DAIMLERCHRYSLER

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

March 31, 2004

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-212mjl; RQ04-001

This document contains DaimlerChrysler Corporation's ("DCC") response to the referenced inquiry regarding 1998-1999 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 asserts that the data clearly demonstrates that the increase in the number of complaints directly correlates to the release of recall B24 in November 2002. Approximately 80% of the complaints received on this population have occurred since the announcement of recall B24 indicating a significant influence from an outside source. Also, the terminal resistance issue noted on the 7-circuit clocksprings built into these vehicles could likely have a substantial influence on the complaint rate, even though this condition will not affect proper deployment of the driver airbag. In addition, in the unlikely event of a backwound fatigue of the clockspring conductive ribbon, all DCC vehicles have a warning light system that alerts the driver that the airbag system needs immediate attention from a trained dealership technician.

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

Although DCC believes that these complaints are random, driven by recall B24, and are likely related in some substantial part to terminal resistance issues, a part retention program has nonetheless been initiated to obtain field return samples for additional analysis. The results of this survey will be supplied as a supplement to this response as soon as a significant quantity of parts have been returned and analyzed.

Sincerely,

Stephan J. Speth

Attachment and Enclosures

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Q1. State, by model and model year, the number of subject vehicles DaimlerChrysler has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by DaimlerChrysler, 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 1998 and 1999 DaimlerChrysler Corporation ("DCC") minivans (Dodge Caravan, Plymouth Voyager, and Chrysler Town & Country) built since March 1, 1998 are similar vehicles and have the same subject clockspring. These vehicles are collectively referred to as the NS model. The total number of subject NS vehicles manufactured for the US market is 726,646.

The detailed response that lists the market production data as requested in items a. through g. 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 DaimlerChrysler are 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; and
e. Third-party arbitration proceedings where DaimlerChrysler is or was a party to the arbitration; and

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f. Lawsuits, both pending and closed, in which DaimlerChrysler is or was a defendant or codefendant.

For subparts "a" through "d," 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 DaimlerChrysler'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.

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 721 customer complaints, which include 103 NHTSA reports (VOQ's) that may relate to the alleged condition. The 618 other (non-VOQ) customer complaints contain 484 unique vehicles.

The original list of VOQ's received from NHTSA contained 146 VOQ's but 2 of the VOQ's are not related to the alleged condition and 41 VOQ's do not have vehicle identification numbers and they cannot be verified by DCC. Two of the 103 VOQ's with identification numbers reference the same vehicle identification number. Nineteen of the 103 VOQ's with vehicle identification numbers have related customer complaints in the DCC system. The remaining 84 VOQ's are unique reports which do not have related complaints in the DCC system.

b. There are 23 field reports that contain 23 unique vehicles.

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c. There are 4 claims alleging injury that are responsive to this inquiry.

In reviewing the 4 claims it is noted that, during the inspection of each vehicle, each claim had stored fault codes for the driver airbag ranging from 593 to 32,768 minutes of engine ignition on time. The maximum stored number of minutes in the airbag module is 32,768. Therefore an accurate indication as to how long the airbag warning light was actually on is not possible in some cases. With the a fault code for the driver airbag, the airbag warning light would be illuminated giving the driver more than adequate opportunity to have the airbag system verified for proper operation by a trained technician, as detailed in the vehicle owner's manual. Only completely ignoring the illuminated warning light for an extended period of time will increase the risk of injury as is alleged in some of these cases.

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

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

f. There are 11 lawsuits and claims, 2 pending and 9 closed, involving DCC that are responsive to this inquiry. Six of the lawsuits and claims have related customer complaints in the DCC system.

DCC's analysis of the VOQ's and customer complaints indicates the increase in the number of complaints correlates to the release of Recall B24 in November 2002. The percentage of VOQ's received prior to the recall is approximately 12% while the percentage of VOQ's received after the release of Recall B24 is approximately 88%. The percentage of customer complaints received by DCC prior to the recall is approximately 22% while the percentage of customer complaints received after the release of Recall B24 is approximately 78%.

DCC's analysis of customer complaints indicates that at least half of the complaints may be attributed to other random issues such as terminal resistance, the airbag control module, or the driver airbag module. Due to the lack of information, it is impossible to discriminate the alleged condition (backwound clockspring) from other random issues such as terminal corrosion, an airbag control module issue, or a driver airbag module issue.

As discussed in the numerous responses to the prior investigation, DCC's analysis of clockspring terminals indicated a reduced thickness of gold plating on

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the terminals. Gold plating with a thickness of below 15 microinches results in the diffusion of the base metal through the plating resulting in an increase in resistance. This increase in resistance could cause the airbag warning light to illuminate but will not obstruct the operation of the airbag system.

Also, the airbag warning light system mandated by FMVSS 208 is designed to alert the driver that the airbag system needs immediate attention from a trained dealer. Very specific warnings are given in the vehicle owner's manual in the event that the airbag warning light is illuminated for a period longer than the normal 8 seconds at vehicle startup or illuminated as you drive, as mandated in FMVSS 208. The driver's decision to disregard the warning lamp and not have the airbag system inspected at a dealer is out of the control of DCC.

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. DaimlerChrysler'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 property damage is alleged;
k. Number of alleged injuries, if any;
l. Number of alleged fatalities, if any; and

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 l. is provided in Enclosure 2 as a Microsoft Access 2000 table, titled "REQUEST NUMBER TWO DATA".

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Q4. Produce copies of all documents within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports) and describe the method DaimlerChrysler 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 DaimlerChrysler 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. DaimlerChrysler'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.

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

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A5. The total number of warranty claims for Clockspring replacement (Labor Operation 19-85-25) for the 1998 through 1999 model years for the NS vehicles is shown in the chart below:

NS	2,983	10,005

It should be noted that a multitude of conditions not related to this inquiry (collision, noise, terminal plating, misdiagnosis, etc.) often result in replacement of the subject component. No conclusions can be drawn from this warranty data relative to the alleged condition.

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

Q6. State, by model and model year, a total count for all of the vehicles repaired under DaimlerChrysler Safety Recall No. B24 separated by labor operation code 19-B2-41-82 and labor operation code 19-B2-41-83.

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

a. DaimlerChrysler'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.

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

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A6. The total number of vehicles repaired under DaimlerChrysler Safety Recall No. B24 for the 1996 through 1998 model years for the NS vehicles is shown in the chart below:

19-B2-41-81 Inspect clockspring	26,691	23,130	11,826
19-B2-41-82 Replace clockspring (vehicles with LESS than 70,000 miles)	44,953	69,203	71,098
19-B2-41-83 Check DTC's and replace clockspring (vehicles with a failed clockspring and MORE than 70,000 miles)	118,792	105,395	52,427

The detailed response that lists the vehicles repaired under Recall No. B24, as requested in items a. through k. is provided in Enclosure 5 as a Microsoft Access 2000 table, titled "RECALL DATA".

Q7. Describe in detail the search criteria used by DaimlerChrysler 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 DaimlerChrysler 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 DaimlerChrysler 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.

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A7. The search criteria used by DCC to identify claims to Request No. 5, can be found in the chart below:

Clockspring, Airbag – Replace	19-85-25-01
Diagnostics	19-85-25-00
Diagnostics – Procedure Manual	19-85-25-68
Diagnostics – MOPAR Diagnostics System Procedure	19-85-25-78
Apply Dielectric Grease to Clockspring	19-85-25-90
Apply Dielectric Grease to Clockspring and Replace Clockspring	19-85-25-91

Fault codes for the above reference labor operations are provided below.

D4	No Cancel
D5	Turn Signal Defect
11	Broken or Cracked
18	Open Circuit
51	Improperly Installed
58	Internal Defect
67	Noisy Rattles (loose)
68	Noisy

The two fault codes "Open Circuit" and "Internal Defect" (fault codes 18 & 58) may directly impact the ability of the driver airbag circuit to properly function in the case of a deployment. The other fault codes, such as "Noisy", "Broken or Cracked", and "Improperly Installed" will not affect the warning lamp. It should also be noted as previously explained in prior submissions that "Open Circuit" and "Internal Defect" fault codes may be assigned to parts with terminal plating issues. Diagnostic tools used by the dealership are unable to distinguish between parts experiencing an increase in resistance due to terminal corrosion

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versus those that are experiencing a true open circuit. The increase in resistance due to inadequate terminal plating could cause the airbag warning lamp to illuminate but will not obstruct the operation of the airbag system. Therefore it cannot be assumed that the provided warranty data shows any conclusive evidence of a trend related to backwound clocksprings.

The standard warranty offered on all NS-model vehicles was 36 month / 36,000 miles. There were 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 DaimlerChrysler; this warranty data is not available to DaimlerChrysler and is not included in this response.

Q8. Produce copies of all service, warranty, recall, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that DaimlerChrysler 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 manufacturer's short name is planning to issue within the next 120 days.

A8. There are two Service Bulletins included in Enclosure 6 – SERVICE BULLETINS that may be responsive to this inquiry. Service Bulletin 08-010-01 details general service information for the dealership. Service Bulletin 08-011-02 was issued to inform the service technicians of corrective actions related to terminal resistance that may cause the airbag warning lamp to illuminate intermittently or constantly.

Q9. 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, DaimlerChrysler. 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;

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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.

A9. There have been no assessments, analyses, tests, studies, surveys, simulations, investigation, inquiries and/or evaluations conducted by or for DCC since EA01-007 was closed. Any relevant documents were previously submitted to NHTSA as part of PE00-032 or EA01-007.

Since the opening of RQ04-001, DCC has initiated a part retention survey in order to obtain field return samples for analysis. The results of this survey will be supplied to NHTSA as a supplement to this response as soon as a significant quantity of parts have been returned and analyzed.

Q10. **Describe all modifications or changes made by, or on behalf of, DaimlerChrysler 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 and MY 2000 minivans. 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.

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Also, provide the above information for any modification or change that DaimlerChrysler 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, as requested in sections a. through h., has been included as Enclosure 7 – DESIGN CHANGE INFORMATION.

Q11. Produce two of the following:
- **a. Exemplar samples of each design version of the subject component;**
- **b. Field return samples of the subject component exhibiting the subject failure mode; and**
- **c. Any kits that have been released, or developed, by DaimlerChrysler for use in service repairs to the subject component/assembly which relate, or may relate, to the alleged defect in the subject vehicles.**

A11. Exemplar samples of each design version of the subject component have been shipped under separate cover to the attention of Mr. Michael Lee. These exemplar samples are the current service parts released for the subject vehicles.

At this time DCC does not have in its possession any samples which exhibit the alleged condition. However, as stated in response to Question 9, DCC has initiated a part retention process in order to obtain field return samples. As soon as samples are available, they will be shipped to Mr. Michael Lee at NHTSA.

Q12. State the number of each of the following that DaimlerChrysler 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 component; and**
- **b. Any kits that have been released, or developed, by DaimlerChrysler for use in service repairs to the subject component/assembly.**

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

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DaimlerChrysler 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 is included in Enclosure 8 – PART SALES.

As stated prior in the Request No. 5 warranty claim section, it is not possible to determine the exact usage or need for these parts. There are other issues (collision, noise, terminal plating, misdiagnosis, etc.) that are not related to this investigation, yet will result in sales of the subject clockspring.

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

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

A13. DCC's analysis of customer complaints indicates the increase in the number of complaints correlates to the release of Recall B24. The number of customer complaints increased 3.5 times after the release of Recall B24. The data indicates customers learned about the recall and associated any condition in the vehicles airbag system or steering wheel with the clockspring. DCC's analysis of customer complaints indicates a large percentage of complaints can not be confirmed to be related to the subject component. In addition, as was previously submitted, a large percent of the complaints and parts sold could be due to increased resistance in the system caused by terminal corrosion. This corrosion can be sufficient to illuminate the warning lamp, but it will not impede driver airbag deployment in the event that it is necessary.

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DCC has a warning lamp system, as mandated in FMVSS 208, incorporated in the entire airbag system to alert the driver that the airbag system needs immediate attention from a trained dealership technician.

At vehicle key-on, the airbag electronic control module (AECM) sends out a diagnostic pulse approximately every 100 milliseconds to test the airbag circuits for potential open or shorted conditions. If an open or short is detected, the airbag warning lamp is illuminated and a fault code flag is set in the module. If the fault is corrected, the airbag lamp is extinguished and normal operation resumes. Normal lamp operation is "on" for 6-8 seconds at key-on, then off. If an intermittent problem is encountered lamp illumination can be substantially longer. If the fault "matures" and the lamp remains illuminated, a fault code timer is activated and the AECM keeps track of the number of minutes the fault has existed with the key on. The airbag lamp "on" is notification to the customer that a problem exists in the system and requires diagnosis by a trained professional. Depending on the fault in the system, an airbag lamp "on" may mean that the system is non-functional from a deployment standpoint or that the system is unpredictable, or in some cases that it will still function as intended. The driver's behavior to disregard the warning and not have the airbag system inspected at a dealer is out of the control of DCC.

The clockspring utilized in the subject vehicles has a centered pre-determined length of conductive ribbon that allows the steering wheel to rotate an equal number of turns in either direction. If the clockspring is turned in the counterclockwise direction when the steering intermediate shaft is disconnected or with the steering wheel removed, a backwound condition will exist. This condition causes the conductive ribbon to fold over on itself and may cause fatigue in the conductive circuits. If the clockspring is turned in the clockwise direction when the intermediate shaft is disconnected or with the steering wheel removed, an overwound condition will exist. This condition results in the shortening of the conductive ribbon and will cause it to break. Either of these conditions could cause the conductive circuits located in the clockspring to become an open circuit. When an open circuit condition is detected in the driver airbag circuit the cluster will illuminate the airbag warning light.

The NS electrical system has a low threshold for increased airbag circuit resistance. Vehicles with backwound clocksprings provide significant warning to the vehicle operator if the clockspring does fatigue. As the clockspring fatigues, there will be a significant time period where the airbag warning light will be turning on and off abnormally, indicating that the circuit is suspect and requires inspection and service. During this time period of the airbag warning light turning

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on and off abnormally, there is no loss of airbag function if the operator responds to the warning light within a reasonable amount of time.

To further understand the potential causes for the abnormal increase in complaints, DCC will continue to monitor field input and has initiated a part retention survey in order to obtain field returns samples for analysis. The results of this survey will be supplied to NHTSA as a supplement to this response as soon as a significant quantity of parts have been returned and analyzed.