



The Committee on Energy and Commerce

Memorandum

December 1, 2014

To: Members of the Subcommittee on Commerce, Manufacturing, and Trade

From: Majority Committee Staff

Re: Hearing on “Takata Airbag Ruptures and Recalls”

On Wednesday, December 3, 2014, the Subcommittee on Commerce, Manufacturing, and Trade will convene a hearing at 10:00 a.m. in 2123 Rayburn House Office Building entitled “Takata Airbag Ruptures and Recalls.” Witnesses are by invitation only.

I. Witnesses

A. Panel I

- Hiroshi Shimizu, Senior Vice President for Global Quality Assurance, Takata Corporation;
- Abbas Saadat, North American Regional Product Safety Executive and Vice President of Vehicle Safety and Compliance Liaison Office, Toyota;
- Rick Schostek, Executive Vice President, Honda North America; and,
- Craig Westbrook, Vice President, Aftersales, BMW of North America.

B. Panel II

- David J. Friedman, Deputy Administrator, National Highway Traffic Safety Administration.

II. Summary

This hearing will give Members of the Subcommittee the opportunity to hear about the facts and circumstances surrounding the discovery of the Takata airbag inflator defects, the contributing factors to the defects, and the series of recalls initiated over the last six years to address and remedy this motor vehicle safety issue. There has been confusion around this issue, in part, because there have been different issues impacting different airbags, such as driver side versus passenger side airbags, which are entirely different airbag modules. In addition, there are ongoing issues regarding defects in airbags that have been in high humidity areas for a prolonged period for which no root cause has been identified.

III. Background

Today’s airbags consist of three main component parts: the airbag inflator, the airbag cushion material, and the airbag module that holds both the inflator and cushion material in the

steering wheel or dashboard of a vehicle.¹ When the airbag is triggered to deploy, a chemical propellant, housed within the metal airbag inflator in the form of a solid wafer, is ignited. The heat from the ignition causes the propellant wafer to undergo a chemical reaction, which produces a gas. The inflator has a number of holes that allow the gas to exit and fill the airbag. The holes initially are sealed, often with a thin layer of aluminum, and the force of the gas breaks the seal after the propellant is ignited, allowing for a properly timed inflation of the airbag.² Upon inflation, the airbag is drawn out of the steering wheel or dashboard. When the vehicle occupant makes contact with the airbag, the gas is dispersed through vents located along the sides and back of the bag causing it to deflate. This whole process happens within milliseconds of a crash.

An airbag inflator rupture occurs when there is too much pressure from the gas within the inflator.³ This happens when the propellant density is too low, which causes it to burn faster and produce gas too quickly after it is ignited. Instead of only exiting through the inflator's designed holes, the excessive pressure of the gas "ruptures" the inflator's metal housing. The metal can puncture the airbag cushion, can break into fragments, and hit the driver and other occupants.

A. Takata Airbag Inflators

TK Holdings Inc. ("Takata") has been producing airbags for vehicle manufacturers around the world since 1987.⁴ In mid-2005, Takata received photographs depicting a ruptured driver's airbag inflator from an accident that occurred in Alabama in 2004. The accident involved a 2001 model year Honda Accord in which the vehicle's driver was severely injured by metal fragments and debris from the airbag upon its deployment. This was the first known rupture connected with the recalls that led to this hearing. Based on an internal review that consisted of a visual inspection of the photographs, Takata determined that moisture had been absorbed into the unit causing it to rupture. It also concluded that the incident was an anomaly and not indicative of a larger problem.⁵ No testing beyond the visual analysis was conducted to investigate the incident further.⁶

B. 2008 – 2011 National Safety Recalls (Manufacturing Issues – Driver Side)

From May to August of 2007, Takata received three accident reports from Honda involving ruptured airbag inflators. While no deaths were associated with these reports, Takata began collecting driver's airbag inflators to inspect the part and attempt to recreate the rupture to identify the root cause of the burst. Through its testing and analysis, Takata ultimately determined in September 2008 that a defect existed in the inflator. Takata identified one root cause of this defect.

The cause was attributed to inadequate manufacturing processes involving propellant wafers produced between 2000 and 2002 in a Takata facility in Moses Lake, Washington.

¹ Jay Joseph, *Honda North America, Inc., Briefing to Committee Staff* (October 29, 2014).

² *Id.*

³ *Takata Representatives, Briefing to Committee Staff* (November 13, 2014).

⁴ See <http://www.takata.com/en/about/history.html>.

⁵ *Takata Representatives, Briefing to Committee Staff* (November 13, 2014).

⁶ *Id.*

Takata found that the propellant wafers produced on a machine press at that plant were not properly compressed during the stamping process. This caused the propellant to burn too fast when ignited, creating too much gas in the inflator, which caused the inflator to rupture.

Takata's discovery led to a series of national safety recalls from 2008 to 2011 for cars equipped with potentially defective driver's airbag inflators that had been produced between 2000 and 2002. This included approximately 1.1 million Honda vehicles in the U.S., ranging from model year 2001 to 2004.

C. 2013 National Safety Recalls (Manufacturing Issues – Passenger Side)

In 2011, Takata was notified of airbag inflator ruptures occurring in scrapyards in Japan by salvage operations conducting “end-of-life” recycling processes for expired vehicles. To determine the cause of these ruptures, Takata launched an investigation and began testing inflators taken from vehicles in the field. In October 2012, Takata concluded from its analysis that inadequate compression of the propellant wafers and exposure to poor moisture conditions, in combination with the aging of the propellant were possible causes of the rupturing inflators.⁷ Takata identified the propellant manufactured between 2000 and 2002 at its Moses Lake facility as being potentially defective.⁸ Takata disclosed that there was a new compression problem it identified at its Moses Lake facility, which was different from the compression problem that led to the 2008 through 2011 recalls, and involved a different piece of equipment.

Takata also identified improper storage of propellant wafers that were kept in a bunker outside of its Monclova, Mexico facility between 2001 and 2002 as another cause to the ruptures. Takata discovered that the propellant was exposed to unregulated environmental conditions (humidity being the greatest concern) that degraded its quality and caused the same rupture effect in the inflator when the airbag was deployed.⁹

By April 2013, Takata confirmed the existence of a passenger's airbag inflator defect and, at that point, was aware of six total inflator ruptures in the field – four in the U.S. and two in Japan.¹⁰ This led to a second series of national safety recalls for vehicles equipped with the defective part. Automakers impacted by this defect included Toyota, Honda, Nissan, Mazda, BMW, and GM. Approximately 1.8 million vehicles were recalled, covering model years 2001 through 2004, by Mazda, Honda, Toyota¹¹, Nissan, and BMW.

D. 2014 National Safety Recalls (Manufacturing Issues Continued – Passenger Side)

A third series of national safety recalls began in 2014 due to the same manufacturing problems identified in 2012. In June 2014, Takata found that its production records used to

⁷ Letter from Kazuo Higuchi, Senior Vice President, TK Holdings Inc., to Nancy Lewis, Associate Administrator of Enforcement, NHTSA (April 11, 2013) available at <http://www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM436445/RCDNN-13E017-5589.pdf>.

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

¹¹ Toyota designs GM vehicles impacted by the Takata defect. Toyota included those GM vehicles in its recalls.

determine the recall range for the 2013 recalls may have been inadequate or incomplete.¹² It also found that its “methodology used to identify the range of affected airbag inflators was inadequate.”¹³ In light of those discoveries, Honda, Toyota, Nissan, Mazda, and BMW launched expanded recalls to capture other vehicles potentially affected by the defective propellant and faulty inflators. An additional 1.8 million vehicles were recalled by those automakers and covered model years 2000 through 2006.

E. Regional Safety Improvement Campaigns (Absolute Humidity Concerns – Driver and Passenger Side)

A new series of recalls was initiated in June 2014 through regional safety improvement campaigns (SIC) due to new reports that inflator ruptures had occurred in both driver and passenger frontal airbags. Since these incidents occurred in Florida and Puerto Rico – high absolute humidity climates – Takata determined that high absolute humidity was a possible contributor to the ruptures. Takata theorized that exposure to high absolute humidity caused the propellant to deteriorate over time, lowering its material density. As a result, when the propellant was ignited, it would generate excessive internal pressure within the inflator that would cause the inflator to rupture when the airbag was deployed.

Based on this theory, several regional SICs have been initiated at the request of the National Highway Traffic Safety Administration (NHTSA) to address the heightened safety risk of defective inflators located within high absolute humidity areas. The purpose of these regional SICs is to test the collected inflator parts from these regions to identify a root cause of the ruptures and determine whether a safety defect exists.

Approximately 6.9 million vehicles between model years 2000 through 2011 have been recalled from gulf regions due to this potential defect. The regional campaigns involve Toyota, Honda, Mazda, Mitsubishi, GM, Subaru, Ford, Chrysler, BMW, and Nissan. Florida, Hawaii, Puerto Rico, and the U.S. Virgin Islands are among the targeted areas included in most of these efforts. Honda has expanded its regional SIC to include Alabama, California, Georgia, Louisiana, Mississippi, South Carolina, and Texas.

F. Unresolved Issues

To date, the Takata inflator recalls and regional SICs have covered approximately eight million vehicles in the United States. There have been four fatalities in the U.S., all in cars that were covered by or triggered national recalls tied to manufacturing issues.

Currently, both Takata and NHTSA are conducting investigations around the high absolute humidity rupture incidents and testing returned inflator parts from the field to determine the scope of the vehicles impacted and to determine the root cause of the potential defect. Takata has collected approximately 12,000 inflator parts from the field and conducted tests on approximately 4,000 of those parts. A number of those inflator parts (between 1,000 and 2,000)

¹² Letter from Jay Joseph, Assistant Vice President Product Regulatory Office, American Honda Motor Co., Inc., to Nancy Lewis, Associate Administrator for Enforcement, NHTSA (June 19, 2014) available at <http://www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM457390/RCDNN-14V349-6465P.pdf>.

¹³ *Id.*

have been collected from areas outside of the designated high absolute humidity climate regions to assess risk in those locations. Takata is testing approximately 100 inflators per day. They are seeking to double their testing capacity at some point in the future. Takata is reporting the results of its testing to vehicles manufacturers and NHTSA as they become available.

On the replacement side, Takata is producing approximately 300,000 replacement kits a month for automakers, part suppliers, and dealers to replace the returned defective inflators. Takata is expected to increase production to 450,000 replacement kits a month by January 2015.

Takata has not disclosed whether it has made any changes to the design specifications or manufacturing processes for the replacement inflators. In discussions with staff most vehicle manufacturers indicated that they were replacing the inflators with “like” parts indicating that it was the same inflator with the same propellant presumably manufactured the same way but of a newer vintage.

IV. Honda’s EWR Reporting

On November 24, 2014, Honda announced that it had failed to report over 1,700 incidents since 2003 that were required to be reported under the TREAD Act’s Early Warning Reporting (EWR) requirements.¹⁴ Honda reported the following errors:

A. Data Entry Errors

In entering injury and death claims into the company’s database Honda often did not enter a date in the “written claim received” field. The computer program used to generate Honda’s Early Warning Reports requires completion of that field in order to distinguish reportable written claims and notices from non-reportable oral claims for relief. Therefore, those written claims and notices that were input without a “written claim received” date were automatically omitted from Honda’s Early Warning Reports.

B. Coding Error

Early Warning Reports are required to identify the particular component involved in the injury or death claims being reported using a series of NHTSA component codes. Historically, Honda maintained a more exhaustive series of its own component/defect sub-codes to track incoming claims. However, the EWR computer program was not set up properly at the outset, and did not properly map all of Honda’s internal sub-codes to a NHTSA code. Therefore, when generating its Early Warning Reports, Honda’s computer program included only those written injury and death claims or notices that mapped to a NHTSA component code – thus underreporting claims.

C. Narrow Regulatory Interpretation

Honda used an overly narrow interpretation of what constituted a “written notice” under the TREAD Act. Using this narrow interpretation, Honda did not consider third-party documentation that the company obtained through its associates or consultants as reportable. For

¹⁴ *Fact Sheet: Honda’s Early Warning Report Audit & NHTSA Special Order (November 24, 2014).*

example, police reports obtained by Honda or information from private investigators hired by the company, were not considered a “notice received by the manufacturer” – and thus did not trigger an Early Warning Report.

Honda also acknowledged that “The TREAD Act requires manufacturers to report, by number, the warranty and property damage claims received from customers or their representatives. In reviewing its reporting of these areas, Honda determined that regular warranty claims were properly reported to the NHTSA. However, certain special warranty claims, including “good will” warranty, and extended warranties for certified pre-owned vehicles and under third-party service contracts were not properly reported.”¹⁵

Further, instead of reporting all property damage claims, as required, Honda was reporting only property damage claims that it had denied, while those claims that it accepted and paid to customers were improperly included in the count of warranty claims. The net result is that Honda over-reported these as warranty claims and under-reported property damage claims.”¹⁶

Honda claims it initially recognized an issue related to the recording of a verbal date code in the legal file management system in 2011, but there was no follow-up. NHTSA also made Honda aware of its underreporting EWRs in early January 2012, but Honda did not begin a third-party audit to determine the full extent of its underreporting until September 2014, and first notified NHTSA of the discrepancies in Honda’s Early Warning Reporting in October 2014.¹⁷

Honda has indicated that it is taking corrective actions. Honda also noted that eight Takata airbag ruptures were not properly reported through its EWR reports. Honda has indicated that each of those eight incidents were otherwise made known to NHTSA.

V. Questions for Consideration

- What has been learned from inflator testing so far?
- How much testing needs to be done before a root cause is identified or it is concluded that there are other issues with the inflator design?
- What factors do manufacturers consider when determining the vehicles model years and geographic areas that are subject to recall?
- Is NHTSA limited in providing better information to consumers and is there more that NHTSA should be doing?
- Are further audits of EWR reporting necessary?

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.*

- Does NHTSA believe its processes for identifying safety defects worked properly with respect to the airbag incidents?
- How do we prevent this from happening again?

VI. Staff Contacts

If you have any questions regarding this hearing, please contact Paul Nagle, Olivia Trusty, or Graham Dufault of the Committee staff at (202) 225-2927.