



Mitsubishi Motors North America, Inc.

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May 22, 2008

Mr. Thomas Cooper, Chief  
Vehicle Integrity Division  
NHTSA Office of Defects Investigation

RE: NVS-212cag, PE08-014

Dear Mr. Cooper:

Mitsubishi submits the remaining responses for Questions 8, 9, 10 and 14 relating to PE08-014.

Mitsubishi is seeking confidential treatment for the seventeen documents listed on the attached Document List, which summarizes the subject information. Two copies of this information and documentation, with the appropriate confidentiality requests and their supporting information, were submitted today to the Office of Chief Counsel (NCC-111), National Highway Traffic Safety Administration, Room W41-227, 1200 New Jersey Ave. S.E., Washington, DC 20590.

Responses to Questions 1 through 7, 11, 12, and 13 were provided on April 20, 2008. However, to update this response, attached herewith is one additional consumer case pertaining to Question 12 that we discovered during our quality assurance check for this response.

Should you have any questions or need additional information, you can reach me at one of the contact points listed below.

Sincerely,

Kent Reeves  
National Manager  
MMNA Product Support & Technical Compliance  
Phone: 714-372-6362  
Fax: 714-934-4242  
Email: [kreeves@mmsa.com](mailto:kreeves@mmsa.com)

Enclosures

- Q.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 being planned by, or for, Mitsubishi. For each action, provide the following information:
- Action title or identifier;
  - The actual or planned start date;
  - The actual or expected end date;
  - Brief summary of the subject and objective of the action;
  - Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
  - 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.

- A.8. Responsive information with respect to each action is summarized in the attached list. The attachments include a one-page summary describing a. through f. and related documentation for each action, the Japanese originals and their respective English translations.

- Q.9. Describe all modifications or changes made by, or on behalf of, Mitsubishi in the design, material composition, manufacture, quality control, supply, or installation of the subject component, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:

- 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(s) (service and engineering) of the original component;
- The part number(s) (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 Mitsubishi is aware of which may be incorporated into vehicle production within the next 120 days.

- A.9. Document No.16 contains a table summarizing all modifications and changes, including design, manufacture, and quality control, which relate to the front passenger window switch of the subject vehicles.
- Q.10. Produce one of each of the following:
- Half/quarter sections drawings of the latest design version of the subject components.
- A.10 Document No.17 contains drawings and the photograph of the latest design version of the front passenger door switch of the subject vehicles.

Q.14. Furnish Mitsubishi's assessment of the alleged defect in the subject vehicles, 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.

A.14. Mitsubishi's assessment of the passenger window switch with burning damage in the subject vehicles is as follows:

**a. The causal or contributory factor**

According to investigations of recovered parts, reconstruction testing, and FTA analysis, the cause of this incident was determined to be human error. Soft drinks or other such liquids were spilled directly over the passenger power window switch knob and contaminated the inside of the switch. This contamination resulted in electrical leakage because of an electrolyte and/or carbon accumulation inside the switch. For details, refer to Document No. 7 and 15.

Mitsubishi has verified the cause of this incident based on the trace of the liquid flows found on the back of the door trim on all of the returned door trims. The burning damage was reproduced at our reconstruction testing by spilling liquids on to the subject switch. It was also confirmed that burning damage will not occur unless liquids enter into the subject switch.

The failure mechanism and the occurrence phenomena are described in detail in the below b. and c.

**b. The failure mechanism**

1. Projected failure mechanism as of 2004

According to investigations of recovered parts and reconstruction testing in 2004, it was projected that the passenger power window switch with burning damage occurs as a result of the following. For details, refer to the Document No.7.

- ① More than 250cc of the liquids like a sport drink containing electrolytes were spilled over the power window switch area at one time.
- ② Some liquid enters the switch interior and stays at the broaching area between IG terminal (power supply) and MU terminal (ground).
- ③ As the liquid dries off, the electrolytes accumulate between the above terminals.
- ④ Due to moisture absorption and drying repeatedly, the accumulated electrolytes become a conductive material.
- ⑤ Depending on the condition of the circuit bridge developed by the particles between IG and ground terminal, if the resistance between the terminals reaches a certain value, the switch may start to heat up and melt or ignite the plastic components.

2. Projected failure mechanism based on the further validation at this time

Based on the further reconstruction test result conducted for this PE response, the projected failure mechanism of the passenger power window switch with burning damage has been revised from the one of 2004 as follows: For details, refer to the Document No. 15.

- ① Large amounts of liquids (more than 100cc which was determined at this further validation) like a soft drink were spilled over the power window switch area at one time not like splashing the liquids over the area.
- ② Some liquid enters the switch interior and stays at the broaching area between IG terminal (power supply) and ground terminal.
- ③ As the liquid dries off, the electrolytes and carbonized particles (verified at the further validation at this time) accumulate between the above terminals.
- ④ Due to moisture absorption and drying repeatedly, the accumulated electrolytes and carbonized particles become a conductive material.
- ⑤ Depending on the condition of the circuit bridge developed by the particles between IG and ground terminal, if the resistance between the terminals reaches a certain value, the switch may start to heat up and melt or ignite the plastic components.

**C. The failure mode**

As mentioned above, if the subject liquids enter into the switch, the terminals may begin to heat up and begin to smoke. Depending on the amount of electrolyte or carbonized material accumulation at the switch contacts, a bridge could occur, resulting in current flow and the potential of switch housing to melt or ignite.

**d. The risk to motor vehicle safety that it poses**

As mentioned above, the subject incident is rare and would only occur under extremely limited circumstances.

- ① The incident occurs due to spillage of electrolyte or sugar containing liquid onto the power window switch, this most probably is an accidental event that would not occur in ordinary use.
- ② The subject switch has a 30A fuse as a safety means which is to cut the excess electric current in case of an electrical overload such as a short circuit. Although the bridge circuit (from the accumulated electrolyte or carbonized material) is essential for the incident to occur, the current flow sufficient to cause the switch contacts to overheat is dependant on the amount of resistance the bridge material exhibits.
  - If the bridge resistance is small (full bridge circuit) the current flowing in the circuit would be enough to cause the fuse to blow out and cut the electric current.
  - If the resistance is too large (Low or partial bridge circuit) little or no electrical current will flow, thus the temperature of the switch contacts will not go up.

- It is only in the rare case where the right amount of resistance (through the bridge circuit) would allow enough current to flow to cause the temperature of the contacts to rise to a sufficient level to melt the switch contacts.
  - Even if the resistance of the bridge happens to be at the "intermediate" level, the bridge itself would be burnt out before the subject incident would occur in most cases since the bridge is very weak in nature.
- ③ As reported on the May 1, 2008 response, the number of "peer" vehicles that use the subject switch (including the 02-03 Galant) is approximately 750,000+ units. Based on this total and the 48 reported complaints (28 for subject vehicles, 20 for peer vehicles) the failure rate for this incident is only 0.006%, which is extremely low.
- ④ Even if the incident occurs, the first symptom is smoke from the switch, which the passenger will notice and exit the vehicle.
- ⑤ The design, materials and structure of the subject switch is common in the industry, having no unique features.

Because of the above-mentioned reasons and Mitsubishi has found that the condition is very rare and it was only minor in nature in the case where there has been an allegation of injury, we do not think this issue rises to the level of an unreasonable risk to public safety and therefore, Mitsubishi will continue to monitor the field situation.

**e. Is there any warning for the driver or any other persons outside the vehicle when the subject part is in failure condition?**

It is possible for the driver or passenger to acknowledge the incident by the smell or the smoke when the power window switch is burning.

**f. Opinion on the four ODIs included in the inquiries.**

We have not determined the cause of the four ODI cases yet since we have not made the investigation for the vehicles and their related parts. However, it is estimated that the four ODI cases were caused by the soft drink spilled by the occupants into the subject switch as explained above.

**CONFIDENTIAL**

**Document list**

\* : D: Document, M : Memorandum, R : Report

No.	TYPE *	Document Date	Created by	Title	Content
1	R	6/24/2004	OMRON	2C00 P/W SW Failure Analysis Result Report	Report from supplier regarding the investigation result of failure returned parts (for two vehicles)
2	R	7/28/2004	MRDA	Investigation report of smoke from passenger door on ST41	Investigation report for the burnt passenger door trim in Missouri (for one vehicle)
3	M	7/29/2004	OMRON	2C00 P/W SUB SW Failure Analysis Investigation Result	Report from supplier regarding the investigation result of failure returned parts (for two vehicles)
4	R	8/5/2004	MMC	Investigation report of parts returned from 5th case (MO)	E-Mail from supplier regarding the investigation result of failure parts (for one vehicle) (see Document #2)
5	R	8/24/2004	MMC	MMNA products ST41/ST24S/ST28/PSU Burn and Melt investigation result report of power window switch	Interim investigation report for the power window switch with melting damage and burning damage on ST41/ST24S/ST28/PSU as of August 2004.
6	D	9/14/2004	OMRON	2C41 P/W SW Burn trouble FTA	Failure Tree Analysis for P/W SW burning damage
7	R	9/15/2004	OMRON	2C41 P/W AS SW Failure Analysis Result Report	Final investigation report dated September 15, 2004 from supplier to MMC
8	R	9/17/2004	OMRON	2C00 P/W SW Failure Analysis Summary Report	Explanation documents in addition to the explanation to MMNA on 09/17/2004.
9	R	10/12/2004	OMRON	P/W SW Failure Returned Parts Analysis Result Report	Report from supplier regarding the validation result of the effect on the other models (P45, JT41) for P/W SW problem occurred on ST41.
10	R	10/19/2004	OMRON	Test Plan	Response from supplier against the additional questions from MMNA to the investigation result by the supplier.
11	R	2/1/2005	OMRON	2C41 P/W SUB SW Failure Returned Parts Analysis Result Report	Report from supplier regarding the investigation result of failure returned part (for one vehicle)
12	R	2/25/2005	OMRON	2C41 P/W AS SW Failure Analysis Result Report	Report from supplier regarding the investigation result of failure returned part (for three vehicles)
13	D	3/8/2005	MMNA	Summary Report for all ST overheat failure of passenger's door	List of Returned Part Analysis as of March 2005
14	R	5/17/2005	OMRON	2C00 P/W SUB SW Failure Analysis Result Report	Report from supplier regarding the investigation result of failure returned parts (for two vehicles)
15	R	5/9/2008	MMC	Reproduction test result conducted by MMC	Reproduction test result conducted by MMC.
16	D	5/12/2008	MMC	History of past modifications and changes for the subject power window switch (Response to Question 9.)	The table summarizing of all modifications and changes for the subject power window switch
17	D	5/12/2008	MMC	Design drawings and photograph of the subject power window switch (Response to Question 10.)	Spec control drawings and approval drawings for the subject power window switch. The photograph of the external of the subject switch and its component parts.

x

Customer Relations

Help

Summary

Case Information

Row 1 of 1

BRANDED TITLE: (P) SALVAGE Y							
Case No	356343	Case Type	SERVICE	Related Mediation		Created By	
Current Status	CR CLOSE	Responsible Party	CASE MANAGER	Assigned User	BRET EISMAN	Phone	714/37:
Start Date	08 16 2004	Close Date	10 19 2004	Days Open	65	Country	US
Priority	PRIO1	Sub-Category	SERVICE DEPT. COMPLAINT	Other	OTHER	Case Type	Please
Follow-Up Date		CR Only	<input type="radio"/> Yes <input checked="" type="radio"/> No				

Customer Information

Title	Please select one	First Name	MOHAMMED	Last Name	GAZZAZ	Middle Initial	
158 N BLACON APT B4							
City	BRIGHTON	State	MASSACHUSETTS	Zip Code	02135		
Phone Number				Cell Number			

Customer Contact Information

E-Mail							
Home	(617)739-2065	Work		Ext		Cell	(617)792-7465
Other		Fax		Preferred Contact Method	UNKNOWN		

Vehicle Information

VIN	4A3AC44G41E159616	Model	2001 - ECLIPSE 3-DOOR SPORT COUPE - "SPORTRONIC" TM 4-SPD AUTO O/D TRANS - STERLING SILVER	Country	US
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Current Mileage	40000	Retail Sales Date	03/24/2001	Sales Type	04 - 04 RETAIL-CASH IS PAID ON A LMTD BA
Purchase Date if Used	(MM/DD/YYYY)	Used Purchase Retailer		Used Purchase Mileage	

**Recall Information**

Recall Number	Recall Description	Recall Completion Date
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**Dealer Information**

Selling Dealer	20054 DANVERS MITSUBISHI	Service Dealer	20033 PETER FULLER MITSUBISHI	Self Auth Level	4
Sales Manager	**** TERMINATED****	Service Manager	JEFF KRASNER		
Selling Dealer Phone No	(978) 774-4040	Service Dealer Phone No	(617) 924-8100		
General Manager		General Manager	PETER FULLER		
District	B5	District	B5		
Current DSM	WILLIAM WHITNEY	Current DPSM	GARY CASSIDY		
DSM Phone No	856/467-7781	DPSM Phone No	856/467-7786		

**Condition**

Group	Sub-Group	Condition	Cust Code
54 CHASSIS ELECTRICAL	82 SWITCH GENERAL	26 SHORT/OPEN CIRCUIT	R1 FIRE
How long has the vehicle exhibited this condition?	0 day(s)	Prior Repair Attempts	0
Location of Prior Repair Attempts	NONE	Other Location	NONE
To whom have you spoken at the dealership?		Was the dealership able to duplicate the problem?	NO

**Service Questions**

How long has/was the vehicle at the dealership?	0 day(s)		
Current Vehicle Location	NONE	Other Location	
Last Service Performed	UNKNOWN	Last Service Date	
Location of Last Service	NONE	Other Location	
Loan Car Requested?	NO		
What resolution are you seeking for your concern?	OTHER	If Other	CONVERSION

**Comments**

13 Total Comments

Seq	Csfg Status	Date	Entered By	Comments
1		10-19-2004 00:00:00	GCASSIDY	DEALER COMMENTS TRANSMITTED ON (10/19/2004)(GCASSIDY) FILE CLOSED AS A RESULT OF TRANSMISSION
1		08-17-2004 00:00:00	BEISMAN	DATE REPAIR COMPLETED OR DECISION RENDERED : 08/17/2004 REPAIR ORDER NUMBER : 6300 MILEAGE AT REPAIR : 42311 COMMENTS INPUT BY : CASG ACTION TAKEN : VEH INSPECTED - FOUND TO HAVE ELECTRICAL FIRE IN PASS FR DOOR. CAUSE UNDETEMINED. CONTACT BY PRODUCT SUPPORT TO REPAIR / REPLACE ALL AFFECTED PARTS AND SEND TO PRODUCT SUPPORT. VEH REPAIRED AND COMPLETELY CLEANED / DETAILED AND



				RETURNED TO CUSTOMER
		08-26-2004 00:00:00	BEISMAN	(08/26/04) (10:47) (EISB): DPSM CASG INSPECTED VEH THIS DATE AND TOOK DIGITL PHOTOS AND E-MAILED TO ENGINEER DWONG FOR REVIEW. PARTS TO BE RETURNED TO CORP HEADQUARTERS. DPSM ALSO FOUND BODY DAMAGE TO HOOD AND RIGHT FENDER FROM PREVIOUS INCIDENT AND COVERED WITH SILVER SPRAY PAINT. THERE IS ALSO DAMAGE TO REAR BUMPER COVER THAT WAS SPRAYED OVER WITH SILVER PAINT AND DOES NOT MATCH. VEH IS NOT IN BEST OF CONDITION BUT UNRELATED TO PASSENGER DOOR INCIDENT. DPSM WILL CALL CUST TO ADVISE THAT REPAIRS ARE POLICY ADJUSTMENT SO THAT MMNA COULD HAVE PARTS. NO OTHER ADJUSTMENTS OR ASSISTANCE WILL BE PROVIDED TO CUST.
		08-18-2004 00:00:00	BEISMAN	(08/18/04) (08:36) (EISB): VCM CALLED DLR SM FABIO WHO IS GOING FORWARD WITH REPAIRS. DLR IS TAKING DIGITAL PHOTOS AND SENDING TO D WONG. DLR AGREED TO RETAIN PARTS AND WILL DISCUSS WITH D WONG TO COORDINATE PARTS RETURN TO MMNA.
		08-17-2004 00:00:00	BEISMAN	(08/17/04) (10:20) (EISB): VCM REVIEWED FILE WITH LEGAL AND MEDIATION. MMNA OFFER FOR ASSIST IS TO RETRIEVE PARTS AND NOT AN ADMISSION OF PRODUCT DEFECT. MMNA COVERING REPAIRS AS A POLICY ADJUSTMENT AND THIS IS COMPENSATION THAT CUST IS RECEIVING FROM MMNA. THIS IS INSURANCE ISSUE BUT MMNA WANTING PARTS AND PROVIDING REPAIRS AND RENTAL AS COMPENSATION FOR ALLOWING MMNA TO OBTAIN PARTS. VCM CALLED DPSM CASG AND REVIEWED. DPSM UNDERSTOOD AND WILL DISCUSS FURTHER WITH DLR SM AFTER REVIEW WITH D WONG. VCM CALLED D WONG TO ADVISE OF POSTURING BY CUST BUT THAT VCM HAS REVIEWED WITH LEGAL MEDIATION & ENGINEERING MGR K RUSSELL. D WONG ADVISED THAT HE SPOKE TO SM FABIO AND HE WANTED OKAY FROM DPSM TO GO FORWARD WITH RPRS. VCM ATTEMPTED TO REACH SM BUT WAS TRANSFERRED TO PHONE THAT NOONE PICKED UP - STILL RINGING AFTER SEVERAL MINUTES WHILE I UPDATED FILE.
		08-17-2004 00:00:00	ESTEELE	(08/17/04) (10:12) (STEE): REVIEWED FILE WITH EISB.
		08-17-2004 00:00:00	MATIENZA	(08/17/04) (09:45) (ATIM): MR RATHOR STATES HE IS AT DEALER AND SM FABIO NOT AWARE OF THIS ISSUE. VCM ADVISED TO HAVE SM REVIEW WITH SA JOE, AS SM WAS DOING THIS, CUST INQUIRED ABOUT MMNA'S INITIAL OFFER TO COMPENSATE. VCM ADVISED THAT MMNA DOES NOT REVIEW ANY COMPENSATION WITHOUT CUST REQUEST FOR EXACT AMOUNT AND DEMAND. VCM SPOKE WITH SM FABIO, HE ALREADY REVIEWED WITH JOE AND WILL PLACE CUST IN A RENTAL AND PROCEED WITH REPAIRS. SM HAS LEFT A MESSAGE FOR DPSM TO CONTACT HIM REGARDING THIS, AND CUSTOMER'S REQUEST FOR FINANCIAL COMPENSATION. VCM ADVISED SM TO PROVIDE CUST'S CONTACT NUMBER TO DPSM FOR DIRECT CUST CONTACT DUE TO THE NATURE OF HIS REQUEST. VCM REVIEWED WITH EISB REGARDING THE REQUEST FOR FINANCIAL COMPENSATION, HE WILL REVIEW WITH LEGAL.
		08-16-2004 00:00:00	BEISMAN	DEALER PRINT, (08/16/04) (17:26) (EISB) ***** THANK YOU FOR YOUR ASSISTANCE IN RESOLVING OUR CUSTOMERS ISSUE. ***** ***** IF YOU HAVE ANY QUESTIONS ABOUT THE FILE, CONTACT ***** ***** CUSTOMER CONNECTIONS AT 888-908-6672 TO SPEAK WITH A ***** ***** VEHICLES CASE MANAGER. ***** ***** ***** CUSTOMER SATISFACTION AND RETENTION IS OUR FIRST PRIORITY! *****
		08-16-2004 00:00:00	BEISMAN	RETAILER SERVICE MANAGER, PLEASE RESOLVE 1. PLS RECEIVE VEH AND PROVIDE CUST WITH RENTAL. 2. PLS COMPLETE REPAIRS NEEDED TO RETURN RIGHT DOOR TO ORIGINAL CONDITION OR REVIEW WITH YOUR DPSM TO VERIFY ACTION TO TAKE. 3. PLS UPDATE FILE WITH ACTION TAKEN AND CLOSE THE FILE. THANKS FABIO - BRET
		08-16-2004 00:00:00	BEISMAN	(08/16/04) (14:15) (EISB): VCM REVIEWED WITH R LANTZ IN ENGINEERING AND HE REQUESTED THAT VEH BE TAKEN TO DLR AND MMNA WILL COVER RPRS. MMNA WANTING TO COLLECT PARTS FOR REVIEW. MMNA WILL COVER REPAIRS AND RENTAL. VCM CALLED DLR AND SPOKE TO SA JOE IN SM'S ABSENCE. JOE HAD TALKED TO THE CUSTOMER ON SATURDAY AND REFERRED THEM TO MMNA 800# AS VEH HAD FIRE DAMAGE THAT WAS INSURANCE ISSUE BUT CUST INSISTED THAT MMNA INSPECT VEH. DAMAGE WAS LIMITED TO THE PASSENGER SIDE DOOR. JOE WILL ADVISE SM FABIO OF SITUATION. VCM CALLED CUST AND ADVISED TO TAKE VEH TO DLR TOMORROW AND THEY WILL PROVIDE RENTAL AND DO REPAIRS TO VEH. CUST AGREED. VCM VM'D DPSM ALDG WITH FILE INFO.
		08-16-2004 00:00:00	BEISMAN	CUST'S FRIEND, JUNAID RATHOR, CALLING ON OWNER'S BEHALF AS THEY HAD FIRE IN PASSENGER SIDE DOOR AND WANT MMNA TO ASSIST WITH REPAIRS. CUST WAS DRIVING AND VEH STARTED SMOKING AND THEN CAUGHT ON FIRE. CUST STATES THAT FIRE DEPT PUT OUT FIRE BUT WANT MMNA TO PAY FOR RPRS. VCM ADVISED CUST THAT MMNA WILL REVIEW AND ADVISE IF ASSIST IS AVAILABLE. VCM WILL CALLBACK CUST TODAY OR TOMORROW.
		08-16-2004 00:00:00	BEISMAN	CHASSIS ELECTRICAL PREVIOUS FILE(S) : MECHANICAL ISSUE # 1 : PASSENGER DOOR CAUGHT ON FIRE. ( ) PREVIOUS RPRS MECHANICAL ISSUE # 2 : ( ) PREVIOUS RPRS MECHANICAL ISSUE # 3 : ( ) PREVIOUS RPRS ORIGNAL OWNER .....: ( ) YES; (X) NO, PURCH MM/YY AT --- MILES POLICY ADJUSTMENT REQUEST ...: ( ) RENTAL; ( ) OUT OF WARR REPAIR ; ( ) OTHER PARTS DELAY/BACKORDER .....: ( ) YES ; PART # ; ORDER # RETAILER SM/ADVISOR CONTACTED: ( ) YES ; NAME : DPSM CONTACTED .....: ( ) YES ; NAME :
		08-16-2004		

	00:00:00	BEISMAN	(08/16/04) (13:43) (EISB): PLS CALL JUNAID RATHOR AT CELL # LISTED AS CONTACT
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Return	Email	Print
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