



Date: May 27, 2004

GM-656 (PE04-032)

On The Cover:

- GM Assigned IR Number
- NHTSA Assigned Preliminary Evaluation Number
- Number of Books
- Allegation Title, Model Year and Make
- Date Received from NHTSA
- GM Reply Date

Book 1:

- Tab (1) GM Response Letter to NHTSA
- Tab (2) NHTSA Letter
- Tab (3).....GM Response To (Q01) with (1) CD
- Tab (4).....GM Response To (Q03) with (1) CD
- Tab (5)..... GM Response To (Q05) with (1) CD
- Tab (6)..... GM Response To (Q06) with (1) CD
- Tab (7)..... GM Response To (Q07) with (1) CD
- Tab (8)..... GM Response To (Q08) with (1) CD
- Tab (9).....GM Response To (Q09) with (1) CD
- Tab (10).....GM Response To (Q10) with (1) CD
- Tab (11).....GM Response To (Q12) with (1) CD

OFFICE OF SAFETY INVESTIGATION

2004 MAY 28 A 7:09

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NVS-210

May 27, 2004

Thomas Z. Cooper, Chief
Vehicle Integrity Division
Office of Defects Investigation
NHTSA Safety Assurance
Room #5326
400 Seventh Street, S.W.
Washington, D.C. 20590

DEFECTS INVESTIGATION

OFFICE OF

GM-856

2004 MAY 28 P 8:09

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NVS-212am
PE04-032

Dear Mr. Cooper:

This letter is General Motors (GM) response to your information request (IR), dated April 13, 2004, regarding allegations of failure of the brake lamp bulb to illuminate during application of vehicle brakes on 2002–2004 Model Year (MY) Chevrolet TrailBlazer vehicles.

The subject vehicles for this inquiry are 2002–04 MY Chevrolet TrailBlazer & TrailBlazer EXT, GMC Envoy & Envoy XL, Oldsmobile Bravada and 2004 MY Buick Rainier vehicles. The GM response includes information related to failure of the brake or tail lamp bulb to illuminate because a single two-filament bulb is used for both functions.

This GM response and the searches conducted in formulating this response are based on GM's Problem Definition Project and root cause analysis specifically related to the alleged defect in the subject vehicles.

Your questions and our corresponding replies are as follows:

1. **State, by model and 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. **Make;**
 - c. **Model;**
 - d. **Model Year;**
 - e. **Date of manufacture;**
 - f. **Date warranty coverage commenced; and**
 - g. **The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).**

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

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:

PRODUCT INVESTIGATIONS

Mail Code: 480-106-304 • 30500 Mound Road • Warren, MI 48090-9055
Phone: (586) 986-8029 • Fax: (586) 947-2318
GM-656 Response



MODEL	2002 MY	2003 MY	2004 MY*	TOTAL
Chevrolet TrailBlazer	253,221	193,929	167,678	614,828
Chevrolet TrailBlazer EXT	23,905	87,028	57,070	168,003
GMC Envoy	108,661	83,069	67,096	258,826
GMC Envoy XL	12,852	56,002	32,846	101,700
Oldsmobile Bravada	28,709	8,642	3,475	40,826
Buick Rainier	0	0	24,602	24,602
TOTAL	427,348	428,670	352,767	1,208,78

TABLE 1 VEHICLE PRODUCTION

*Vehicle production as of April 21, 2004

The production information requested in 1a-1g is provided on the CD labeled Response to Q1; refer to the Microsoft Access 2000 file. 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 1g. 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 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. **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;**
 - 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 "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.

In the two paragraphs immediately preceding, GM interprets subpart "e" to mean subpart "f" and subpart "f" to mean subpart "g".

Table 2-1 below summarizes records that could relate to the subject condition.

TYPE OF REPORT	COUNT (INCLUDING DUPLICATES)	GM REPORTS	GM REPORTS CORRESPONDING TO NHTSA REPORTS	LOCATION OF REPORTS (ATTACHMENT)	NUMBER WITH PROPERTY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/FATALITIES*	NUMBER WITH FIRE
Owner Reports	472	469	3	2A	0	0	0	0
Field Reports & Technical Assistance System Reports	150	150	0	2B	1	1	1	0
Not-In-Suit Claims	0	0	0	2C	0	0	0	0
Subrogation Claims	0	0	0	2D	0	0	0	0
Third Party Arbitration Proceedings	0	0	0	2E	0	0	0	0
Product Liability Lawsuits	0	0	0	N/A	0	0	0	0
Total (Including Duplicates)	622	619	3	N/A	1	1	1	0
Total (Excluding Duplicates)	619	617	2	N/A	1	1	1	0

TABLE 2-1: REPORT BREAKDOWN

N/A Not Applicable

* GM is not aware of any fatalities related to the subject condition.

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
Corporate Central File	04/28/2004
Customer Assistance Center	04/29/2004
Technical Assistance Center	04/26/2004
Field Information Network Database (FIND)	04/22/2004
Company Vehicle Evaluation Program (CVEP)	04/21/2004
Captured Test Fleet (CTF)	04/21/2004
Early Quality Feedback (EQF)	05/18/2004
Field Product Report Database (FPRD)	04/22/2004
Legal / Employee Self Insured Services (ESIS)	04/29/2004

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 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table, which provides further details regarding this submission.

The requested information is provided on the CD labeled Response to Q3; refer to the Microsoft Access 2000 file.

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 on the CD labeled Response to Q3. GM has organized the records by the GM file number within each attachment.

5. 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 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.

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

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

The 202,710 regular warranty claims and 2,052 extended warranty claims for the subject vehicles that may be responsive to this request, are summarized by model and model year in Tables 5A and 5B. A summary of these warranty claims is provided on the CD labeled Response to Q5. Some of the warranty claims included on the CD may not be related to the alleged defect as explained in response to item 6.

Regular Warranty Claims Related to Failure of Brake or Tail Lamp Bulb to Illuminate

MODEL	2002MY	2003MY	2004MY	TOTAL
Chevrolet TrailBlazer	100,695	50,454	1,073	152,222
Chevrolet TrailBlazer EXT	11,482	18,084	109	29,685
GMC Envoy	8,920	3,886	131	12,937
GMC Envoy XL	916	2,186	39	3,141
Oldsmobile Bravada	3,952	742	5	4,699
Buick Rainier	0	0	26	26
TOTAL	125,965	75,362	1,383	202,710

TABLE 5A

Extended Warranty Claims Related to Failure of Brake or Tail Lamp Bulb to Illuminate

MODEL	2002MY	2003MY	2004MY	TOTAL
Chevrolet TrailBlazer	1,326	44	0	1,370
Chevrolet TrailBlazer EXT	45	12	0	57
GMC Envoy	158	6	0	164
GMC Envoy XL	6	2	0	8
Oldsmobile Bravada	449	4	0	453
Buick Rainier	0	0	0	0
TOTAL	1,984	68	0	2,052

TABLE 5B

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. The warranty data was last gathered on April 21, 2004.

GM's warranty database does not contain the vehicle owner's name or telephone number. Some of the replacement part numbers; part descriptions and customer concern code descriptions are not included in the GM warranty database. GM is providing a field labeled "Verbatim Text" in response to request 5I (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 required to be completed for every warranty claim.

The MIC extended warranty system does not contain the following information: repairing dealer code, vehicle owner information, trouble code, trouble code description, part number, part description or verbatim. 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.

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.

- 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 data was collected by searching GM CARD for the 11 labor codes and 174 trouble codes identified on the CD labeled Response to Q6; refer to the Microsoft Excel file. The MIC extended warranty data was collected by searching for labor codes only. The UWC extended warranty data was collected by searching for the labor code description "Enhanced Electrical Miscellaneous".

Due to the generality of some of the GM labor code description categories regarding the specific component repaired or replaced under that labor code, some of the warranty claim records provided in response to item 5 may not be related to failure of the brake or tail lamp bulb to illuminate. For example, labor code "N0912 - Socket, Lamp Exterior - Replace" is not only used for warranty claims in which the brake or tail lamp socket is replaced but the same labor code is also used for replacement of other exterior bulb sockets such as headlamps, daytime running lamps and parking lamps.

In an attempt to provide only those warranty claim records that are related or may be related to brake or tail lamp failure, the part numbers and part number descriptions were used to filter the regular warranty claims collected using the labor and trouble codes identified on the CD labeled Response to Q6. When the replacement part identified in the warranty claim record could unquestionably be related to a component other than those affecting brake and or tail lamp illumination, such as headlamps, daytime running lamps, etc., the warranty claim record was excluded. Those warranty claim records that did not have a part number or part description or the part description was ambiguous were retained along with warranty claim records that relate to or may relate to brake and or tail lamp failure.

The result of filtering the warranty claim records using replacement part descriptions is that 191,785 (95%) of the 202,710 regular warranty claims provided on the CD labeled Response to Q5 can be associated with a warranty repair of the tail lamp assembly. However, because of the generality in the labor code descriptions many of these warranty claim records cannot be identified as being specifically related to either, the brake lamp, or the tail lamp nor can they be specifically identified as repair or replacement of the left side or the right side tail lamp assembly. Consequently, after filtering the warranty claim records, 95% of the claims can be related to the tail lamp assembly (not a specific bulb or side) and some of the warranty claims may not be related to failure of the brake or tail lamp bulb to illuminate.

The warranty data provided has limited analytical value in analyzing the field performance of a motor vehicle component. The labor operation codes listed above may be applicable to the alleged defect, but are also related to other issues. 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. Provide the following counts and rates (expressed as counts per 100,000 vehicles) for warranty records on the subject vehicle by model year for the following actions:**
- a. Replace and/or repair the left tail light assembly;**
 - b. Replace and/or repair the right tail light assembly; and**
 - c. Replace and/or repair both left and right tail light assemblies (i.e. the left hand tail light assembly and the right hand tail light assembly are replaced and/or repaired during the same repair visit).**

The regular and extended warranty claim records provided on the CD labeled Response to Q5, were collected by searching for labor codes and/or labor codes descriptions used for warranty repairs that may be related to failure of the brake and/or tail lamp bulb to illuminate. As indicated in response to item 6, some of the labor code descriptions do not specifically identify whether the repair or replacement was to the left side, the right side or both sides and some do not identify which exterior lamp was repaired or replaced (see response to item 6).

There are 154,612 warranty claim records that could not be used to calculate the requested rate information because the records do not indicate if the left, or the right or both tail lamp assemblies were replaced or repaired.

There are 41,029 warranty claim records that indicate, by the labor code, whether the left, right or both the left and right tail lamp assemblies were replaced or repaired. However, 563 of these warranty claim records could not be used to calculate the requested rates because the warranty claim records do not indicate the sale date of the vehicle. The majority of these vehicles do not have a sale date because they are dealer demonstrator vehicles not yet assigned a sale date. A rate calculation can't be made without knowing the vehicle exposure. The sale date is required to calculate the vehicle exposure. This warranty analysis is consistent with rate calculations provided in the past.

Consequently, the information provided on the CD labeled Response to Q7 represents the counts and rates for warranty records on the subject vehicles.

8. **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.**

The bulletins that have been issued by GM that relate to, or may be related to, failure of the brake and/or tail lamp bulb to illuminate are identified in Table 8. Table 8 also includes a bulletin that GM plans to issue in the next 120 days. A copy of each bulletin identified in Table 8 is included on the CD labeled Response to Q8.

DOCUMENT I.D.	DOCUMENT TITLE	ISSUE DATE
1200768	Rear Brake Light Bulb Failure # PI00651	11/12/2002
1341275	Info – Tail Lamp Circuit Board Now Available for Service Use #03-08-42-006	06/05/2003
1388471	Info – Tail Lamp Circuit Board Now Available for service Use #03-08-42-006A	10/01/2003
6890	Tail Lamp Circuit Board Now Available for Service Use # 03-08-42-006B	05/24/2004
04017	Service Bulletin – Special Policy Adjustment – Tail Lamps/Stop Lamps DRAFT	TBD

TABLE 8 BULLETINS

9. **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. Provide all copies of all documents related to all actions.**

The information listed in Table 9-1 below is a summary of actions performed by GM and Guide Corporation, the supplier of the tail lamp assembly, regarding the subject condition on the subject vehicles. Documents and additional supporting information is included on the CD labeled Response to Q9.

<p>Action: GM Vehicle Warranty Engineering "RED X" analysis Start Date: 8/2/2002 End Date: 10/10/2002 Engineering Group: GM Confidential Attachment 9A Response to Q9 Action: Red X analysis of brake lamps prematurely failing (inoperative) Summary of Action: Executive Summary report regarding the failure of brake lamps on the subject vehicles. The Red X causing the tail-lamp assembly inoperative was found to be the loose fit between the bulb to the socket terminals that would cause arcing. The pink X was the Wagner bulbs.</p>
<p>Action: PRTS+ Data - Incident # N112148 Start Date: 7/23/2002 End Date: 8/18/2003 Engineering Group: GM Attachment 9B Response to Q9 Description: Incident Report - Problem Resolution tracking customer complaint of brake lights fail prematurely. Loose bulb fit at connector "socket" at backplate location that is vibrating causing electric arc causing premature bulb failure Analysis/Development/Validation testing of backplate socket material. Summary of Action: Engineering report regarding the condition, diagnosis and possible solution.</p>
<p>Action: Guide Corporation testing to validate the solution to socket deformation Start Date: 7/15/2003 End Date: 8/1/2003 Engineering Group: Guide Corporation Guide Confidential Attachment 9C Response to Q9 Description: Guide testing of new material for bulb snap fingers and construction on the tail lamp assembly backplate. Summary of Action: Summary of results of testing performed on the tail lamp assembly by Guide Corporation</p>
<p>Action: Field Performance Evaluation investigation of Inoperative brake and/or tail lamps on the subject vehicles. Start Date: 10/27/2003 End Date: 2/5/2004 Engineering Group: GM Confidential Attachment 9D Response to Q9 Confidential Attachment 9E Response to Q9 FPE Report (a formal summary of the investigation including GM's recommended field action. Confidential Attachment 9I Response to Q9 Weibull plots. Description: Field Performance Evaluation investigation documents of inoperative brake and/or tail lamp assemblies on the subject vehicles and identifies root cause/contributory factors. Summary of Action: The condition, investigation, suspected causes and solution were presented to the FPE Director in February 2004.</p>

<p>Action: Preventive Action Documentation of Inoperative Tail/Stop lamps - GMT360/370 Start Date: March 2004 End Date: March 2004 Engineering Group: GM Confidential Attachment 9F Response to Q9 Description: Documentation to summarize the condition, its root causes, corrective actions taken and the specific actions to be taken to prevent recurrence of the condition on future vehicle programs. Summary of Action: Preventive Actions documented.</p>
<p>Action: Post FPE-investigation study of the GM process in addressing the Inoperative Rear Running and Stop Lamps on 2002-2004 GMT360-370 Utility Vehicles. Start Date: March 2004 End Date: March 2004 Engineering Group: GM Confidential Attachment 9G Response to Q9 Description: Documentation summarizing how GM Engineering addressed the inoperative rear running and stop lamp condition, on the subject vehicles. Summary of Action: Documentation summarizing how GM addressed the condition in the subject vehicles was created March 23, 2004.</p>
<p>Action: Creation of untitled document that discusses the lessons learned regarding the determination of product specifications and adequacy of testing related to the condition. Start Date: March 2004 End Date: March 14, 2004 Engineering Group: GM Untitled Confidential Attachment 9H Response to Q9 Description: Documentation to summarize the lessons learned regarding the determination of product specifications and adequacy of testing related to the condition. Summary of Action: Lessons learned documented.</p>

TABLE 9-1

10. 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 an exemplar sample of each design version and 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.

The modification information responsive to items 10a - 10h is summarized on the CD labeled Response to Q10, refer to the Microsoft Excel file.

Engineering Work Order (EWO) AMKYW was written in November 2002 (Attachment 10A included on the CD labeled Response to Q10). This EWO removed the Wagner brand bulb as an approved tail/brake lamp bulb for use in the subject vehicles. GM Engineering decided to discontinue use of the Wagner bulb because the bulb design features a smaller base and a larger glass housing, permitting the bottom of the bulb to contact the bulb socket. This contact causes additional heat transfer to the bulb socket. Excessive heat build-up can cause deformation of the bulb socket, electrical arcing and result in failure of the bulb to illuminate. This modification, implemented into vehicle production on March 3, 2003, left the Sylvania bulb as the only tail/brake lamp bulb approved for use in the subject vehicles.

EWO AYPVP (Attachment 10B included on the CD labeled Response to Q10) written on June 25, 2003, changed the socket material and socket lead (contacts) material in the tail lamp assembly backplate. The material forming the sockets in the backplate was changed from Questra WA210, a glass-reinforced polymer, to ENV17-1806-BK, which is a thermoplastic polymer. The ENV17-1806-BK material was selected because of its excellent thermal stability at higher temperatures. The electrical leads in the backplate that form the contacts inside the socket were changed from brass to tin-plated steel to increase bulb contact force and reduce the possibility of damage due to improper bulb insertion. This EWO also directed GM Vehicle Assembly and Service Parts Operations (SPO) to dispose of, or rework, the existing stock of unmodified tail lamp assemblies.

Temporary Engineering Work Order (TWO) AYPVPA (Attachment 10C included on the CD labeled Response to Q10) written on August 7, 2003, authorized the supplier of the tail lamp assemblies, Guide Corporation, to start producing tail lamp assemblies with the revised bulb socket materials. On August 19, 2003, the modified tail lamp backplate was implemented into vehicle production. On October 1, 2003, the modified tail lamp backplate assembly was available for service repairs and use of the unmodified tail lamps assembly for service repairs was discontinued.

11. Provide a field return sample of the subject component exhibiting the subject failure mode.

Table 11 shows the field return samples contained in Enclosure 11.

Part Name	Part Number	Part Description
Circuit board, Tail Lamp Chevrolet	16525938	Chevrolet TrailBlazer backplate
Circuit board, Tail Lamp Oldsmobile	16525952	Original Oldsmobile Bravada backplate
Circuit board, Tail Lamp GMC	16525964	Original GMC Envoy backplate
Circuit board, Tail Lamp Chevrolet	16532713	New Chevrolet TrailBlazer backplate
Circuit board, Tail Lamp Oldsmobile	16532715	New Oldsmobile Bravada backplate
Circuit board, Tail Lamp GMC	16532716	New GMC Envoy backplate
Bulb - Tail and Brake Lamp	09441839	Sylvania 3157
Bulb - Tail and Brake Lamp	09441839	Wagner 3157
Returned Failed Circuit board, Tail Lamp Chevrolet with both brand bulbs	16525938	Failed Original Chevrolet TrailBlazer backplate

TABLE 11 SAMPLE RETURNED PARTS

12. State the number of each of the following that GM has sold that may be used in the subject vehicles by component name, part number (both service and engineering/

production), model and model year of the vehicle in which it is used and month/year of sale (including the cut-off date for sales, if applicable):

- a. Subject component;**
- b. Any kits that have been released, or developed, by GM for use in service repairs to the subject component/assembly.**

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 CD labeled Response to Q12; refer to the Microsoft Excel file. GM does not offer any kits that have been released or developed for use in service repairs specifically related to the subject condition.

These sales numbers represent sales to dealers in the US and Canada. This data has limited analytical value in analyzing the field performance of a motor vehicle component because the records do not contain sufficient information to establish the reason for the part sale. It is not possible from this data to determine the number of these parts that have been installed in the subject vehicles or the number remaining in dealer or replacement part supplier inventory.

This table contains service part numbers, part description, part usage information including the GM vehicles that contain the identical component, part sales figures by month and calendar year and the supplier's name and address, contact name and phone number. The General Motors Service Parts System does not contain a title of a contact person for each component and is therefore unable to provide this information.

13. 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.**

The brake lamp and tail lamp illumination for the subject vehicles is provided by a dual-filament bulb located in one of three bulb positions (sockets) in each tail lamp assembly. Failure of the brake or tail lamp bulb to illuminate in the subject vehicles can result from two contributory factors.

One of the contributory factors is the temperature that can be attained by the bulb socket as a result of the combination of heat from the bulb, environmentally induced heat and vibration-induced heat. These temperatures can exceed the thermal limitations of the socket material in the tail lamp assemblies installed in the subject vehicles. Temperatures at the bulb-socket interface that exceed the thermal limitations of the socket material can cause the socket to

permanently deform, reducing the contact pressure between the leads in the sockets and the contacts on the bulb creating a potential for electrical arcing and subsequent bulb failure. This can cause the affected tail lamp and/or brake lamp to initially exhibit flickering that may warn observers of the failure, followed by bulb inoperation.

The second factor is the difference in design of the Sylvania brand and the Wagner brand of brake and tail lamp bulb installed in the subject vehicles. The designs of the Sylvania and Wagner bulbs differ in the manner in which the bulb fits into the socket. The Wagner bulb design features a smaller base and a larger glass housing, permitting the bottom of the bulb to contact the bulb socket. This contact transfers heat into the bulb socket. Excessive heat build-up can cause deformation of the bulb socket, electrical arcing and an inoperative bulb.

Visibility of the rear of the vehicle during braking will always be maintained by the center high-mounted stop lamp (CHMSL) and in most cases the remaining operable brake lamp.

Visibility at the corner of a vehicle with an inoperative taillamp is reduced under low-ambient light conditions. However, the GMC Envoy and Envoy XL have a second independent tail lamp in each rear lamp assembly. If one tail lamp is inoperative, visibility under low ambient-light conditions on that rear corner is maintained by the redundant tail lamp.

The probability of more than one individual lamp function becoming inoperative at once on a given vehicle (both tail lamps, both brake lamps or tail and brake lamps simultaneously) is dependent upon the complex interaction of several variables; built-in part-to-part variation among bulbs, sockets and/or backplates, built-in variation in the physical interfaces among the component parts of each tail lamp assembly, side-to-side variation in vehicle structural rigidity and side-to-side variation in tail lamp fastener joint integrity. GM's understanding of the condition does not indicate that it is likely that one entire lighting function (either tail or brake lamps) or both lighting functions together will become inoperative at the same time due to the complex interaction of these variables.

The probability of one lighting function or both lighting functions existing in an inoperative state simultaneously on a given vehicle, regardless of when each side becomes inoperative depends upon the vehicle's cumulative tail lamp service history; the length of time a failure on one side goes undetected and/or un-repaired; and the specific type and/or quality of repair(s) conducted. There is only one report of an injury as a result of an alleged inoperative brake or tail lamp. For these reasons GM does not believe an unreasonable risk to safety exists. GM has decided to address this condition in the interest of improving customer satisfaction by offering a Special Policy for 6 years on vehicles produced prior to implementation of the new tail lamp backplate.

General Motor's assessment of the 37 reports included with this inquiry indicates that the condition reported may have resulted from the contributory factors noted above. GM has not examined the tail lamp assemblies that are the subject of the reports; therefore, GM has not identified the specific contributory factors related to each of the brake and/or tail lamp bulb failures.

* * *

General Motors requests that the document stamped "GM Confidential" included in Attachments 9A, 9D, 9E, 9F, 9G, 9H and 9I be afforded confidential treatment by the NHTSA. This information is not customarily made public by General Motors and contains trade secrets and commercial information which is privileged or confidential under 5 U.S.C. Section 552(b)(4), 49 CFR Part 512 and 49 U.S.C. Section 30167(a).

This information can be used by competitors to identify quality and performance problems or differences, thereby enabling them to improve their own products, without the expenditures

associated with the evaluation of products, all at the expense of General Motors. Attachments 9A, 9D, 9E, 9F, 9G, 9H and 9I contain commercial information the disclosure of which would likely result in substantial competitive harm.

General Motors treats the above material as confidential proprietary information available only to authorized General Motors personnel and not otherwise available to the public. The document is maintained under a record-keeping system which is intended to control dissemination of this material within General Motors, and to assure that it is not disseminated outside the Corporation, except as described in the attached certification made pursuant to 49 CFR Part 512.4(e).

To the best of our knowledge, no prior determinations of the confidentiality of these documents have been made by the NHTSA, other Federal Agencies, or the Federal Courts. Documents such as those contained in Attachments 9A, 9D, 9E, 9F, 9G, 9H and 9I, however, have to the best of our knowledge, normally been granted confidential treatment by the NHTSA in the past.

The documents subject to this request for confidentiality have been clearly stamped "GM CONFIDENTIAL". If a request for disclosure of any or all of this information is received by the NHTSA, General Motors requests notification of receipt of each such request and, if necessary, an opportunity to further explain the reasons why such material is trade secret and commercial information which should not be disclosed under the applicable statutes and regulations.

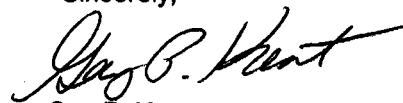
This response is based on searches of General Motors Corporation (GM) locations where documents determined to be responsive to your request would ordinarily be found. As a result, the scope of this search did not include, nor could it reasonably include, "all of their divisions, subsidiaries (whether 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 April 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