivetrain (two-wheel drive or four-wheel drive), 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. Make;
 - c. Model;
 - d. Model Year;
 - e. Drive wheels;
 - f. Plant of manufacture;
 - g. Date of manufacture;
 - h. Date warranty coverage commenced; and
 - i. 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 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

General Motors is providing the number of subject vehicles produced for sale or lease in the United States by model and model year in Table 1 below:

Make	Model	1999	2000	2001	Total
Chevrolet	Tracker	33,305	45,064	49,843	128,212

TABLE 1: VEHICLE PRODUCTION

The production information requested in 1a-1i is provided on the CD in Attachment 1, in the folder labeled Response to Q1; refer to the Microsoft Access 2000 file labeled "PRODUCTION DATA. The GM database that contains Vehicle Identification Number (VIN) information does not include information on the state where an individual vehicle was sold. GM is providing the state where the vehicle was shipped in response to request 1i. For some of the subject vehicles, which have incomplete warranty files, the GM warranty system does not contain a warranty start date or state where the vehicle was shipped and therefore these fields are blank in the Microsoft Access 2000 file.

2. **State, by model year and drivetrain, 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. **Consumer complaints, including those from operators, where a vehicle stall was reported**
 - c. **Field reports, including dealer field reports;**
 - d. **Field reports, including dealer field reports where a vehicle stall was reported;**
 - e. **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;**
 - f. **Property damage claims;**
 - g. **Third-party arbitration proceedings where GM is or was a party to the arbitration; and**
 - h. **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 "e" through "h," 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 g and h, 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.

Table 2-1 and 2-2 below summarize records that could relate to the subject condition. GM has organized the records by the GM file number within each attachment. Vehicle stall as discussed in Question 2b and 2d above is not a consequence related to the subject condition.

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES			
		CORRESPONDING TO NHTSA REPORTS	NUMBER WITH PROPERTY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/ FATALITIES
Owner Reports	20	1	0	0	0
Field Reports	0	0	0	0	0
Not-In-Suit Claims	0	0	0	0	0
Subrogation Claims	0	0	0	0	0
Third Party Arbitration Proceedings	0	0	0	0	0
Product Liability Lawsuits	0	0	0	0	0
Total Reports (Including Duplicates)	20	1	0	0	0
Total Vehicles with Reports (Unique VIN)	20	1	0	0	0

TABLE 2-1: REPORT BREAKDOWN FOR CROSS-MEMBER CORROSION

* GM IS NOT AWARE OF ANY FATALITIES REPORTED FOR THE SUBJECT CONDITION

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES			
		CORRESPONDING TO NHTSA REPORTS	NUMBER WITH PROPERTY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/ FATALITIES
Owner Reports	9	2	0	0	0
Field Reports	0	0	0	0	0
Not-In-Suit Claims	0	0	0	0	0
Subrogation Claims	0	0	0	0	0
Third Party Arbitration Proceedings	0	0	0	0	0
Product Liability Lawsuits	0	0	0	0	0
Total Reports (Including Duplicates)	9	2	0	0	0
Total Vehicles with Reports (Unique VIN)	9	2	0	0	0

TABLE 2-2: REPORT BREAKDOWN FOR CROSS-MEMBER CORROSION AND CONTROL ARM ATTACHMENT SEPARATION (NO CLAIMS FOR STEERING BOX SEPARATIONS WERE FOUND)

* GM IS NOT AWARE OF ANY FATALITIES REPORTED FOR THE SUBJECT CONDITION

To date, GM's investigation of the alleged defect has not included an assessment of the cause(s) of each incident responsive to Request No. 2. Some incident reports may not contain sufficient reliable information to accurately assess cause. Assessments of other incidents (from lawsuits and claims) may be attorney work product and/or privileged. Therefore, information and documents provided in this response, if any, consist only of non-attorney work product and/or non-privileged material for incidents that have been investigated and assessed.

The sources of the requested information and the last date the searches were conducted are tabulated in Table 2-3 below.

SOURCE SYSTEM	LAST DATE GATHERED
Customer Assistance Center	8/18/2006
Technical Assistance Center	8/18/2006
Field Information Network Database (FIND)	8/24/2006
Company Vehicle Evaluation Program (CVEP)	8/24/2006
Field Product Report Database (FPRD)	8/24/2006
Legal / Employee Self Insured Services (ESIS)	8/22/2006

TABLE 2-3: DATA SOURCES

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 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. Repair(s) dealer made to the vehicle;
- j. Whether a crash is alleged;
- k. Whether property damage is alleged;
- l. Number of alleged injuries, if any;
- m. Number of alleged fatalities, if any; and
- n. A summary of the incident.

Provide this information in Microsoft Access 2003, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

The requested information is provided on the CD in Attachment 1, in a folder labeled Response to Q3; refer to the Microsoft Access 2000 file in the file labeled, "REQUEST NUMBER TWO DATA".

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 GM used for organizing the documents.**

Copies of the records identified in Item 2 are provided in the attachments listed in Table 2-1. GM has organized the records by the GM file number within each attachment.

5. **State, by model year and drivetrain, total counts 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 made in accordance with the procedure specified in the subject service bulletin; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made.**

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. **Whether any warning lights were lit at the time the alleged defect occurred;**
- 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; and**
- l. **Comment, if any, 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 that provides further details regarding this submission.

Tables 5-1 and 5-2 summarize by model year the regular and extended warranty claims for the subject vehicles that were collected by searching the labor codes and trouble codes that may be related to the alleged defect. A list of the labor codes and trouble codes is provided in response to item No. 6. A summary of the warranty claims, including the information requested in 5(a-l), is provided on the Attachment 1 CD; refer to the folder labeled, "Response to Q5."

The warranty data provided has limited analytical value in analyzing the field performance of a motor vehicle component. The warranty records do not contain sufficient information to establish the condition of the part at the time of the warranty correction; and service personnel may not consistently use the appropriate labor and trouble codes. Warranty numbers represent claims by our dealers for reimbursement for parts and labor costs incurred in performing warranty service for our customers. Consequently, some of these warranty claims are not related to the alleged defect.

The GM regular warranty that may relate to the subject condition were collected by searching for the labor codes listed in Table 6-1. The GM regular warranty claims were filtered for a cross-member component replacement cost that is greater than two hundred dollars. GM then filtered the remaining claims for incidents that occurred on vehicles that experienced greater than 24 months (730 days) field exposure. GM then contacted dealers and discussed repair order information and determined that 15 claims stated that the cross-member was replaced for

excessive corrosion. None of the claims stated that the control arm or steering box separated from the cross-member.

The MIC claims that may relate to the subject condition were collected by searching for the labor codes listed in Table 6-1. The MIC warranty claims were filtered for a cross-member component replacement cost that is greater than two hundred dollars. GM contacted dealers and discussed repair order information and determined that none of the extended warranty claims stated that the cross-member was replaced for corrosion, detachment of the front control arm connection and/or separation of the steering box from the cross-member.

The MIC extended warranty claims include only the labor code used to identify the repair. Additional information including Trouble code/description, Customer code/description, part numbers/ descriptions and customer/dealer comments are not recorded therefore, GM is unable to determine which if any, claims may relate to the alleged condition.

Make	Model	1999	2000	2001	Total
Chevrolet	Tracker	5	7	3	15

TABLE 5-1A: GM REGULAR WARRANTY CLAIMS FOR CROSS-MEMBER CORROSION

Make	Model	1999	2000	2001	Total
Chevrolet	Tracker	0	0	0	0

TABLE 5-1B: GM REGULAR WARRANTY CLAIMS FOR CROSS-MEMBER CORROSION INCLUDING STEERING BOX AND/OR CONTROL ARM SEPERATION

Make	Model	1999	2000	2001	Total
Chevrolet	Tracker	0	0	0	0

TABLE 5-2A: MIC EXTENDED WARRANTY CLAIMS FOR CROSS-MEMBER CORROSION

Make	Model	1999	2000	2001	Total
Chevrolet	Tracker	0	0	0	0

TABLE 5-2B: MIC EXTENDED WARRANTY CLAIMS FOR CROSS-MEMBER CORROSION INCLUDING STEERING BOX AND/OR CONTROL ARM SEPERATION

The sources of the requested information and the last date the searches were conducted are tabulated in Table 5-3 below.

SOURCE SYSTEM	LAST DATE GATHERED
GM CARD --regular warranty	8/16/2006
Motors Insurance Corporation (MIC) – extended warranty	8/22/2006
Universal Warranty Corporation (UWC) – extended warranty	8/22/2006*

TABLE 5-3: DATA SOURCES

* NO CLAIMS FOUND

GM searched the GM North America Claim Adjustment Retrieval Database (CARD-regular warranty), the Motors Insurance Corporation (MIC-extended warranty), and the Universal Warranty Corporation (UWC-extended warranty) databases to collect the warranty data for this response.

GM's warranty database does not contain the following information: vehicle owner's name or telephone number, replacement part number description, or customer concern statement. GM is providing a field labeled "Verbatim Text" in response to request 5K (dealer/technician comment). The verbatim text is an optional field in the GM warranty system for the dealer to enter any additional comments that may be applicable to the warranty claim. The verbatim text field is not required to be completed for every warranty claim.

Universal Warranty Corporation (UWC) does not cover the subject components and therefore has no claims related to the subject condition.

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. State, by make and 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) that GM 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.

The GM regular warranty and MIC extended warranty claims that may relate to the subject condition were collected by searching for the labor codes listed in Table 6-1 below. The list of trouble codes used during the search is included in Table 6-2 below. GM does not have a specific labor code for cross-member replacement, technicians frequently used labor code E1720 (Cross Member, Transmission Support - R&R Or Replace) for servicing the subject component.

LABOR CODE	DESCRIPTION:
E1720	Cross Member, Transmission Support - R&R Or Replace
E2140	Link or Bushings, Front Stabilizer Shaft At Control Arm - Right - R&R Or Replace
E2141	Link or Bushings, Front Stabilizer Shaft At Control Arm - Left - R&R Or Replace
E2147	Link or Bushings, Front Stabilizer Shaft At Control Arm - Both - R&R Or Replace
E2180	Insulator And/Or Bracket, Front Stabilizer Shaft At Frame - Replace
E3530	Arm Assembly, Front Control - Lower - Right - Replace
E3531	Arm Assembly, Front Control - Lower - Left - Replace
E3537	Arm Assembly, Front Control - Lower - Both - Replace

TABLE 6-1 LABOR CODES USED IN WARRANTY SEARCH

TROUBLE CODE	DESCRIPTION:
5W	RUSTED/CORRODED
4X	WORN
4Q	WEAK
2W	LOOSE
6C	COMPONENT-INOPERATIVE

TABLE 6-2 TROUBLE CODES USED IN WARRANTY SEARCH

The warranty data provided has limited analytical value in analyzing the field performance of a motor vehicle component. The warranty records do not contain sufficient information to establish the condition of the part at the time of the warranty correction; and service personnel may not consistently use the appropriate labor and trouble codes. Warranty numbers represent claims by our dealers for reimbursement for parts and labor costs incurred in performing warranty service for our customers.

The subject vehicles are covered by a bumper-to-bumper new vehicle warranty for three years or 36,000 miles whichever occurs first. Many different extended warranty options are available through GM dealerships. They are offered at different prices and for varying lengths of time, based on customer's preference, up to 7 years from the date of purchase or up to a total of 100,000 vehicle miles. The General Motor's warranty system does not contain information on the number of vehicles that have extended warranty coverage.

- 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 GM 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 GM is planning to issue within the next 120 days.**

GM is not aware of any past service, warranty or other documents that relate or may relate to the subject condition in the subject vehicles, that GM has issued to dealers, regional or zone offices, field offices, fleet purchasers or other entities.

General Motors expects a service bulletin to be issued regarding the cross-member to be issued in the next 120 days. A draft of the future service bulletin is provided on the Attachment 1 CD; refer to the folder labeled, "Response for Q7."

The data collection was completed on September 5, 2006.

- 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, GM. 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.

The information listed in Table 8-1 below is a summary of actions performed by GM and Suzuki regarding the subject condition on the 1999-2001 MY Chevrolet Tracker vehicles. Documents

and additional supporting information is included in the following Attachments: Attachment 1 CD GM Non-Confidential Data, Response to Q8 files, Attachment 2 CD GM Confidential Data, Response to Q8 files and the Attachment 3 CD Suzuki Confidential Data, Response to Q8 files. The data collection was completed on September 13, 2006.

<p>Action 8-1: Cross-member initial design, validation and durability information Start Date: 12/1996 End Date: 9/2000 Engineering Group: Suzuki Motor Corporation Attachments: Attachment 3 CD Suzuki Confidential Data, Response to 8a (ANNEX8-1.tiff, ANNEX8-2.pdf) Attachment 1 CD GM Non-Confidential Data, Response to 8a (45812-65D00-ENG.CHANGE NOTICE.tif, 45812-65D00-OLD PRINT.tif, 45812-65D00-REVISED PRINT.tif, Suzuki email DWG info.doc) Description: Suzuki Motor Corporation is collecting the additional information and it will be forwarded when received. Summary of Action: Designed, validated and released cross-member component</p>
<p>Action 8-2: Cross-member E-Coat certification certificates Start Date: 1/2000 End Date: 9/2000 Engineering Group: E-Coating suppliers Attachment: Attachment 2 CD GM Non-Confidential Data, Response to 8a (Certificates of Compliance Formcoat.pdf, Quality Certificates DYNA-MIG.pdf) Description: Supplier E-Coat certification certificates for cross-member components Summary of Action: E-coat process compliant to original design specification</p>
<p>Action 8-3: Field Reports and Field Component Analysis Start Date: 11/01/05 End Date: 3/01/06 Engineering Group: Suzuki Motor Corporation Attachment: Attachment 3 CD Suzuki Confidential Data, Response to 8b (Annex1.pdf, Annex2.pdf, Annex3.pdf, Annex4.xls, Annex4 Attach.pdf) Description: Suzuki field reports and component analysis Summary of Action: Field report of cross-member corrosion incidents on field vehicles. Analysis and summary of a front suspension cross-member component retrieved from field vehicle and analysis and summary of corrosion coating of cross-member from field sample.</p>
<p>Action 8-4: Automobile Claim Countermeasure Meeting Minutes Start Date: 12/05 End Date: 3/06 Engineering Group: Suzuki Motor Corporation Attachment: Attachment 3 CD Suzuki Confidential Data, Response to 8c (Annex6.pdf) Description: Continuing discussion of cross-member analysis, discussion and component improvements Summary of Action: Change cross-member flange design to improve E-Coat application on inside of cross-member</p>
<p>Action 8-5: New design cross-member Component Analysis Start Date: 8/06 End Date: 9/06 Engineering Group: Suzuki Motor Corporation Attachment: Attachment 3 CD Suzuki Confidential Data, Response to 8d (ANNEX5 Page1-4.pdf, ANNEX5 Page5-6.pdf) Attachment 1 CD GM Non-Confidential Data, Response to 8d (Suzuki Chronology 9_7_06.doc, Aug 31 SUZUKI REPLY.pdf, Annex5 email.doc.) Description: Cross-member component Analysis and Chronology Summary of Action: Includes: Chronology of events that drove component design change. Measurement and comparison of E-Coat coverage on the interior and exterior surfaces of the original and new design cross-member components</p>
<p>Action 8-6: STR22286 and STR22558 Start Date: 8/11/06 End Date: 8/16/06 Engineering Group: GM Engineering Attachment: Attachment 2 CD GM Confidential Data, Response to 8e (STR22286.Doc, STR22483.Doc) Description: GM Evaluation Report of cross-members from field vehicles Summary of Action: Analysis and summary of front suspension cross-member component retrieved from field.</p>

<p>Action 8-7: Cross-member NHTSA Field Component Analysis Start Date: 9/8/06 End Date: 9/8/06 Engineering Group: Suzuki Motor Corporation Attachment: Attachment 1 CD GM Non-Confidential, Response to 8f (Suzuki field component analysis.doc) Description: Cross-member component Analysis Summary of Action: Email summary of inspection and analysis of field component received from the NHTSA</p>
<p>Action 8-8: Tracker Vehicle Testing Start Date: 9/7/06 End Date: 9/7/2006 Engineering Group: Suzuki Motor Corporation Attachment: Attachment 3 CD Suzuki Confidential Data, Response to 8g (PATN1.wmv, PATN2.wmv, PATN3.wmv, DSC00027.jpg, DSC00030.jpg, Test drive Information.doc) Description: Drive schedule, video and photos of vehicle test drive with cross-member detached from control arm. Summary of Action: Vehicle was driven straight at 80kph with braking (corrected and non-corrected steering) and driven at 40kph through slalom course.</p>
<p>Action 8-9: Tracker Vehicle Evaluation and Testing Start Date: 8/25/06 End Date: 9/11/2006 Engineering Group: GM Engineering Attachment: Attachment 2 CD GM Confidential Data, Response to 8h(MVCXXX and DCSXXX.jpg) Description: Photos of vehicle tested. Photos of the vehicle with the cross-member detached from control arm and fabricated bracket installed to allow lateral movement of the forward attachment point of the control arm. Summary of Action: Photos of vehicle used for performance testing</p>
<p>Action 8-10: Component Analysis and Rate Determination Start Date: 6/26/06 End Date: Ongoing Engineering Group: GM Engineering Attachment: Attachment 2 CD GM Confidential Data, Response to 8j (UB photos, Incident summary.xls, US Canada Tracker Incidents.ppt) Description: Field Vehicle Inspection, Component/Incident Analysis and Weibull Projections Summary of Action: Inspection and Analysis of additional cross-member field components to determine if corrosion growth is regional and the projected incident rates.</p>
<p>Action 8-11: Management Review of Tracker Cross-member issue (3 meetings) Start Date: 6/26/06, 8/8/06 and 9/5/06 End Date: same Engineering Group: GM Engineering Attachment: Attachment 2 CD GM Confidential Data, Response to 8k (Chevrolet Tracker Cross Member Corrosion ISR mtg.doc) Description: GM investigation into alleged issue regarding the 1999 – 2001 MY Chevrolet Tracker Summary of Action: Field reports, warranty analysis and engineering information regarding the Chevrolet Tracker cross-member corrosion.</p>

TABLE 8-1 SUMMARY OF ACTIONS RELATED TO THE SUBJECT CONDITION

9. Describe all modifications or changes 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. 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 GM is aware of which may be incorporated into vehicle production within the next 120 days.

During the production of the 1999-2004 MY Chevrolet Tracker, no modifications or changes were made to the cross-member component. Suzuki released a new design cross-member component service part for the 1999-2004 MY Chevrolet Tracker vehicles in September 2006. GM will dispose of the old service parts when the new part is made available. GM expects the new cross-member component to be available within the next 120 days.

The new design includes two flange beads at each end of the component and an additional hole to allow air to escape which improved the E-Coat (corrosion protection) coverage on the interior of the cross-member. Summary documents of the component modifications, engineering service notice information and process changes responsive to items 9 a-h are included on the Attachment 2 CD GM Confidential; refer to the folder labeled "Response to Q9".

10. State the number of subject components that GM has sold that may be used in the subject vehicles by state, part number (both service and engineering/production) 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). If part sales data cannot be provided by state, provide it by part distribution center with a description of the region covered by each center.

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 GM is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

An electronic summary table of the requested service part information for the subject component is provided on the Attachment 1 CD; refer to the Microsoft Excel file in the folder labeled "Response to Q10." GM does not record the state where the individual components are sold. Additionally, when the subject components are sent to the distribution center, GM is unaware of the final retail destination.

11. Describe in detail the corrosion protection applied to the subject components and the protection system used on all surfaces. Provide copies of all engineering specifications and other design, manufacturing or testing documents that relate to corrosion protection of the subject components.

Information regarding the corrosion protection applied to the subject components, the anti-corrosion coating application process, component material specifications and anti-corrosion requirements are provided on the Attachment 1 CD; refer to the files in the folder labeled "Response to Q11."

12. 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 modes and the effect of each on vehicle control;**
- d. The condition(s) under which the alleged defect can occur;**
- e. The 3-, 5- and 10-year projected failure rates of the subject components by model year, drivetrain and region (salt belt and non-salt belt states);**
- f. The risk to motor vehicle safety that it poses;**
- g. 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**
- h. The reports included with this inquiry.**

The front suspension cross-member component installed in the 1999 – 2001 MY Chevrolet Tracker includes the application of an electrodepositing (E-Coat) corrosion protection that is required to withstand 450 hours of salt spray as described in the Suzuki Standard SES0197C (Annex2.pdf). Suzuki Painting Parts Inspection Standard SES D2203a recommends a thickness of 20um for vehicle components. However, variation in actual coating thickness is considered acceptable as long as the corrosion resistance standard is met. Suzuki does not specify the E-Coat thickness for the interior of the cross-member component.

The E-Coat corrosion protection applied to the exterior of the cross-member is 20um thick, as stated in the compliance certificates provided in Response to Question 8a. As stated above, the cross-member, regardless of the E-Coat thickness, is required to withstand 450 hrs of salt spray without corrosion, swelling, peeling or softening of the coating. The cross-member component meets the corrosion resistance specification.

GM and Suzuki have examined cross-members from field vehicles and determined that the corrosion is initiated on the interior of the component. Examination and analysis of sectioned cross-members indicates that the E-Coating application did not provide adequate corrosion protection on the interior of the component. Over time, water and mud/salt (poultice) from the road surface can enter the component (via seams and holes) and initiate crevice corrosion. The build up of poultice at localized areas of insufficient coating on the interior of the cross-member can accelerate crevice corrosion and may eventually cause perforation. The growth rate of corrosion on the interior of the component may be affected by the amount of E-Coating, vehicle underbody wash cycles and environmental conditions such as, ambient and underhood temperatures, exposure to road deicing materials, and personal driving patterns (rural and urban, paved and non-paved roads).

Both GM and Suzuki performed evaluation drives with the subject condition simulated. Test descriptions and videos are included in the Response to Q8.

Suzuki Vehicle Evaluation:

Suzuki removed the passenger side front control arm attachment flange from the cross-member assembly to simulate the effect of a completely separated control arm from the cross-member and performed the following tests:

Evaluation 1:

The vehicle was driven in a straight line at 80kph and the brakes were applied to decelerate the vehicle at a rate of 0.5g. Suzuki found the vehicle stopped within 53 meters and pulled to the left without any steering correction from the driver.

Evaluation 2:

The vehicle was driven in a straight line at 80kph and the brakes were applied to decelerate the vehicle at a rate of 0.5g. Suzuki found the vehicle stopped within 48 meters and pulled to the left less than 1 meter with steering correction from the driver.

Evaluation 3:

The vehicle was driven through a slalom maneuver at 40kph and the driver was able to control the vehicle to a complete stop.

The evaluation information and videos are included in the response to Question 8f.

GM Vehicle Evaluation:

GM modified the passenger side front cross-member on a 2000 MY Chevrolet Tracker to simulate the effect of a loose control arm front attachment point. This was accomplished by welding a slotted control arm attachment bracket to the cross-member that allowed lateral motion of the right hand front control arm attachment point. An adjustable travel-limiting bolt was used to simulate the effect of progressive corrosion of the attachment point up to and including separation. The control arm attachment point was allowed to move laterally up to four inches. Photos of the vehicle, test setup and fabricated cross-member are included in the response to Question 8h.

GM Evaluation 1

Parking lot and low speed maneuvers were conducted that included shifting the transmission from forward to reverse and vice versa, which caused the steering wheel to rotate off-center approximately 20-30 degrees. As the control arm attachment point moved laterally, it was obvious to the driver that the required steering wheel angle to maintain the intended path had changed and looseness was felt in the steering system. Although the vehicle was easy to control, it was noted that significant steering wheel corrections were required.

GM Evaluation 2

The vehicle was driven at 50 mph in a straight line and the brakes applied to bring the vehicle to a complete stop at constant decelerations ranging from approximately 0.05 to 0.7g. When the brakes were applied, the driver did not apply any steering wheel corrections. Limiting the front control arm lateral movement to approximately 1 inch, the vehicle pulled minimally to the left as it came to a complete stop at all levels of deceleration. Allowing the front control arm four inches of lateral movement, the vehicle turned strongly to the left without any steering correction at the higher deceleration levels.

GM Evaluation 3

The vehicle was driven at 50 mph in a straight line and the brakes applied to bring the vehicle to a complete stop at constant decelerations ranging from approximately 0.05 to 0.7g. Limiting the front control arm lateral movement to approximately 1 inch, minimal steering correction was required to maintain a straight path as the vehicle came to a complete stop, at all levels of deceleration. Allowing the front control arm four inches of lateral movement, steering wheel correction greater than 180 degrees of rotation was required to maintain the road lane width as the vehicle came to a complete stop.

These evaluations show that symptoms become more obvious to the driver as the range of travel of front control arm lateral attachment point increases.

GM has reviewed customer comments from warranty and field reports for cross-member corrosion. The customer comments indicate that the driver realized that the vehicle required maintenance or service.

Examples of customer comments include:

- Tire wobbling
- Steering acting funny
- Pulling to one side
- Front end noises (clunk, bang, etc.)
- Vehicle shaking
- Tire shaking
- Wheels shaking

As shown in Table 12-1 and 12-2 below, the incident rates for claims that may relate to the subject condition in corrosion and non-corrosion states are extremely low. GM has found that the majority of incidents have occurred in the corrosion states. Considering all field reports and warranty claims in all states, the IPTV is less than 0.7. For reports that indicate corrosion of the cross-member and control arm front attachment point separation, the IPTV is 0.11.

	1999 MY	2000 MY	2001 MY
Non-corrosion	0.00	0.11	0.00
Corrosion	0.56	0.69	0.00

TABLE 12-1 FIELD REPORT INCIDENT RATES FOR CROSS-MEMBER CORROSION AND CONTROL ARM ATTACHMENT SEPARATION

	1999 MY	2000 MY	2001 MY
Non-corrosion	0.07	0.00	0.00
Corrosion	0.34	0.35	0.15

TABLE 12-2 WARRANTY CLAIMS INCIDENT RATES CROSS-MEMBER CORROSION INCLUDING CONTROL ARM SEPARATION

GM strongly believes the occurrence of the cross-member corrosion does not pose a threat to motor vehicle safety. All the warranty claims and two-thirds of the field reports state the cross-member was replaced for excessive corrosion found during vehicle inspections or other vehicle maintenance. As stated earlier, none of the field reports or warranty claims reported that the steering box separated from the cross-member assembly.

GM and Suzuki's drive evaluations demonstrated that the Chevrolet Tracker's steering and braking systems can be effective in controlling the vehicle with the subject condition.

This is supported by the fact that none of the reports alleging a separation of the control arm front attachment point have resulted in a crash, injury or property damage incident.

To compare the long term durability of the components in corrosion and non-corrosion states, GM is continuing to retrieve field components to determine the projected incident rates of the subject components.

GM is continuing its investigation.

The six incident reports (VOQs) included with this inquiry indicate that all experienced corrosive failure of the front suspension cross-member. Four reports indicate the corrosive failure of the front control arm attachment point and one with the dislocated steering box mounts. These

alleged failures may have resulted from the contributory factors and failure mechanisms noted above. GM has examined one cross-member from a VOQ report. The cross-member did exhibit corrosion and near separation of the front control arm connection point.

* * *

General Motors requested assistance and documents from Suzuki Motor Corporation, CAMI, and suppliers in responding to items 7, 8, 9, 11 and 12 and this response includes those documents received from suppliers.

GM claims that certain information, in documents that are part of lawsuit and claims files maintained by the GM Legal Staff, is attorney work product and/or privileged. That information includes notes, memos, reports, photographs, and evaluations by attorneys (and by consultants, claims analysts, investigators, and engineers working at the request of attorneys). GM is producing responsive documents from claims files that are neither attorney work product nor privileged, and withholding those that are attorney work product and/or privileged.

Except for documents from other entities, this response is based on searches of GM locations where documents determined to be responsive to your request would ordinarily be found. As a result, the scope of this search did not include, nor could it reasonably include, "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 GM (including all business units and persons previously referred to), who are or, in or after January 1, 2000, 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. "

This response was compiled and prepared by this office upon review of the documents produced by various GM locations, and does not include documents generated or received at those GM locations subsequent to their searches.

Please contact me if you require further information about this response or the nature or scope of our searches.

Sincerely,



Gay P. Kent
Director
Product Investigations

Attachments

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GM CONFIDENTIALITY LETTER

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Dynamig Manufacturing Inc.

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