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ONE HUNDRED THIRTEENTH CONGRESS  
**Congress of the United States**  
**House of Representatives**

COMMITTEE ON ENERGY AND COMMERCE

2125 RAYBURN HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515-6115

Majority (202) 225-2927  
Minority (202) 225-3641

December 15, 2014

Mr. Hiroshi Shimizu  
Senior Vice President  
Global Quality Assurance  
Takata Corporation  
2500 Takata Drive  
Auburn Hills, MI 48326

Dear Mr. Shimizu,

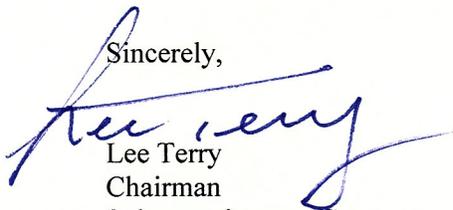
Thank you for appearing before the Subcommittee on Commerce, Manufacturing, and Trade on Wednesday, December, 2014 to testify at the hearing entitled "Takata Airbag Ruptures and Recalls."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

To facilitate the printing of the hearing record, please respond to these questions by the close of business on Tuesday, December 30, 2014. Your responses should be e-mailed to the Legislative Clerk in Word format at [Kirby.Howard@mail.house.gov](mailto:Kirby.Howard@mail.house.gov) and mailed to Kirby Howard, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, D.C. 20515.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,



Lee Terry  
Chairman  
Subcommittee on Commerce,  
Manufacturing, and Trade

cc: Jan Schakowsky, Ranking Member, Subcommittee on Commerce, Manufacturing, and Trade  
Attachment

## Additional Questions for the Record

### **The Honorable Lee Terry**

1. Mr. Shimizu acknowledged warnings were issued by Takata engineers about the use of ammonium nitrate in Takata airbag inflators but testified that Takata believed it could control the chemical. What specific controls did Takata implement to manage ammonium nitrate and mitigate concerns about its stability?
2. What changes has Takata made in the composition of the propellant used in any of the makes and models that have been recalled for inflator issues? When were those changes made? Is Takata aware of any vehicle makes and models that use the same propellant compound that haven't had recall issues?
3. Do airbag inflators or propellant wafers have an expiration date? If so, please specify how long airbag inflators and/or propellant wafers are guaranteed to function properly in the event of an airbag deployment. If not, please confirm that airbag inflators and propellant wafers are guaranteed to perform properly throughout the "life" of a vehicle. Please include a discussion of how the "life" of a vehicle is determined.
4. Age has been indicated as a contributing factor in the ruptures. Specifically, what effect does age have on the propellant material that contributes to the ruptures?
5. Is there a way to recreate the effect of time in a laboratory in a much shorter period to understand how these inflators will operate in the future?
6. How is Takata certain that over time more inflators won't be affected?
7. Please describe in detail what changes Takata has made between 2000 and today in the manufacturing process for inflators subject to a recall. Please identify which changes are most responsible for ensuring that replacement inflators are safe, and, separately, why the replacement inflators are not susceptible to deterioration over time.
8. Mr. Shimizu's testimony states that to Takata's best current judgment the root cause of the most recent inflator ruptures involves a combination of three factors: the age of the unit, the persistent exposure to high absolute humidity, and potential manufacturing issues.
  - a. What does Takata consider to be persistent exposure to conditions of high absolute humidity?
  - b. How did Takata make the determination that high absolute humidity is a potential root cause in the most recent inflator ruptures?
  - c. How does extended exposure to high humidity and moisture affect the airbag inflator?
9. Mr. Shimizu testified that the manufacturing of the inflators, and not the materials, was the cause of the ruptures occurring in high absolute humidity climates. How did Takata make that

determination? Has Takata identified which manufacturing issues could potentially be problematic? If so, please identify them.

10. Has Takata found any evidence in its testing that the vehicle itself is a possible contributor to the inflator ruptures? Has Takata found any evidence in its testing that the way in which the airbag module is installed in the vehicle is a possible contributor to the inflator ruptures?
11. Please provide updated numbers/results for all inflator testing done by year up to the current date and starting with 2000.
12. Please provide the exact number of replacement inflators manufactured in 2014 by design number and how many of each have been provided to each OEM to date.
13. How does Takata determine the provision of replacement parts to each OEM?
14. Based on Takata's testing and analyses, are there certain inflators that are more at risk than others in high absolute humidity areas? If so, please identify which inflators are more susceptible to a rupture in high absolute humidity areas.
15. NHTSA identified four high absolute humidity regions in its June 2014 regional field action request – Florida, Hawaii, Puerto Rico, and the U.S. Virgin Islands. Does Takata support NHTSA's identification of high absolute humidity areas in the United States?
  - a. Does Takata think more states should be included in the designated high absolute humidity region? If so, which states?
  - b. Please describe the method Takata utilized to determine areas of high absolute humidity in the United States if Takata disagrees with NHTSA's identification of high absolute humidity areas in the United States.
16. In the summer of 2004, Takata reported that it conducted an experiment on airbags at its Auburn Hills, Michigan facility to investigate an incident involving an airbag cushion tear. Takata claimed that the abrasion on the inside cover of the cushion was unrelated to an inflator rupture. How did Takata make the determination that the tear was unrelated to an inflator rupture? What caused the abrasion? Please explain.
17. In September 2007, Takata presented a propellant exposure theory to Honda which concluded that "elevated moisture and thermal cycling compromised the propellant." Can you please explain this theory? Is it related to airbag inflator ruptures?
18. In the 2013 recalls affecting passenger's side airbag inflators, Takata attributed part of the defect to the "auto-reject" function on a machine at its Moses Lake, Washington facility. Takata stated in an April 11, 2013<sup>1</sup> filing to NHTSA that the auto-reject feature is supposed to identify and reject propellant wafers with inadequate compression. When the auto-reject is on and properly functioning, what is the average percentage of propellant wafers this feature rejects?

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<sup>1</sup> See <http://www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM436445/RCDNN-13E017-5589.pdf>

19. Mr. Shimizu testified that the reported 2003 airbag inflator rupture incident in a BMW vehicle in Switzerland was not related to the current issues regarding inflators. What caused the inflator to rupture in that 2003 incident?
- a. Mr. Shimizu testified that a manufacturing process problem was involved with the 2003 rupture in Switzerland. What specifically was the manufacturing process problem and how was it resolved?
  - b. Is the manufacturing issue from the 2003 rupture a possible cause of the ruptures occurring in either driver or passenger airbag inflators in the United States since 2003? Is Takata examining the possibility that the 2003 rupture has the same, or a similar, cause to the rupture events occurring after that time in the United States?
20. According to a December 3, 2014 *Reuters* article<sup>2</sup>, Takata stated that the cause of the 2003 inflator rupture was due to an “overloaded inflator.” What is an “overloaded inflator” and how does that occur? What processes did Takata put in place to remedy that particular inflator issue?
- a. What exact elements of the manufacturing process may cause an “overloaded inflator”?
  - b. What exact elements of the manufacturing process caused the “overloaded inflator” in the 2003 case?
21. How long will the Quality Assurance Panel’s audit take to be completed? What Takata facilities will the Panel audit? What manufacturing procedures will the Panel audit? Will Takata make public any and all findings produced by the Panel’s audit? If so, please identify which findings will be made public? Will the findings of the Panel’s audit be shared with Takata’s vehicle manufacturer customers? Will the findings of the Panel be shared with any regulatory agencies, including but not limited to NHTSA?

### **The Honorable Marsha Blackburn**

1. A November 19<sup>th</sup> New York Times article noted that two Takata employees at your Moses Lake, Washington facility questioned the use of an ammonium nitrate propellant in your airbags.<sup>3</sup>
- (1) Michael Britton, a Takata chemical engineer, stated the following: ***“It was a question that came up: Ammonium nitrate propellant, won’t that blow up?”***
  - (2) Mark Lillie, a former senior engineer with Takata, said ***“It’s a basic design flaw that predisposes this propellant to break apart, and therefore risk catastrophic failure in an inflator.”***
- a. What was Takata’s response to the concerns raised by Mr. Britton and Mr. Lillie?

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<sup>2</sup> See <http://www.reuters.com/article/2014/12/03/us-autos-takata-tests-exclusive-idUSKCN0JH1HL20141203>

<sup>3</sup> See <http://www.nytimes.com/2014/11/20/business/takatas-switch-to-cheaper-airbag-propellant-is-at-center-of-crisis.html? r=0>

- b. Did any other Takata employees, or outside parties, warn Takata about using an ammonium nitrate propellant in its airbags?
  - c. Were concerns about using an ammonium nitrate propellant relayed to executives at Takata? Who? When?
  - d. Why did Takata decide to use an ammonium nitrate propellant as opposed to Tetrazole? Who at the company oversaw that decision making process?
  - e. Yes or No...was there a cost savings to using ammonium nitrate as opposed to Tetrazole in Takata air bags? What was the cost savings per airbag?
2. Did Takata have possession of any reports or studies, internal or otherwise, relating to the long term storage of ammonium nitrate as a propellant in airbags, or long-term storage in general, *prior to* making its decision to switch in 2001?
  3. Did Takata perform any safety testing regarding ammonium nitrate propellant *prior to* authorizing its use in Takata airbags?
  4. What was the level of training and experience of the Takata engineers involved in analyzing the use and granting approval to use ammonium nitrate propellant in airbags?

### **The Honorable Jan Schakowsky**

1. Takata filed a Part 573 Safety Recall Report on October 29, 2014, about a manufacturing issue at the Monclova, Mexico plant that was not previously disclosed during meetings with Committee staff. According to this 573 Report, “[c]ertain air bag inflators installed in frontal driver-side air bag modules built with an incorrect component manufactured at Takata’s Monclova, Mexico plant during the period from June 16th, 2008 through June 20th, 2014.”
  - a. Was Takata producing defective airbags as recently as six months ago, even after it had recalled millions of vehicles?
  - b. How many airbags were built with “incorrect components” between June 1 and June 20, 2014?
  - c. What was the manufacturing defect you identified in this October 29 report? How did this defect affect the functionality of the airbags?
  - d. How is this manufacturing-related defect different from the manufacturing defect Takata previously identified that occurred at the Monclova plant in 2002?
2. Please provide all recent results of Takata’s testing (in the same format as previously provided to the Committee), from November 17, 2014 to the present.
3. At the Subcommittee hearing on December 3, 2014, Takata testified that the replacement airbag inflators were produced from the most recent production line, which takes into account all countermeasures learned from previous issues. But in meetings with Committee

staff, Takata's representatives said that most of the recalled inflators were being replaced with "like" inflators, with the exception of one car manufacturer that elected to use a different inflator for the replacements.

- a. How has the design or manufacturing process changed from the production of the original inflators to the "most recent line" you discussed at the Subcommittee hearing?
  - b. Are the replacement inflators different in any way from the original inflators installed in the vehicles?
  - c. Please describe all modifications or changes in the design, material composition, manufacturing, or quality control of the inflators that were made from 2000-2014.
  - d. Takata, NHTSA, and the automakers testified at the Subcommittee hearing on December 3, 2014, that the root cause of the airbag ruptures is still unknown. Takata claims that high humidity, high temperature, and the age of the vehicle are factors contributing to the ruptures. What is Takata doing to ensure that the new airbags currently being installed into cars in Florida will not have the same problems in five or ten years?
4. At the Subcommittee hearing on December 3, 2014, you testified that testing of airbags that occurred in 2004 was not related to the current inflator recalls. In a follow-up written response to Chairman Upton's question, the airbag testing that Takata conducted in 2004 was instead related to airbag cushion tearing identified by NHTSA that year.
- a. Please describe with specificity the testing protocols that Takata used to test airbags for tearing in 2004.
  - b. Please describe with specificity the results of Takata's testing of airbag tearing in 2004, including information on the number of airbags tested, the number of tested airbags with cushion tearing, and the number of tested airbags with other problems (including a description of those problems).
  - c. Did Takata's testing of airbags for tearing in 2004 result in any ruptures of airbag inflators, or any indication that airbags could potentially rupture?
  - d. Did Takata conduct any other testing of airbags in 2004 in the normal course of business? If so, did any such testing result in ruptures of airbag inflators, or any indication that airbags could potentially rupture?
5. Many members of the armed forces serve at bases in located in the high absolute humidity regions, and may be stationed there or deployed from there for years, but are allowed to register their cars in their home states. In these or other cases, the vehicle may be operated in Florida for many years but never registered in Florida. In working with the vehicle manufacturers to identify vehicles for recall, how is Takata accounting for these and other vehicles that have been operated in high-humidity regions for years but have never been registered in those regions?

6. According to a Reuters article on December 4, 2014, titled “Toyota Expands Takata Air Bag Recall in Japan, China,” Toyota announced that it would recall 185,000 vehicles across 19 models in Japan and 5,000 vehicles in China. Japan’s transport ministry said that it instructed other automakers to check whether their vehicles could be affected by the same inflator problem.
  - a. Has Takata conducted, or is Takata planning to conduct, any recalls in Japan or China with regard to Takata airbag inflator ruptures?
  - b. If so, are the recalls in Japan or China being conducted pursuant to laws or regulations in those countries? What laws or regulations?
  - c. Please list the make, model, and model years of each vehicle that was recalled in Japan and China in relation to Takata airbag inflator ruptures.