DAIMLERCHRYSLER

February 4, 2003

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

Mr. Kenneth N. Weinstein
Associate Administrator, Safety Assurance
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

03V-034 ①or③

Dear Mr. Weinstein:

Attached is DaimlerChrysler Corporation's Defect Information Report, complying with the requirements of 49 CFR Part 573, Defect and Noncompliance Reports, which contains details of a recall regarding a potential safety related defect in 1997-2002 Plymouth and Chrysler Prowler vehicles. The lower control arm ball joints may experience a loss of lubrication and potentially result in a loss of directional control. DaimlerChrysler is not aware of any injuries related to this condition.

Sincerely,

For Stephan J. Speth

Enclosures: Defect Information Report for DaimlerChrysler Recall # C03

cc: K.C. DeMeter, NHTSA
Division of Occupational Safety & Health
California Department of Industrial Relations

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OFFICE OF DEFECTS INVESTIGATION

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DEFECT INFORMATION REPORT FOR DAIMLERCHRYSLER RECALL # C03

03V-034 ②of ③

Submission date: February 4, 2003

Identifying classification of vehicles potentially affected:

Make	Model	Model Years	Inclusive Dates of Manufacture	Vehicle Volume
Plymouth/Chrysler	Prowler	1997-2002	January 1997 – March 2002	11,698

Estimated percentage containing defect: Unknown

Description of defect:
The lower control arm ball joints may experience a loss of lubrication which can result in accelerated wear and possible separation from the steering knuckle. A ball joint which has separated may result in loss of directional control.

The name, address and telephone number of the supplier who manufactured the subject components:

TRW Automotive
34201 Van Dyke Avenue
P.O. Box 8008
Sterling Heights, MI 48311
(586) 977-1000

The following principal events occurred between mid August, 2002 and late January, 2003:

- The company received notice from the NHTSA Office of Defect Investigations of 2 field reports describing separation of the lower control arm ball joint on 1999 MY Prowler vehicles, and subsequently opened PE02-062 on August 13, 2002.
- The company identified five additional reports of lower control arm ball joint separation.
- The lower control arm ball joints on 5 company fleet vehicles were inspected. Three of the ten joints inspected had torn boots, and four others were found to be distorted. It was not clear if there was a consistent cause of the boot tears, or if the boot distortion could eventually result in joint separation.
- A review of parts returned from the field revealed that although there was evidence of boot damage, there was no specific causal issue that could be identified.
- It was suspected that heat from the brake rotor might cause boot distortion. However, subsequent severe braking tests done on an instrumented vehicle at the Chrysler Proving Grounds confirmed that brake heat was not causing boot distortion.
- Other possible causes for boot tears or distortion were investigated.
- Further analysis of returned parts suggested that an internal boot support collar within the ball joint assembly could possibly be causing seal tears by cutting the seal

from the inside. A design review determined that although there was no internal interference by design between the boot and this collar, this clearance was small (1.0mm).

- An X-ray analysis of knuckle and ball joint/control arm assemblies was set up to further investigate this possibility. This analysis showed that there was contact between the boot and the internal collar on the ball stud after the ball joint was installed into some knuckle assemblies. This established that variable pull up into the knuckle assembly could potentially cause an interference condition that may eventually lead to boot degradation.
- A separated ball joint received from a field return showed no evidence of boot damage. This suggested that a loss of sealing could potentially also occur due to torsional loading (twisting) of the boot.
- Accelerated laboratory durability testing was initiated in an attempt to recreate boot damage that could subsequently lead to a loss of lubrication. This testing was able to reproduce boot damage and loss of sealing by twisting the boot. It was found that repeated twisting would also cause the boot to tear or rotate on the ball joint housing, either of which can allow water ingestion and a loss of lubrication. These conditions will lead to ball joint wear and may ultimately result in ball joint separation.
- A design analysis of the part revealed that interference with the collar as well as the tendency for torsional twisting could be eliminated with two changes. The undercut taper of the ball joint stud inside the boot area could be removed since this feature was not required for the Prowler application. Subsequently elimination of the undercut area will also allow the internal collar to be removed, preventing a potential cause of boot internal cutting.
- Since the investigation began an additional 7 field reports have been received indicating separated ball joints.
- DaimlerChrysler is not aware of any injuries relating to this condition.
- This information was presented to the Vehicle Regulations Committee, who decided to conduct a Safety Recall to remedy the condition.

Statement of measures to be taken to correct defect:

DaimlerChrysler Corporation will conduct a safety recall to replace the front lower control arm ball joints with modified assemblies on all Prowler vehicles. DaimlerChrysler Corporation expects to implement national notification to dealers and begin owner notification in late March 2003.

DaimlerChrysler Corporation has a longstanding policy and practice of reimbursing owners who have incurred the cost of repairing a problem that subsequently becomes the subject of a recall. To ensure consistency, DaimlerChrysler Corporation, as part of the owner letter, will request that customers send original receipt and/or other adequate proof of payment to the company for confirmation of the expense.