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July 19, 2010

Via Federal Express

Mr. Michael Lee
Vehicle Integrity Division
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

RE: Parts Requested in PE 10-017 Information Request

Dear Mr. Lee:

On behalf of Daimler AG and Mercedes-Benz USA, LLC (Mercedes), enclosed please find the field-returned sample parts requested in Request Number 13 of the information request in PE 10-017. In addition, extra samples of some of the parts provided at our July 15, 2010 meeting with Mercedes are also enclosed.

Please let me know if you have any questions.

Sincerely,

Patrick M. Raher

Enclosure

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July 19, 2010

D. Scott Yon, Chief
Vehicle Integrity Division
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: PE10-017 – Preliminary Evaluation to Investigate Allegations of Steering Column Module Wiring Harness Failures on Certain MY 2005 and 2006 E-Class Vehicles

Dear Mr. Yon:

This letter is submitted on behalf of Daimler AG and Mercedes-Benz USA, LLC (collectively "Mercedes") to the National Highway Traffic Safety Administration ("NHTSA" or "Agency") in response to the Office of Defects Investigation's May 24, 2010 request for information relating to the Agency's preliminary evaluation of allegations of steering column module (SCM) wiring harness failures in Model Year 2005 and 2006 E-Class Mercedes-Benz vehicles equipped with the telescopic steering column feature. Pursuant to your email of June 11, 2010, this response provides information responding to each information request with regard to Model Year 2005 and 2006 E-Class and CLS Mercedes-Benz vehicles, and also provides certain sales and warranty claim information regarding models with a substantially similar airbag design and layout. This additional information is provided with the responses to Requests 1 and 5.

Overview

Dealer Technical Bulletin ("DTB") P-B-91.60/99 dated December 12, 2005, and later related bulletins, were issued to address the occurrence of intermittent electrical resistance in the SCM wiring harness of affected vehicles. The SCM wiring harness is a part of the driver's airbag ignition circuit. Specifically, vehicles presenting fault codes "DTC 9103" or "DTC 9123" indicate the occurrence of resistance values in the driver's side airbag ignition circuits sufficient to register DTC 9103 for circuits using component R12/13, and DTC 9123 for circuits containing component R12/14.

Causal Factors and Failure Mechanism Resistance levels sufficient to set a Diagnostic Trouble Code ("DTC") may occur in the subject wiring harnesses due to a slow-motion movement effect which has the potential to vary the retention force or "tightness" of crimping on wires within the

harness. In the subject SCM wiring harness the individual wires terminate within the N80 plastic connector housing. Originally 10 individual wires were included in the harness. In Model Year 2005, two additional and larger diameter wires were optionally added to allow for the option of a heated steering wheel; these wires had to carry more current for the steering wheel heater than other wires in the harness. For both the original 10 wire wiring harness and the new 12 wire wiring harness, the individual wires terminate within the N80 connector housing. For each termination, the individual wire is held to an electrical contact by a crimp. To accommodate the new larger wires, a new connector housing and contact (the MLK), were added. For uniformity purposes, the MLK contact was introduced for all wires in the N80 connector.

Following the change to the 12 wire wiring harness, reports were received from the field indicating the illumination of the airbag warning light and the DTC codes noted above. After a lengthy and detailed series of investigative actions, it was determined that over time, small slow motion movements of the wiring harness could cause micro-gaps to occur between the individual wire strands and the crimped connections within the N80 connector housing. The nanometer to micrometer gaps are only visible under Reflection Electron Microscope (REM) and occur without entire separation of the strands from the crimp itself. When present, the nanometer to micrometer gaps can allow thin layers of oxidation on exposed copper wire surfaces, which can increase resistance. The increase in resistance was found to be intermittent, not stable, and leading to spikes in resistance before the slow motion movement of the wiring again shifts the strands. Thus, additional slow motion movements of the wiring harness can return the crimp and wire to a complete connection or effectively rub through any thin layers of oxidation that formed. Similarly, variations in temperature can add to the slow motion effect and alter the level of resistance. As discussed below in response to Request 9, this condition was addressed in production and in a field repair kit by the introduction of crimp connectors with higher shoulders that can exert a more stable crimping force on the wires.

Driver Warnings The airbag fault detection system is necessarily very sensitive to increases in resistance. The typical designed electrical resistance of all the components in the driver's air bag ignition circuit is 3.1 ohms. The fault detection system has a relatively low fault detection threshold of 6 ohms. With this low fault detection threshold, even a very small increase in resistance over the design resistance can be detected and a DTC of 9123 or 9103 will be set, and the SRS malfunction indicator light ("MIL") will illuminate. Since the diagnostic measurement interval is 250 milliseconds, even short time deviations of resistance are detected, and the SRS MIL is set and remains on, even after the resistance level returns to normal, which is the typical behavior.

Other Alleged Failure Modes Complete disconnection of the wiring harness terminal plug or complete separation of individual wires is not a potential failure mode. No evidence of this type of failure mode has been observed in the field. Similarly, the length of the original wiring harness is not the root cause of the slow motion effect described above. The length of the original wiring harness is more than sufficient to allow full articulation of the telescoping steering wheel without putting any significant tension on the harness or its connections. The original wiring harness section in all U.S. vehicles was 200 mm. Following the redesign of the harness due to a change in the cockpit bracket in Model Year 2006, the length increased to 320 mm. In both the original and redesigned harness, the range of motion from the fully retracted to the fully extended wheel position is 60 mm (for the in and out motion) and 50 mm (for the up and down motion). Both the original and redesigned wiring harness provide a minimum safety margin of 15 mm to fully accommodate the full extension and downward motion (worst case status) of the steering wheel. In addition, tolerance stacking within the various parts provide up to 20 mm of additional length.

Not only is the harness length sufficient, but even assuming the length was not sufficient the harness connector plug would fracture if extended beyond the length of the harness. This result would be caused by the fact that the harness connector plug is fixed to the moving portion of the steering column by a metal bracket. This bracket only allows the plug to be disconnected after it is first pulled out of the bracket. To pull the plug out of the bracket, it must be moved perpendicular to the axis of the telescoping steering column. Therefore, in a hypothetical situation where the wiring harness was too short, the bracket would hold the plug against the telescoping force of the steering wheel extension thereby breaking or fracturing the connector housing. No such damage has been observed in the field.[1]

The reason for the field repair extension of the harness from its original design length was not to prevent a disconnect. Rather, the additional length is provided to facilitate the field repair, which requires manual splicing and soldering of the individual wires in the harness without completely removing it from the vehicle. Since the repair instructions specify that the solder connectors must not be positioned directly above one another, there must be sufficient extra length to allow for the proper soldering. Thus, after the repair the harness is longer than the original and must be looped to allow proper storage.

Risk to Motor Vehicle Safety The foregoing situation presents no risk to motor vehicle safety. The basis for this conclusion is that in the current situation, even if the SRS light is illuminated, the airbag system remains fully functional and within normal operating conditions.

There are several reasons why the airbag remains fully functional and within normal operating conditions resulting in no risk to safety. First, based on field data developed in the U.S. and EU, approximately 98% of vehicles brought in for service with the SRS light illuminated have a fully-operational SRS system with an operating resistance below the SRS light threshold. Approximately 1,500 vehicles and repair documents were analyzed for this investigation. Each vehicle had been brought to the repair facility with the SRS light illuminated and the DTC 9123 or 9103 stored in the system. In approximately 98% of the vehicles, diagnostics tests demonstrated that the affected vehicles' SRS system had an operating resistance below the SRS light threshold. In only 29 of the cases was there an existing resistance above the illumination threshold. The highest level of resistance measured in these vehicles was 10.43 ohms.

In 51 of the EU vehicles, which were company vehicles, DAG was also able to equip the vehicles with event data recorders without repairing the vehicle. These event data recorders measured and confirmed the random and sporadic nature of the slow motion variation in system resistance with exceedence of the SRS light threshold in many cases lasting only very short durations. Accordingly, the situation under review does not represent a safety issue since the driver's airbag remains fully functional at all times and, in fact, even though the SRS light was illuminated for a sporadic exceedence of the illumination threshold, 98% of the vehicles were under the threshold when inspected.

A second reason there is no safety consequence to the existing situation is that at any time there would be an event that actually triggered a driver's airbag deployment, the "fritting effect" would

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[1] In fact, sales of connector housing parts are extremely low. Prior to the availability of the wiring harness repair kit, any damage to the housing would have appeared in sales of this part, but there were only 324 connector housings sold and only 65 connector housing locks sold. When compared to the many thousands of wire repairs prior to the repair kit, these sales are very small. This demonstrates that the connector housing part sales were caused by damage by technicians "de-pinning" and re-pinning the wires out of and into the old connector.

immediately eliminate any existing resistance resulting from the slow motion effect and the SRS would operate at its normal resistance level. Attachment 7 contains the results of tests performed on SRS components subjected to the slow motion effect where resistance levels were created in a laboratory as high as two times any value seen in the field. Even under extreme adverse temperature and resistance conditions, the triggering of the SRS system immediately eliminated any oxidation and increased resistance and allowed the SRS system to function at its normal operating and resistance levels.

Thus, based on the foregoing field data and the engineering analysis referenced above, there is no safety issue involved in this situation.

<u>*Reports Included with this Inquiry*</u> The reports included with the IR do not suggest a safety-related defect of any kind.

- *VOQ 10298310* – [redacted] – This customer alleges that the SRS system "shut down" on his MY 2005 E-Class, that the SRS MIL illuminated, and that the dealer informed him that DTC 9103 was recorded in the system and told him that the wiring harness was too short to allow for telescoping of the steering wheel. As explained above, activation of the SRS warning light is not an indication that the SRS system is no longer operating. There is no evidence to suggest that the airbag on this vehicle was deactivated. As explained above the original wiring harness is not too short. DTC 9103 does indicate that a resistance reading was recorded by the system, and that the vehicle should be repaired under the subject DTB. The SRS light remains illuminated even when the resistance returns to normal levels below 6 ohms.

- *VOQ 10297534* – [redacted] – This customer alleges that the SCM wiring harness was "too short" and came apart "disabling all airbags." As noted above the original wiring harness is not too short and there was no parts damage or replacement to suggest a disconnection. As noted above, increased resistance in the harness does not disable the driver's side airbag at the levels that set the SRS MIL. In addition, resistance in the harness, and even complete disconnection of the driver's airbag harness, will not impact the functionality of the vehicle's other airbags.

- *VOQ 10285463* – [redacted] – This customer alleges that the SRS MIL on his MY 2005 E-Class illuminated causing "complete failure of all SRS systems" and "entire SRS shut down." As noted above, even complete disconnection of the SCM wiring harness does not disable the entire SRS system. High resistance which can set the SRS MIL will not disable the driver's airbag, and has no impact on the other SRS components.

- *VOQs 10163005 and 10161151* – This customer alleges that the SRS MIL on her MY 2005 E-class illuminated and required service on multiple occasions, which "could cause airbags not to deploy." As noted above, the activation of the SRS MIL would not cause the airbags not to deploy in the event of a crash.

The responses to NHTSA's requests numbered 1-14 are provided below following a restatement of the Agency's original requests.

Responses to Requests No. 1-14:

Request No. 1: *State, by model and model year, the number of the subject vehicles MBUSA has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by MBUSA, 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."

Response to Request No. 1:

The information requested in Request No. 1 is provided in Attachment 1, Production Data. In addition, the supplemental production information regarding MY 2005 and 2006 models with substantially similar airbag design and layout is provided in Attachment 2, Substantially Similar Models.

Request No.2: *State, by model and model year, the number of each of the following, received by MBUSA, or of which MBUSA 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) Property damage claims;
e) Third-party arbitration proceedings where MBUSA is or was a party to the arbitration; and
f) Lawsuits, both pending and closed, in which MBUSA 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 MBUSA'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.

Response to Request No. 2:

a) Mercedes has received 1,305 consumer complaints in its Customer Assistance Center which relate to, or may relate to, the alleged defect in the subject vehicles.

(b) Mercedes has received no field reports which relate to, or may relate to, the alleged defect in the subject vehicles.

(c) Mercedes has received no reports involving a crash or injury, and no reports involving a fatality, relating to the alleged defect in the subject vehicles.

(d) Mercedes has received no property damage claims alleged to have resulted from the alleged defect in the subject vehicles.

(e) Mercedes is aware of one arbitration proceeding in which it is or was a party relating to the alleged defect in the subject vehicles. The additional information requested for this item is provided below in Attachment 4, Request Number Two Documents.

(f) Mercedes is not aware of any lawsuits in which it is or was a defendant where the alleged defect in the subject vehicles is the primary claim. Mercedes is aware of 8 lemon law cases where complaints about the illumination of the SRS MIL or repairs under the subject DTBs were included among a wide range of complaints that formed the request for relief. These lemon law claims are included the response to Request No. 3 below. The additional information requested for this item is provided below in Attachment 4, Request Number Two Documents.

Request No. 3: *Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:*

a) MBUSA's file number or other identifier used;
b) The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
c) Vehicle owner or fleet name (and fleet contact person), address, and telephone number; Vehicle's VIN;
d) Vehicle's make, model and model year;
e) Vehicle's mileage at time of incident;
f) Incident date;
g) Report or claim date;
h) Whether a crash is alleged;
i) Whether property damage is alleged;

j) Number of alleged injuries, if any; and
k) Number of alleged fatalities, if any.

Response to Request No. 3:

The information requested in Request No. 3 is provided in Attachment 3, Request Number Two Data.

Request No. 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 MBUSA used for organizing the documents.*

Response to Request No. 4:

The information requested in Request No. 4 is provided in Attachment 4. Attachment 4A provides customer complaint documents, and Attachment 4B provides lawsuit documents.

Request No. 5: *State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by MBUSA 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 (TSB) or customer satisfaction campaign.*

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

a) MBUSA's claim number;
b) Vehicle owner or fleet name (and fleet contact person) and telephone number;
c) Vehicle's 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) DTC stored in air bag system;
j) Whether or not the claim is related to a TSB;
k) Replacement part number(s) and description(s);
l) Concern stated by customer; and
m) 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."

Response to Request No. 5:

Mercedes has paid warranty claims for 35,519 vehicles that relate to, or may relate to, the alleged defect in the subject vehicles. For the E-Class, there were 11,683 claims for Model Year 2005 vehicles and 19,086 for Model Year 2006 vehicles. For the CLS-Class, there were 4,750 claims paid for Model Year 2006 vehicles. The additional information requested in Request No. 5 is provided in Attachment 5, Warranty Data. In addition, warranty claim information for Model Year 2005 and 2006 vehicles with substantially similar airbag designs in which the subject part was replaced is provided in Attachment Two, Substantially Similar Models.

Request No. 6: *Describe in detail the search criteria used by MBUSA 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 model and model year, the terms of the new vehicle warranty coverage offered by MBUSA 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 MBUSA 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.*

Response to Request No. 6:

In order to identify the warranty claims reported in response to Request No. 5, Mercedes used the following damage codes, part numbers and labor operation numbers:

Damage codes	Part numbers	Labor Operation numbers
59782	A0015409405	54 1011 - short test perform
59783	A0015408705	91 0660 - Safety system check (after short test) test perform
	A0015408805	02 4859 - Airbag line to steering column module, replace
	A2114404509	

The normal new vehicle warranty coverage period in the United States is four years/50,000 miles.

Request No. 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 MBUSA 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 MBUSA is planning to issue within the next 120 days.*

Response to Request No. 7:

Mercedes issued the following technical service bulletins that relate to, or may relate to, the alleged defect in the subject vehicles:

- 91.60/99 (December 12, 2005) (repair pigtails)
- 91.60/99a (January 17, 2006) (process, part number description and damage code updated)
- 91.60/99b (April 13, 2006) (numbering sequence updated)
- 91.60/99c (February 6, 2007) (harness kit)
- 91.60/99d (June 12, 2007) (notes added for short test and returned parts)
- 91.60/99e (March 4, 2009) (labor time updated)

Copies of these documents are provided in Attachment 6, Service Documents.

Request No. 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, MBUSA. 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) 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. If an action is not complete, provide a detailed schedule for the work to be done, tentative findings and/or conclusions, and provide an update within 10 days of completion of the action.

Response to Request No. 8:

The following actions that relate to, or may relate to, the alleged defect in the subject vehicles have been conducted by or for MBUSA:

- Research Report 26/05: Resistance Response of a Cable Harness Subjected to Current Pulses (July 12, 2005). This report summarizes a study by DaimlerChrysler Research and Technology regarding the resistance response of airbag ignition circuits to an ignition pulse with increased resistance in the ignition circuit. The report finds that there is a Fritting effect, under which the ignition pulse leads to a reduction of the resistance.

- Technical Report: Evaluation of Data Logger Vehicles 2005 (June 2010). This DAG report summarizes vehicle data originally collected in 2005, in which vehicles from the company car pool which had generated an SRS fault message in response to high resistance in the ignition circuit, as well as other vehicles from the test vehicle pool, were fitted with a data logger. The goal was to identify the resistance behavior at the ignition circuits in driving mode. The study confirmed that increases and decreases in SRS resistance occur only sporadically, not continuously and not on a continuously rising basis.
- In July 2010, MBUSA conducted a review of dealer repair orders which indicated the subject codes. The analysis showed that 97.8% of the vehicles stored the code, indicating that the airbag system had reached the 6 ohm threshold and then returned to below 6 ohms.
- Resistance Behavior of Crimp Connections with Current Pulses (July 2010). This report by DAG Research & Development examined the Fritting effect and concluded that due to this effect, high resistance levels in the airbag system decreased to nearly nominal values.

Copies of the relevant documents are provided in Attachment 7, Assessment Action Documents.

Request No. 9: *Describe all modifications or changes made by, or on behalf of, MBUSA in the design, material composition, manufacture, quality control, supply, or installation of the subject components, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:*

a) The date or approximate date on which the modification or change was incorporated into vehicle production;
b) A detailed description of the modification or change;
c) The reason(s) for the modification or change;
d) The part numbers (service and engineering) of the original component;
e) The part number (service and engineering) of the modified component;
f) Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
g) When the modified component was made available as a service component; and
h) Whether the modified component can be interchanged with earlier production components.

Also, provide the above information for any modification or change that MBUSA is aware of which may be incorporated into vehicle production within the next 120 days.

Response to Request No. 9:

The following modifications in subject components have been made by Mercedes which relate to, or may relate to, the alleged defect in the subject vehicles:

- Change to the SCM connector contacts due to introduction of steering heater option, which required two additional wires capable of carrying increased current; MLK replaced MQS contact (July 2004).
- Change in length of SCM harness due to modification of cockpit bracket (July 2005)
- Change in MLK contact to increase contact force; MLK changed to MLK-S (July 2005).
- Increase in shoulder of crimp in MLK-S contact to improve crimping (February 2006).
- Introduction of gel to avoid ambient influences in MLK-S contact (July 2006).

- Use of tin wires in MLK-S contact (November 2006).

The requested information regarding these modifications is provided in Attachment 8, Part Modification Information.

Request No. 10: *Describe in the detail, by model and model year, the design and layout of the subject components in the subject vehicles. Your response should include, but is not limited to, the following information:*

a) List of all components or systems electrically connected to the SCM;
b) All circuit diagrams for the SCM and driver air bag module;
c) The original length and layout of the SCM wiring harness (include photos of layout);
d) The minimum length of the SCM wiring harness necessary to prevent the occurrence of DTC 9103 or 9123; and
e) The full stroke or excursion of the telescopic steering column.

Response to Request No. 10:

a) A list of components electrically connected to the SCM is provided in Attachment 9, Components Connected to SCM.

b) A diagram of the SCM and driver airbag module is provided in Attachment 10, Engineering Drawings.

c) The original length of the wiring harness was 200 mm. The length and layout of the SCM wiring harness is depicted in Attachment 10 and in Attachment 11, Wiring Harness Photographs. In addition, Attachment 12, Cable Length Video, provides a video presentation demonstrating the ample safety margin in the length of the wiring harness.

d) The minimum length of the wiring harness is not related to DTC 9103 or 9123. In any case, the design of the wiring harness cable ensures that there is always at least a 15 mm margin of safety regardless of the steering wheel position.

e) The maximum steering column extension is 60 mm (for the fore and aft motion) and 50 mm (for the up and down motion) beyond the original zero-point position; at these extensions, there is always at least 15 mm of additional wiring harness cable.

Request No. 11: *Provide, by model and model year, the following information regarding TSB P-B-91.60/99 and the subsequent revised bulletins:*

a) The revised length and layout of the SCM wiring harness (include photos of layout);
b) A detailed discussion of all known and potential consequences of DTC 9103 and 9123 with respect to the operation of the frontal air bag system in the subject vehicles; and
c) A detailed discussion of the possibility of the wire ends pulling out of the connector block due to the problem addressed by the TSBs.

Response to Request No. 11:

a) The revised length of the wiring harness is 320 mm. The length was revised due to introduction of a new one-piece cockpit bracket. In addition, DTB 91.60/99c introduced the harness repair kit. To facilitate this repair and to ensure ample length so that the solder sleeves are not positioned one on top of the other along the harness, the harness length was increased. However, at the end of the repair, the additional cable is looped and fixed with a cable tie. The revised wiring harness is depicted in Attachment 11, Wiring Harness Photographs.

b) As outlined in the Overview section above, notwithstanding the slow motion effect, the airbag system remains fully functional even when the fault codes are stored and the SRS warning light is illuminated.

c) As explained in the Overview section, there is no evidence that disconnection of the wiring harness terminal plug or individual wires is possible. If such a disconnection were to occur, the harness connector plug would fracture, and no such damage has been observed in the field or in testing situations.

Request No. 12: *State the number of the subject components that MBUSA 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). Include any kits that have been released, or developed, by MBUSA for use in service repairs to the subject component/assembly which relate, or may relate, to the alleged defect 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).

Response to Request No. 12:

The parts sales data cannot be limited by model, with the exception of the harness kit (part number A211 440 4509) which is used exclusively on models 211 and 219. For the harness kit, total sales were 33,944. All other listed parts are used to repair other models as well as the 211 and 219. In addition, several of the parts sold to repair the alleged defect – such as the repair wire and solder connector – require multiple parts per vehicle, and are universal parts used in many other vehicle applications beyond the SRS system.

The following table lists the parts and part numbers that have been used to repair vehicles with the subject SRS light illumination issue, the models using each part, dates of use, and number of parts required per vehicle.

Part Number	Part	Models Using	Dates of Use	Number Per Vehicle
A211 440 4509	Harness kit	211 and 219, MY 2005 and later	February 2007	1
A001 540 8705	Repair wire	All models, MY 2005 and later	December 2005 - February 2007 (except model 463 which still uses)	8
A001 540 8805	Repair wire	All models, MY 2005 and later	December 2005 - February 2007 (except model 463 which still uses)	2
A001 540 9405	Repair wire	MY 2004 vehicles	December 2005 - present	10
A002 546 1341	Solder connector	All models	December 2005 - present	10

The additional information requested in Request No. 12 is provided in Attachment 13, Parts Sales Data, and Attachment 14, Supplier Information.

Request No. 13: *Produce two of each of the following:*

a) Exemplar samples of each design version of the subject components used in the subject vehicles;

b) *Field-returned samples of each design version of the subject components from the subject vehicles associated with DTC 9103 and/or 9123; and*
c) *Any kits that have been released or developed by MBUSA for use in service repairs to the subject component/assembly which relate, or may relate, to the alleged defect in the subject vehicles.*

Response to Request No. 13:

Several of the requested parts were provided during Mercedes' July 15, 2010 meeting with NHTSA staff. The remainder, including field returned samples, are being sent under separate cover to Michael Lee.

Request No. 14: *Furnish MBUSA'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 would have that the alleged defect was occurring or subject component was malfunctioning; and*
f) *The reports included with this inquiry.*

Response to Request No. 14:

Please refer to the Overview section above.

Please feel free to contact me if you have any questions concerning this submission.

Sincerely,

Patrick M. Raher

Attachments