



*2/21/08*

February 19, 2008

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Kathleen C. DeMeter, Director  
 Office of Defects Investigation  
 National Highway Traffic Safety Administration  
 1200 New Jersey Ave., S. E., Room W46-409  
 Washington, D.C. 20590

OFFICE OF  
 DEFECTS INVESTIGATION N080015

NVS-213dlr  
 EA07-012

Dear Ms. DeMeter:

This letter is General Motors' (GM) response to your Information Request dated January 3, 2008, requesting peer information for your investigation of model year 2003 through 2005 Land Rover Range Rover for front axle differential and/or front prop-shaft that results in a loss of propulsion and subsequent immobilization of the vehicle. The subject peer vehicles are MY 2003-2005 Cadillac Escalade and Escalade ESV equipped with all-wheel drive manufactured for sale or lease in the United States.

Your questions and our corresponding replies are as follows:

1. **State, by model and model year, the number of subject peer vehicles GM has manufactured for sale or lease in the United States. Separately, for each subject peer vehicle manufactured to date by GM, state the following:**
  - a. **Vehicle identification number (VIN);**
  - b. **Model**
  - c. **Model Year;**
  - 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 this information in Microsoft Access 2003, or a compatible format, entitled "EA07-012 GM PRODUCTION DATA."**

GM is providing the number of subject peer vehicles produced for sale or lease in the United States by make, model and model year in Table 1 below:

Make/Model	2003 MY	2004 MY	2005 MY	Total
Cadillac Escalade	28,539	29,090	24,018	81,647
Cadillac Escalade ESV	9,497	16,820	13,453	39,770
Total	38,036	45,910	37,471	121,417

TABLE 1 VEHICLE PRODUCTION

The production information requested in 1a-1f is provided on the ATT\_1 disk in the folder labeled Q\_01; refer to the Microsoft Access 2000 file labeled, "Production Data." GM is providing the state where the vehicle was shipped in response to request 1f. For certain subject peer 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 Microsoft Access 2000 file.

This data was collected from the GM Claims Analysis Retrieval Database (CARD) on January 9, 2008.

**Product Investigations**

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 subject condition in the subject peer vehicles:

- a. Consumer complaints, including those from fleet operators;
- b. Field reports, including dealer field reports;
- c. Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
- d. Reports involving a fire, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
- e. Property damage claims; and
- f. Third-party arbitration proceedings where GM is or was a party to the arbitration; and
- g. Lawsuits, both pending and closed, in which GM 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 "g", 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 "f" and "g," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

Table 2-1 below summarizes records that could relate 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*	NUMBER WITH FIRES
Owner Reports	0	0	0	0	0	0
Field Reports	2	0	0	0	0	0
Not-In-Suit Claims	0	0	0	0	0	0
Subrogation Claims	0	0	0	0	0	0
Third Party Arbitration Proceedings	0	0	0	0	0	0
Product Liability Lawsuits	0	0	0	0	0	0
Total Reports (Including Duplicates)	2	0	0	0	0	0
Total Vehicles with Reports (Unique VIN)	2	0	0	0	0	0

TABLE 2-1: REPORT BREAKDOWN

\* GM HAS NO FATALITY REPORTS

To date, GM's investigation of the subject condition has not included an assessment of the cause(s) of each incident responsive to Request No. 2. Certain 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 2-2 below.

SOURCE SYSTEM	LAST DATE GATHERED
Customer Assistance Center	1/9/2008
Technical Assistance Center	1/18/2008
Field Information Network Database (FIND)	1/25/2008
Field Product Report Database (FPRD)	1/10/2008
Company Vehicle Evaluation Program (CVEP)	1/7/2008
Captured Test Fleet (CTF)	1/7/2008
Early Quality Feedback (EQF)	1/7/2008
Legal / Employee Self Insured Services (ESIS)/Product Liability Claims/ Lawsuits	1/9/2008

TABLE 2-2: 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:
- GM's file number or other identifier used;
  - The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
  - Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
  - Vehicle's VIN;
  - Vehicle's make, model and model year;
  - Vehicle's mileage at time of incident;
  - Incident date;
  - Report or claim date;
  - Whether a crash is alleged;
  - Whether a fire is alleged;
  - Whether property damage is alleged;
  - Number of alleged injuries, if any; and
  - Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2003, or a compatible format, entitled "EA07-012 GM REQUEST NUMBER TWO DATA."

Produce copies of all documents related to each of items "c" through "e" within the scope of Request No. 2. Organize the documents separately by category (i.e., crash/injury/fatality reports, property damage claims, etc.) and describe the method GM used for organizing the documents.

The requested information is provided on the ATT\_1 disk in the folder labeled Q\_03 refer to the Microsoft Access 2000 file labeled, "EA07-012 GM REQUEST NUMBER TWO DATA." Certain

incident reports may not contain sufficient reliable information to accurately answer all parts of question 3. GM has organized the records by the GM file number within each attachment.

4. State, by model and 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 subject condition in the subject peer 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 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 2003, or a compatible format, entitled "EA07-012 GM WARRANTY DATA."

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 in Microsoft Access 2003, or a compatible format. 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).

Produce copies of all service, warranty, and other documents that relate to, or, the subject condition in the subject peer 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.

Table 4-1 summarizes by model year the regular warranty claims for the subject peer vehicles that were collected by searching the labor codes, customer complaint codes, trouble codes, loss codes, verbatim where available, dealership calls, and/or cost information that may be related to the subject condition.

A summary of the warranty claims, including the information requested in 4(a-k), is provided on the Att\_1\_GM disk in the folder labeled "Q\_04," refer to the Microsoft Access 2000 file labeled, "Q\_04\_WARRANTY DATA."

MAKE/MODEL	2003 MY	2004 MY	2005 MY	TOTAL
CADILLAC ESCALADE	3	1	0	4
CADILLAC ESCALADE ESV	1	0	0	1
TOTAL	4	1	0	5

TABLE 4-1 REGULAR WARRANTY CLAIMS

There are no warranty claims covered under regular warranty as good will. Also, there are no claims from the MIC and UWC extended warranty databases.

The sources of the requested information and the last date the searches were conducted are tabulated in Table 4-2 below.

SOURCE SYSTEM	LAST DATE GATHERED
GM CARD --regular warranty	1/16/2008
Motors Insurance Corporation (MIC) – extended warranty	1/18/2008
Universal Warranty Corporation (UWC) – extended warranty	2/8/2008

TABLE 4-2: DATA SOURCES

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/or 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 subject condition.

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 4K (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.

The MIC extended warranty system does not contain the vehicle owner information. The UWC extended warranty system does not use the GM labor code or labor code description and it does not contain the repairing dealer code, trouble code or trouble code description.

GM searched the GM North America Claim Analysis 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. The warranty data was last gathered on February 8, 2008.

The regular warranty data was collected from the GM CARD database by searching for the labor operation codes listed in Table 4-3, trouble codes listed in Table 4-4, customer complaint codes listed in Table 4-5, verbatim where available, dealership calls, and/or cost information that may be related to the subject condition. The regular warranty data with the z-labor operation codes were reviewed individually to determine if the claim corresponded with the subject condition.

LABOR CODE	DESCRIPTION:
F0092	UNIV JOINT, FRT-PROPELLER SHAFT-RPL
F0097	UNIV JOINT, BTH-PROPELLER SHAFT-RPL
F1200	PROPELLER SHAFT, FRT-REPLACE
F2122	CARRIER, FRT DIFF - R&R
F2142	CARRIER, COMPL FRT DIFF-REPLACE
F2222	CASE, FRT DIFFERENTIAL-REPLACE
F4002	FRONT DIFF/TRANSFER CASE RECONDITIO
Z1241	Product Liability/Investigation REP PR (Goodwill)
Z1242	PAR – Repairs/Reimbursement (Goodwill)

TABLE 4-3 LABOR CODES USED IN REGULAR AND MIC SEARCH

TROUBLE CODE	DESCRIPTION:
1D	Broken
1J	Collapsed
1K	Cracked
3Z	Ruptured
4D	Sheared
4H	Torn
6C	Component – Inoperative

TABLE 4-4 TROUBLE CODES USED IN REGULAR AND MIC SEARCH

CUSTOMER COMPLAINT CODE	DESCRIPTION:
OA	Operation: Binds
VB	Visual: Broken
OZ	Operation: Slips
OV	Operation: Shift- No (slips)
VE	Visual: Cracked

TABLE 4-5 CUSTOMER COMPLAINT CODES USED IN REGULAR AND MIC SEARCH

The MIC extended warranty data was also collected by searching for the labor codes listed in Table 4-3, except Labor Codes Z1241 and Z1242, trouble codes listed in Table 4-4, and customer complaint codes listed in Table 4-5, and dealership calls that may be related to the subject condition. MIC does not use these labor codes. The UWC extended warranty data was collected by searching for the loss codes that are provided in Att\_1\_GM disk in the folder labeled "Q\_04," refer to the Microsoft Word file labeled, "Q\_04\_UWC\_Loss Codes."

The subject peer vehicles are covered by a bumper-to-bumper new vehicle warranty for four years or 50,000 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. The number of extended warranty coverage contracts on the subject vehicles that have been sold by MIC and UWC for the subject vehicles regardless of status (in-force, expired, cancelled) are contained in Tables 4-6 and 4-7, respectively.

Make/ Model/ Model Year	2003	2004	2005	Total
Cadillac Escalade	5,393	4,328	2,924	12,645
Cadillac Escalade ESV	1,989	3,015	1,980	6,984

TABLE 4-6: MIC EXTENDED WARRANTY COVERAGE CONTRACTS SOLD BEFORE JANUARY 18, 2008

Make/ Model/ Model Year	2003	2004	2005	Total
Cadillac Escalade	211	140	67	418
Cadillac Escalade ESV	61	86	37	184

TABLE 4-7: UWC EXTENDED WARRANTY COVERAGE CONTRACTS SOLD BEFORE FEBRUARY 8, 2008

GM has not issued any service, warranty or other documents to dealers, regional or zone offices, that relates to subject condition in the subject peer vehicles.

GM is not planning to issue in the next 120 days, any service, warranty or other technical documents or communications to its dealers, regional offices, zone offices or other entities regarding the subject condition in the subject peer vehicles.

The preceding information was collected from GM Service Operations. The data collection was completed on January 9, 2008.

5. 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 components, from the start of production to date, which relate to, or may relate to, the subject condition in the subject peer vehicles. For each such modification or change, provide the following information:
- The date or approximate date on which the modification or change was incorporated into vehicle production;
  - A detailed description of the modification or change;
  - The reason(s) for the modification or change;
  - The part number (service and engineering) of the original component;
  - The part number (service and engineering) of the modified component;
  - Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
  - When the modified component was made available as a service component; and
  - Whether the modified component can be interchanged with earlier production components.

GM is providing a summary of all product release engineering change information requested in 5(a-h) on the non-confidential ATT\_1\_GM disk in the folder labeled "Q\_5," refer to the files labeled, "Q\_5\_Modifications." However, this engineering release change information may not be related to the subject condition.

Additionally, GM is providing Production Part Approval Process (PPAP) and Part Submission Warrant (PSW) information on the GM Confidential ATT\_2\_GM\_CONF disk in the folder labeled "Q\_5," refer to the files labeled, "PPAP" and "PSW 15090194." However, this PPAP or PSW information may not be related to the subject condition. General Motors requests that this information, which has been stamped "GM Confidential" be afforded confidential treatment by NHTSA.

**6. Provide the following information:**

- a. Briefly describe how the four-wheel (or all-wheel) drive system(s) functions in the subject vehicles including the major components and their locations on the vehicle(s). If more than one system is available (e.g., part-time four-wheel drive, full-time four-wheel drive or all-wheel drive) briefly describe each system and the differences in functionality.
- b. Copies of all engineering standards, design guides, or similar documents that relate in any way to the alignment of the front driveshaft to the front differential.
- c. Copies of all assembly plant process instructions detailing the assembly process connecting the front driveshaft with the front differential.
- d. Copies of all engineering standards, design guides or similar documents that relate to the use of a "universal joint" or "flex coupling" design in the front driveshaft.
- e. Copies of exemplary engineering drawings individually showing the front driveshaft and the front differential as separate parts, as assembled together, and as located within the vehicle.
- f. State whether a spline failure (or joint failure) at the interface of the front driveshaft and the front differential in the subject peer vehicles can result in total vehicle immobilization (i.e. no power to the front and rear wheels).

- a. The 2003-2005 Escalade transfer case is classified as an open differential All Wheel Drive (AWD) system. This means that the transfer case contains a simple differential which splits torque between the front and rear axles using a compound planetary arrangement. On the Escalade, that torque split is 40% front and 60% rear. When a tire loses its traction, the traction control system applies the brake to the free spinning wheel causing torque to be transferred to the other wheels.

GM is providing a service bulletin and a section of the owner's manual which explain the general operating characteristics of 4WD/AWD systems on the non-confidential Att\_1\_GM disk in the folder labeled "Q\_06\_A."

**b. & d.**

GM is providing Design Failure Mode Effects Analysis and Sub-System Technical Specification for alignment of the front driveshaft to the front differential assembly and for a universal joint design in the front driveshaft on the GM Confidential Att\_2\_GM\_Conf disk in the folder labeled "Q\_06\_B," refer to the files labeled, "drbfm gmt800\_h2 9\_1\_2006" and "SSLT 8FNLDREV-." General Motors requests that this information, which has been stamped "GM Confidential" be afforded confidential treatment by NHTSA.

GM is also providing service manuals which explain the general service procedure in replacing the front differential carrier assembly and the front prop-shaft assembly on the non-confidential Att\_1\_GM disk in the folder labeled "Q\_06\_B and D."

- c. GM is providing requested information in assembly plant process instructions for connecting the front driveshaft to the front differential assembly on the non-confidential Att\_1\_GM disk in the folder labeled "Q\_06\_C," refer to the files labeled, "front axle to frame", "front axle vent pad", "front axle", and "Propshaft 2004 PAD."
- e. GM is providing exemplary engineering drawings for the front driveshaft and the front differential assembly on the GM Confidential Att\_2\_GM\_Conf disk in the folder labeled



"Q\_06\_B," refers to the files labeled, "15008850001000N101805" and "Frt Propshaft drawing cgm 15182097." General Motors requests that this information, which has been stamped "GM Confidential" be afforded confidential treatment by NHTSA.

- f. For the subject peer vehicle AWD systems, if there is a total loss in the mechanical connectivity between the transfer case and the front axle, the result would be an immobilization of the vehicle.

\* \* \*

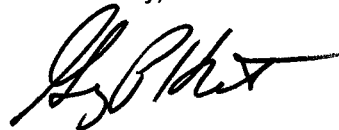
This response is based on searches of GM Corporation (GM) locations where documents determined to be responsive to your request would ordinarily be found. As a result, the scope of this search did not include, nor could it reasonably include, "all of its divisions, subsidiaries (whether or not incorporated) 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 (including all business units and persons previously referred to), who are or, in or after January 1, 1996, were involved in any way with any of the following related to the subject condition 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

**N080015  
EA07-012**

**GM CONFIDENTIALITY LETTER**

**GM CONFIDENTIALITY LETTER  
HAS BEEN REMOVED FROM THIS  
ATTACHMENT AND SUPPLIED TO  
THE OFFICE OF THE CHIEF COUNSEL**

**N080015  
EA07-012**

**ATTACHMENT "1"**

**GM NON-CONFIDENTIAL MATERIAL**

**N080015  
EA07-012**

**ATTACHMENT "2"**

**GM CONFIDENTIAL MATERIAL**

**GM CONFIDENTIAL MATERIAL  
HAS BEEN REMOVED FROM THIS  
ATTACHMENT AND SUPPLIED TO  
THE OFFICE OF THE CHIEF COUNSEL**