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June 5, 2008

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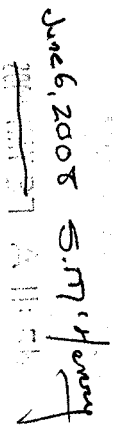

Via Federal Express

Jeffrey L. Quandt, Chief
Vehicle Control Division
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
West Building
Washington, DC 20590

Re: RQ08-002 – Recall Query to Investigate Complaints of Power Steering Fluid Leakage in M-Class Vehicles Previously Repaired in Safety Recall 03V-121

Dear Mr. Quandt:

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 March 24, 2008 request for information relating to the Agency's investigation of allegations of power steering fluid cooling hose leakage in model year (MY) 1998 through 2003 Mercedes M-Class vehicles that had previously received the recall remedy in Safety Recall 03V-121.

Overview

Before responding to the specific questions in this information request, an overview of the issues raised in NHTSA's request will be helpful.

Background In May 2002, Mercedes identified a field issue involving the connection of the low-pressure power steering fluid hose to the power steering fluid cooler. The connection at issue is located where the power steering fluid flows back from the power steering rack to a heat exchanger integrated into the radiator. This cooling circuit is located in the *low-pressure* portion

of the power steering system, where the hydraulic pressure is typically less than three bars. The field issue identified by Mercedes involved power steering fluid leaks that could result in gradual loss of power steering fluid. The cause of the leaks was found to be insufficient clamping force for the connection. Progressive loss of power steering fluid results in gradually increasing levels of noise from the power steering pump, and progressively increasing levels of required steering effort. For example, initially noise and increased effort are only encountered at high steering angles obtained at low speeds, which gradually increase until the pump noise is constant and power assist is intermittent at any steering angle, and eventually no longer available.

May/June 2002 Dealer Technical Bulletins Dealer Technical Bulletins (DTBs) were issued on May 16, 2002 (T-B-46.30/09) and June 12, 2002 (T-B-46.30/09a) to address this issue. The May DTB provided instructions for replacing the clamp at the lower power steering hose connection, and checking the power steering fluid level. The June DTB updated the initial repair instructions by specifying a new hose clamp part which was not available when the DTB was first issued in May. The original serial production hose clamp ("Clamp #1") was a screw-style clamp with a nominal diameter of 15.5 mm, and a designed tightening torque of 1.5 Nm +0/-0.2. The DTB specified replacement of Clamp #1 with a worm-gear style hose clamp ("Clamp #2") which was capable of providing 33-66% more tightening torque.[1] Specifically, Clamp #2 had a nominal diameter of 14-16 mm and a designed tightening torque of 2.0 Nm +0.5/-0.1.

Safety Recall 03V-121 On February 13, 2003, NHTSA opened PE 03-006 and provided Mercedes with seven (7) VOQ complaints which alleged not only power steering fluid leaks, but sudden and complete failure of the connection with customer allegations of sudden and immediate loss of power steering while driving. Although Mercedes was not aware of a sudden loss of power steering in the field, the company investigated if such an occurrence was possible under any circumstances. As described in detail below, Mercedes concluded that the operating characteristics of the power steering system make it extremely unlikely that there can ever be a sudden loss of power steering while operating the vehicle on a roadway. Nevertheless, Mercedes determined that a recall to install a clamp with even greater holding force was a reasonable action to take for a number of reasons. Accordingly, Mercedes initiated a voluntary safety recall with a Part 573 Report filed on March 26, 2003 (Safety Recall 03V-121).

Operating Characteristics of Low-Pressure Power Steering Hose The low-pressure power steering hose, under normal vehicle operation (over approximately 5 MPH) and with fluid temperatures above 20°C, is subject to very low pressure, such that separation of the lower hose from the cooler connection is nearly impossible, even with the original clamp (Clamp #1). Specifically, typical internal operating pressures of the low pressure hose range from approximately 2.5 bar static-pressure to less than 8 bar dynamic peak load under normal on-road

[1] Clamp #2 is part number A2029950110.

vehicle operation (> 5 MPH and fluid at normal operating temperature). Thus, even in a situation where a power steering hose leak exists, the holding capacity of Clamp #1 was sufficient to maintain the hose connection under driving conditions. In its analysis Mercedes has found that pressure spikes can occur in the low-pressure section of the hydraulic system under a very narrow set of circumstances.

In order for pressure spikes to occur that could significantly increase pressure within the power steering hose, the following factors must be present:

> First, the power steering fluid must be relatively cold. Cold ambient temperatures obviously decrease fluid temperatures and increase the initial fluid viscosity upon start-up. At these lower temperatures, the viscosity of the fluid is increased. High viscosity fluid is, however, only present for a short time after the engine has been started due to the fact that the pump circulates fluid at approximately 9 liters per minute, and fluid warms to the operating range quickly after start-up.
>
> Second, in the presence of highly viscous fluid, the power steering system must be subject to maximum loads, which occur when a vehicle is standing and the wheel is turned, which presents the maximum tire to ground friction and the highest power steering loads. Extreme steering angles, to the stop and back, like those used in low speed or stationary parking maneuvers, also present a potential for the highest loads.

Under these worst-case conditions, the internal static pressures can be over 10 times as great as normal on-road driving pressures, and the peak pressures can be nearly 5 times the levels experienced while driving. Thus, the potential for pressure spikes was identified as a potential high-load situation at engine start-up, in cold weather, when the vehicle is parked and the wheels are turned, or during vehicle parking scenarios, where at start-up wheel speeds are low and tire friction is at its maximum. Specifically, static pressures upon initial engine start-up with ambient temperatures of minus 30° Celsius can be nearly 25 bar, and peak pressures can be nearly 50 bar when steering back from the full steering stop position at minus 30° Celsius while stationary.

During normal driving conditions, the pressures even at cold ambient temperatures remain in the range of 2-3 bar static pressure to less than 8 bar dynamic peak load. We note that there have been a number of owner complaints that alleged a complete power steering failure, or complete separation of this connection, *while driving*. Mercedes' analysis indicates that even if these allegations actually involved a hose separation, the situation likely reflects a hose separation that occurred as the result of a low-speed start-up pressure spike such as described above, but which is simply not noticed by the driver until the driver's trip is underway. As previously demonstrated to NHTSA in PE03-058, the steering force differential with and without power steering assist is very small when the wheels are turning, and may not be immediately

noticeable to most drivers. Although the safety relevance of these failures is low, Mercedes decided to address this issue as a safety recall.

Initial Recall Remedy The integrity of the connection of the power steering fluid hose to the cooler is determined by the interface between the radiator nipple, the rubber hose, and the hose clamp. All three of these design parameters must work together to maintain the required clamping force to prevent fluid leakage and, in a worst-case situation, complete hose disconnection. Various changes to each of these elements are described in response to Request No. 9 and Request No. 12, but the critical parameters addressed in the recall remedies are discussed below.

The initial remedy in Recall 03V-121 required installation of a hose clamp with significantly greater clamping force, and an inspection of the power steering fluid hose. There were two recall bulletins issued setting forth the initial remedy. The first bulletin was issued in May 2003, and involved replacement of the clamp with a screw-style clamp ("Clamp #3") and inspection of the condition of the rubber hose.[2] Specifically, Clamp #3 had a reduced nominal diameter of 15 mm and a designed clamping force of 2.0 Nm +0.5/-0.1. The screw-style clamp replaced clamp #2 because the screw mechanism has somewhat lower tightening friction than the worm-gear mechanism and can apply more clamping force for the same level of tightening torque. Like the May 2002 DTB, the recall remedy involved the use of a hose clamp with 33-66% more tightening torque. In addition to the new clamp, the bulletin instructed dealers to "carefully inspect the condition of the lower power steering hose at the radiator" and to replace the hose where the "casing displays cuts or splits."

Just a few days after the May recall bulletin was issued, DAG informed MBUSA that Clamp #3 was not the correct part and the recall implementation was immediately suspended.[3] The recall was suspended before any customer communications were sent out regarding this recall and before any recall repairs were performed. The reason for the recall halt was that specified Clamp #3 did not contain a square washer between the machine screw head and the clamp band. The square washer is required to insure that the screw-style clamp can be tightened to the full maximum 2.5 Nm torque value.

The recall was recommenced in June 2003, when a revised recall bulletin was issued. The June recall bulletin was identical to the May 2003 bulletin, except that clamp PN A0009957610 ("Clamp #4") was specified. Clamp #4 is essentially the same as Camp #3, but it

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[2] See May 2003 Recall Campaign Bulletin in Campaign No. 2003040005 at Attachment 1. Clamp #3 was part number N916033015100.

[3] See May 27, 2003 Part 573 Update to NHTSA, attaching May 19 and May 20 communications to dealers suspending the recall with clamp #3 at Attachment 2.

included the square washer referenced above. Again, Clamp #4 had a nominal diameter of 15 mm, and a designed tightening torque of 2.0 Nm +0.5/-0.1, which is 33-66% greater than the original Clamp #1. Clamping force tests conducted in response to this investigation indicate that the pull force required to separate the clamp #4 from the radiator connection is nearly double what would be required to separate the clamp #1 from the radiator using the same hose under typical conditions (see test report provided in response to Request No. 8).[4]

July 2003 Recall Bulletin – Lock-to-Lock Test and Hose Inspection In July 2003, the recall was again revised to provide dealers with more information and guidance on the circumstances under which power steering hoses should be replaced.[5] In addition to the original visual hose inspection (Recall Bulletin Step 6), a leakage test of the hose connection was added after installation of the new clamp to allow the technician to verify the success of the repair. This test required the service technician to start the vehicle and turn the steering wheel to the right until the steering stop was reached, and then "as-fast-as possible (abruptly) turn the steering wheel a minimum of ½ turn to the left" and repeat this procedure five times. After performing the "lock-to-lock" test, a visual inspection of the hose connection was performed, and the hose would be replaced as needed. The hose clamp used in the July 2003 instructions was again Clamp #4.

November 2003 Recall Bulletin – Elimination of Lock-to-Lock Test In November 2003, the campaign bulletin was revised to eliminate the so-called "lock-to-lock test." Feedback from dealers indicated that the lock-to-lock test was difficult and time-consuming to conduct. For instance, the vehicle would have to be brought down off the lift for testing, and then re-lifted for any additional work, and in most cases two technicians would be required to conduct the work. The test procedure also raised questions about how fast the wheel needed to be turned to raise the pressure in the hose, and how many times the test should be performed. The November 2003 campaign bulletin eliminated the hose inspection test process and substituted proactive replacement of both the original clamp and hose at one time. These instructions specified the use of a parts kit which contained both a new clamp and a new lower power steering hose.

The hose used in the recall kit was the same as the hose that was being used in serial production at that time. The specifications for the new and old hose are set forth in detail in response to Request No. 9 and Request No. 12. In general, the new serial production hose part was changed in order to incorporate lead-free rubber products into production pursuant to EU regulation 2000/53/EC L 269 (September 18, 2000). The new lead free hose available from European suppliers had a slightly reduced inner diameter. The clamp used in the kit ("Clamp

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[4] Indicating that pull force for Clamp #1 is 654 N and 1168 N for Clamp #5.

[5] See July 2003 Recall Campaign Bulletin at Attachment 3.

#5") was sized to fit the lead-free hose diameter and had a nominal diameter of 15.5mm.[6] Like clamp #4, clamp #5 had the same increased tightening torque specification of 2.0 Nm +0.5/-0.1, which is 33-66% percent more torque than used in original serial production. The pull tests described above indicate that like clamp #4, Clamp #5 has significantly more holding force than the original clamp #1 configuration (1115 N for Clamp #5 vs. 654 N for Clamp #1) Accordingly, all iterations of the recall involved the replacement of the original clamp with a hose clamp that had significantly more tightening force than the original clamp, as measured by both tightening torque and in actual pull tests of the subject assemblies.

Clamp #4 vs. Clamp #5 Field Experience Although the clamping force and overall holding force of both Clamp #4 and Clamp #5 used in the recall are much greater than the original configuration, and are nearly the same, warranty data and parts sales indicate that recalls made with Clamp #4 have frequently required subsequent repairs under the warranty extension, whereas repairs made with Clamp #5 have not required subsequent repairs. In fact, approximately one-third of the vehicles fixed with Clamp #4 required a second repair under the extended warranty with Clamp #5. There are three primary reasons for this: 1) normal effects of aging of the components in the power steering system will cause the reduction in the fluid level in the power steering system, which will cause power steering pump noise which triggers power steering-related service visits for vehicles of this age; 2) unnecessary repairs prompted by the warranty extension; and 3) failure of the Clamp #4 to be properly installed pursuant to the Recall Bulletin instructions in certain cases. With respect to the first factor, the normal aging of rubber components in the system will cause expansion; the expansion of hoses, for example, increases their fluid volume capacity and in turn causes reductions in the level of fluid in the reservoir. This is a phenomenon that has been observed across all Mercedes vehicle models. Even small fluid reductions can result in power steering fluid pump noises, which, as observed across all Mercedes models, results in power steering service visits. In the case of the subject M-Class vehicles, service visits that would result in simply topping off the power steering fluid in other vehicles, has often resulted in more extensive repairs because of the 10-year extended warranty, which provides replacement of the lower power steering hose (even if previously recalled) at no charge to the customer. Even without these service visits, the issuance of the extended warranty policy itself resulted in a noticeable increase in claims. The claims spikes following this extension suggest that it has influenced the number of repairs made to the power steering hose connection, which may not correlate to actual failures.

With respect to the improper installation of Clamp #4, our investigation has indicated a number of potential installation errors that could cause the repair to subsequently leak or become disconnected. The clamp #4 version of the recall required that the original hose not be removed from the radiator unless it required replacement, and this fact appears to have created a number

[6] The part number for Clamp #5 is A0009958310.

of opportunities for improper implementation of the Clamp #4 repair. For example, claims investigations have identified instances of clamps being incorrectly positioned on the hose. Where the hose is not removed, the required location of the clamp with respect to the ridge may be less intuitive for technicians. Similarly, the Clamp # 4 repair required a visual inspection of the condition of the hose, and where this was not done properly, and hoses were not replaced as necessary, subsequent failure of the connection would be more likely. In addition, where the original hose was re-used without following the recall instructions, there was potential for the nipple to become contaminated with oil, which can greatly reduce the holding force of the connection, even with the improved Clamp #4. The Clamp #4 recall instructions made it clear that the original hose should not be disturbed, and that it should not be removed, except for the purpose of hose replacement. Where the original hose is disturbed, or removed and reconnected with the new clamp, power steering fluid can enter the end of the hose and contaminate the radiator connection upon installation of the new clamp, even where the connection nipple itself is wiped clean before reattaching the used, oil-filled hose. By removing the hose from the nipple, contrary to the instructions, technicians may have sought to reduce the time required for the repair, since leaving the hose in place required the technician to completely unscrew the clamp and place it around the hose, and then completely re-thread the new clamp screw. Contamination of the radiator connection with oil greatly decreases the holding force of the connection. The test report provided in response to Request No. 8 indicates that when the connection is contaminated with oil, the holding force of Clamp #4 and Clamp #5 are about the same as the original Clamp #1 design, and approximately less than half of the designed dry-holding force. Specifically, the pull force for Clamp #1 is 236 N, Clamp #4 is 280 N, and Clamp #5 is 236 N, when the connection is contaminated with power steering fluid. This is about one-quarter of the dry holding force of 1168 N and 1115 N for Clamps #4 and #5 respectively. The Clamp #5 iteration of the recall eliminated the potential for these errors, since no hose inspection was required, and a new clean hose was always reinstalled.

There were approximately 158,569 recall repairs made with clamp #4. Of these, approximately 55,886 were subsequently re-repaired with the Clamp #5 kit under the extended warranty. The remaining 102,683 vehicles with Clamp #4 have shown excellent durability. The last clamp-only repair was in November, 2003 which indicates that when installed properly, Clamp #4 provides a very effective remedy for the subject condition. The 102,683 Clamp #4 repairs that were performed properly have lasted over five years on vehicles and original hoses that, in many cases, are over 10 years old.

Warranty Extension NHTSA's Information Request also references a warranty extension that was provided on the subject components. In March 2004, MBUSA issued a letter to all owners of M-Class vehicles that were subject to this recall. This letter arose out of the settlement of a class action by M-Class owners for the recovery of costs and expenses associated with

repairs to the lower power steering hose connection (the "Maldonado Class Action"). The Maldonado action was initiated before Recall 03V-121, and well before the modification of the recall remedy, and does not relate to the adequacy of the repair used in this recall. The owner notification of the Maldonado Class Action settlement was originally planned for the same time-frame as the recall. Unfortunately, extra time was needed to fully resolve and finalize the class action so the settlement notice was issued a year after the recall notice. The package of owner benefits included in this settlement involved a number of benefits above and beyond what is required in a typical safety recall. Specifically, owners were offered reimbursement for documented incidental costs, including the costs of towing, lodging, food and travel expenses (including rental cars), that were reasonably and necessarily incurred as a result of a breakdown due to a power steering failure that was the subject of Recall 03-V121. This remedy package also included an extension of warranty coverage for the subject failure for up to 10 years from the date of purchase. Because of this warranty extension, any owners who have a failure of the lower power steering hose connection are entitled to a repair without charge, for ten years, regardless of previous repairs or previous work performed under the recall. Thus, any failures that arise due to improper installation of Clamp #4 either already have been covered, or will be covered, at no cost to owners under this warranty extension.

December 21, 2007 Dealer Technical Bulletin On December 21, 2007, Mercedes updated Dealer Technical Bulletin T-B-46.30/13, which had originally communicated the class action warranty extension to the dealer network. This update was issued because dealers were conducting warranty replacements for recalled lower power steering connections that had been serviced in the recall, and which did not show any sign of leakage. Specifically, dealers were billing for repairs in which the hose showed approximately ¼ inch of distance between the radiator and the end of the hose. This represents a normal hose fit, and does not indicate a leakage situation unless there are actual signs of leakage or a loose hose.

Based on the foregoing chronology, Mercedes believes its initial field action addressed the potential for leaking from the low-pressure power steering hose connection. The company's subsequent recall also addressed the relatively small potential for hose separation in cold temperatures and during parking or slow-speed maneuvers. All actions subsequent to the original recall were designed to assist dealers to implement the remedy properly and to implement the class action settlement. The information available to Mercedes, and set forth in the following response, does not indicate any problems with the effectiveness of the original recall repair when performed properly. Vehicles for which Clamp #4 was not installed properly have now been repaired without charge with Clamp #5 in most cases.

The responses to NHTSA's requests numbered 1-13 are provided below following a restatement of the Agency's original requests.

Responses to Requests No. 1-13

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

a) Vehicle identification number (VIN);
b) Model;
c) Model Year;
d) Date of manufacture;
e) Date warranty coverage commenced;
f) The date the subject recall was completed (use N/A if not completed);
g) The mileage when the subject recall was completed (use N/A if not completed);
h) The repair performed in the subject recall (i.e., replace hose clamp or replace hose and hose clamp – us N/A if not completed); and
i) The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

Response to Request No. 1:

The information requested in Request No. 1 is provided in Attachment 4, Production Data.

Request No.2: *State the number of each of the following, received by Mercedes-Benz, or of which Mercedes-Benz is otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:*

a) Consumer complaints, including those from fleet operators;
b) Field reports, including dealer field reports;
c) Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices

received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;

d) Reports involving a fire, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;

e) Property damage claims; and

f) Third-party arbitration proceedings where Mercedes-Benz is or was a party to the arbitration; and

g) Lawsuits, both pending and closed, in which Mercedes-Benz is or was a defendant or codefendant.

For subparts "a" through "e" state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "g," provide a summary description of the alleged problem and causal and contributing factors and Mercedes-Benz's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "f" and "g," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

Response to Request No. 2:

(a) Mercedes has received 349 customer complaints in its customer service center which relate to, or may relate to, the alleged defect in the subject vehicles since the start of the recall campaign in May 2003. Mercedes has also identified 30 complaints in its legal department files which are not litigation matters. Please note that in some cases, the customer complaints may involve situations in which the recall has not yet been performed, or situations in which it is not clear whether the recall has been performed.

Even though these complaints would not be relevant to the issue of the recall remedy's success, they are nonetheless included in the complaints presented. In addition, Mercedes has received additional complaints which are generally related to power steering issues but which are not specifically related to the alleged defect. (These additional complaints are not included in the data provided in response to Request No. 3.)

(b) Mercedes has received 45 field reports which relate to, or may relate to, the alleged defect in the subject vehicles since the start of the recall campaign.

(c) Mercedes has received nine reports involving a crash or injury relating to the alleged defect in the subject vehicles, and no reports involving a fatality, that have occurred since the start of the recall campaign.

(d) Mercedes has received two reports alleging a fire relating to the alleged defect in the subject vehicles that have occurred since the start of the recall campaign.

(e) Mercedes has received no property damage claims relating to the alleged defect in the subject vehicles since the start of the recall campaign.

(f) Mercedes is aware of two third-party arbitration proceedings in which it is or was a party relating to the alleged defect in the subject vehicles that have been filed, and/or for which the underlying incident occurred, since the start of the recall campaign.

(g) Mercedes is aware of 15 lawsuits in which it is or was a defendant relating to the alleged defect in the subject vehicles that have been filed, and/or for which the underlying incident occurred, since the start of the recall campaign. The overwhelming majority of these lawsuits are lemon law-type suits that mention the power steering hose or clamp, or allege leakage from the power steering system or steering difficulty in addition to other complaints about the vehicle. In addition, one lawsuit alleges loss of vehicle control resulting in a crash. Mercedes also is aware of 33 general lemon law-type lawsuits that mention the steering system generally, among other vehicle systems, in making a defective vehicle claim but make no specific allegations relating to the alleged defect.

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) Mercedes-Benz'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;
d) Vehicle's VIN;
e) Vehicle's make, model and model year;
f) Vehicle's mileage at time of incident;
g) Incident date;
h) Report or claim date;
i) Whether a crash is alleged;
j) Whether a fire is alleged;
k) Whether property damage is alleged;
l) Number of alleged injuries, if any; and
m) Number of alleged fatalities, if any.

Response to Request No. 3:

The information requested in Request No. 3 is provided in Attachment 5, Request Number 2 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 Mercedes-Benz used for organizing the documents.*

Response to Request No. 4:

The information requested in Request No. 4 is provided in Attachment 6, Request Number 2 Documents. The documents are divided into four sections: complaints; field reports; crash/injury reports; and fire reports. Please note that the documents related to lawsuits and arbitrations are privileged and confidential and in some cases relate to ongoing litigation matters. Therefore, a privilege log of these documents is provided. In addition, the 30 complaints from the legal department files are privileged and confidential; these documents also are included in the privilege log. Finally, some of the documents related to crash, injury or fire reports are privileged and confidential, and these documents are also included in the privilege log.

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 Mercedes-Benz to date that relate to, or may relate to, the alleged defect in the subject vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.*

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

a) Mercedes-Benz's claim number;
b) Vehicle owner or fleet name (and fleet contact person) and telephone number;
c) VIN;
d) Repair date;
e) Vehicle's 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.

Response to Request No. 5:

Approximately 55,886 warranty claims have been paid by Mercedes under the extended warranty damage code that relate, or may relate, to post-recall campaign repairs of the alleged defect in the subject vehicles. The additional information requested in Request No. 5 is provided in Attachment 7, Warranty Data.

Request No. 6: *Describe in detail the search criteria used by Mercedes-Benz to identify the claims identified in response to Request No. 5, including the labor operations, problem codes, part numbers and any other pertinent parameters used. Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to the alleged defect in the subject vehicles. State, by make and model year, the terms of the new vehicle warranty coverage offered by Mercedes-Benz 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 Mercedes-Benz 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 extended warranty damage code 46533.

The operation codes and damage codes applicable to the alleged defect are listed in Attachment 7, Warranty Data.

The normal new vehicle warranty coverage period in the United States is four years/50,000 miles. In addition, extended warranty coverage was provided for failure of the lower power steering hose connection as described above in the Overview section.

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*

Mercedes-Benz has issued to any dealers, regional or zone office, 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 Mercedes-Benz is planning to issue within the next 120 days.

Response to Request No. 7:

Mercedes has issued the following service and warranty documents that relate or may relate to the alleged defect:

- DTB T-B-46.30/09 (5/16/02)
- DTB T-B-46.30/09a (6/12/02)
- Netstar message regarding warranty extension (3/5/04)
- DTB T-B-46.30/13 (3/5/04)
- DTB T-B-46.30/13a (12/21/07)
- Recall Campaign Bulletin (May 2003) (provided in Attachment 1)
- Recall Campaign Bulletin (June 2003)
- Recall Campaign Bulletin (July 2003) (provided in Attachment 3)
- Recall Campaign Bulletin (November 2003)

Copies of each of these documents are provided in Attachment 8, Service and Warranty Documents, except where noted.

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, Mercedes-Benz. 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.

Response to Request No. 8:

Mercedes has conducted an assessment during this investigation of the force required to separate the lower power steering hose from the cooler for each of the clamp and hose combinations that have been used on the subject vehicles from the start of production. This test report is included at Attachment 9.

Request No. 9: *Describe all modifications or changes made by, or on behalf of Mercedes-Benz in the design, material composition, manufacture, quality control, supply, or installation of the subject defect 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 number(s) (service and engineering) of the original component;
e) The part number(s) (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 Mercedes-Benz is aware of which may be incorporated into vehicle production within the next 120 days.

Response to Request No. 9:

There have been four different clamp designs used on the lower power steering hose since the beginning of production; each of these parts, and the reason for the changes, are discussed in the Overview section.

There have been essentially two different lower power steering hose specifications used on the subject vehicles. Different part numbers were used on different models to designate a different connection fitting on the power steering pump end of the hose for different models. Accordingly, there have been a total of eight different part numbers assigned to these two hose specifications for the ML320, ML350, ML430, ML500, and ML 55AMG. The original serial production hose (Part number A1634604124) was replaced in serial production by a new hose specification in September of 2003. This change was required by EU regulation 2000/53/EC L 269 (September 18, 2000) which mandated that "Member States shall ensure that materials and components of vehicles put on the market after 1 July 2003 do not contain lead, mercury, cadmium, or hexavalent chromium other than in cases listed in Annex II under the conditions specified therein . . . ." The original hose specification used an ECO elastomer which contained measurable quantities of lead, which were prohibited. For the new specification, the elastomer was changed to the lead-free AEM elastomer, and the inner diameter of the hose was decreased slightly to enabler the use of stock AEM hose. When the recall campaign procedures were updated to eliminate the lock-to-lock test, and include 100% replacement of hoses in November, 2006, the new serial production AEM hose was incorporated into the replacement parts kit.

The detailed information requested in Requests No. 9(a) through 9(g) is contained in the excel spreadsheet at Attachment 10, Parts Modification Information. The new components are interchangeable with the original serial production parts.

Request No. 10: *Produce one of each of the following:*

a) Exemplar samples of each design version of the subject components; and
b) Field return samples of the recall remedy version of the subject components from vehicles that experienced power steering fluid leakage at the connection of the subject hose to the power steering fluid cooler and had both the clamp and hose replaced.

Response to Request No. 10:

The requested exemplar sample parts (the power steering fluid cooling hose and hose clamps used to secure the hose to the power steering fluid cooler) and the requested field return samples are provided under separate cover.

Request No. 11: *State the number of each of the following that Mercedes-Benz has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used and month/year of sale (including the cut-off date for sales, if applicable):*

a) Subject components; and
b) Any kits that have been released, or developed, by Mercedes-Benz for use in service repairs to the subject component/assembly (e.g., those detailed in T-B-46.30/13(a)).

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 Mercedes-Benz is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

Response to Request No. 11:

The requested sales information is provided in Attachment 11, Parts Sales Information. The requested supplier and model information is provided in Attachment 10.

The parts in this M-Class vehicle combination (clamp, hose and radiator) are not used in any other Mercedes-Benz vehicle.

Request No. 12: *Provide the following information regarding the subject components and the subject bulletins (state tolerances for all dimensions):*

a) State the material composition of the subject hose, including the SAE line call out for each rubber material used in the hose;
b) State the inner diameter of the subject hose;
c) State the outer diameter of the subject hose;
d) State the specifications for each version of the subject hose clamps (e.g., type, size, torque specification);
e) State the outer diameter of the power steering fluid cooler fitting;
f) State the bead diameter and bead width of the power steering fluid cooler fitting;
g) State the design interference fit for the subject hose;
h) State the design operating temperature and pressure of the power steering fluid at the subject cooler connection;
i) State the design sealing forces/pressures in the subject hose joint and provide a chart showing how they change with time/mileage for each of the clamps used by Mercedes as original equipment, recall parts or service parts;
j) Identify all tests used by, or for Mercedes to evaluate the durability of the subject components in resisting leakage from the subject hose joint;
k) Provide a table summarizing the performance of all hose/clamp combinations in the tests identified in 12.j – this should include the hose/clamp used in the subject vehicles as original equipment (i.e., the parts that were the subject of Recall 03V-121), the recall remedy parts, and all subsequent revisions to the subject components (e.g., the parts released in the subject bulletins);
l) Provide a table summarizing the field performance (e.g., complaints, field reports and warranty claims) of all hose/clamp combinations in

the tests identified in 12.j – this should include the hose/clamp used in the subject vehicles as original equipment (i.e., the parts that were the subject of Recall 03V-121), the recall remedy parts, and all subsequent revisions to the subject components (e.g., the parts released in the subject bulletins);

m) State the nominal fluid capacity of the subject power steering system, the amount of leakage that is necessary to affect system performance (i.e., increased steering effort), the amount of leakage that could lead to pump failure; and the hot surface ignition temperature of the power steering fluid;

n) Provide a chronology of events related to subject component leakage, including the following: (1) Job #1 of subject vehicle production; (2) first complaint of leakage from the subject hose fitting (pre-recall); (3) chronology of actions related to the DTB issued before 03V-121; (4) chronology of actions related to the decision to conduct 03V-121; (5) the date of the first complaint of leakage from a subject hose assembly after the recall remedy had been performed; (6) the start of Mercedes review of 03V-121 remedy effectiveness (i.e., actions leading to DTB T-B-46.3/13; (7) chronology of actions leading to revised DTB T-B-46.30/13a; and (8) the cumulative numbers of complaints and warranty claims received by Mercedes related to recall remedy failures by the dates that the subject bulletins were issued in 2004 and 2007 and currently;

o) Provide copies of all documents related to the subject bulletins, including the review of field data (e.g., complaints, field reports and warranty data), the development of the new clamp, and all related meetings, briefing material and presentations; and

p) Explain why Mercedes decided to address recall remedy failures with the subject bulletins rather than a new safety recall.

Response to Request No. 12:

For the response to Request No. 12(a), please see Attachment 12, Hose Supply Specification. The material of the hoses included in the hose-clamp kit is Elastomer AEM; earlier hoses used Elastomer ECO-material.

For the response to Requests No. 12(b) through 12(d), please see Attachment 13, Engineering Drawings, and Attachment 14, Clamp Drawings. In addition, please refer to the following table:

Part. No.	A005 997 2790	A202 995 0110	N916 033 015 100 W3	N916 002 015 100 W1	A000 995 7610	A000 995 8310
Standard			MBN10225 (10225 15 W3)	MBN10225 (10225 15 W1)		
Torque in Nm:	1,5 Nm +0/- 0,2 Nm	2,0 Nm +0,5/- 0,1 Nm	1,5 Nm +0,2/- 0,1 Nm From 04/16/03 2,0 Nm +0,5/- 0 Nm	1,5 Nm +0,2/- 0,1 Nm From 04/16/03 2,0 Nm +0,5/- 0 Nm	2,0 Nm +0,5/- 0 Nm	2,0 Nm +0,5/- 0 Nm

For the response to Requests No. 12(e) and 12(f), please refer to Attachment 15, Radiator Fitting Variants.

For the response to Request No. 12(g), please refer to Attachment 9, Clamp Test Report.

For the response to Request No. 12(h), please refer to Attachment 12, Hose Supply Specification, which states that the operating temperature for long-term exposure is 120°C, and for short-term exposure is 140°C. In addition, please refer to Attachment 16, Hose Line Test Specification, regarding ensuring the durability of the hose with a pulse testing procedure using an impulse pressure of 15 bar and ensuring a burst pressure greater than 80 bar with corresponding burst pressure tests. Finally, please also refer to Attachment 9, Clamp Test Report.

For the response to Request No. 12(i), please refer to Attachment 9, Clamp Test Report.

For the response to Request No. 12(j), please refer to the tests found in Attachment 12, Hose Supply Specification, and Attachment 16, Hose Line Test Specification.

For the response to Request No. 12(k), please refer to Attachment 9, Clamp Test Report.

Regarding Request No. 12(l), a field evaluation has not been conducted.

For the response to Request No. 12(m), please refer to Attachment 17, Fluid Specification, Service and Testing Information.

Responses to Requests No. 12(n) subsection (3), (4), (6) and (7), and to Requests No. 12(o) and 12(p), are included in the Overview discussion. The additional information requested is as follows:

- 12(n)(1): The start of production was July 1997.
- 12(n)(2): The date of the first pre-recall complaint was September 28, 1998.
- 12(n)(5): The earliest customer complaint regarding alleged recall remedy failure was received June 18, 2003.
- 12(n)(8): The number of warranty claims and customer complaints received by the dates of the subject bulletins are found in the following table:

DATE	**NUMBER OF ALLEGATIONS**	
By:	Warranty Claims	Complaints
March 5, 2004	17,054	30
December 21, 2007	50,750	105
Present	5,136	17

Request No. 13: *Furnish Mercedes-Benz's assessment of the alleged defect in the subject vehicles in comparison to the conditions addressed by Safety Recall 03V-121, including:*

a) The causal or contributory factor(s);
b) The failure mechanism(s);

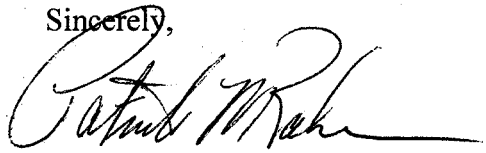
c) *The failure mode(s);*
d) *The failure rates after 12, 36 and 60 months-in-service – describe fully all statistical methods used for this response, including whether they are based on actual data from segments of subject population that had achieved the designated times-in-service for the parts in question or based on statistical modeling (e.g., Weibull analysis) – time-in-service for the 03V-121 parts should obviously be calculated from the date of the recall service;*
e) *The risk to motor vehicle safety that it poses;*
f) *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*
g) *The reports included with this inquiry.*

Response to Request No. 13:

The questions raised in Request No. 13 are addressed in the Overview section. In addition, please see Attachment 18, Failure Rate Data, for the response to Request No. 13(d).

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

Sincerely,



Patrick M. Raher

Attachments

Attachment 6
Mercedes – RQ08-002
Response to Question 4: Request Number 2 Documents

Attachment 6(a): Consumer Complaints (hard copy only)
Attachment 6(b): Field Reports (hard copy only)
Attachment 6(c): Crash/Injury Reports (hard copy only)
Attachment 6(d): Fire Reports (hard copy only)
Attachment 6(e): Privilege Log

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June 6, 2008 S.M. Henry

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June 5, 2008

Patrick M. Raher
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Via Federal Express

Mr. Anthony M. Cooke
Chief Counsel
National Highway Traffic Safety Administration
(NCC-111), Room W41-227
1200 New Jersey Avenue, S.E.
West Building
Washington, D.C. 20590

RE: Request for Confidentiality Concerning Mercedes-Benz's Response to Information Request in RQ08-002

Dear Mr. Cooke:

This letter requests confidential treatment under 49 C.F.R. Part 512 for an attachment to my June 5, 2008 letter, sent on behalf of Daimler AG and Mercedes-Benz USA, LLC ("Mercedes-Benz") to the National Highway Traffic Safety Administration's Office of Defects Investigation in response to an information request in RQ08-002.

Pursuant to 49 C.F.R. Part 512, this request attaches two complete versions of the letter to Mr. Jeffrey L. Quandt, and a single public version of the response with confidential Attachment 13 redacted. Attachment 13 is marked "CONFIDENTIAL" in accordance with 49 C.F.R. § 512.6(b). This attachment contains detailed engineering design drawings of the power steering hoses used in Mercedes-Benz M-Class vehicles.

Blueprints and engineering drawings containing process and production data are presumed by NHTSA to be confidential under Appendix B to Part 512 because of the high

likelihood that disclosure to the public would result in substantial competitive harm. The materials contained in Attachment 13 are thus subject to a class determination under Appendix B and are entitled to confidential treatment under 49 C.F.R.§ 512.16.

Moreover, the materials in Attachment 13 are entitled to confidential treatment under National Parks and Conservation Association v. Morton, 498 F.2d 765 (D.C. Cir. 1974) because they are confidential commercial information, the release of which is likely to cause competitive harm. The National Parks basis for confidential treatment has been incorporated into the Agency's regulations at 49 C.F.R. § 512.3(c)(2)(i) (confidential commercial information). The drawings depict design and engineering specifications that are unique to Mercedes-Benz vehicles' power steering system. As such, the drawings represents proprietary and confidential business information. This information represents a significant investment in research and development, which would cause substantial competitive harm to Mercedes-Benz and its individual suppliers if disclosed to competitors. Because of the substantial competitive harm that would be caused, the Agency should protect the confidentiality of this information. Accordingly this information should be granted confidential treatment under the criteria at 49 C.F.R. § 512.15(b).

The information contained in Attachment 13 has not been publicly disclosed. Mercedes-Benz has taken measures to ensure that the information contained in the attachments have not been disclosed or otherwise made available to any persons outside of Mercedes-Benz, its parents, suppliers, and affiliates. Insofar as is known by Mercedes-Benz, this information is not known outside Mercedes-Benz, except by these related parties. The information has also been disclosed as necessary for the purpose of obtaining advice and assistance from counsel and other confidential advisers. Such disclosures do not compromise the confidential nature of the information because of the close business relationship between Mercedes-Benz and its parents and affiliates, nor does selective disclosure to advisers bound by obligations of confidentiality compromise such confidentiality.

We request that confidentiality be granted for Attachment 13 to the June 5, 2008 submission to NHTSA indefinitely, until such time as the information is no longer held confidential by the company, and would appreciate your notifying us of your decision when practicable.

Please note that because the design drawings were prepared for Mercedes-Benz by Eaton Fluid Power GmbH and Aeroquip (which is part of Eaton), we have included a certificate in support of confidentiality from Eaton as well as the certificate from Mercedes-Benz.

Thank you for your consideration of this request. Please forward your response to this request to my attention.

Sincerely,

Patrick M. Raher

Cc: Jeffrey L. Quandt

Attachments:
Two complete versions of submission (w/o production documents)
One redacted version of submission
Certificates in Support of Request for Confidentiality

Attachment 6
Mercedes – RQ08-002
Response to Question 4: Request Number 2 Documents

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Thank you for your consideration of this request. Please forward your response to this request to my attention.

Sincerely,

Patrick M. Raher

Cc: Jeffrey L. Quandt

Attachments:
Two complete versions of submission (w/o production documents)
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Certificates in Support of Request for Confidentiality

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2008 JUN 9 AM 8:22

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June 5, 2008

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Via Federal Express

Mr. Stephen McHenry
Vehicle Control Division
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
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Washington, DC 20590

Re: RQ08-002 – Recall Query to Investigate Complaints of Power Steering Fluid Cooling Hose Leakage in Model Year 1998-2003 Mercedes-Benz M-Class Vehicles; Response to Request 10

Dear Mr. McHenry:

On behalf of Daimler AG and Mercedes-Benz USA, LLC (collectively "Mercedes-Benz"), we are submitting the sample parts requested in Request 10 of the Office of Defects Investigation's March 24, 2008 request for information in RQ08-002. Specifically, the attached box contains a sample of the subject power steering fluid cooling hose and hose clamps used to secure the hose to the power steering fluid cooler, and the requested field return samples.

Mercedes-Benz's responses to the remaining information request items will be provided under separate cover.

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

Sincerely,

Patrick M. Raher

Attachment