



5/10/06

Volvo Trucks North America

May 5, 2006

VIA EXPRESS MAIL

Mr. Richard Boyd, Chief
Medium and Heavy Duty Vehicle Division
Office of Defects Investigation
U.S. Department of Transportation
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

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Re: **PE06-013**
NVS-214njs

Dear Mr. Boyd:

Please find below Volvo Truck North America's ("Volvo") responses to specific questions raised in your letter of March 21, 2006. In some areas we provided additional information, which we believe, may be helpful in conducting your evaluation.

1. State by model and model year, the number of subject vehicles Volvo has manufactured for sale or lease in the United States.

Model	Model Year	Count
VHD	2004	291
VHD	2005	501
VHD	2006	609

Source of information: Volvo's Customer Database. The information was gathered on May 3, 2006.

2. State the number and provide copies of each of the following, received by Volvo, which relate to, or may relate to the alleged defect in the subject vehicles:

- a. Consumer/ Fleet Complaints;*
- b. Field Reports;*
- c. Reports Involving a crash, injury, or fatality;*
- d. Property Damage claims;*
- e. Third-Party Arbitration proceedings where Volvo is or was a party to the arbitration; and*
- f. Lawsuits, both pending and closed, in which Volvo was a defendant or co-defendant.*

For subparts "a" through "f," state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted

separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint). For "d" through "f," provide a summary of each event.

Type	Total Number
a. Consumer/ Fleet Complaints	9
b. Field Reports	23
c. Reports involving a crash, injury, or fatality	0
d. Property damage claims	2
e. Third- party arbitration proceedings	0
f. Lawsuits	0

Summary of events "d" through "f":

1. Property Damage Claim: VIN 4V5K99GH65N [REDACTED] Owner: [REDACTED] While operating the vehicle on September 25, 2004, the right rear drive wheels and tires came off causing the right side of the truck to drop to the roadway.
2. Property Damage Claim: VIN 4V5KC9GH25N [REDACTED] Owner: [REDACTED] Right rear wheel came off vehicle causing progressive damages to the vehicle.

Source of information: Volvo's Service Database and Legal Department. The information was gathered on April 25, 2006.

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. Vehicle VIN;
- b. Vehicle's owner or fleet name (and fleet contact person), address, and telephone number;
- c. Vehicle's model and model year;
- d. Vehicle's mileage at time of incident if known;
- e. Incident date;
- f. Date of manufacture; and,
- g. Date Warranty Coverage commenced.

If you desire you may submit items "a" through "g" on an electronic disk. Excel or Microsoft Access 2000, are the preferred formats.

Refer to Attached Table titled "Response to question # 3."

Source of information: Volvo's Service Database and Legal Department. The information was gathered on April 25, 2006.

4. State by model and model year, a total count for all warranty claims that have been paid by Volvo to date that relate to, or may relate to, the alleged defect in the subject vehicles.

Model	Model Year	Count
VHD	2004	20
VHD	2005	26
VHD	2006	15

Source of information: Volvo's Warranty Database. The information was gathered on April 25, 2006.

5. Pertaining to Volvo Service Program (SP) 771-003, Aluminum Disc Wheel Spacer Removal, please provide the following information.

a. Provide a complete chronology, listing all activities or events, including, but not limited to, incidents involving the subject components, which led Volvo to issue the communication;

2/1/05 Customer contacts Volvo regarding broken wheel studs on 4V5KC9GH15N [REDACTED]

4/12/05 Dealer Contact regarding loss of clamp load on 4V5KC9GH05N [REDACTED]

4/29/05 Market Quality Report issued by Product Reliability suggesting wheel spacer as the root cause of the aforementioned incidents.

5/05/05 Engineering investigation started relative to wheel spacers on VHD Model vehicles.

5/26/05 Wheel spacer removed from build specification on VHD model product.

6/14/05 Internal Letter distributed regarding wheel spacer removal.

8/1/05 Service program published regarding the removal of the wheel spacers.

b. Provide a listing (in chronological order) of all testing through which the need for the communication was identified and/or assessed, even if the testing was being conducted for another purpose. Please provide a copy of all relevant information from each listed test;

2/05 Broken Wheel Studs from 4V5KC9GH15N [REDACTED] sent to Gunitite, supplier, for material analysis. Results published on April 25, 2005.

7/05 Analysis on failed material from 4V5K99GH35N [REDACTED] Results published in August 15 and September 7, 2005.

- c. State the number of repairs and/or replacements paid for by Volvo that resulted from the communication identified. List your response by repairing dealer (and include the repairing dealer's name, address, and telephone number); and*

Two hundred seventy four (274) VHD Model vehicles have been repaired by removing the wheel spacers. Refer to the attached table titled "Response to question 5c" for information on the repairing dealers.

Source of information: Volvo's Warranty Database. The information was gathered on May 4, 2006.

- d. State the intended range of models and model years included in the SP.*

2004 – 2006 VHD Model vehicles manufactured with the wheel spacer from 5/1/03 through 5/26/05.

- 6. Provide copies of any service or technical bulletins, product improvement campaign announcements, or advisories, and all other communications concerning the alleged defect that Volvo has issued or is considering issuing, other than SP 771-003.*

One internal notice issued on 6/14/05 to inform district service managers that the wheel spacer had been removed from our product offering on the VHD model vehicles. The notice is attached.

- 7. Provide a complete technical description of the plastic spacer used in the subject vehicles. Include design considerations such as, but not limited to, crush characteristics and thermal properties. Also provide supplier information and contact information for this component.*

Reference attached drawing and material specification sheet from the supplier. The supplier of the finished product is:

Core Systems, LLC
7102 Cessna Drive
Greensboro, NC 27409
Phone: (336) 605-5559
Contact Name: Joel Barnett

8. *Provide contact information (name, address, and phone number) for all suppliers of wheel lug nuts and studs used on the subject vehicles.*

Lug Nuts:

INTEGRATED LOGISTICS SOLUTIONS
1327 South Woodbranch Dr.
Charlotte, NC 28273
Phone: (704) 588-7008
Contact: Lisa Black

Studs:

Proprietary Hubs:

INTEGRATED LOGISTICS SOLUTIONS
1327 South Woodbranch Dr.
Charlotte, NC 28273
Phone: (704) 588-7008
Contact: Lisa Black

Supplier Hubs (studs supplied with the hub):

Gumite Corporation
302 Peoples Avenue
Rockford, Ill 61104-7092
Phone: (800) 677-3786
Contact: Peter Oldis (336) 230-0110

Consolidated Metco, Inc. (ConMet)
P.O. Box 83201
Portland, OR 97283
Phone: (800) 547-9473
Contact: Bill Nash (336) 855-9646

9. *Furnish Volvo'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; and*
- e. What warnings, if any, the operator and other people both inside and outside the vehicle would have that the alleged defect was occurring or subject component was about to fail?*

Response:

The VHD model is a vocational truck primarily used in applications such as construction (dump and concrete mixer trucks) and refuse (trash removal and disposal). In these applications, the truck will experience severe conditions such as driving off road, up steep grades and over rough terrain. Also, there is a high duty cycle for the brakes due to the constant stopping and starting of the vehicle. Additionally, given the varying levels of law enforcement presence, periodic overloading is a possibility.

Considering these operating conditions, it is imperative to properly maintain and service the vehicle. This starts with the pre-service inspection, where the owner should retorque all wheel nuts prior to placing the vehicle in service. The design specified torque is conveniently located on the outer edge of the nut for easy view. TMC Recommended Practice RP803, Pre-Service Vehicle Inspection, calls for the torque of wheel-mounting nuts be checked to specification before placing the vehicle in service.

Continued inspection is also necessary to ensure that the torque is maintained and that any damage to the wheel and wheel studs are addressed. State requirements specify that pre-trip inspections should include checking wheel and wheel studs for damage; this requirement is also published in our operator's manual (see attached excerpt from operator's manual). Additionally, TMC Recommended Practice RP222A, User's Guide to Wheels and Rims, specifies how to address broken studs and "out of service" conditions for disc wheels.

In summary, the application of the VHD model warrants proper maintenance and inspection of the vehicle by the owner and operator.

- a. The causal or contributory factor(s);

Application and lack of proper maintenance and inspection. Also, operating the vehicle with loads that exceed the vehicle weight rating.

Possibly, the seating of the stud in the hub may be a contributing factor. Our preliminary investigation suggests that this is random; however, we are continuing to discuss this with our hub suppliers.

- b. The failure mechanism(s);

Loss of clamp load and continued operation of vehicle with loose wheel nuts.

May 5, 2006

c. The failure mode(s);

- Deflection of the wheel spacers from elevated drum temperatures.
- Broken wheels studs
- Cracked or damaged wheels
- Wheel separation

d. The risk to motor vehicle safety that it poses

The risk exists if a wheel separation occurs. An immediate wheel separation is not expected as a result of the issue provided that the owner performs the necessary inspections and addresses any broke studs or damaged wheels using appropriate repair methods.

e. What warnings, if any, the operator and other people both inside and outside the vehicle would have that the alleged defect was occurring or subject component was about to fail?

Vibration or a difference in handling should be evident to the person driving the vehicle. Also, rust streaks extending from the bolt holes indicate either worn, poor quality, or loose wheel nuts.

10. State whether Volvo intends to take any additional action on this matter.

Volvo will continue to monitor the warranty and service databases for this condition.

Yours truly,



Tim L. LaFon

Manager, Regulatory Affairs

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