

Howell, Rosa <NHTSA>

From: McHenry, Stephen <NHTSA>
Sent: Tuesday, October 10, 2006 1:49 PM
To: Howell, Rosa <NHTSA>
Subject: FW: Volvo response to remaining questions from request letter of September 7, 2006 (reference EA05-021 / NVS 213.)

Rosa,
Please enter this e-mail and attachments into the public record for EA05-021
Steve

From: Lidgett, Diana (D.L.) [mailto:dlidgett@volvocars.com]
Sent: Tuesday, October 10, 2006 12:45 PM
To: McHenry, Stephen <NHTSA>
Cc: Shapiro, William (W.)
Subject: Volvo response to remaining questions from request letter of September 7, 2006 (reference EA05-021 / NVS 213.)

Dear Steve,

Volvo is providing a response to the remaining questions from your request letter of September 7, 2006 (reference EA05-021 / NVS 213.) Please refer to the attached documents.

M Safety Program Final Proposal.pdf>> <<

Best regards,

Diana Lidgett

Manager, Compliance Programs
Regulations and Compliance
Volvo Cars of North America, LLC
1 Volvo Drive (Bldg. B), Rockleigh, NJ 07647

☎ Desk: 201 768 7300, ext. 7249
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10/18/2006

EA05-021

VOLVO

10/10/2006

2ND PART OF VOLVO RESPONSE

October 10, 2006

Dear Steve,

Volvo is providing a response to the remaining questions from your request letter of September 7, 2006 (reference EA05-021 / NVS 213.) Volvo previously responded to questions 1 through 5 on September 15, 2006.

- Statements from NHTSA are in regular font.
- Volvo's responses are in italics.

1. ODI is becomingly increasingly concerned about the safety consequences of throttle module failures. We currently calculate 1,416 owners who have experienced mechanical limp home mode events. This accounts for 30% of the total of the owner complaint combined database of approximately 4,700 complainants (VOQs and complaints supplied by Volvo. Volvo's internal documents (document 00013537-40, dated February 2005) indicate that 20% of ETM failure incidents are "extreme limp home" events. Given Volvo's predicted failure rate for the ETM, which indicate single or multiple ETM failures over the life of the vehicle, we ask Volvo to further explain why it believes that ETM failures do not pose an unreasonable risk to safety.

Answer:

Volvo has demonstrated to NHTSA at the East Liberty, Ohio Test facility in May 2006 the ability of the car and driver to maneuver the car to a safe stop with the original vehicle's specifications. The most severe case for the driver is the "mechanical limp home" mode where the throttle is 20% open allowing the driver to safely maneuver the vehicle at approximately 30 MPH as demonstrated in May 2006. All ETM alleged failures analyzed by Volvo in this investigation have Diagnostic Trouble Codes (DTCs) stored which indicate different stages of limp modes.

It appears to Volvo that document 0001353-40 referenced above by NHTSA has been misinterpreted. This is specific component test data. The 6.4% on the chart is MY2001 engine group B5T. The range for different MY2001 engine groups is 2, 6, and 8%. Furthermore, this document is a draft document intended for discussions with the California Air Resources Board (CARB.) That matter was resolved with CARB upon implementation of Service Campaign 155 and our Extended Warranty Program

04-12-15 *Claim prediction with level based only on QFU = 32% at 70,000 Miles*

05-01-18 *# of DTCs with extreme limp home (3+2) / (19+6) = 5/25 = 20%*

[32% X 20% = 6.4%]

05-01-18 *# of DTCs with extreme limp home F:6.4% at 70,000 Miles [2001MY B5T]*

As answered within the EA response March 27, 2006 predictions are no longer appropriate. Volvo now uses actual limp home data. Based upon the actual 154,969 ETM warranty claims we have, there are 1,982 cases of mechanical limp home mode (1.3%).

2. Our ongoing investigation indicates that stalling is also a matter of concern. ODI has contacted over 1,600 owners of the subject vehicles. Presently, we count 491 who describe stalling events created by ETM failures. Although Volvo maintains that the engine management system is better able to perceive and record stalls, we believe, based on the characteristics of the event, which included the engine shutting off, not going into mechanical limp mode; no power steering or power brakes; and the problem being corrected by replacement of the ETM, that these are true “stall” events. If extrapolated to encompass the entire vehicle population, the number of stalls rises to 824, or 17% of the 4,557 owner complaints. We are currently in the process of contacting warranty customers to obtain further detailed information.

Answer:

Volvo's preliminary assessment of the 30 VIN sample size from ODI:

- i. Some of the described stalling events cannot be attributed to ETM alleged failures*
- ii. Some of the described stalling events were not "true 'stall' events".*

Volvo has already described for NHTSA about the different approaches customers have taken when contacting Volvo compared with NHTSA within document "ETM PE05-041 Presentation dated September 27, 2005" when we previously responded to NHTSA that Volvo has reported cases where there has been a clear connection of ETM related DTCs set. Volvo's opinion and experience is when talking to a vehicle owner after their experience, the owner is not always sure about the connection of the alleged defect and real root cause. That could explain differences in number of cases between Volvo and NHTSA.

3. These described stalling events differ from Volvo’s assessment of stalling (EA response question 18 subsection f) as “the drivability phenomena when the vehicle hesitates . . . although the vehicle is still in a drivable condition,” which also differs from Volvo internal documents detailing possible ETM related stalling conditions (e.g. document 00011773). Some examples of the events described by owners are attached to this e-mail in conjunction with some excerpts from warranty claims and technical hotline reports.

The Power Point slide (document 00011773) is correct. It states what happens when an ETM is in mechanical limp home [severe]. The fact that a speaker's note was added referring to stalling is for the presenter to use if the question would have been asked what happens if there is no air into the engine. It is only a "what if" case.

Once again, Volvo's opinion and experience is when talking to a vehicle owner after their experience, the owner is not always sure about the connection of the alleged defect and real root cause. Further complicating analysis of ETM reports is the fact that many people, including internal Volvo employees, do not share a common definition of stall. This can clearly be seen when reviewing Volvo's submitted reports in support of this investigation.

4. The Stalling and “limp home” phenomena are accompanied by smaller numbers of “surging” complaints. The “surging” complaints - described as possible in some Volvo documents (00491618, 00019915-16, 00475873-74) - are responsible for the majority of the reported crashes.

As you requested, I am also including details on the 12 crashes we are currently counting as part of this investigation. These are provided for your review.

The 3 documents referenced within the above paragraph are taken from development work. They indicate possibilities identified mainly during FMEA (failure modes and effect analysis) work. The closure of the loop is done by implementing a solution during the remaining development work.

Draft document 00019915-16 and document 00475873-74 are concerning the Volvo medium car platform (P1/ S40 and V50) and not the vehicles involved within investigation EA05-021. The reference on slide 15 within document 00475873-74 to the large car platform (P2 / S60, V70, S80) is a statement concerning a theoretical possibility and there is no information whether this theoretical possibility has ever occurred. This theoretical possibility is discussed as a result of the FMEA work (described above.)

Volvo's conclusion is that this is the state of the art of how to work with FMEA.

Volvo's preliminary assessment of alleged twelve crashes is that only two are possibly ETM related and were already "agreed" to by Volvo. Please reference the summaries provided below from Volvo's response to NHTSA's Preliminary Evaluation for the ETM (PE05-041.)

"VIN: YV1TS94D [REDACTED] S80 MY 2001. Customer, C. [REDACTED]"

Customer states: On the way into a parking lot, foot off gas and hovering above brake pedal, car allegedly accelerated and a collision occurred.

Volvo APF report issued stating ETM related codes read, 902A and 958F. These failure codes describe that the throttle went into semi limp home mode. Both codes describe communication errors that will result in the idle position being controlled by fuel cut offs dependent on the pedal and pedal release.

Assessment of the situation:

It is impossible for these communication errors to cause unexpected vehicle acceleration. We can also state that the DTC's will light the check engine lamp and that text will be displayed in the car.

"VIN: YV1LS56D [REDACTED] S70 MY 1999. Customer, N. [REDACTED]"

Customer states: Coming to a stop, briefly took foot off brake and car allegedly surged into the car in front. ETS light on and off that day.

Volvo APF report issued stating no failure codes set, but a cleaning of the ETM was done subsequent to the incident, and there was a previous report with the ETM.

Assessment of the situation:

At that time the data was presented indicating that the condition alleged in this report is a fluctuating idling speed and the car can easily be held with the brake pedal (the difference would be to use 35N on the pedal instead of 25N from a normal stand still. This 10 additional Newtons is a small amount of additional force. As a reference, please note, that an average force used to stop the car when driving 35 mph is between 60-80N.) The customer's description of the light being on and off that day indicates to Volvo that this vehicle was in semi limp home mode.

Based on the above analysis there are two c [REDACTED] allege a crash with no injuries or deaths (VIN: YV1TS94D [REDACTED] and VIN: YV1LS56D9 [REDACTED])"

The clear conclusion from Volvo is that based upon our own research and based upon the facts supported by NHTSA from their investigation that there were quality concerns. This is not an unreasonable risk to motor vehicle safety. Since we launched our actions our customers are pleased and are also being compensated for earlier repairs. Clearly NHTSA agrees with the effectiveness of our software solution. However based upon the latest discussion we had together Volvo understands NHTSA's concerns and has decided to provide an additional "Safety Information Program" for concerned cars (that have not yet received the software download) and their owners advising about proper driving. In this letter to owners we will state (see Appendix I for our proposal):

- How to drive in an efficient way in limp mode*
- What performance can be expected*
- Why the vehicle may go into limp mode and applicable warnings given in the car*
- Why the owner must go to a Volvo dealer for this work*

As was shown in our response of September 15, 2006 the ETM Customer Satisfaction Campaign (SC155) has been just as effective as Volvo Safety Recall Programs for similar model year vehicles.

This additional action that we plan to launch a month from now will increase completion rates to be even more effective than safety recall programs for this age of vehicles in question.

- The Volvo Safety Recall Programs that were previously compared to (on September 15, 2006) had already undergone re-mailing efforts, whereas the ETM Customer Satisfaction Program (SC155) has not yet undergone a re-mailing effort.*
- The additional action of Volvo's "Safety Information Program" will include stronger language than the original notification letter urging Volvo owners that have not yet had the ETM software download (SC155) done on their vehicles, to have this campaign performed as soon as possible.*
- It is quite possible that all Volvo owners will receive an additional mailing concerning the Class Action Lawsuit which may further compel them to have the Software Download (SC155) performed. This matter is still not fully resolved.*
- Coincident with this new "Safety Information Program", Volvo is launching a New Web-based Training Module to all Volvo retailers, reinforcing the urgency of having this important software download performed on any affected vehicle that visits their dealership.*

We deeply believe the above described actions are the appropriate solution for this issue.

Thank you, again, for your time and attention on September 29, 2006. We look forward to meeting with you on Tuesday October 17, 2006. If there are any questions please contact Diana Lidgett or myself.

Sincerely,

*Volvo Cars North America, LLC
Customer Service Division*

*William Shapiro, PE
Manager, Regulations, Compliance and Safety*

Enclosures:

- Draft "Safety Information Program"*
- "Confidential 2 Slides from Sept2005 Presentation to NHTSA"*

EA05-021

VOLVO

10/10/2006

ETM SAFETY PROGRAM FINAL
PROPOSAL

DRAFT
Safety Information Program

November 2006

Mr. John Sample
123 Main Street
Anywhere, USA 12345

Your Vehicle Identification Number is: YV12345678912345567

Volvo Cars of North America, LLC, has voluntarily decided to:

1. **Initiate a Safety Information Program.**
 - a. You must have Volvo install an Electronic Throttle System software upgrade on your vehicle. We strongly urge you to contact your authorized Volvo retailer to have this software upgrade completed as soon as possible. This software upgrade will be provided at no charge to you and will take approximately ½ hour. However, due to scheduling, your Volvo retailer may require your vehicle for a full business day.
 - b. Please read the enclosed instructions concerning proper operation of your Volvo vehicle and make sure that all drivers of this vehicle read and understand these instructions. We strongly urge that you keep them with your Owner's Manual within your glove box.
2. **Extend the warranty period** for the Electronic Throttle System function on your vehicle to 10 years or 200,000 miles from the original in service date and zero miles, whichever comes first.

Why is Volvo conducting this Safety Information Program for the Electronic Throttle System?

Volvo Cars of North America, in cooperation with the National Highway Transportation Safety Administration (NHTSA) has introduced a Safety Program which includes new Electronic Throttle System software that will improve the driveability of your vehicle and Safety Information that will inform you, and any other driver of this vehicle, about the effects of limp home modes, on how to safely respond to them.

Why is Volvo extending the warranty on the Electronic Throttle System?

Volvo Cars of North America believes that your vehicle may be unable to meet certain emission control requirements for its useful life due to the Electronic Throttle System. Volvo has decided to extend the warranty to address this concern.

What conditions might be evident if this system needs repair?

The Check Engine Light or ETS light may illuminate. Additional symptoms that may be associated with this condition include *uneven engine idle*, and/or the *onset of "limp home mode"*, a condition that affects drivability potentially restricting maximum vehicle speed to between approximately 10 and 30 miles per hour.

Why did Volvo initiate the Safety Information Program /Customer Satisfaction Campaign for the Electronic Throttle System?

In some cases a warning indicator light/message illuminates unnecessarily without evidence of a problem. The new software has been recalibrated to address this situation. The software upgrade should also provide improved idling. We encourage you to contact your authorized Volvo retailer, as soon as possible, to have the software upgrade completed.

How will Volvo and your retailer assist in this matter?

If, within 10 years or 200,000 miles whichever comes first, from the date your vehicle was originally placed into service and zero miles, your vehicle exhibits any of the conditions mentioned above regarding the Electronic Throttle System function, contact your nearest authorized Volvo retailer to schedule an appointment for diagnosis. Repairs or replacements required based on the diagnosis and which are a result of an Electronic Throttle System failure will be covered by this extended warranty and performed at no charge.

DRAFT
Safety Information Program

Are there other conditions not related to the Electronic Throttle System that may exhibit similar symptoms?

There are other conditions and systems that may cause the above symptoms that are not a result of an Electronic Throttle System failure. **Repairs of such conditions would not be covered by this extended warranty. Only repairs or replacements required based on the diagnosis and which are a result of an Electronic Throttle System failure will be covered by this extended warranty and performed at no charge.**

Have you previously paid for this repair?

If you have already paid to have the Electronic Throttle System repaired or replaced within 10 years and less than 200,000 miles, you may be eligible for a refund.

How do you apply for a refund?

- Send your **repair order** with a **copy of this letter** (retaining a copy of both for your records) to:

Volvo Parts & Service Warranty Rebates
c/o ACB
P.O. Box 343230
Memphis, TN 38184

- To **avoid delays** do not send this information to any other location.
- The repair order must show that you previously paid for an Electronic Throttle System servicing, and include the amount you paid, the date of payment, your name, and address. If the repair order does not include your vehicle's VIN number, please provide some other documentation reflecting that number, or simply write that VIN number onto the repair order. Also, due to varying state laws and to ensure prompt reimbursement of sales taxes paid in relation to these payments please complete the attached assignment form and return with the repair order.
- Please allow 4 weeks for reimbursement.

Only parts and labor costs relevant to repair of the Electronic Throttle System will be reimbursed under the terms of the extended warranty. Additional charges listed on the repair order for other services will not be included in the reimbursement.

If you have questions or seek status of your claim please contact:

www.acbpromotions.com/volvoetmwarranty
Volvo ETM Warranty help desk at 866-637-3774

Can we assist you further?

If you have difficulty getting your vehicle repaired promptly and without charge, please contact your Volvo retailer's Service Manager. If you still have concerns regarding this issue please contact the Volvo Customer Care Center at 800 458-1552 Monday through Friday, 8:30 A. M. to 7 P.M. Eastern Time.

Thank you for your attention to this matter and remember to keep a copy of this letter for your records. We have taken this action in the interest of your continued satisfaction with your Volvo and will be pleased to conduct the software upgrade at your Volvo dealership and honor the Extended Warranty.

Very truly yours,

Eunice Stern
Manager, Customer Care Center