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DEFECTS

DaimlerChrysler Corporation
Stephan J. Speth
Director
Vehicle Compliance & Safety Affairs

March 23, 2005

Mr. Thomas Z. Cooper, Chief
Vehicle Integrity Division
Office of Defects Investigation
National Highway Traffic Safety Administration
U.S. Department of Transportation
400 Seventh Street, SW
Washington, D.C. 20590

Dear Mr. Cooper:

Reference: NVS-212am; PE05-004

This document contains DaimlerChrysler Corporation's ("DCC") response to the referenced inquiry regarding alleged headlight flicker on 2001-2002 model year DCC minivans. In reaching our analysis and conclusions, and by providing the information contained herein, DCC is not waiving its claim to attorney work product and attorney-client privileged communications.

DCC's investigation into the allegation of the headlights flickering and/or turning off on 2001-2002 model year minivans established that customer complaints vary widely, and may not be an accurate indicator of what, if any, abnormal event is actually occurring. It is important to note that there are no allegations of injury, accident, or property damage in any of the identified complaints.

DCC contends a large number of the complaints are likely the result of an increased electrical load on the vehicle's charging system. For example, if a customer has the front headlamps turned on and an additional electrical feature such as the blower motor, radiator fan, or brake lamps are turned on, the front headlamps may flicker or dim slightly. This is an expected condition. As the additional feature is actuated, the charging system attempts to supply adequate current for the electrical load and a large inrush current can occur. As this inrush current is being supplied, the operating voltage may drop slightly. This drop in operating voltage can be seen as a flickering or dimming of the front headlamps of the vehicle. This increased electrical local load condition may occur while the vehicle is either in a static or dynamic mode.

DaimlerChrysler Corporation
800 Chrysler Drive CIMS 482-00-91
Auburn Hills MI USA 48326-2757

DCC has initiated a vehicle survey to evaluate vehicles that have allegedly experienced headlight flickering or turning off while the vehicle is in motion. DCC is continuing to analyze one of the survey vehicles that allegedly experienced this condition. DCC has interrogated the vehicle's electronic controllers for any fault codes and found none. DCC has instrumented the survey vehicle with a data acquisition system and the vehicle is currently being driven daily to record any condition that may be causing the headlamps to flicker and/or turn off while the vehicle is in motion. DCC plans to evaluate several other vehicles in the near future. DCC will update NHTSA on the progress and findings of this analysis as information becomes available.

Sincerely,

Stephen J. Speth

Attachment and Enclosures

ATTACHMENT

Q1. State, by model and model year, the number of subject vehicles DCC has manufactured for sale or lease I the United States. Separately, for each subject vehicle manufactured to date by DCC, 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."

A1. The MY 2001-2002 DaimlerChrysler Corporation ("DCC") Dodge Caravan and Grand Caravan, and Chrysler Voyager and Town & Country are similar vehicles and have the same subject components. The subject vehicles are referred to as the RS model. The total number of subject RS vehicles manufactured for the US market is 813,597.

The detailed response that lists the market production data is provided in Enclosure 1 as a Microsoft Access 2000 table, titled "PRODUCTION DATA."

Q2. State the number of each of the following, received by DaimlerChrysler, or of which DCC 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

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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 DCC is or was a party to the arbitration; and

g. Lawsuits, both pending and closed, in which, DCC 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 "e," provide a summary description of the alleged problem and casual contributing factors and DCC'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.

A2. The following summarizes the non-privileged reports received by DCC that relate to, or may relate to, the alleged condition in the subject vehicles. DCC has conducted a reasonable and diligent search of our normal repositories of such information.

a. There are a total of 214 customer complaints, which include 21 NHTSA reports (VOQ's) that may relate to the alleged condition. The 193 other (non-VOQ) customer complaints contain 178 unique vehicles.

The original list of VOQ's received from NHTSA contained 21 VOQ's but 3 VOQ's do not have vehicle identification numbers and cannot be verified by DCC. Eleven of the 21 VOQ's with vehicle identification numbers have related customer complaints in the DCC system. The remaining 10 VOQ's are unique reports which do not have related complaints in the DCC system

b. There are 463 field reports that contain 367 unique vehicles.

c. There are no claims alleging crash, injury, or fatality that are responsive to this inquiry.

d. There are no reports that allege fire damage that are responsive to this inquiry.

e. There are no reports that allege property damage that are responsive to this inquiry.

f. There are no third-party arbitration proceedings involving DCC that are responsive to this inquiry.

g. There are 7 claims against DCC, or notices received by DCC, that are responsive to this inquiry. Three of these claims have a corresponding customer complaint in the DCC system. There are 13 lawsuits, pending or closed, involving DCC that are responsive to this inquiry. One of the lawsuits has a corresponding customer complaint in the DCC system.

DCC's analysis of customer complaints indicates that approximately 6% of the complaints refer to the headlights and park lights flashing. This condition can be attributed to an improper software algorithm in the Front Control Module (FCM). The software of the FCM could allow erroneous actuation of the headlamps, park lamps and horn while the vehicle is parked. DCC released TSB #08-005-04, supplied in Enclosure 05 – Service Bulletins, on February 3, 2004 to address this issue.

DCC found that approximately 48% of the customer complaints reference the headlights flickering. DCC believes a large number of these complaints are the result of an increased electrical load on the vehicle's charging system. For example, if a customer has the front headlamps turned on and an additional electrical feature such as the blower motor, radiator fan, or brake lamps are turned on, the front headlamps may flicker or dim slightly. This is an expected condition. As the new feature is actuated, the charging system attempts to supply the adequate current for the electrical load and a large inrush current can occur. As this inrush current is being supplied the operating voltage may drop slightly. This drop in operating voltage can be seen as a flickering or slight dimming of the front headlamps of the vehicle. Depending on the particular electrical load being added, the flickering may be momentary while the dimming may be seen for a longer duration. An example of the momentary electrical load increase is the actuation of the turn signals and an example of a longer duration electrical load is the A/C compressor turning on. This

increased electrical local load condition may occur while the vehicle is either in a static or dynamic mode.

Approximately 21% of the customer complaints refer to either one headlamp inoperable or one headlamp is on low beam and the opposite is on high beam. DCC reviewed these complaints and have concluded that these complaints are not a defect and do not present an unreasonable risk to motor vehicle safety since only one headlamp is affected. The other headlamp is working properly and the customer has adequate warning to take the vehicle to an authorized service department for repairs.

DCC's analysis determined that the remaining 25% of the customer complaints reference the headlights flickering, dimming or turning on/off while driving. DCC initiated a vehicle survey to gather vehicles in which the owner has alleged that the headlights flicker and/or completely turn off while the vehicle is in motion. The objective of the vehicle survey is to determine the reason that the owner may be experiencing this condition. DCC is in the process of analyzing one of the survey vehicles that allegedly experienced the headlamps flickering and/or turning off while in motion, and is planning to evaluate several additional vehicles in the near future.

Q3. 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. DCC's file number or other identifier used;
b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field reports, 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 in 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.

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Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA."

A3. The detailed response that lists the customer complaints and field reports, from Request No. 2, as requested in items a. through m. is provided in Enclosure 2 as a Microsoft Access 2000 table, titled "REQUEST NUMBER TWO DATA".

Q4. 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 DCC used for organizing the documents.

A4. Copies of all documents within the scope of Request No. 2 are provided in Enclosure 3 – COMPLAINTS AND FIELD REPORTS, on the enclosed CD-ROM.

Q5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by DCC 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. DCC's claim number;
b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
c. VIN;
d. Repair date;
e. Vehicle mileage at time of repair;
f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
g. Labor operation number;
h. Problem code;
i. Replacement part number(s) and description(s);
j. Concern stated by customer; and
k. Comment, if any, by dealer/technician relating to claim and/or repair.

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Provide this information in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA."

A5.

08-19-02-01	9,337	5,479
08-19-02-60	30	0
08-19-02-70	11	0
08-19-08-01	2,267	2,080
08-50-31-02	1,817	1,342
08-50-31-03	1,605	1,759
08-80-36-01	5,391	3,303
08-90-75-02	245	306
08-90-90-09	277	290

It is impossible to determine what any particular warranty claim is for. There are other random issues that are not related to this alleged condition, yet still trigger replacement of the subject components. DCC has concluded that the warranty cannot be used to determine any trend related to the alleged condition.

The detailed response that lists the warranty claims is provided in Enclosure 4 as a Microsoft Access 2000 table, titled "WARRANTY DATA".

Q6. **Describe in detail the search criteria used by DCC 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 DCC 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 DCC 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.**

A6. The search criteria used by DCC to identify claims to Request No. 5, can be found in the chart below:

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Module, Body Control – Replace	08-19-02-01
Module, Body Control – Diagnostic Procedures Manual Allowance	08-19-02-60
Module, Body Control – Mopar Diagnostic System Procedures Allowance	08-19-02-70
Module, Front Control – Replace	08-19-08-01
Housing/Lamp, Right Side Aero Headlamp – Replace	08-50-31-02
Housing/Lamp, Left Side Aero Headlamp – Replace	08-50-31-03
Switch, Headlamp & Instrument Panel – Test & Replace	08-80-36-01
Wire Harness, Body – Test & Replace	08-90-75-02
Wiring Harness, Instrument Panel – Test & Replace	08-90-90-09

11	Broken or Cracked	67	Noisy Rattles (Loose)
14	Burned or Burned Out	83	Connection Loose
18	Circuit Open	9X	Routed Improperly
48	Grounded or Shorted	ML	Malfunction Indicator Lamp On
51	Improperly Installed	SE	Shortage and/or Error
58	Internal Defect	X2	Split, Cut or Torn
61	Intermittent Operation	X6	Terminals Damaged
65	Leaks		

The standard warranty offered on all RS-model vehicles was 36 month / 36,000 miles. There is no extended warranty coverage options related specifically to the subject components. Owners may have purchased additional warranty coverage through third-party providers not affiliated with DCC; this warranty data is not available to DCC and is not included in this response.

Q7. Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that DCC 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

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documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that DCC is planning to issue within the next 120 days.

A7. There has been 1 Technical Service Bulletin (TSB) document, provided in Enclosure 5 – SERVICE BULLETINS, issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities that may be responsive to this inquiry. There are no planned communications in the next 120 days.

Q8. 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, DCC. 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.

A8. Since the opening of PE05-004, DCC initiated a vehicle survey to evaluate vehicles that may have experienced headlight flickering while the vehicle is in motion. A detailed summary and status of the vehicle survey is included as Enclosure 06 – SURVEY.

Q9. Some consumers have stated to ODI that when they took their vehicles to get their headlights repaired, the technicians have said that the alleged cause of the headlights not working properly is that the Body Control Module (BCM) needs to be calibrated with newer software for proper headlight operation. Explain how the BCM controls the operation of the headlights.

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A9. The BCM monitors the headlamp switch, multifunction switch, ignition switch, diagnostic tool, hazard switch and the J1850 Bus to perform various lamp operations. The headlamp switch is resistively multiplexed to the BCM. The BCM monitors the headlamp switch and when the switch changes its position the BCM will request the Integrated Power Module/Front Control Module (IPM/FCM), via the J1850 bus, to turn on the appropriate lamps based on the headlamp multiplexed switch input.

The high beam and optical horn functions are resistively multiplexed within the multi-function switch, which is a separate input to the BCM. The BCM will send the IPM/FCM appropriate information pertaining to these features via the J1850 bus.

Auto-Headlamps (optional equipment)
When the headlamp switch is placed in the "auto" position, the key cylinder is in the run/start position and the BCM receives the request for the auto headlamp signal from the electro-chromatic mirror, the BCM will request the IPM, via the J1850 bus, to turn on the headlamps. The headlamps will remain on until the electro-chromatic mirror stops sending the request for auto headlamp signal or the headlamp switch is moved from the "auto" position, or the vehicle is turned off.

Q10. Describe all modifications or changes made by, or on behalf of, DCC in the design, material composition, manufacture, quality control, supply, or installation of the subject component, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each 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**

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h. Whether the modified component can be interchanged with earlier production components.

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

A10. A detailed summary of all pertinent design change information for the subject components is included as Enclosure 7 – CHANGE HISTORY.

Q11. Produce one of each of the following:

a. Exemplar sample of each design version of the headlight switch;
b. Field return sample of the headlight switch exhibiting the subject failure mode; and
c. Any kits that have been released, or developed, by DCC for use in service repairs to the headlight switch which relate, or may relate, to the alleged defect in the subject vehicles.

A11. a. Samples of various design versions of the headlight switch have been shipped separately to the attention of Ali Motamedamin. DCC was not able to gather a sample of each design version of the headlight switch due to a change of the component supplier. The original headlight switch supplier was Delphi Mechatronic Systems from MY2001 – MY2004. During the 2004 calendar year, for the MY2005, the headlight switch supplier changed to TRW Automotive Electronics Group. The TRW switch assembly also superceded the Delphi switch as a service replacement part.

b. DCC initiated a vehicle survey to inspect various components on vehicles that have allegedly experienced the headlights flickering or turning off while the vehicle is in motion. As of March 23, 2005, DCC has not been able to determine any failure mode associated with the headlight switch. Therefore, DCC does not have a field return sample of the headlight switch. DCC has initiated a part retention survey in order to obtain field return samples for analysis. In the event that DCC receives a field return sample of the headlight switch, it will be sent as a supplement to this response with an assessment of its condition and the reason why it was replaced.

c. There have been no kits released, or developed, by DCC for use in service repairs to the headlight switch which relate, or may relate, to the alleged defect in the subject vehicles.

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Q12. State the number of headlight switches that DCC 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):

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

A12. The part sales information has been included in Enclosure 8 – Part Sales. It is impossible to determine what these part sales are for. There are other customer issues (i.e. customer damage) that are not related to this alleged condition, yet still trigger sales/replacement of the subject components. DCC has concluded that the part sales cannot be used to determine any trend related to the alleged condition

Q13. Furnish DCC's assessment of the alleged defect in the subject vehicle, including:

a. The casual or contributory factor(s);
b. The failure mechanism(s);
c. The failure mode(s);
d. The risk to motor vehicle safety that it poses;
e. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning; and
f. The reports included with this inquiry.

A13. DCC's investigation into allegation of the headlights flickering and/or turning off on 2001-2002 model year minivans established that customer complaints vary widely, and may not be an accurate indicator of what, if any, abnormal event is actually occurring. It is important to note that there are no allegations of injury accident or property damage in any of the identified complaints.

DCC determined that approximately 75% of the customer complaints & field reports reference either the headlights and park lights flashing, headlights flickering, or either one headlamp inoperable or one headlamp

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is on low beam and the opposite is on high beam. The headlights and park lights flashing condition may be the result of an improper FCM software algorithm. TSB #08-005-04, supplied in Enclosure 05 – Service Bulletins, was released on February 3, 2004 to address this issue.

Additionally, the allegation of headlights flickering or dimming slightly may be the result of an increased electrical load on the vehicle's electrical system. When an additional feature is activated the operating voltage may drop slightly. This drop in the operating voltage may result in the headlights flickering. This headlight flicker is only a momentary flicker of the headlight prior to the vehicle's electrical system returning to a steady state condition.

DCC believes customers may be confusing the momentary flicker, due to the electrical load, as the headlights turning off. The one headlamp inoperable or one headlamp on low beam and the opposite on high beam has not been analyzed on a vehicle. DCC asserts all headlamp bulbs, utilized in all DCC vehicles, are not designed or expected to last the life a vehicle. The headlamp system is designed for serviceability if one of the bulbs becoming inoperative. DCC contends that neither the one headlamp inoperable or one headlamp on low beam and the opposite headlamp on the high beam present an unreasonable risk to motor vehicle safety.

DCC has initiated a vehicle survey to evaluate vehicles that have allegedly experienced headlight flickering or turning off while the vehicle is in motion. DCC is continuing to analyze one of the survey vehicles that allegedly experienced this condition. DCC has interrogated the vehicle's electronic controllers for any fault codes and have found none. DCC has instrumented the survey vehicle with a data acquisition system and the vehicle is currently being driven daily to record any condition that may be causing the headlamps to flicker and/or turn off while the vehicle is in motion. DCC plans to evaluate several other vehicles in the near future.

DCC will continue to investigate this issue and will update NHTSA as progress is made.