



*Frank*  
*3/8/07*

March 7, 2007

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

N070018

NVS-212lhs  
PE07-001

Dear Mr. Cooper:

This letter is General Motors' (GM) response to your information request (IR), dated January 24, 2007, regarding failure of the brake lamps to illuminate when the brake pedal is applied (not related to bulb burnout) in certain 2000-2002 model year (MY) Pontiac Grand Prix vehicles. Per a telephone conversation on February 6, 2007 with Lee Strickland of NHTSA, GM's response is limited to multifunction switch, hazard switch and brake switch issues relating to failure of the brake lamps to illuminate when the brake pedal is applied.

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."**

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

MAKE/MODEL	2000 MY	2001 MY	2002 MY	TOTAL
Pontiac Grand Prix	156,504	117,647	144,655	418,806

TABLE 1 VEHICLE PRODUCTION

The production information requested in 1a-1g is provided on the on the Att\_1\_GM disk in the folder labeled Q\_01 refer to the Microsoft Access 2000 file labeled, "Q\_01\_PRODUCTION DATA". 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, that 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 an injury or death, notices received by GM alleging or proving that an injury or death was related to or resulted from the alleged defect in a subject vehicles;
  - d. Property damage claims, including claims of a loss of vehicle control and/or accident in which impaired driver visibility due to the alleged defect is alleged to have contributed to the occurrence;
  - e. Third-party arbitration proceedings where GM is or was a party to the arbitration; and,
  - f. Lawsuits, both pending and closed, in which GM is or was a defendant or codefendant.

For subparts "a" through "c," 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 item "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.

Table 2-1 below summarizes records that could relate to the alleged defect. GM has organized the records by the GM file number within each attachment.

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES			
		CORRESPONDING TO NHTSA REPORTS	NUMBER WITH PROPERTY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURY/FATALITY
Owner Reports	50	0	0	0	0
Field Reports	1	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)	51	0	0	0	0
Total Vehicles with Reports (Unique VIN)	49	0	0	0	0

TABLE 2-1: REPORT BREAKDOWN

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	02/06/2007
Technical Assistance Center	01/29/2007
Field Information Network Database (FIND)	03/01/2007
Field Product Report Database (FPRD)	03/01/2007
Company Vehicle Evaluation Program (CVEP)	01/29/2007
Captured Test Fleet (CTF)	01/29/2007
Early Quality Feedback (EQF)	01/29/2007
Legal / Employee Self Insured Services (ESIS)/Product Liability Claims/ Lawsuits	02/13/2007

TABLE 2-2: DATA SOURCES

3. For each item (complaint, field report, claim, notice, or matter) within the scope of GM's 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 property damage is alleged;
  - Number, type, and severity 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."

The requested information is provided on the Att\_1\_GM disk in the folder labeled Q\_03 refer to the Microsoft Access 2000 file labeled, "Q\_03\_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 summarized in Table 2-1 are on the Att\_1\_GM disk embedded in the folder labeled Q\_03; refer to the Microsoft Access 2000 file labeled, "Q\_03\_REQUEST NUMBER TWO DATA". GM has organized the records by the GM file number within each attachment.

5. State a total count for all of the following categories of claims, collectively, that have been paid by GM to date that relate, or may relate, to the alleged defect in the subject

**vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.**

**Separately, for each such claim, state the following information:**

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

Tables 5-1, 5-2 and 5-3 summarize individually by labor code the regular and goodwill warranty claims for the subject vehicles that were collected by searching the labor codes and trouble codes that may be related to the alleged condition. Table 5-4 summarizes the extended warranty claims that were collected by searching the labor codes that may be related to the alleged condition. 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-k), is provided on the Att\_1\_GM disk in the folder labeled Q\_05; refer to the Microsoft Access 2000 file labeled, "Q\_05\_WARRANTY DATA."

**REGULAR WARRANTY CLAIMS FOR MULTIFUNCTION SWITCH REPLACE\***

MAKE/MODEL	2000 MY	2001MY	2002 MY	TOTAL
Pontiac Grand Prix	534	272	570	1376

TABLE 5-1

\*The MFS can be replaced for failure of:

- hazard lamps to illuminate
- left and right brake lamps to illuminate (CHMSL illuminates)
- front and rear turn signal lamps to illuminate
- windshield wipers
- cruise control to engage

**REGULAR WARRANTY CLAIMS FOR STOP LAMP SWITCH REPLACE**

MAKE/MODEL	2000 MY	2001MY	2002 MY	TOTAL
Pontiac Grand Prix	109	91	94	294

TABLE 5-2

**REGULAR WARRANTY CLAIMS FOR TURN SIGNAL & HAZARD WARNING SWITCH REPLACE**

MAKE/MODEL	2000 MY	2001MY	2002 MY	TOTAL
Pontiac Grand Prix	166	67	108	341

TABLE 5-3

EXTENDED WARRANTY CLAIMS FOR MULTIFUNCTION/STOP LAMP/HAZARD WARNING SWITCH REPLACE

MAKE/MODEL	2000 MY	2001MY	2002 MY	TOTAL
Pontiac Grand Prix	423	143	209	775

TABLE 5-4

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

SOURCE SYSTEM	LAST DATE GATHERED
GM CARD --regular warranty	02/01/2007
Motors Insurance Corporation (MIC) -- extended warranty	02/06/2007
Universal Warranty Corporation (UWC) -- extended warranty	02/02/2007

TABLE 5-5: 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 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.

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.

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.

- 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 the terms of the new vehicle warranty coverage offered by GM on the subject vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Describe any extended warranty coverage option(s) related to the alleged defect that GM offered for the subject vehicles and state the number of vehicles that are covered under each such extended warranty.

To search for and collect the warranty data for this response, the GM Claim Adjustment Retrieval Database (CARD) regular warranty database and the Motors Insurance Corp (MIC)

extended warranty database were searched using the labor codes listed in table 6-1. Universal Warranty Corporation (UWC) does not use labor codes or trouble codes.

LABOR CODE	DESCRIPTION:
N2355	SWITCH MULTIFUNCTION - REPLACE
N2440	SWITCH, STOP LAMP - REPLACE
N2530	SWITCH, TURN SIGNAL & HAZARD WARNING - REPLACE
Z1241	PRODUCT LIABILITY/INVESTIGATION REP PR (GOODWILL)
Z1242	PAR - REPAIRS/REIMBURSEMENT (GOODWILL)

TABLE 6-1 LABOR CODES USED IN WARRANTY SEARCH

The labor codes Z1241 and Z1242 can be used by dealers for reimbursement for goodwill warranty repairs. They are not specific to replacement of the subject components. GM reviewed the goodwill claims with these two labor codes. Claims that clearly did not relate to replacement of subject components or failure of the brake lamps to illuminate when the brake pedal is applied based on a review of the dealer verbatim, customer code, trouble code, repair cost and vehicle VIN are not being provided.

GM lists the trouble codes in Table 6-2 and the customer complaint codes in Table 6-3, within the labor codes, that may relate to replacement of the subject components due to failure of the brake lamps to illuminate when the brake pedal is applied.

TROUBLE CODE	DESCRIPTION
1D	BROKEN
1E	BURNED
1K	CRACKED
4X	WORN
6B	COMPONENT-GROUND
6C	COMPONENT-INOPERATIVE
6D	COMPONENT-INTERMITTENT
6F	COMPONENT-OPEN
6G	COMPONENT-SHORTED
7D	WIRE-SHORTED TO GROUND
98	CUSTOMER SATISFACTION

TABLE 6-2 TROUBLE CODES USED IN WARRANTY SEARCH

CUSTOMER COMPLAINT CODE	DESCRIPTION:
OB	OPERATION: BLOWS FUSE
OJ	OPERATION: INOPERATIVE (HARSH)
OL	OPERATION: INTERMITTENT (INSUFFICIENT HEAT/COOL)
VB	VISUAL: BROKEN
WB	WARNING LIGHTS: BRAKE LIGHTS

TABLE 6-3 CUSTOMER COMPLAINT CODES USED IN WARRANTY SEARCH

Any claims that clearly did not relate to the alleged defect based on review of the dealer verbatim or replacement part number were removed and are not being provided.

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. The number of extended warranty coverage contracts on the subject vehicles that have been sold by MIC regardless of status (in-force, expired, cancelled) as of February 6, 2007 is contained in Table 6-4.

MAKE/MODEL	2000 MY	2001MY	2002 MY	TOTAL
PONTIAC GRAND PRIX	12,702	7,315	7,539	31,469

TABLE 6-4: MIC EXTENDED WARRANTY COVERAGE CONTRACTS SOLD

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 such communication that GM may be planning to issue within the next 120 days.**

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

General Motors 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 vehicles.

The preceding information was collected from GM Service Operations. The data collection was completed on January 29, 2007.

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 multifunction switch with integral hazard warning switch is designed and manufactured by Valeo Switches and Detection Systems. The multifunction switch assembly is integral to the steering column assembly and supplied to GM by Delphi Automotive Systems. The brake switch is designed, manufactured and supplied to GM by Mallory Controls Inc.

The information listed in Table 8-1 below is a summary of actions that have been conducted by or for GM regarding the subject components as of February 28, 2007. Documents and additional supporting information are included in the Attachments as noted in the table.

<p><b>Action 8-A:</b> Valeo Switches and Detection Systems (Valeo) Multifunction Switch and integral Hazard Warning Switch; Design Failure Mode Effects Analysis (DFMEA), Manufacturing Process Failure Mode Effects Analysis (PFMEA) and Validation Test Reports.</p> <p><b>Start Date:</b> 08/1995</p> <p><b>End Date:</b> 01/2001</p> <p><b>Engineering Group:</b> Valeo Switches and Detection Systems</p> <p><b>Attachments:</b> Documents can be found on the Att_3_Valeo Confidential disk in the folder labeled Q_08, refer to the folder labeled, "Q_08_A Valeo Documents." Valeo will provide copies of the validation test reports March 12, 2007.</p> <p><b>Description:</b> The DFMEA provided is for a substantially similar (later version) of the subject vehicle multifunction/hazard switch. The failure mechanisms and failure modes are the same as those contained in the subject vehicle multifunction switch DFMEA. Valeo is unable to locate the DFMEA specific to the subject vehicle multifunction switch.</p> <p><b>Summary of Action:</b> The multifunction switch with integral hazard warning switch meets all design requirements, validation requirements and manufacturing process requirements.</p>
<p><b>Action 8-B:</b> Mallory Controls Inc. (Mallory) Brake Switch; Design Failure Mode Effects Analysis (DFMEA), Manufacturing Process Failure Mode Effects Analysis (PFMEA), Material Specifications, Control Plan and Validation Test Reports.</p> <p><b>Start Date:</b> 04/1994</p> <p><b>End Date:</b> 08/1999</p> <p><b>Engineering Group:</b> Mallory Controls Inc.</p> <p><b>Attachments:</b> Documents can be found on the Att_4_Mallory Confidential disk in the folder labeled Q_08, refer to the folder labeled, "Q_08_B Mallory Documents."</p> <p><b>Description:</b> The brake switch DFMEA, PFMEA, Validation Test Reports, Material Specifications and Control Plan documentation and confirmation activity.</p> <p><b>Summary of Action:</b> The Brake Switch meets all engineering performance specifications, validation requirements and manufacturing process requirements.</p>
<p><b>Action 8-C:</b> Delphi Automotive Systems (Delphi), Multifunction Switch Product Design Specifications/Validation Plan, Grand Prix versus M/L Van hazard switch comparison and drawings.</p> <p><b>Start Date:</b> 12/1996</p> <p><b>End Date:</b> 02/2007</p> <p><b>Engineering Group:</b> Delphi Automotive Systems</p> <p><b>Attachments:</b> Documents can be found on the Att_5_Delphi Confidential disk in the folder labeled Q_08, refer to the folder labeled, "Q_08_C_Delphi Documents." The confidential drawings are enclosed with the Delphi documentation.</p> <p><b>Description:</b> The multifunction switch Delphi design specifications, validation plan and drawings specifications, drawings and validation plan and activity for the Valeo manufactured multifunction switch integral to the steering column that is installed in the subject vehicles.</p> <p><b>Summary of Action:</b> The multifunction switch as installed in the steering column meets all engineering performance and validation requirements. The Grand Prix hazard switch differs from the M/L Van hazard switch. The Grand Prix hazard switch button profile is different, the slider material has a higher heat resistance, the grease used is different, the Grand Prix electrical load is lower because the Grand Prix has two fewer bulbs and the Grand Prix hazard button is at a 15° angle to the turn signal/hazard housing resulting in a partial side load to the hazard latching feature (increased contact).</p>



**Action 8-D: GM Brake Switch drawings, product and test specifications and Weibull analysis**  
**Start Date:** 1991  
**End Date:** 02/2007  
**Engineering Group:** GM Engineering  
**Attachments:** Documents can be found on Att\_2\_GM\_Conf disk in the folder labeled Q\_08, refer to the folder labeled, "Q\_08\_C\_GM\_Docs."  
**Description:** The drawing and specifications for the design, functional, performance, supplier and reliability test requirements and activity for the electronic brake control and brake pedal switch assembly. The MFS was designed when Delphi was a part of GM therefore; the MFS design specifications are contained in the Delphi documents.  
**Summary of Action:** The brake switch meets all engineering performance and validation requirements. Test documentation is contained in the Att 4 Mallory Conf disk.

Table 8-1

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 components, from the start of production to date, which relate, or may relate, to the alleged defect in the subject 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 numbers (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.

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.

GM is providing a summary of the product engineering information requested in 9(a-h) related to the multifunction switch and hazard warning switch on the Att\_1\_GM disk in the folder labeled Q\_09, refer to the folder labeled, "Q\_09\_A\_Modifications". The supplier of the Brake Switch has indicated that there have not been any modifications to the brake switch installed in the subject vehicles.

GM is not planning to incorporate any modifications or changes into production of the subject vehicles that relate to the alleged defect within the next 120 days.

10. Provide a complete engineering description and appropriate engineering specifications of the subject components installed in the subject vehicles. 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, equipped with identical subject components as the subject vehicles, whether installed in production or in service, and state the applicable dates of production or service usage.

The stop lamp subsystem mechanization electrical circuitry schematic is provided on the Att\_1\_GM disk, in the folder labeled Q\_10, in the file labeled, "Q\_10\_A\_Circuitry Schematic.

A complete engineering description including specifications of the multifunction switch is contained on the Att\_3\_Valeo Confidential disk in the folder labeled Q\_08; refer to the folder labeled, "Q\_08\_A Valeo Documents." The drawings are included in the Delphi confidential enclosure. The multifunction switch part numbers, supplier information and GM vehicle usage information are provided on the Att\_1\_GM disk in the folder labeled Q\_10; refer to the file labeled Q\_10\_B\_MFS.

A complete engineering description including specifications of the brake switch is contained on the Att\_4\_Mallory Confidential disk in the folder labeled Q\_08, refer to the folder labeled, "Q\_08\_Mallory Documents. The GM drawings, material specifications and product specifications for the brake switch are contained on the Att\_2\_GM Confidential disk in the folder labeled Q\_08; refer to the folder labeled "Q\_08\_D GM Documents". The brake switch part numbers, supplier information and GM vehicle usage information are provided on the Att\_1\_GM disk in the folder labeled Q\_10, refer to the file labeled Q\_10\_C\_Brk Sw.

**11. Provide 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 primary components of the stop lamp sub-system in the subject vehicles that affect brake lamp illumination when the brake pedal applied are the brake switch assembly and the multifunction switch assembly.

The brake switch is a plunger switch. The brake switch provides the signal to the brake lamps including the CHMSL and the cruise control system. A failure of the brake switch can result in failure of the brake lamps to illuminate when the brake pedal is applied and failure of the cruise control to engage.

The brake switch failure mechanisms and failure modes are provided in the Mallory DFMEA contained on the Att\_4\_Mallory Confidential disk in the folder labeled Q\_08, refer to the folder labeled, "Q\_08\_B\_Mallory Documents". GMs warranty analysis of the claims for brake switch replacement show that the rate is low. Brake switch replacement is 1.2 IPTV at 36 months of service.

The multifunction switch assembly includes the hazard warning switch, turn signal switch, wiper switch, cruise control switch and beam change/flash to pass module. A multifunction switch failure can result in:

- failure of the hazard lamps to illuminate,
- failure of the left and right brake lamps to illuminate (CHMSL illuminates),
- failure of the front and rear turn signal lamps to illuminate,
- failure of the windshield wipers, and
- failure of the cruise control to engage.

The multifunction switch/hazard warning switch failure mechanisms and failure modes are provided in the Valeo DFMEA contained on the Att\_3\_Valeo Confidential disk in the folder labeled Q\_08, refer to the folder labeled, "Q\_08\_A Valeo Documents".

GM attempted to filter the warranty claims for multifunction switch replacement to include only multifunction switch replacement claims related to failure of the brake lamps to illuminate when the brake pedal is applied. The warranty records related to multifunction switch replacement do not contain sufficient information to establish the condition of the part at the time of the warranty correction. Consequently the warranty claims provided for multifunction switch replacement are not all related to the alleged defect.

The rate for multifunction switch replacement for any reason is 3.9 IPTV at 36 months of service. GM's analysis of the warranty claims for turn signal & hazard warning switch replacement indicates a 1.0 IPTV at 36 months of service.

GM did a Weibull analysis of the warranty and complaint data to estimate the cumulative IPTV rate for failure of the brake lamps to illuminate related to the multifunction switch, hazard switch and brake switch. The estimates are:

- 2.5 IPTV at 3 years
- 3.8 IPTV at 5 years
- 5.1 IPTV at 7 years
- 6.9 IPTV at 10 years

The warranty rate is low, the predicted failure rates are low, the number of incident reports that may be related to the subject condition is low and there have been no reported crashes, injuries or fatalities. The design, manufacture and performance history of the multifunction switch, hazard switch and brake switch do not indicate any reason for field action.

GM reviewed the 13 incident reports (VOQs) included with this inquiry. GM has concluded that 8 of the VOQs may be related to the multifunction switch based on the description provided. The remaining 5 VOQs appear to be related to the brake switch based on the information provided. GM has not examined the multifunction switches or the brake switches that are the subject of the VOQs; therefore, GM has not identified the specific contributory factors related to each of the alleged failures.

\* \* \*

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.

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 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 1998, were involved in any way with any of the following related to the alleged defect in the subject vehicles:

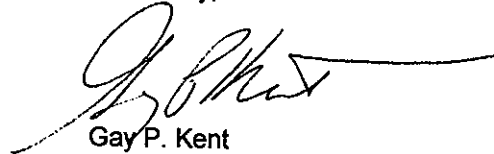
- a. Design, engineering, analysis, modification or production (e.g. quality control);
- b. Testing, assessment or evaluation;
- c. Consideration, or recognition of potential or actual defects, reporting, record-keeping and information management, (e.g., complaints, field reports, warranty information, 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.

General Motors requested assistance and documents from suppliers in responding to items 8, 9 and 10 and this response includes those documents received from suppliers.

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

**N070018  
PE07-001**

**GM CONFIDENTIALITY LETTER**

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

**N070018  
PE07-001**

**SUPPLIER CONFIDENTIAL LETTER**

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

**N070018  
PE07-001**

**ATTACHMENT "1"**

**GM NON-CONFIDENTIAL MATERIAL**

**N070018  
PE07-001**

**ATTACHMENT "2"**

**GM CONFIDENTIAL MATERIAL**

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



**N070018  
PE07-001**

**ATTACHMENT "3"  
VALEO SYSTEMS  
CONFIDENTIAL MATERIAL**

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

**N070018  
PE07-001**

**ATTACHMENT "4"  
MALLORY CONTROLS INC.  
CONFIDENTIAL MATERIAL**

**MALLORY CONTROLS INC.  
CONFIDENTIAL MATERIAL  
HAS BEEN REMOVED FROM THIS  
ATTACHMENT AND SUPPLIED TO  
THE OFFICE OF THE CHIEF COUNSEL**

**N070018  
PE07-001**

**ATTACHMENT "5"  
DELPHI AUTOMOTIVE  
CONFIDENTIAL MATERIAL**

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