



COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION

OFFICE OF OVERSIGHT AND INVESTIGATIONS
MINORITY STAFF

Danger Behind the Wheel: The
Takata Airbag Crisis and How to
Fix Our Broken Auto Recall
Process

STAFF REPORT FOR RANKING MEMBER NELSON
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EXECUTIVE SUMMARY

Following reports of serious injury and death from airbags manufactured by TK Holdings Inc. (Takata) in numerous makes and models of vehicles – and claims of a delayed response from Takata, the automakers, and regulators – the Senate Commerce Committee held a hearing in November 2014 to determine the scope, potential cause, and appropriate Congressional response to this serious safety issue. After the hearing, then Commerce Committee Chairman Jay Rockefeller and Senator Bill Nelson requested briefings and documents from Takata, automakers, and the National Highway Traffic Safety Administration (NHTSA). Among other things, the documents provided to the Committee by Takata detailed the airbag inflator production process, the types of propellant used in these inflators, inflator failure modes analyses, and the alleged deaths and injuries caused by defective Takata airbags. Earlier this year, Chairman John Thune and Ranking Member Nelson made two additional requests for documents, mainly pertaining to airbag inflator testing programs and internal Takata safety inspections. To date, Committee minority staff has reviewed more than 13,000 documents provided by Takata that total more than 90,000 pages.

As further detailed in this report, it appears that Takata was aware, or should have been aware, of serious safety and quality control lapses in its manufacturing plants as early as 2001. Documents reviewed by Committee minority staff also indicate that Takata was informed of three serious incidents involving faulty inflators in the first half of 2007. Nonetheless, the first recall was not issued until November 2008 – more than a year later.

In addition, internal emails obtained by the Committee suggest that Takata may have prioritized profit over safety by halting global safety audits for financial reasons. The report also sheds light on Takata's effort to address the impact of moisture and humidity on its inflators, which has now been reported to play a role in causing inflator ruptures. Further, it appears that NHTSA, by not opening an investigation until June 11, 2014, failed to promptly investigate Takata's defective airbags. NHTSA conducted an investigation related to Takata airbag inflators in November 2009, but the investigation only dealt with the scope and timeliness of two previous recalls, and it was closed in May 2010.

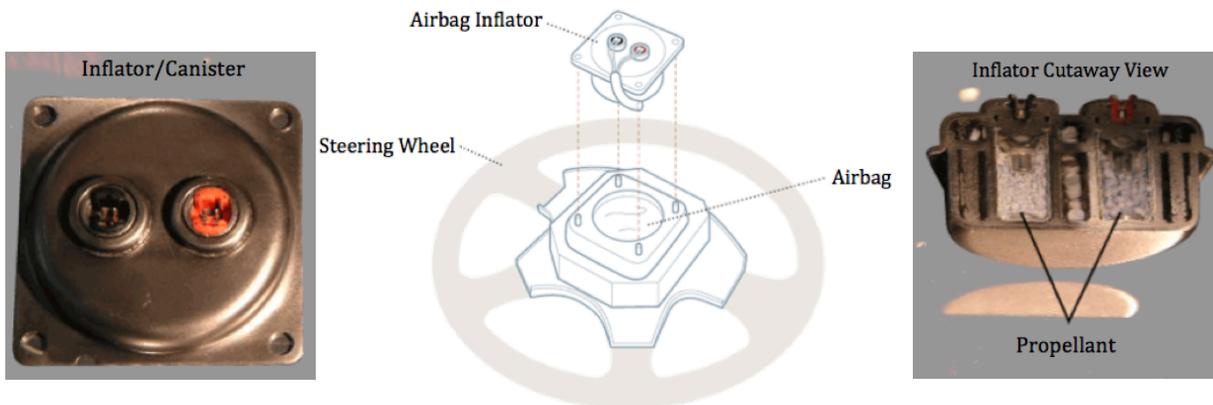
After more than 100 injuries and eight deaths allegedly caused by shrapnel from its rupturing airbags – over a period of more than 10 years – Takata cannot identify a root cause of these ruptures. Yet, Takata is currently producing hundreds of thousands of replacement inflators each month that may not completely eliminate the risk of airbag rupture. Overall, the Committee minority staff's ongoing investigation reveals a pattern of failures and missteps that did not quickly or effectively respond to a serious safety defect.

The recall process must be strengthened to address future defects that could cause serious injury or death. The Moving Ahead for Progress in the 21st Century Act (MAP-21), which was enacted in July 2012, took some important steps forward in this area by incentivizing employees to voluntarily share important safety information and protecting them from retaliation when they do so. Proposals that could strengthen NHTSA's ability to prevent and respond to future safety recalls include increasing the agency's civil penalty authority and expanding its ability to conduct independent testing. Steps must also be taken to improve recall completion rates and the automakers' ability to appropriately respond when recalls are necessary.

I. Background

An airbag is a vehicle occupant restraint system that consists of a fabric cushion or envelope that opens rapidly in the event of a collision. When a crash is detected, a signal is sent to the inflator, which is composed of a steel canister that houses a propellant,¹ and initiates a chemical reaction that causes the propellant to burn.² The burning propellant emits a gas that rapidly inflates and deploys the fabric cushion.³ In some cases, the propellant in airbags manufactured by Takata burns too quickly.⁴ This can cause the inflator to rupture, shooting metal fragments of the inflator canister at the car's occupants.⁵

FIGURE I: AIRBAG INFLATOR AND PARTS⁶



In July 1984, NHTSA amended Federal Motor Vehicle Safety Standard 208 to phase in a requirement that cars offer automatic occupant protection, such as airbags or automatic seatbelts.⁷ In 1991, Congress passed the Intermodal Surface Transportation Efficiency Act, which required cars built after September 1, 1997, to have airbags for the driver and right front passenger.⁸

Since 1987, Takata has supplied automakers with airbags and has become one of the three largest airbag manufacturers worldwide.⁹ In 1991, Takata began manufacturing airbag inflators in the U.S., and media reports suggest that in 2001 the company started using ammonium nitrate as the main ingredient in its propellant.¹⁰ Compared to its predecessor, tetrazole, ammonium nitrate allowed Takata to create

¹ *Takata Saw and Hid Risk in Airbags in 2004, Former Workers Say*, New York Times (Nov. 6, 2014).

² National Highway Traffic Safety Administration, *Air Bag Deployment* (online at www.safercar.gov/Vehicle%20Shoppers/Air%20Bags/Air%20Bag%20Deployment).

³ Takata, *All About Airbags* (online at www.takata.com/en/around/airbag01.html).

⁴ *Car Industry Struggles to Solve Air Bag Explosions Despite Mass Recalls*, Reuters (June 22, 2014).

⁵ *Id.*

⁶ *Takata Saw and Hid Risk in Airbags in 2004, Former Workers Say*, *supra* n. 1.

⁷ 49 Fed. Reg. 28962 (July 17, 1984).

⁸ Pub. L. No. 102-240 (1991).

⁹ Takata, *Airbags* (online at www.takata.com/en/products/airbag.html); *Special Report: Deadly Airbags Backfire on Firm that Crossed 'Dangerous Bridge,'* Reuters (Jan. 13, 2014). Autoliv and TRW are the other top three airbag manufacturers. *Airbag Inflator Shortage Plagues Industry*, Automotive News (Nov. 24, 2014).

¹⁰ *Takata's Switch to Cheaper Airbag Propellant Is at Center of Crisis*, New York Times (Nov. 19, 2014).

smaller and cheaper airbag inflators that emit less toxic fumes, which, in turn, could reduce the risk of chemical burns or breathing problems when an airbag deploys.¹¹ More than 14 years after the introduction of ammonium nitrate, however, this compound remains at the center of a safety crisis that has plagued Takata for more than a decade.

II. Timeline of the Takata Airbag Crisis

In 2003, the first known incident of a rupturing Takata airbag inflator occurred in a BMW vehicle in Switzerland.¹² Takata's investigation of the incident determined that the inflator, which was 17 months old at the time of the incident, ruptured as a result of an "overloading of propellant in the assembly of the inflator."¹³ Takata stated that this was an isolated event and unrelated to subsequent incidents.¹⁴

In 2004, the airbag in a 2002 Honda Accord ruptured in Alabama.¹⁵ Honda filed an early warning report with NHTSA, which was one of 245 reports filed that year about incidents that resulted in injury or death.¹⁶ Takata tentatively concluded that a compromised seal on the inflator or an overloading of propellant into the inflator might have caused the rupture.¹⁷ Honda said it was assured by Takata in 2004 that this incident was an anomaly.¹⁸ According to two former Takata employees interviewed by the *New York Times*, in the aftermath of this incident, Takata secretly conducted tests on 50 airbag inflators that were collected from vehicles sent to scrapyards.¹⁹ After two of these inflators cracked during testing, engineers began designing possible fixes in anticipation of a recall. The testing was suddenly shut down, however, and Takata executives ordered technicians to delete the testing data.²⁰ In Takata's response to the Committee's request for more information about this testing, Takata stated that it never tested airbags recovered from scrapyards in 2004.²¹

The next known incidents of rupturing inflators did not occur until three years later.²² According to a 2010 letter from Takata to NHTSA, in 2007, Honda reported three additional episodes to Takata

¹¹ *Id.*

¹² TK Holdings Inc., Defect Information Report, PSDI, PSDI-4, and PSDI-4K Driver Air Bag Inflators (May 18, 2015), at 3.

¹³ *Id.*

¹⁴ *Takata Investigated Defective Air Bag Inflator as Early as 2003*, Reuters (Dec. 3, 2014).

¹⁵ *Takata Saw and Hid Risk in Airbags in 2004, Former Workers Say*, *supra* n. 1; TK Holdings Inc., Defect Information Report, PSDI, PSDI-4, and PSDI-4K Driver Air Bag Inflators, *supra* n. 12, at 3.

¹⁶ *Air Bag Flaw, Long Known to Honda and Takata, Led to Recalls*, *New York Times* (Sept. 11, 2014).

¹⁷ TK Holdings Inc., Defect Information Report, PSDI, PSDI-4, and PSDI-4K Driver Air Bag Inflators, *supra* n. 12, at 3.

¹⁸ *Takata Saw and Hid Risk in Airbags in 2004, Former Workers Say*, *supra* n. 1.

¹⁹ *Id.*

²⁰ *Id.*

²¹ Takata Narrative Response to Senate Commerce Committee (Dec. 12, 2014) at 5.

²² *Air Bag Flaw, Long Known to Honda and Takata, Led to Recalls*, *supra* n. 16.

that occurred during the first half of 2007²³ – all involved 2001 Honda Civics.²⁴ According to media reports, Honda settled with the victims for undisclosed sums of money.²⁵

Takata determined that all three rupture incidents involved inflators that were assembled between October 31 and November 15, 2000, and all contained propellant tablets manufactured in the same months.²⁶ Focusing on the short timeframe in which these inflators and propellant were produced, Takata theorized that two manufacturing processes, which overlapped during this period, led to elevated moisture levels in the propellant.²⁷ It appears Takata believed these elevated propellant moisture levels during the manufacturing process, when combined with the thermal cycling in vehicles, “could cause the propellant density to decline over time, and such a decline in density could lead to overly energetic combustion during deployment of the air bag.”²⁸ This analysis was shared with Honda in September 2007, but a recall was not issued until more than a year later.²⁹

To test this hypothesis, Takata conducted additional testing on inflators recovered from salvage yards and inflators provided by Honda, but the analysis was inconclusive.³⁰ After the conclusion of Takata’s testing, the company learned of a fourth rupture incident.³¹ In October 2008, Takata recommended that Honda recall all vehicles equipped with propellant from the four suspect lots of inflators.³² The following month, in November 2008, Honda issued its first recall of vehicles with Takata airbags, which covered driver-side airbags in 3,940 cars in the U.S.³³

Based on its testing of additional inflators, Takata shifted its focus from the assembly of the inflator to the production of the propellant.³⁴ In 2009, Takata realized that its methodology for calculating propellant density in 2000 and 2001 could have led to invalid results.³⁵ The density of the propellant in inflators recovered from Honda’s November recall that were produced on Takata’s Stokes press, a specific compression press used to form the propellant into tablets, was found to be low, which

²³ Letter from Kazuo Higuchi, Senior Vice President, Takata, to George Person, Chief, Recall Management Division, Office of Defect Investigation, National Highway Traffic Safety Administration, at 5 (Feb. 19, 2010) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/ACM13395661/INRL-RQ09004-39140P.pdf).

²⁴ Takata Response to Senate Commerce Committee, Exhibit A (Dec. 12, 2014); Takata Response to Senate Commerce Committee, Exhibit B (Mar. 27, 2015).

²⁵ *Air Bag Flaw, Long Known to Honda and Takata, Led to Recalls*, *supra* n. 16.

²⁶ Letter from Higuchi to Person, *supra* n. 23, at 5-6.

²⁷ *Id.* at 6.

²⁸ *Id.* at 6.

²⁹ *Id.* at 6.

³⁰ *Id.* at 6-7 (TKH-SCS&T00002077-2078).

³¹ *Id.* at 7 (TKH-SCS&T00002078).

³² *Id.* at 7.

³³ This recall covered certain 2001 Honda Civics and Accords. Letter from William R. Willen, Managing Counsel, Product Regulatory Office, American Honda Motor Co., to Daniel C. Smith, Associate Administrator for Enforcement, National Highway Traffic Safety Administration (Nov. 11, 2008) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/ACM10641506/RCDNN-08V593-1511.pdf).

³⁴ Letter from Higuchi to Person, *supra* n. 23, at 8.

³⁵ *Id.* at 8-9 (TKH-SCS&T00002079-2080).

could leave the propellant “more susceptible to overly aggressive combustion.”³⁶ Takata also learned of additional malfunctions of inflators produced outside the range of the November 2008 recall.³⁷

Takata presented this information to Honda in June 2009 and recommended expanding the recall to include all vehicles containing propellant manufactured on the Stokes press through February 2001.³⁸ The following month, Honda announced its decision to recall approximately 440,000 vehicles in the U.S. due to a potential defect in driver-side airbags.³⁹ Takata explained to NHTSA that it did not provide any inflators that were the same or substantially similar to those covered by the two recalls to any auto manufacturer other than Honda.⁴⁰ Among the nine alleged incidents of rupturing inflators that occurred in 2009, all involving Honda vehicles, were two incidents in which the shrapnel from the airbag inflator appears to have killed the driver of the car.⁴¹

In November 2009, NHTSA opened an investigation related to Takata’s rupturing airbags.⁴² The agency explained that it needed “additional information from Honda and Takata to more fully evaluate the scope and timeliness” of the previous recalls.⁴³

The second Honda recall covered approximately 10,000 vehicles outside the range that Takata had identified as containing the potentially defective inflators – primarily inflators with propellant produced after February 28, 2001 – to allow Takata to assess whether the second recall addressed all potentially dangerous inflators.⁴⁴ Testing of these inflators determined that the density of some of the propellant that was manufactured outside the period covered by the existing recalls was also low.⁴⁵ In February 2010, Honda issued another recall, which expanded its second recall to include all vehicles with driver-side inflators containing propellant manufactured on the Stokes press.⁴⁶ In May 2010, NHTSA closed its investigation into rupturing Takata airbags after determining that Honda did not fail to make timely defect decisions and that the scope of the previous recalls was appropriate.⁴⁷

³⁶ National Highway Traffic Safety Administration, ODI Resume, Recall Query, Close Resume, RQ09-004 (Nov. 2, 2009 – May 6, 2010) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/ACM13978206/INCLA-RQ09004-5021.pdf).

³⁷ Letter from Higuchi to Person, *supra* n. 23, at 11 (TKH-SCS&T00002082).

³⁸ *Id.* at 11-12.

³⁹ This recall involved certain 2001 Honda Civics and Accords, certain 2002 Honda Accords, and certain 2002 Acura 3.2TLs. Letter from William R. Willen, Managing Counsel, Product Regulatory Office, American Honda Motor Co., to Daniel C. Smith, Associate Administrator for Enforcement, National Highway Traffic Safety Administration (July 29, 2009) (online at www.autosafety.org/sites/default/files/09V259%20Part%20573.pdf).

⁴⁰ Letter from Higuchi to Person, *supra* n. 23, at 2.

⁴¹ Takata Response to Senate Commerce Committee, Exhibit A (Dec. 12, 2014); Takata Response to Senate Commerce Committee, Exhibit B (Mar. 27, 2015).

⁴² National Highway Traffic Safety Administration, ODI Resume, Recall Query, Opening Resume, RQ09-004 (Nov. 2, 2009).

⁴³ *Id.*

⁴⁴ Letter from Higuchi to Person, *supra* n. 23, at 12.

⁴⁵ Letter from Higuchi to Person, *supra* n. 23, at 12 (TKH-SCS&T00002083).

⁴⁶ Letter from Higuchi to Person, *supra* n. 23, at 13.

⁴⁷ NHTSA, Close Resume, RQ09-004, *supra* n. 36.

In April 2011, Honda expanded its three previous recalls because it was unable to account for approximately 2,400 replacement inflators that may have been installed in vehicles covered by previous recalls.⁴⁸ To capture the entire population of vehicles in which these replacements could have been installed, Honda recalled 833,277 vehicles.⁴⁹ In December 2011, this recall was expanded to include an additional 272,779 vehicles.⁵⁰ Between 2011 and 2012, 16 additional alleged incidents occurred, although Takata may not have been aware of some of the incidents until years later.⁵¹

Between February and March 2013, Takata learned of two manufacturing problems affecting the propellant tablets within certain passenger-side airbag inflators.⁵² Takata explained that one manufacturing issue occurred at its Moses Lake, Washington plant between April 13, 2000, and September 11, 2002, where some propellant tablets may not have been adequately compressed because the auto-reject function on the machine that pressed the propellant into tablets had been turned off by the machine operator.⁵³ The other issue occurred at Takata's Monclova, Mexico plant between October 4, 2001, and October 31, 2002, where some propellant tablets may have been exposed to moisture.⁵⁴ Due to these manufacturing problems, Takata found that the propellant could potentially deteriorate, leading to over-aggressive combustion, which could cause the inflator to rupture.⁵⁵ At the time, Takata was aware of six ruptures – four in the U.S. and two in Japan.⁵⁶ Takata informed NHTSA in April 2013 that, based on these two manufacturing problems, a defect may exist in certain passenger-side airbag inflators in certain Honda, Toyota, Nissan, Mazda, GM, and BMW vehicles.⁵⁷ In light of Takata's defect report, most of these automakers issued recalls, but NHTSA did not reopen its investigation into rupturing Takata airbags.⁵⁸ In 2013, 18 additional alleged incidents occurred.⁵⁹

By May 2014, Takata was aware of six rupture incidents that occurred in vehicles in Florida and

⁴⁸ Letter from Jay Joseph, Senior Manager, Product Regulatory Office, American Honda Motor Co., Inc., to Claude Harris, Acting Administrator for Enforcement, National Highway Traffic Safety Administration (Apr. 27, 2011) (online at www.autosafety.org/sites/default/files/imce_staff_uploads/Honda%20Airbag%2011V-260.pdf).

⁴⁹ *Id.*

⁵⁰ Letter from Jay Joseph, Senior Manager, Product Regulatory Office, American Honda Motor Co., Inc., to Nancy Lewis, Acting Administrator for Enforcement, National Highway Traffic Safety Administration (Dec. 1, 2011) (online at www.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/ACM19786131/RCDNN-11V260-5849.pdf).

⁵¹ Takata Response to Senate Commerce Committee, Exhibit A (Dec. 12, 2014); Takata Response to Senate Commerce Committee, Exhibit B (Mar. 27, 2015).

⁵² Letter from Kazuo Higuchi, Senior Vice President, TK Holdings, Inc., to Nancy Lewis, Associate Administrator of Enforcement, National Highway Traffic Safety Administration (Apr. 11, 2013) (online at www.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM436445/RCDNN-13E017-5589.pdf).

⁵³ *Id.* An “auto-reject” function can “detect and reject propellant wafers with inadequate compression by monitoring the compression load that had been applied.” *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ Honda, Toyota, Nissan, Mazda, and BMW issued recalls. See *Timeline - Takata Air Bag Recalls*, Reuters (Nov. 25, 2014).

⁵⁹ Takata Response to Senate Commerce Committee, Exhibit A (Dec. 12, 2014); Takata Response to Senate Commerce Committee, Exhibit B (Mar. 27, 2015).

Puerto Rico that were not covered by previous recalls.⁶⁰ In June 2014, Takata notified automakers that some of its traceability records were incomplete, meaning Takata “could not identify with absolute certainty the propellant lots from which the propellant wafers in a specific inflator were taken.”⁶¹ As a result, it was possible that propellant wafers had been stored at the Monclova plant for up to three months before being used in inflators.⁶² Based on these conclusions, Takata recommended expanding the recall of vehicles with certain passenger-side airbag inflators, which led five automakers to expand their 2013 recalls and one automaker to issue a new recall.⁶³

Also in June 2014, officials from NHTSA’s Office of Defects Investigation (ODI) requested that Takata support field actions – essentially regional recalls – of suspect inflators in vehicles registered in humid areas.⁶⁴ Even though, according to Takata, there was no evidence identifying a particular safety defect in inflators not recalled at the time, Takata agreed to support the requested regional recalls of driver-side and passenger-side airbag inflators in vehicles in Florida, Puerto Rico, Hawaii, and the Virgin Islands.⁶⁵ Takata identified that certain Honda, Toyota, Nissan, Mazda, Ford, Chrysler, and BMW vehicles contained the inflators.⁶⁶ Later that month, Takata determined that certain Subaru and Mitsubishi vehicles also contained the suspect inflators, increasing the number of automakers impacted by the potential defect to nine.⁶⁷

On June 11, 2014, after receiving complaints of three Takata airbag ruptures⁶⁸ – and then learning from Takata of three additional ruptures⁶⁹ – NHTSA’s ODI opened an investigation “in order to collect all known facts from the supplier and the vehicle manufacturers that it believes may have manufactured vehicles equipped with inflators produced during the same period as those that have demonstrated rupture events.”⁷⁰ Because all six incidents occurred in the high absolute humidity climates of Florida and Puerto Rico, Takata theorized that humidity, in conjunction with potential

⁶⁰ Letter from Mike Rains, Government Affairs Specialist, TK Holdings, Inc., to Frank Borris, Director, Office of Defects Investigation, National Highway Traffic Safety Administration (June 11, 2014) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM457251/INLE-PE14016-59600.pdf).

⁶¹ TK Holdings Inc., Defect Information Report, SPI Passenger Air Bag Inflators (May 18, 2015) at 4.

⁶² *Id.*

⁶³ *Id.* The automakers who expanded existing recalls include Toyota, Honda, Nissan, Mazda, and BMW; Subaru issued a new recall.

⁶⁴ Letter from Rains to Borris, *supra* n. 60.

⁶⁵ *Id.* Takata agreed to support regional recalls replacing driver-side airbags manufactured between January 1, 2004, and June 30, 2007, and passenger-side airbags manufactured between June 2000 and July 31, 2004.

⁶⁶ *Id.*

⁶⁷ Letter from Mike Rains, Government Affairs Specialist, TK Holdings, Inc., to Frank Borris, Director, Office of Defects Investigation, National Highway Traffic Safety Administration (June 25, 2014) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM457659/INLE-PE14016-59647.pdf).

⁶⁸ The three ruptures include a driver-side airbag rupture in a 2005 Honda Civic (report received Aug. 2013), a passenger-side airbag rupture in a 2003 Toyota Corolla (report received Mar. 2014), and a driver-side airbag rupture in a 2005 Mazda 6 (report received Apr. 2014). National Highway Traffic Safety Administration, ODI Resume Investigation: PE 14-016 (June 11, 2014) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM456824/INOA-PE14016-9724.PDF).

⁶⁹ *Id.* The three rupture incidents occurred in the following: a passenger-side airbag in a 2004 Nissan Sentra; a driver-side airbag in a 2006 Dodge Charger; and a passenger-side airbag in a 2002 Toyota Corolla.

⁷⁰ *Id.*

manufacturing issues, might influence the stability of the propellant as it ages and thus contribute to the possibility of a rupture.⁷¹

On October 22, 2014, NHTSA released a consumer advisory urging owners of certain vehicle models made by the now ten affected automakers to respond to recall notices, some sent out 18 months prior, and act immediately to replace defective Takata airbags.⁷² The advisory noted that, from 2013 to 2014, approximately 7.8 million vehicles were recalled as a result of faulty Takata airbags.⁷³ David Friedman, NHTSA Deputy Administrator, stated, "Responding to these recalls, whether old or new, is essential to personal safety and it will help aid our ongoing investigation into Takata airbags and what appears to be a problem related to extended exposure to consistently high humidity and temperatures."⁷⁴

On October 29, 2014, Deputy Administrator Friedman sent letters to the ten affected automakers urging them to "take aggressive and proactive action to expedite [their] remedy of the recalled vehicles and to supplement Takata's testing with [their] own."⁷⁵ He also asked for information on the steps the automakers were taking to expedite production of replacements, including by obtaining additional airbag suppliers, urging and incentivizing dealers to repair vehicles, and encouraging consumers to bring in vehicles for repair.⁷⁶

The next day, NHTSA issued a Special Order to Takata demanding information on the defective airbags.⁷⁷ The Special Order listed 36 requests, which covered documents that refer to manufacturing conditions and process changes, communications between Takata and its rivals as well as its customers, and a list of known deaths and injuries. The Special Order also requested documents cited in an October 17, 2014, *Reuters* article, including a March 2011 email from Takata supervisor Guillermo Apud with the subject "Defectos y defectos y defectos!!!!"⁷⁸

On November 18, 2014, NHTSA called for a national recall of certain driver-side airbags after learning of a rupture incident in a vehicle outside the existing regional recalls.⁷⁹ NHTSA also issued a

⁷¹ Letter from Rains to Borris, *supra* n. 60.

⁷² NHTSA originally issued an alert on October 20, 2014, but this alert included erroneous entries of vehicle models. NHTSA released an updated consumer advisory on October 22, 2014. National Highway Traffic Safety Administration, *Consumer Advisory: Vehicle Owners with Defective Airbags Urged to Take Immediate Action* (Oct. 22, 2014) (online at www.nhtsa.gov/About+NHTSA/Press+Releases/Vehicle-owners-with-defective-airbags-urged-to-take-immediate-action). See also *NHTSA Releases Updated Takata Airbag Recalled Cars List, But It Still Has Errors*, AutoBlog (Oct. 22, 2014).

⁷³ *Consumer Advisory: Vehicle Owners with Defective Airbags Urged to Take Immediate Action*, *supra* n. 72. Auto manufactures covered under the recalls include Toyota, Honda, Mazda, BMW, Nissan, Mitsubishi, Subaru, Chrysler, Ford and General Motors.

⁷⁴ *Id.*

⁷⁵ See e.g., Letter from David J. Friedman, Deputy Administrator, National Highway Traffic Safety Administration to Jay Joseph, Assistant Vice President, American Honda Motor Co. (Oct. 29, 2014) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM465685/INIM-PE14016-14351.pdf).

⁷⁶ *Id.*

⁷⁷ National Highway Traffic Safety Administration, Special Order Directed to TK Holdings, Inc. (Oct. 30, 2014) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM465855/INLM-PE14016-60576.pdf). A Special Order is issued pursuant to 49 U.S.C. § 30166(g). It is equivalent to a subpoena and requires that the response be signed under oath by a responsible officer of the company.

⁷⁸ *Id.* See also *U.S. Regulator to Takata: Give Us Faulty Air-Bag Documents*, *Reuters* (Oct. 30, 2014).

⁷⁹ National Highway Traffic Safety Administration, *USDOT Calls for National Recall of Defective Takata Driver Side Air*

General Order to Takata and the ten affected automakers demanding a detailed report and production of documents related to the testing of Takata inflators outside the regional recall areas.⁸⁰ NHTSA also issued a second Special Order to Takata, which compelled the company to provide documents and information related to the propellant within its inflators.⁸¹ NHTSA's press release acknowledged Takata's public concession that it had changed the chemical mix of its propellant in newly-designed inflators.⁸² Honda agreed to expand its recalls and replace defective inflators nationwide.⁸³

On November 21, 2014, the Senate Commerce Committee held a hearing to examine the Takata airbag defects and the recall process.⁸⁴ Hiroshi Shimizu, Senior Vice President of Global Quality Assurance, testified on behalf of Takata and apologized for the injuries and deaths caused by rupturing Takata airbags. At the hearing, Mr. Shimizu was unable to provide answers to important questions, including questions regarding the chemical compounds used in Takata's airbags and the current production and safety testing of replacement airbags.⁸⁵ Because Mr. Shimizu's testimony left so many questions unanswered, then Chairman Rockefeller and Senator Nelson sent a letter to Takata requesting documents and information regarding the company's defective airbags.⁸⁶

On November 26, 2014, NHTSA sent Takata a Recall Request Letter formally demanding that Takata acknowledge the existence of a defect and issue a national recall for certain driver-side airbag inflators.⁸⁷ Based on reports of ruptures outside the geographic areas covered under the regional recalls, NHTSA believed that an "unreasonable risk posed by subject driver's side airbag inflators may exist outside of the areas with high absolute humidity and therefore would not be mitigated by the current regional recall."⁸⁸ On December 2, 2014, Takata responded to NHTSA's Recall Request Letter stating that it firmly believed that the data and currently available information did not support a nationwide recall.⁸⁹

Bags (Nov. 18, 2014) (online at www.nhtsa.gov/About+NHTSA/Press+Releases/DOT-calls-for-national-recall-of-takata-driver-air-bags).

⁸⁰ National Highway Traffic Safety Administration, General Order Directed to Manufacturers, PE14-016 Air Bag Inflator Rupture (Nov. 18, 2014).

⁸¹ National Highway Traffic Safety Administration, Second Special Order Directed to TK Holdings, Inc., PE14-016 (Nov. 18, 2014).

⁸² *USDOT Calls for National Recall of Defective Takata Driver Side Air Bags*, *supra* n. 79.

⁸³ *Honda to Replace Airbags Throughout U.S.*, New York Times (Nov. 18, 2014).

⁸⁴ Senate Committee on Commerce, Science, and Transportation, *Examining Takata Airbag Defects and the Vehicle Recall Process*, 113th Cong. (2014).

⁸⁵ *Id.* See also *Frustrated Senators Blast Takata, Signal More Safety Legislation*, Automotive News (Nov. 23, 2014).

⁸⁶ Letter from Chairman John D. Rockefeller, IV and Senator Bill Nelson to Shigehisa Takada, Chairman and Chief Executive Officer, Takata Corporation (Nov. 24, 2014).

⁸⁷ Letter from Frank S. Borris II, Director, Office of Defects Investigation, National Highway Traffic Safety Administration, to Kazuo Higuchi, Senior Vice President, TK Holdings, Inc. (Nov. 26, 2014) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM467335/INRM-PE14016-60978.pdf).

⁸⁸ *Id.* at 3.

⁸⁹ Letter from Mike Rains, Director of Product Safety, TK Holdings Inc., to Frank Borris, Director, Office of Defects Investigation, National Highway Traffic Safety Administration (Dec. 2, 2014) (online at www.autosafety.org/sites/default/files/imce_staff_uploads/Takata's%20Dec%20%20%20response%20to%20NHTSA's%20Nov%20%2026%20RRL.pdf).

By December 2014, more than 11 million vehicles in the U.S. had been recalled, and five deaths were linked to the defective Takata airbags.⁹⁰ In addition to Honda, four auto manufacturers responded to the pressure from NHTSA to expand their Takata airbag-related recalls nationwide.⁹¹

Also in the same month, the automakers affected by the Takata airbag recalls formed a consortium to conduct an independent investigation into the root cause of the airbag ruptures. The consortium's ten members include Honda, Toyota, Fiat-Chrysler, BMW, Mazda, Ford, Subaru, Mitsubishi, General Motors, and Nissan.⁹² In February 2015, the group of automakers appointed former NHTSA Acting Administrator David Kelly as the project manager and coordinator and selected aerospace and defense technology company Orbital ATK to lead the review and testing of Takata inflators.⁹³ The automakers hope that this industry-wide testing initiative will supplement Takata's own testing and provide answers to questions surrounding the defective airbags.⁹⁴

In February 2015, NHTSA announced a \$14,000 per day fine against Takata for failing to fully respond to NHTSA's Special Orders regarding Takata's defective airbags.⁹⁵ According to NHTSA, Takata was not "being forthcoming with the information that it is legally obligated to supply" as well as not being "cooperative in aiding NHTSA's ongoing investigation of a potentially serious safety defect."⁹⁶ NHTSA also warned Takata that an incomplete response to the Special Orders and civil penalties could be referred to the Department of Justice, which could take action in federal court to compel Takata to fully respond.⁹⁷ Takata responded by stating that the company had provided the agency with almost 2.5 million pages of documents and that it strongly disagreed with NHTSA's characterization of the company's cooperation.⁹⁸

On February 25, 2015, NHTSA issued a Preservation Order requiring Takata to preserve inflators recovered from recalled vehicles.⁹⁹ According to the Order, Takata is prohibited from destroying or damaging recovered inflators except for testing purposes and is required to implement a

⁹⁰ *Honda to Expand Airbag Recall Nationwide as Takata Resists*, New York Times (Dec. 3, 2014).

⁹¹ Honda, Mazda, BMW, Chrysler, and Ford expanded their recalls. *See Id.*; *Mazda Says U.S. Recalls Over Takata Air Bags to be Expanded Nationwide*, Reuters (Dec. 9, 2014); *BMW Joins in Expansion of Takata Airbag Recalls*, New York Times (Dec. 22, 2014); *Chrysler Recalls 2.9 Million U.S. Vehicles with Takata Airbags, Car and Driver* (Dec. 19, 2014); *Ford Recall of Takata Airbags to Extend Nationwide*, New York Times (Dec. 18, 2014).

⁹² *Automakers Choose Aerospace Firm to Run Takata Airbag Tests*, Automotive News (Feb. 26, 2015).

⁹³ *Automakers Select Orbital ATK to Lead Independent Review of Takata Airbag Inflators*, Reuters (Feb. 26, 2015).

⁹⁴ *Id.*

⁹⁵ Each Special Order is subject to a civil penalty of \$7,000 per day. Because, according to NHTSA, Takata was in violation of two Orders, it was fined \$14,000 per day. *See* 49 U.S.C. § 30165(a)(3); 49 C.F.R. § 578.6(a)(3). Letter from O. Kevin Vincent, Chief Counsel, National Highway Traffic Safety Administration, to Steven G. Bradbury, Counsel, Takata, Re: Failure to Fully Respond to Special Orders in NHTSA's Investigation in PE14-016, Takata Airbag Inflator Rupture (Feb. 20, 2015) (online at www.nhtsa.gov/staticfiles/communications/pdf/Takata-civil-penalty-demand-02202015.pdf); *see also* *NHTSA to Fine Takata \$14K a Day for Failing to 'Fully Cooperate' in Airbag Probe*, Automotive News (Feb. 20, 2015).

⁹⁶ Letter from Vincent to Bradbury, *supra* n. 95.

⁹⁷ *Id.*

⁹⁸ *Takata Responds to U.S. DOT and NHTSA Statements*, Business Wire (Feb. 20, 2015).

⁹⁹ National Highway Traffic Safety Administration, *U.S. Transportation Secretary Foxx Announces Order to Preserve Defective Takata Air Bag Inflators for Ongoing Federal Investigation* (Feb. 25, 2015) (online at www.nhtsa.gov/About+NHTSA/Press+Releases/2015/takata-ordered-to-preserve-defective-air-bag-inflators).

control plan for the “inspection, testing, or analysis of those inflators.”¹⁰⁰ Takata is also required to set aside ten percent of the inflators for private plaintiffs and must submit a protocol for third-party testing.¹⁰¹ NHTSA will have access to all testing data from Takata, as well as all other independent testing data, while also reserving the right to collect inflators for its own testing.¹⁰² In conjunction with announcing the Order, Secretary of Transportation Anthony Foxx revealed that NHTSA upgraded its investigation to an Engineering Analysis, a formal step in the defect investigation process which signals a belief in the existence of a safety defect.¹⁰³

On April 23, 2015, NHTSA published the Protocol submitted by Takata, as demanded by the Preservation Order, to “establish a framework under which the ten vehicle manufacturers[,] ... private parties to civil litigation, or a consortium of the [automakers] or private parties may apply for and potentially receive Takata inflators for testing provided they satisfy certain legal and safety requirements.”¹⁰⁴ Under the Protocol, automakers or private plaintiffs must submit an application that identifies the number of requested inflators and, if the applicant desires a specific category of inflators, also identifies the inflators by type, automaker, state from which the inflators were obtained, and vehicle year and model. Takata will then determine whether it has a sufficient supply of inflators in the relevant classification to fulfill the request. If a request will cause Takata’s supply of inflators within a classification to fall below a specified minimum,¹⁰⁵ Takata will deny or modify the request, unless the party making the request has written approval from NHTSA to receive the inflators.¹⁰⁶

On May 13, 2015, Toyota announced the recall of approximately 637,000 vehicles in the U.S., and Nissan announced the recall of approximately 263,000 vehicles in the U.S.¹⁰⁷ According to Toyota’s Defect Information Report (DIR) filed with NHTSA, Toyota tested recovered recalled inflators and found that there was “insufficient air sealing at the initiator seal ring” in some of the inflators.¹⁰⁸ Because the inflators were not airtight, moisture could potentially intrude over time.¹⁰⁹

¹⁰⁰ National Highway Traffic Safety Administration, Preservation Order and Testing Control Plan (Feb. 25, 2010) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM477397/INOT-EA15001-1908.pdf).

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *U.S. Orders Takata to Preserve Evidence in Air-Bag Probes*, Bloomberg (Feb. 25, 2015).

¹⁰⁴ Takata, Protocol Under NHTSA Preservation Order (Apr. 23, 2015) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM477398/INOT-EA15001-1909.pdf).

¹⁰⁵ *Id.* The Protocol explains that Takata will not provide inflators for testing if fulfilling the request “would reduce the number of inflators that have been set aside in any classification below 70 percent of the number of inflators then remaining in the relevant set-aside at the time the request is fulfilled.”

¹⁰⁶ *Id.*

¹⁰⁷ See Toyota, Part 573 Safety Recall Report 15V-286 (May 13, 2015) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM478670/RCLRPT-15V286-6231.PDF); Toyota, Part 573 Safety Recall Report 15V-285 (May 13, 2015) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM478665/RCLRPT-15V285-2813.PDF); Toyota, Defect Information Report 15V-284 (May 13, 2015) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM478820/RCORRD-15V284-0712.pdf); Nissan, Defect Information Report 15V-287 (May 14, 2015) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM479142/RCORRD-15V287-3274.pdf).

¹⁰⁸ Toyota, Defect Information Report 15V-284, *supra* n. 107.

¹⁰⁹ *Toyota and Nissan Recall 6.5 Million More Vehicles Over Takata Airbags*, New York Times (May 14, 2015).

On May 18, 2015, Takata filed four DIRs with NHTSA and entered into a Consent Order.¹¹⁰ The DIRs estimated that more than 17 million driver-side inflators and more than 16 million passenger-side inflators have been installed in vehicles in the U.S. as both original and remedy parts.¹¹¹ In the DIRs, Takata explained “that a defect related to motor vehicle safety may arise in some of the subject inflators.”¹¹² Takata’s explanation of the defect in one type of passenger-side airbag inflator states as follows:

The propellant wafers in some of the subject inflators may experience an alteration over time, which could potentially lead to over-aggressive combustion in the event of an air bag deployment. Depending on the circumstances, this potential condition could create excessive internal pressure when the air bag is deployed, which could result in the body of the inflator rupturing upon deployment. Based upon Takata’s investigation to date, the potential for such ruptures may occur in some of the subject inflators after several years of exposure to persistent conditions of high absolute humidity. In addition, Takata’s test results and investigation indicate that this potential for rupturing may also depend on other factors, including vehicle design factors and manufacturing variability. . . . In the event of an inflator rupture, metal fragments could pass through the air bag cushion material, which may result in injury or death to vehicle occupants.¹¹³

In addition, in certain passenger-side airbag inflators, Takata is aware of an issue with the inflators’ tape seals, which could allow leaks that increase the potential for moisture to seep into the inflators.¹¹⁴

The DIRs also reveal Takata’s preliminary conclusions from testing and investigation conducted by Takata and an independent research firm, Fraunhofer ICT. Based on testing thus far, Takata has reached some preliminary conclusions:

It appears that the inflator ruptures have a multi-factor root cause that includes the slow-acting effects of a persistent and long term exposure to climates with high temperatures and high absolute humidity. Exposure over a period of several years to persistent levels of high absolute humidity outside the inflator, combined with the effects of thermal cycling, may lead to moisture intrusion in some inflators by means of diffusion or permeation. Fraunhofer ICT has identified

¹¹⁰ National Highway Traffic Safety Administration, Consent Order, EA15-001 Air Bag Inflator Rupture (May 18, 2015) (online at www.safercar.gov/staticfiles/safercar/recalls/consent-order-takata-05182015.pdf).

¹¹¹ National Highway Traffic Safety Administration, *Department of Transportation Announces Steps to Address Takata Airbag Defects* (May 19, 2015). The driver-side airbag inflator DIR notes that the defect potentially affects 17.6 million inflators. TK Holdings Inc., Defect Information Report PSDI, PSDI-4, and PSDI-4K, *supra* n. 12, at 2. The DIRs for passenger-side airbag inflators note that 16.2 million inflators may be affected by the defect. TK Holdings Inc., Defect Information Report SPI, *supra* n. 61, at 2 (7.7 million); TK Holdings Inc., Defect Information Report PSPI-L Passenger Air Bag Inflators (May 18, 2015) at 2 (5.2 million); TK Holdings Inc., Defect Information Report PSPI Passenger Air Bag Inflators, at 1 (3.3 million).

¹¹² TK Holdings Inc., Defect Information Report SPI, *supra* n. 61, at 3. Takata’s three other DIRs offer a similar explanation of the defect. *See also* TK Holdings Inc., Defect Information Report PSDI, PSDI-4, and PSDI-4K, *supra* n. 12, at 3; TK Holdings Inc., Defect Information Report PSPI-L, *supra* n. 111, at 2; TK Holdings Inc., Defect Information Report PSPI *supra* n. 111, at 2.

¹¹³ TK Holdings Inc., Defect Information Report SPI, *supra* n. 61, at 3. *See also* TK Holdings Inc., Defect Information Report PSDI, PSDI-4, and PSDI-4K, *supra* n. 12, at 3; TK Holdings Inc., Defect Information Report PSPI-L, *supra* n. 111, at 2; TK Holdings Inc., Defect Information Report PSPI, *supra* n. 111, at 2.

¹¹⁴ TK Holdings Inc., Defect Information Report SPI, *supra* n. 61, at 3.

the possibility in these climates for moisture intrusion into the inflator over time and a process by which the moisture may slowly increase the porosity of the propellant within the inflator. Fraunhofer ICT's analysis also indicates that the design of the inflator and the grain (shape) of the propellant can affect the likelihood that the porosity change will occur, as can manufacturing variability. The results of the Fraunhofer ICT research to date are consistent with the geographic location and age of the inflators that have ruptured in the field and in Takata's testing. Takata's testing also indicates that the design of the vehicle and the design of the air bag module are associated with differences in outcomes.¹¹⁵

Takata's DIRs describe prioritizing the replacement of defective inflators in four phases, generally based upon the risk that exists as a result of geographic location and age of the inflators.¹¹⁶ In addition, pursuant to the Consent Order, Takata plans to continue its testing of the defective inflators.¹¹⁷ Under the Consent Order, NHTSA's investigation will remain open and may involve meeting with Takata employees, conducting depositions of Takata employees, requesting information, and reviewing all test results and data.¹¹⁸ The Order also explains that NHTSA will not be seeking civil penalties beyond those that are applicable before May 18, 2015.¹¹⁹

On May 19, 2015, NHTSA announced the events of the previous day, including the expansion of the number of vehicles to be recalled due to defective Takata airbag inflators.¹²⁰ According to NHTSA, the recalls include nearly 34 million vehicles, potentially becoming the largest recall of any consumer product in U.S. history.¹²¹ However, according to news reports, the number of vehicles affected may be less than half the approximately 34 million initially estimated by NHTSA.¹²²

To prioritize and organize the various auto manufacturers' recalls, on May 22, 2015, NHTSA filed a notice of intent to open a coordinated remedy program for the replacement of defective Takata airbag inflators.¹²³ The goal of the notice is to consider whether – and, if so, how – NHTSA will exercise its authority to organize and prioritize the recall and remedy programs. Specifically, as part of this proceeding, NHTSA requests comments on how to order sourcing of the replacement inflators,

¹¹⁵ TK Holdings Inc., Defect Information Report SPI, *supra* n. 61, at 6. *See also* TK Holdings Inc., Defect Information Report PSDI, PSDI-4, and PSDI-4K, *supra* n. 12, at 4-5; TK Holdings Inc., Defect Information Report PSPI-L, *supra* n. 111, at 5; TK Holdings Inc., Defect Information Report PSPI, *supra* n. 111, at 4-5.

¹¹⁶ *See* TK Holdings Inc., Defect Information Report PSDI, PSDI-4, and PSDI-4K, *supra* n. 12, at 5; TK Holdings Inc., Defect Information Report SPI, *supra* n. 61, at 7; TK Holdings Inc., Defect Information Report PSPI-L, *supra* n. 111, at 5-6; TK Holdings Inc., Defect Information Report PSPI, *supra* n. 111, at 5-6.

¹¹⁷ TK Holdings Inc., Defect Information Report PSPI-L, *supra* n. 111, at 5.

¹¹⁸ National Highway Traffic Safety Administration, Consent Order, EA15-001 Air Bag Inflator Rupture (May 18, 2015) at 3-4.

¹¹⁹ *Id.* at 3.

¹²⁰ National Highway Traffic Safety Administration, *Department of Transportation Announces Steps to Address Takata Airbag Defects* (May 19, 2015) (online at www.nhtsa.gov/About+NHTSA/Press+Releases/DOT-action-on-takata-air-bag-defects).

¹²¹ *Id.* *See also* *Flawed Takata Air Bags in 34 Million Vehicles Lead to Biggest Recall in History*, Washington Post (May 19, 2015).

¹²² *Exclusive: Confusion Clouds Count of Cars Hit by Takata Air Bag Recall*, Reuters (June 10, 2015).

¹²³ National Highway Traffic Safety Administration, *Notice of Intent to Open a Coordinated Remedy Program Proceeding for the Replacement of Certain Takata Air Bag Inflators*, 80 Fed. Reg. 29791 (May 22, 2015) (Notice) (online at www.federalregister.gov/a/2015-12449).

whether NHTSA should order the manufacturers to prioritize certain regions or vehicles, and whether NHTSA should order re-replacements for replacement inflators if Takata cannot demonstrate that its replacements are safe.¹²⁴

On June 1, 2015, Honda announced a recall of driver-side airbag inflators in approximately 5.1 million vehicles, including 10 different Honda and Acura models.¹²⁵ The recall covered inflators that were installed at the time of manufacture as well as replacement inflators that had been installed as part of prior recalls of Takata inflators.¹²⁶

On June 5, 2015, NHTSA published a Notice of Coordinated Remedy Program Proceeding for the Replacement of Certain Takata Air Bag Inflators in the Federal Register.¹²⁷ NHTSA explained that the agency is “considering issuing one or more administrative orders that would coordinate remedy programs associated with defective Takata air bag inflators.”¹²⁸ Coordination of the remedy programs could include acceleration, prioritization, organization, and/or phasing of the remedy programs.¹²⁹

According to Takata’s responses to the Committee, as of the end of January 2015, Takata’s defective airbags had allegedly caused over 100 injuries and six deaths, with many of these alleged incidents occurring in Florida, followed by Puerto Rico, Texas, and California.¹³⁰ In addition, on June 12, 2015, Honda confirmed a seventh death resulting from a Takata airbag that ruptured in a 2005 Honda Civic on April 5, 2015, in Lafayette, Louisiana.¹³¹ Most recently, on June 19, 2015, Honda confirmed an eighth death, which occurred in September 2014 as a result of a rupturing airbag in a rented 2001 Honda Civic in Los Angeles.¹³² In Takata’s recent filings with NHTSA, the company reported 84 known rupture incidents.¹³³

¹²⁴ *Id.*

¹²⁵ Honda, Part 573 Safety Recall Report 15V-320 (June 1, 2015) (online at www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM479494/RCLRPT-15V320-0154.PDF).

¹²⁶ *Id.*

¹²⁷ National Highway Traffic Safety Administration, *Notice of Coordinated Remedy Program Proceeding for the Replacement of Certain Takata Air Bag Inflators*, 80 Fed. Reg. 32197 (June 5, 2015) (online at www.federalregister.gov/a/2015-13756).

¹²⁸ *Id.*

¹²⁹ *Id.*

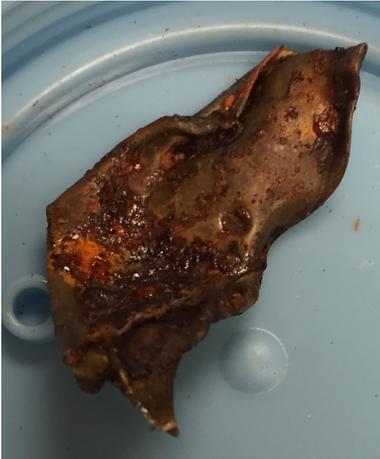
¹³⁰ Takata Response to Senate Commerce Committee, Exhibit A (Dec. 12, 2014); Takata Response to Senate Commerce Committee, Exhibit B (Mar. 27, 2015).

¹³¹ *Honda Confirms 7th Death from Takata Airbags*, Automotive News (June 12, 2015); Statement from American Honda Motor Co., Inc., *Confirmed Fatality Related to the Rupture of a Takata Airbag Inflator in Lafayette, Louisiana* (June 12, 2015).

¹³² *Honda Reports Eighth Death From Exploding Takata Air Bags*, Associated Press (June 19, 2015); Statement from American Honda Motor Co., Inc., *Re: Confirmed Fatality Related to the Rupture of a Takata Airbag Inflator in Los Angeles, CA on September 7, 2014* (June 19, 2015).

¹³³ TK Holdings Inc., Defect Information Report SPI, *supra* n. 61; TK Holdings Inc., Defect Information Report PSDI, PSDI-4, and PSDI-4K, *supra* n. 12; TK Holdings Inc., Defect Information Report PSPI-L, *supra* n. 111; and TK Holdings Inc., Defect Information Report PSPI, *supra* n. 111.

FIGURE II: PIECE OF METAL SHRAPNEL FROM A TAKATA AIRBAG¹³⁴



Piece of metal shrapnel recovered from the neck of a Florida resident after the airbag ruptured in his 2003 Honda Civic on March 20, 2015.

FIGURE III: AIRBAG CUSHION WITH HOLES CAUSED BY SHRAPNEL¹³⁵



III. Media Reports and Takata's Internal Documents Raise Questions Regarding the Company's Knowledge of Serious Safety and Quality Control Issues as Early as 2001

Media reports and internal Takata documents reviewed by Committee minority staff, including audit and engineering reports, internal presentations, and emails, raise questions regarding Takata's commitment to ensuring the highest standards of quality controls. A *Reuters* investigation suggests that quality issues date back to 2001, when engineers in Takata's Monclova, Mexico facility identified a range of problems that included rust and faulty inflator welding, which they said could have caused

¹³⁴ Law Office of Jason Turchin (online at www.floridapersonalinjuryattorneysblog.com/2015/04/2003-honda-civic-airbag-rupture-victim-retains-airbag-attorney-jason-turchin.html).

¹³⁵ Images provided to the Committee minority staff by Jason Turchin, Esq.

inflators to fail.¹³⁶ In 2002, the plant tracked 60 to 80 defects per one million inflators shipped by Takata, which is six to eight times above the company's quality control limit, according to an internal presentation.¹³⁷

A *New York Times* review of internal Takata documents, emails, photos, videos, and regulatory filings uncovered instances of employees raising concerns that transportation mishaps were resulting in the delivery of wet or damaged airbag units to car manufacturers.¹³⁸ One manager wrote an email to colleagues in which he complained that quality checks that existed to ensure the inflators stayed dry, such as hosing down trucks to check for leaks, were being ignored.¹³⁹ "The whole situation makes me sick," he wrote.¹⁴⁰ In addition, footage from closed-circuit television showed forklifts dropping stacks of airbag inflators, which at times were not properly examined to ensure they were not damaged, according to former quality-control managers.¹⁴¹ In 2005, a U.S. consulting firm found a pattern of bad welding, and, according to engineering presentations, on at least three occasions between 2005 and 2006, Takata engineers identified leaks in inflators made in Monclova.¹⁴²

According to a *Reuters* report based on interviews with 21 current and former Takata employees and consultants, managers within Takata raised concerns that workers were breaking quality rules to increase the output of inflators.¹⁴³ Employees also expressed concerns over the pressures placed on them by managers.¹⁴⁴ For example, Alejandro Perez, a former Takata facility manager, told *Reuters* the pressure to restart and make up for lost production after a March 2006 explosion at the Monclova plant was unrelenting, particularly from managers based in the U.S. who had been flown to Mexico.¹⁴⁵

Takata workers also explained that employees were encouraged to meet certain quotas of inflators.¹⁴⁶ "If you didn't make it, you would be behind and they wouldn't pay you a productivity bonus," according to Jose Sanchez, a former Takata employee who made inflators from 2004 to 2010.¹⁴⁷ Workers at Takata's Moses Lake plant, which also manufactured inflators, told a similar story of managers who emphasized output quotas, especially as demand for cars and SUVs grew.¹⁴⁸ Two former quality control managers at Takata's main distribution center in Texas told the *New York Times* that a series of quality problems were encountered as Takata tried to fulfill the increasing demand for its airbags.¹⁴⁹

¹³⁶ *Takata Engineers Struggled to Maintain Air Bag Quality, Documents Reveal*, Reuters (Oct. 17, 2014).

¹³⁷ *Id.*

¹³⁸ *Takata Saw and Hid Risk in Airbags in 2004, Former Workers Say*, *supra* n. 1.

¹³⁹ *Id.*

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² *Takata Engineers Struggled to Maintain Air Bag Quality, Documents Reveal*, *supra* n. 136.

¹⁴³ *Special Report: Plant with Troubled Past at Center of Takata Air Bag Probe*, Reuters (Nov. 20, 2014).

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Takata Saw and Hid Risk in Airbags in 2004, Former Workers Say*, *supra* n. 1.

Production facilities would resist taking back potentially damaged or wet inflators as Takata struggled to meet this increased demand.¹⁵⁰ As automakers cut costs by implementing “just-in-time” production, meaning parts were only to arrive at assembly plants on an as-needed basis, pressure was placed on Takata to meet tight delivery schedules.¹⁵¹ Workers were told that if an automaker was forced to delay production due to a late shipment, the parts supplier would be fined tens of thousands of dollars for every minute of lost production.¹⁵² “That put a lot of pressure and incentive on us to never miss a shipment,” one of the former managers told the *New York Times*.¹⁵³ “I’d argue, ‘what if my daughter bought the car with the bad airbag?’ But the plant would tell us, ‘Just ship it.’”¹⁵⁴

In April 2009, engineers reportedly scrambled to fix a flaw in a machine in Monclova that pressed the propellant into tablets.¹⁵⁵ According to a June 2009 internal presentation reviewed by the *New York Times*, “inflators tested from multiple propellant lots showed aggressive ballistics.”¹⁵⁶ In March 2011 – after three Takata airbag recalls had already been issued by one automaker¹⁵⁷ – Guillermo Apud, a supervisor at the Monclova plant, sent an email with the subject “Defectos y defectos y defectos!!!!”¹⁵⁸

In the full email, which was reviewed by Committee minority staff, Mr. Apud explained that an automaker had reported receiving an improperly welded inflator and that 38 complete inflators had to be thrown out that day due to incorrect assembly.¹⁵⁹ He wrote, “We cannot be faced with findings / defects of this sort and NOT do ANYTHING”¹⁶⁰ and “A part that is not welded = one life less, which shows we are not fulfilling the mission.”¹⁶¹ A follow-up email from a Takata quality engineer¹⁶² reiterated Apud’s concerns: “We are in a very critical situation because of the most recent problems that we have detected on the line. Situations like this can give rise to a Recall.”¹⁶³ According to *Reuters*, after this incident, inspections at the plant were tightened.¹⁶⁴

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ National Highway Traffic Safety Administration, Recall 08V-593 (Nov. 14, 2008); National Highway Traffic Safety Administration, Recall 09V-259 (July 8, 2009); National Highway Traffic Safety Administration, Recall 10V-041 (Feb. 11, 2010).

¹⁵⁸ *Takata Engineers Struggled to Maintain Air Bag Quality, Documents Reveal, supra* n. 136.

¹⁵⁹ Takata Response to Senate Commerce Committee (Mar. 13, 2015) (TKH-SCS&T00045772_T0001).

¹⁶⁰ Takata Response to Senate Commerce Committee (Mar. 13, 2015) (TKH-SCS&T00045772_T0002).

¹⁶¹ *Takata Engineers Struggled to Maintain Air Bag Quality, Documents Reveal, supra* n. 136.

¹⁶² Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00011507).

¹⁶³ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00060737_T0002).

¹⁶⁴ *Takata Engineers Struggled to Maintain Air Bag Quality, Documents Reveal, supra* n. 136.

Nonetheless, according to media reports, serious lapses in quality control continued. In April 2011, Apud told fellow Takata supervisors that chewing gum had been found in an inflator, which he described as one of several “grave problems” in the Monclova plant’s inflator production.¹⁶⁵ The following month, Apud reprimanded employees for attempting to fix defective parts on the inflator assembly line – a practice Takata had prohibited in order to reduce the likelihood of faulty parts being shipped to automakers.¹⁶⁶ He wrote, “Rework on the line is PROHIBITED!!!!”¹⁶⁷ “We can’t have leaders/materials people/operators REWORKING material left and right without ANY control, this is why we have defect upon defect,” he continued.¹⁶⁸ “We need to change NOW!”¹⁶⁹

According to *Reuters*, in 2012, Takata workers in Monclova used the wrong parts when assembling inflators, according to documents Takata and automakers filed with NHTSA.¹⁷⁰ More than 350,000 vehicles from three automakers were later recalled due to that defect.¹⁷¹ According to the explanation Takata provided to regulators in Japan, the mistake was possible because parts bins were kept too close together.¹⁷²

Emails reviewed by Committee minority staff also indicate that – due to financial reasons – Takata’s global safety audits were halted from 2009 until 2011.¹⁷³ In a March 2011 email, a Takata senior vice president in charge of inflators¹⁷⁴ asked the global director of inflator and propellant safety¹⁷⁵ when he planned to audit inflator operations at the Monclova and Moses Lake plants.¹⁷⁶ When the safety director replied that the plan was to audit North America in the fall, the vice president said, “Don’t wait till Fall” and advised him to complete the audits soon, adding, “Please help.”¹⁷⁷ The safety director replied, “I would like to perform a mini audit at Moses Lake (Propellant and Assembly), Monclova (Assembly and Propellant Handling/Storage not CAP), and Monterrey (Steering wheels)” and proposed dates in April and May 2011 to avoid conflicts with other scheduled audits.¹⁷⁸

The Takata global safety director was then dispatched from the U.S. to Monclova in May 2011.¹⁷⁹ A couple weeks before his visit, an email was sent by the advanced product quality planning

¹⁶⁵ *Takata Engineers Struggled to Maintain Air Bag Quality, Documents Reveal, supra* n. 136.

¹⁶⁶ *Plant with Troubled Past at Center of Takata Air Bag Probe, supra* n. 143.

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ *Id.*

¹⁷⁰ *Id.*

¹⁷¹ *Id.*

¹⁷² *Id.*

¹⁷³ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00060922).

¹⁷⁴ Takata Response to Senate Commerce Committee (Mar. 13, 2015) (TKH-SCS&T00050595).

¹⁷⁵ Takata Response to Senate Commerce Committee (Mar. 13, 2015) (TKH-SCS&T00050617).

¹⁷⁶ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00060924).

¹⁷⁷ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00060923).

¹⁷⁸ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00060922-TKH-SCS&T00060923).

¹⁷⁹ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00060913); *Plant with Troubled Past at Center of Takata Air Bag Probe, supra* n. 143.

coordinator¹⁸⁰ instructing employees to close a series of items raised in prior audits: “All items in red must be closed this week without fail, as the time period for the same has already expired.”¹⁸¹ The day before the safety director from the U.S. arrived, the facility conducted its own audit, which detected several quality concerns, including scales with disconnected cables, energetic material on the floor, and dispensers for energetic material on unidentified lines.¹⁸² These items were highlighted in an email to Monclova employees prior to the Takata global safety director’s audit.¹⁸³

Despite this preparation, an audit report dated May 16-18, 2011, from the Takata safety director faulted the plant for not properly closing bags of ammonium nitrate and for storing scrapped or contaminated propellant near good material, allowing for the possibility of a mix-up.¹⁸⁴ The audit report also explained that materials dating back to 2007 were found in the staging area, even though this area was intended for 24-hour storage of materials and not for long-term storage.¹⁸⁵ In addition, the audit found several instances of propellant on the assembly line floor.¹⁸⁶ Notwithstanding these findings, the safety director noted that the audit report would not be shared with Takata's headquarters in Tokyo.¹⁸⁷

The same U.S. safety director conducted a follow-up audit of the Monclova plant in November 2011.¹⁸⁸ Emails exchanged among employees of the plant in the lead-up to his visit discussed plant audit questions that needed to be addressed before the auditor arrived, including the question of whether a central safety committee exists.¹⁸⁹ A week before the director arrived, a superintendent of environmental health and safety¹⁹⁰ wrote that “NO safety committee, as such, has been formed.”¹⁹¹ He continued, “It can be made up by the Inflatos managers, and we can mention the weekly staff meeting as evidence of meetings.”¹⁹² The inflator assembly quality manager¹⁹³ replied, “This is how we are going to answer and what we are going to have as support for a safety audit? GPS [Global Pyrotechnic Safety]? We need compelling responses and evidence so that there is no doubt and they don’t start asking for this and that ...”¹⁹⁴ The follow-up audit report, dated November 10-11, 2011, identified 14 tasks intended to improve concerns identified in the audit. For example, the audit report noted that, in

¹⁸⁰ Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00021010).

¹⁸¹ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00060731_T0005).

¹⁸² Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00060731_T0003).

¹⁸³ *Id.*

¹⁸⁴ Takata Response to Senate Commerce Committee (Mar. 13, 2015) (TKH-SCS&T00045775); *Plant with Troubled Past at Center of Takata Air Bag Probe*, *supra* n. 143.

¹⁸⁵ Takata Response to Senate Commerce Committee (Mar. 13, 2015) (TKH-SCS&T00045775).

¹⁸⁶ Takata Response to Senate Commerce Committee (Mar. 13, 2015) (TKH-SCS&T00045776).

¹⁸⁷ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00060725); *Plant with Troubled Past at Center of Takata Air Bag Probe*, *supra* n. 143.

¹⁸⁸ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00060839).

¹⁸⁹ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00064854_T0002).

¹⁹⁰ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00065182_T0001).

¹⁹¹ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00064854_T0001).

¹⁹² *Id.*

¹⁹³ Takata Response to Senate Commerce Committee (Mar. 13, 2015) (TKH-SCS&T00052964).

¹⁹⁴ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00064854_T0001).

the assembly area, various metal parts were found in an area open to the elements and that improvement was needed to separate and protect the parts from weather.¹⁹⁵

Furthermore, a document from 2013 shows that Takata's Monclova plant was not properly following the procedures that govern how changes are made to some aspects of the manufacturing process.¹⁹⁶ Changes in the inflator assembly lines were implemented without receiving the prior approval of directors of quality, engineering, and safety, despite policies that required their approval.¹⁹⁷ The document outlined updates to internal safety policies that were intended to end the practice.¹⁹⁸ Had Takata implemented more robust safety programs, including outside auditing and verification, it is possible that these serious production issues might have been addressed much earlier.

IV. Media Reports and Takata's Internal Documents Illustrate Takata's Efforts to Address the Impact of Moisture and Humidity on its Inflators

Takata has attempted to understand the precise roles of moisture and humidity in the stability of its ammonium nitrate-based propellant for more than a decade – and questions still remain today. As reported by the *New York Times*, Takata's patent applications demonstrate Takata's general knowledge of moisture's effect on the stability of ammonium nitrate. For example, in an October 2006 patent application, Takata explained that moisture could seep into the propellant during the manufacturing process as well as once the inflator was installed in a car.¹⁹⁹ Similar concerns were raised in another patent application in December 2013, with Takata engineers cautioning that temperature changes inside the airbag inflator might cause the propellant to "lose density especially in the presence of moisture or humidity."²⁰⁰

Documents provided to the Committee by Takata show that the company frequently made adjustments in order to control moisture in the propellant during the manufacturing process. For example, Takata changed the moisture specification, which is the amount of allowable moisture present in the propellant,²⁰¹ for one version of its propellant tablets in 2010 and 2014. Based on an internal presentation outlining process changes for this propellant from 2000 through 2014, it appears that Takata did not change moisture specification from 2000 through 2009.²⁰² In 2010, however, Takata changed the moisture specification from a maximum of 0.20 percent to a maximum of 0.12 percent.²⁰³ In 2014, at Honda's request, Takata again changed the moisture specification – this time from 0.12 percent to 0.07 percent.²⁰⁴

¹⁹⁵ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00060839).

¹⁹⁶ Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00044269).

¹⁹⁷ Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00044271-44273).

¹⁹⁸ Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00044269-44270).

¹⁹⁹ *Airbag Compound has Vexed Takata for Years*, *New York Times* (Dec. 9, 2014).

²⁰⁰ *Id.*

²⁰¹ *See* Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00045446).

²⁰² Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00045419-45443).

²⁰³ Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00045446).

²⁰⁴ Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00045456).

Takata also made changes to control the humidity in the manufacturing environment. For example, according to an internal Takata presentation, the company changed the humidity specification at the propellant loading station for the driver-side inflator on at least three occasions between 2001 through 2010.²⁰⁵ Takata described that the reason for one of the changes was “to minimize the effects of moisture absorption on propellant.”²⁰⁶ In addition, in 2011, Takata began controlling the humidity in the entire plant by installing high capacity dehumidifiers, instead of controlling the humidity at each propellant loading station.²⁰⁷ These process changes illustrate Takata’s efforts to regulate moisture and humidity during the manufacturing process of its airbag inflators.

Currently, Takata continues to attempt to understand the impact of exposure to moisture over the life of the inflator. Analysis by Fraunhofer ICT, a research institute with expertise in airbag and pyrotechnic technology that was hired by Takata to test various aspects of its inflators and propellants, suggests that long-term exposure to a climate of persistent high heat and humidity is a significant factor in explaining the airbag ruptures.²⁰⁸ Ongoing testing has identified an O-ring seal as the possible point at which water is entering the inflator.²⁰⁹

Significant questions still remain, however. For example, it is not known why the same inflator can perform differently depending on the make and model of the vehicle in which it was installed.²¹⁰ In addition, even when an inflator is subjected to all variables that, according to the testing, appear to play a role in causing a rupture event, some of these inflators nonetheless perform properly.²¹¹ These unanswered questions are particularly troubling in light of the fact that Takata continues to produce hundreds of thousands of replacement inflators each month, with plans to increase production to one million inflators per month by September 2015.²¹² Nonetheless, Takata and NHTSA agree that, due to the critical role of time in degrading the propellant, it is best to continue replacing the old, defective inflators as quickly as possible – even though there is a distinct possibility that some of these replacements will eventually also be recalled.²¹³

V. Proposed Policy Changes to Quickly Detect and Address Future Auto Safety Defects

Over the past 20 years, Congress has periodically scrutinized NHTSA’s vehicle safety authority in the wake of high-profile vehicle defects that led to the needless deaths of American drivers. Twice

²⁰⁵ Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00008072-TKH-SCS&T00008095). In 2001, Takata changed the humidity specification from 30% to 42%. Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00008072). In 2004, Takata changed the humidity specification from 42% to 35%. Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00008082). In 2010, Takata changed the humidity specification from 35% to 30%. Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00008095).

²⁰⁶ Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00008082).

²⁰⁷ Takata Response to Senate Commerce Committee (Feb. 3, 2015) (TKH-SCS&T00008098).

²⁰⁸ TK Holdings Inc., Defect Information Report PSDI, PSDI-4, and PSDI-4K, *supra* n. 12.

²⁰⁹ *Takata Air-Bag Problems Linked to Several Factors*, Wall Street Journal (June 2, 2015).

²¹⁰ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00064623).

²¹¹ Takata Response to Senate Commerce Committee (Mar. 23, 2015) (TKH-SCS&T00064697).

²¹² House Committee on Energy and Commerce, Testimony of Kevin Kennedy, Executive Vice President of North America, TK Holdings Inc., *Hearing on An Update on the Takata Airbag Ruptures and Recalls* (June 2, 2015).

²¹³ Briefing by NHTSA to Bipartisan Commerce Committee Staff (June 17, 2015); Briefing by Takata to Bipartisan Commerce Committee Staff (June 18, 2015).

Congress has responded with legislative reform efforts with the Senate Commerce Committee playing a leading role. In 2000, Congress passed the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act in response to the Firestone tire recall that caused at least 174 deaths and over 700 injuries.²¹⁴ Subsequently, in 2012, Congress again legislatively addressed NHTSA's regulatory authority with provisions in the comprehensive surface transportation reauthorization legislation – the Moving Ahead for Progress in the 21st Century Act (MAP-21) – with many of those provisions stemming from the lessons learned from sudden unintended acceleration defects in Toyota vehicles.²¹⁵

While these laws were significant and helpful, they stopped short of reforms that would have provided NHTSA with sufficient resources and authority to better detect and address dangerous vehicle safety defects. The holes in the current NHTSA regulatory and enforcement process, combined with the failure of certain manufacturers to maintain robust internal safety and quality control programs, have manifested in several large recalls – including those involving defective GM ignition switches and Takata airbags.

To that end, this report recommends numerous policy proposals to better enable NHTSA to protect the public from vehicle defects. Many of these proposals have been part of previously introduced bills – some in bills favorably reported by the Committee and some even in Senate-passed legislation. In addition, some of these proposals have been proffered by the Administration in its Fiscal Year (FY) 2015 budget, which provides a comprehensive transportation proposal known as the Generating Renewal, Opportunity, and Work with Accelerated Mobility, Efficiency, and Rebuilding of Infrastructure and Communities throughout America (GROW AMERICA) Act. Furthermore, NHTSA should adopt reforms on its own in order to address deficiencies within ODI.

A. NHTSA Improvements

1. Increase Civil Penalty Authority

The Takata airbag recalls confirm the urgent need for stronger enforcement mechanisms for NHTSA, including civil penalty authority that can sufficiently deter safety violations. In 2014, NHTSA issued over \$126 million in civil penalties, which surpassed the total amount collected by the agency in its 43-year history.²¹⁶ Despite the record year, NHTSA's civil penalty authority is currently capped at \$35 million,²¹⁷ severely limiting its ability to seek fines that are commensurate with, for instance, the seriousness of failing to report defects in a timely manner. The low cap has repeatedly demonstrated an inability to deter automakers from committing grave safety violations. This lack of deterrence is

²¹⁴ Pub. L. No. 106-414 (2000); *Inside the Ford/Firestone Fight*, Time (May 29, 2001).

²¹⁵ Pub. L. No. 112-141 (2012); National Highway Traffic Safety Administration, RQ10003 Summary (Feb. 16, 2010-Mar. 1, 2011) (online at www-odi.nhtsa.dot.gov/cars/problems/defect/results.cfm?action_number=RQ10003&SearchType=QuickSearch&summary=true).

²¹⁶ See, e.g., NHTSA's fines of Honda (\$70 million for failing to both submit early warning reports and warranty claims); Hyundai Motor America (\$17.35 million for failing to issue a recall in a timely manner); and General Motors Company (\$35 million for failing to issue a recall in a timely manner). National Highway Traffic Safety Administration, *NHTSA Issues More Fines in 2014 Than in Agency's Entire History* (Jan. 8, 2015) (online at [www.nhtsa.gov/About+NHTSA/Press+Releases/2015/DOT-fines-Honda-\\$70-million](http://www.nhtsa.gov/About+NHTSA/Press+Releases/2015/DOT-fines-Honda-$70-million)).

²¹⁷ 49 U.S.C. § 30165. The \$35 million maximum limit was increased from \$15 million by MAP-21. See Pub. L. No. 112-141, § 31203 (2012).

particularly apparent when companies fail to report important defect information to NHTSA as required under Section 30118 of the National Traffic and Motor Vehicle Safety Act (NTMVSA).²¹⁸ For example, NHTSA’s “record” \$35 million fine of GM represented a miniscule fraction of the company’s annual revenue of \$156 billion.²¹⁹ In contrast, it is worth noting – and it is telling – that when Toyota agreed to pay a record fine of \$1.2 billion for concealing information on sudden unintended acceleration, the auto giant did so in a settlement with the Department of Justice for violations of the Wire Act – not for violations of Section 30118 of NTMVSA.²²⁰

Over the past several years, lawmakers have proposed increasing or eliminating this cap. A Senate bill introduced in the 111th Congress would have increased the cap to \$300 million,²²¹ and legislation reported out of the Commerce Committee in the 112th Congress would have increased the cap to \$250 million.²²² The Senate-passed version of MAP-21 adopted the Committee-reported increase of \$250 million before it was reduced to the current \$35 million in Conference with the House.²²³ In the 113th Congress, a bill introduced in the Senate would have eliminated the cap,²²⁴ and a bill introduced in the House would have increased the cap to \$200 million.²²⁵ The GROW AMERICA Act also would increase the limit on NHTSA’s civil penalties to \$300 million.²²⁶ Substantially increasing or eliminating NHTSA’s civil penalty cap is critical to making NHTSA a stronger and more effective regulator.

2. Provide Enhanced and Independent Testing Capability

Improving NHTSA’s ability to conduct enhanced and independent testing would also greatly further motor vehicle safety. While Takata and the automakers have the responsibility to identify the root cause of the airbag ruptures, their regulator should have the ability to conduct its own independent tests to verify their findings. Furthermore, according to a new report issued by the Department of Transportation Inspector General’s office (DOTIG), NHTSA’s ability to aggressively and prophylactically identify and address defects before they cause greater harm is hampered by deficiencies in how ODI operates.²²⁷ Specifically, the DOTIG report found that ODI lacks (1) protocols and procedures to collect data that is accurate and useful, (2) the ability to statistically analyze data in order to discern trends that indicate the existence of safety defects, and (3) protocols that govern the conditions for conducting investigations. The report made 17 recommendations that ODI should adopt

²¹⁸ 49 U.S.C. § 30118 (2000).

²¹⁹ See General Motors Company, 2014 Annual Report, at 22 (2014) (online at www.gm.com/content/dam/gmcom/COMPANY/Investors/Stockholder_Information/PDFs/2014_GM_Annual_Report.pdf).

²²⁰ See Department of Justice, *Justice Department Announces Criminal Charge Against Toyota Motor Corporation and Deferred Prosecution Agreement with \$1.2 Billion Financial Penalty* (Mar. 19, 2014) (online at www.justice.gov/opa/pr/justice-department-announces-criminal-charge-against-toyota-motor-corporation-and-deferred).

²²¹ S. 3302, 111th Cong. (2010).

²²² S. 1449, 112th Cong. (2011).

²²³ S. 1813, 112th Cong. (2012).

²²⁴ S. 2559, 113th Cong. (2014).

²²⁵ H.R. 4364, 113th Cong. (2014).

²²⁶ Department of Transportation, *Generating Renewal, Opportunity, and Work with Accelerated Mobility, Efficiency, and Rebuilding of Infrastructure and Communities throughout America Act § 4110* (2014).

²²⁷ Department of Transportation, Office of Inspector General, *Inadequate Data and Analysis Undermine NHTSA’s Efforts to Identify and Investigate Vehicle Safety Concerns* (June 18, 2015).

to address these deficiencies.²²⁸ Furthermore, NHTSA is plagued by a chronic lack of resources. Currently, the agency is underfunded and outmanned – only 51 employees are responsible for analyzing an overwhelming amount of data and conducting appropriate investigations therefrom.²²⁹ The President’s FY 2016 budget request proposes an overall NHTSA budget of \$908 million, a nine percent increase from the agency’s current budget of \$830 million.²³⁰ This includes increasing ODI’s budget to \$31.3 million, up from \$11 million in FY 2015, which would allow for the hiring of an additional 57 personnel.²³¹ Coupled with meaningful internal reforms, the increased budget for ODI would enhance NHTSA’s “ability to monitor data, find defects sooner, and strengthen [its] ability to conduct investigations of vehicles with suspected defects.”²³²

3. Improve Recall Completion Rates

Recall notifications are only effective when consumers act on the notices by actually bringing their vehicles to an authorized dealership to have them repaired. However, achieving high recall completion rates has proven to be a challenge. Secretary of Transportation Anthony Foxx has stated, “Recalls are only successful and can only save lives if they end up getting the cars fixed, but we know that 20 percent of vehicles that are recalled – and possibly more than that – go unrepaired.”²³³ A 2011 Government Accountability Office study found significant variation in recall completion rates: in any given year, some manufacturers have completion rates as low as 23 percent, while others have completion rates as high as 96 percent.²³⁴ By the end of 2014, of the 17 million vehicles that had been recalled for defective Takata airbags, reports suggested that only around 2 million vehicles – a mere 11 percent of those recalled – had been repaired.²³⁵ In April 2015, NHTSA hosted a workshop with industry, safety advocates, policy makers, and researchers on improving recall completion rates. At the workshop, NHTSA Administrator Mark Rosekind said, “Getting to 100 percent is going to be a real challenge, but it has to be our ambition. And until the day we hit that mark, we have to think of new ways to get there.”²³⁶

Lawmakers in recent years have attempted to bolster recall effectiveness by introducing legislation that would prohibit used car dealers and rental car companies from selling, leasing, or renting

²²⁸ *Id.*

²²⁹ *Auto Regulator Has 51 People Tracing 250 Million Cars*, Bloomberg (Mar. 26, 2015).

²³⁰ See Department of Transportation, Budget Estimates Fiscal Year 2015, National Highway Traffic Safety Administration (2015) (online at www.business.cch.com/plsd/FY2016-NHTSA-CBJ-Final.pdf).

²³¹ *Id.* See also Department of Transportation, *U.S. Transportation Secretary Anthony Foxx Unveils President’s Bold \$94.7 Billion Investment in America’s Infrastructure Future* (Feb. 2, 2015) (online at www.dot.gov/briefing-room/us-transportation-secretary-anthony-foxx-unveils-president%E2%80%99s-bold-947-billion).

²³² *Id.*; National Highway Traffic Safety Administration, *U.S. Transportation Secretary Foxx Calls on Congress to Authorize New Enforcement Tools for NHTSA and Levis Fine on Takata* (Feb. 20, 2015) (online at www.nhtsa.gov/About+NHTSA/Press+Releases/2015/DOT-wants-new-enforcement-tools-for-nhtsa-and-fines-takata).

²³³ National Highway Traffic Safety Administration, *U.S. DOT Hosts Workshop to Boost Recall Completion Rates* (Apr. 28, 2015) (online at www.nhtsa.gov/About+NHTSA/Press+Releases/2015/nhtsa-retooling-recalls-workshop-04282015).

²³⁴ Government Accountability Office, *Auto Safety: NHTSA Has Option to Improve the Safety Defect Recall Process*, at 25 (June 2011).

²³⁵ *The Unsolved Mystery of the Exploding Air Bags*, USA Today (Apr. 27, 2015).

²³⁶ *DOT Aims to Follow Record Recall Fines with Record Repair Rate*, Politico Pro (Apr. 28, 2015).

out vehicles subject to an open recall.²³⁷ Under current law, no such prohibition exists, constituting a major loophole in ensuring the safety of cars on the nation’s roads and highways.²³⁸ The GROW AMERICA Act also proposes closing this loophole.²³⁹ Secretary Foxx stated, “Every vehicle under an open safety recall should be repaired as soon as possible. . . . Requiring rental car agencies and used car dealers to fix defective vehicles before renting is a common-sense solution that would make our roads safer.”²⁴⁰ In September 2014, the Senate Commerce Committee favorably reported S. 921, the Raechel and Jacqueline Houck Safe Rental Car Act, which would have closed this loophole for rental cars.²⁴¹

Numerous other ideas have been proposed to improve recall completion rates, including requiring consumers to fix open recalls before they are able to register their vehicles or renew their registrations.²⁴² Another idea is for auto manufacturers to provide direct in-vehicle notification to owners or lessees of open recalls.

4. Enact Whistleblower Legislation

As noted earlier, the Takata airbag recalls – as well as other high-profile safety recalls – highlight the need for stronger incentives for companies to report safety defects to NHTSA as soon as they become aware of them. In addition to increasing civil penalties for violations of Section 30118 of NTMUSA, bolstering incentives and protections for whistleblowers would also increase the likelihood that NHTSA receives critical safety information in a timely manner. Revealing information on the various issues surrounding the Takata airbag defects has often come from former Takata employees who have spoken to media sources in the aftermath of the crisis – often on the condition of anonymity.²⁴³ NHTSA has also urged potential whistleblowers to contact the Administration.²⁴⁴

Currently, MAP-21 provides whistleblower protections for employees of manufacturers, part suppliers, and dealerships by protecting them from discrimination or retaliation for engaging in certain protected activities, including providing information relating to any motor vehicle defect, noncompliance, or any violation to the Secretary of Transportation or an employer.²⁴⁵

²³⁷ See, e.g., S. 3302, 111th Cong. (2010); S. 2559, 113th Cong. (2014); and S. 921, 113th Cong. (2012).

²³⁸ *U.S. Transportation Secretary Foxx Calls on Congress to Authorize New Enforcement Tools for NHTSA and Levis Fine on Takata*, *supra* n. 233.

²³⁹ Department of Transportation, *Generating Renewal, Opportunity, and Work with Accelerated Mobility, Efficiency, and Rebuilding of Infrastructure and Communities throughout America Act* § 4109 (2014). Previous proposals have also required that used car dealers notify purchasers of any outstanding safety recalls. See S. 3302, 111th Cong. (2010) and S. 2559, 113th Cong. (2014).

²⁴⁰ *U.S. Transportation Secretary Foxx Calls on Congress to Authorize New Enforcement Tools for NHTSA and Levis Fine on Takata*, *supra* n. 233.

²⁴¹ S. 921, 113th Cong. (2014). On June 19, 2015, Honda confirmed that the 2001 Honda Civic involved in the eighth death caused by a rupturing Takata airbag inflator was a rental car. Statement from American Honda Motor Co., Inc., *Re: Confirmed Fatality Related to the Rupture of a Takata Airbag Inflator in Los Angeles, CA on September 7, 2014*, *supra* n. 132.

²⁴² See S. 617 (2015).

²⁴³ See, e.g., *Takata Saw and Hid Risk in Airbags in 2004, Former Workers Say*, *supra* n. 1; *Exclusive: U.S. Federal Safety Regulators Seek Takata Whistleblowers*, Reuters (Jan. 29, 2015).

²⁴⁴ *Exclusive: U.S. Federal Safety Regulators Seek Takata Whistleblowers*, *supra* n. 244.

²⁴⁵ Pub. L. No. 112-141 § 30171; 49 U.S.C. § 30171.

In January 2015, Commerce Committee Chairman John Thune and Ranking Member Bill Nelson introduced the Motor Vehicle Safety Whistleblower Act (S. 304), which would enhance the protections in MAP-21 by incentivizing employees and contractors to voluntarily provide information to NHTSA.²⁴⁶ Under the bill, the Secretary of Transportation is authorized to share with the whistleblower up to 30 percent of any fines exceeding \$1 million that NHTSA recovers as a result of the information that is reported. To help improve automobile safety, S. 304 incentivizes whistleblowers to report violations and provides the necessary protections for such actions. On April 28, 2015, the Senate passed S. 304.

B. Safety Measures NHTSA, Takata, and Auto Manufacturers Should Undertake to Improve Recall Effectiveness

Short of additional legislation, NHTSA and private stakeholders can also do a better job of effectuating recalls. Specifically, NHTSA should consider using its existing authority to accelerate the availability of replacement parts to the public and should further modify its public database to make it more user friendly. Lastly, auto manufacturers should make loaner cars more readily available to consumers affected by lengthy recalls.

1. Increase Ability to Effectively Respond to Safety Defects/Recalls

The defective Takata airbag crisis highlights the need for improvements in the auto industry's ability to effectively respond to recalls. As of June 2015, Takata explained that production of replacement inflators had increased from approximately 350,000 to 700,000 per month.²⁴⁷ At this rate of production, it would take Takata more than three years to produce replacement inflators for all recalled vehicles. By September 2015, Takata plans to be manufacturing one million inflators per month,²⁴⁸ but the slow pace at which Takata initially produced replacements, which has led to reports of customers being told that parts are not available,²⁴⁹ underscores the need for better planning for recalls, especially large recalls.

Section 30120 of NTMVSA grants NHTSA the authority to improve the efficacy of recalls by expanding the sources of replacement parts and/or the number of authorized repair facilities.²⁵⁰ Granted under the TREAD Act, NHTSA can use this authority if it determines that the "manufacturer's remedy program is not likely to be capable of completion within a reasonable time."²⁵¹ Thus far, NHTSA has opted not to use its 30120 authority to accelerate the availability of replacements for defective Takata airbags, but it should not hesitate to do so if such an initiative would further public safety.

²⁴⁶ S. 304. The Bill is cosponsored by Senators Heller, McCaskill, Klobuchar, Ayotte, Moran, and Blumenthal. On February 26, 2015 the Commerce Committee considered the bill and ordered to be reported favorably, modified by a substitute amendment.

²⁴⁷ Testimony of Kevin Kennedy, *Hearing on An Update on the Takata Airbag Ruptures and Recalls* (June 2, 2015), *supra* n. 213.

²⁴⁸ *Id.*

²⁴⁹ See, e.g., *Takata Air Bag Recall Stalls in Wisconsin Over Lack of Parts*, Journal Sentinel (Mar. 30, 2015).

²⁵⁰ 49 U.S.C. § 30120.

²⁵¹ 49 C.F.R. 573.14(b).

Furthermore, the lack of accurate information available to consumers raises serious concerns when it comes to industry and the government's readiness. To promote transparency and accountability, MAP-21 mandated that recall information be available on the Internet. Consumers are now able to search by vehicle make and model or enter their Vehicle Identification Number (VIN) into NHTSA's vehicle safety database at www.safercar.gov to see if their vehicle is subject to a recall.²⁵² The Takata airbag recalls have demonstrated that this search tool needs to be strengthened. NHTSA's VIN search tool wrongly informed some consumers that their vehicles had either already been repaired or were not subject to a recall.²⁵³ Moreover, in October 2014, the overwhelming demand for NHTSA's website caused it to crash.²⁵⁴ Bills introduced in Congress to improve NHTSA's vehicle safety database include measures aimed at: improving website organization and functionality; allowing for data to be searched, aggregated, and downloaded; and improving searchability of specific vehicles and issues through standardization of commonly used search terms.²⁵⁵ However, NHTSA is capable of taking these steps on its own accord. Even without a legislative directive, the agency should take the initiative to make its database more user friendly and effective for consumers.

2. Offer Loaner/Rental Cars When Recalls Involve Serious Safety Issues

At the November 2014 Commerce Committee hearing regarding the defective Takata airbags, Senator Nelson called on automakers to provide loaner vehicles or rental cars to consumers who could not get their vehicles immediately fixed due to the unavailability of replacement parts.²⁵⁶ In March 2015, Honda launched a multimillion-dollar ad campaign to urge owners of vehicles affected by the Takata airbag recalls to get their vehicles fixed.²⁵⁷ The advertisements, printed in English and Spanish, promised consumers a rental car or loaner vehicle free-of-charge. To keep drivers and passengers safe when vehicles are subject to a recall, automakers should provide rental or loaner vehicles, especially in cases in which the defect in question poses a serious safety hazard or in which replacement parts are unavailable.

VI. Conclusion

Thus far, the Committee minority staff's ongoing investigation reveals a series of failures by both Takata and NHTSA to timely address a defect that has now mushroomed into a recall crisis. Had Takata maintained a more robust culture of safety, it is likely that many of these defects could have been discovered much sooner. Similarly, had NHTSA promptly undertaken more aggressive steps to

²⁵² Pub. L. No. 112-141 § 31301.

²⁵³ *NHTSA Updates Recall Website After Cars.com Probe*, Cars.com (Apr. 23, 2015).

²⁵⁴ National Highway Traffic Safety Administration, *U.S. Department of Transportation Unveils New, Free, Online Search Tools for Recalls Using Vehicle Identification Number* (Aug. 20, 2014) (online at www.nhtsa.gov/About+NHTSA/Press+Releases/2014/New-free-online-search-tool-for-recalls-using-VIN-released); *see also Demand Crashes Air Bag Recall Web Site Safercar.gov*, Washington Post (Oct. 21, 2014). In addition, Honda's VIN search tool, which allows consumers to determine whether a car is subject to recall, was providing false information in the months after millions of vehicles were recalled. Owners whose cars were subject to multiple recalls were only informed of the most recent recalls, and earlier recalls were shown as completed. *See* Senate Committee on Commerce, Science, and Transportation, *Examining Takata Airbag Defects and the Vehicle Recall Process*, 113th Cong. (Nov. 20, 2014).

²⁵⁵ *See* S. 2559, 113th Cong. (2014); H.R. 1181.

²⁵⁶ Senator Bill Nelson Statement, Senate Committee on Commerce, Science, and Transportation, *Examining Takata Airbag Defects and the Vehicle Recall Process*, 113th Cong. (Nov. 20, 2014).

²⁵⁷ *New Honda Ads: Fix Your Airbags*, AutoBlog (Mar. 14, 2015).

investigate the Takata airbag ruptures, it is possible that this defect could have been addressed years earlier.

To restore consumer confidence in the safety of vehicles, it is imperative that Congress take action to enhance NHTSA's regulatory and enforcement authorities. Similarly, automakers and part suppliers must redouble their internal safety efforts. As this report shows, it is not enough to merely conduct safety audits after problems are detected. Rather, safety must be built-in as a core component of a manufacturer's internal culture.

Chronology of Takata Airbag Events

2004	<p>May</p> <ul style="list-style-type: none"> Driver-side airbag inflator in a 2002 Honda Accord ruptures in Alabama. Takata tentatively concludes that a compromised seal on the inflator or an overloading of propellant into the inflator might have caused the rupture.
2007	<p>February and May</p> <ul style="list-style-type: none"> Honda reports three additional incidents of rupturing driver-side inflators to Takata. One of the incidents occurred in February and two occurred in May; all involved 2001 Honda Civics. Takata theorizes that two manufacturing processes may have resulted in the exposure of propellant to moisture and/or humidity.
2008	<p>November 11</p> <ul style="list-style-type: none"> Honda issues the first recall (08V-593) of cars equipped with Takata airbags, covering 3,940 vehicles in the U.S.
2009	<p>May 27</p> <ul style="list-style-type: none"> Shrapnel from a rupturing driver-side inflator in a 2001 Honda Accord in Oklahoma causes the death of the driver. <p>June</p> <ul style="list-style-type: none"> Takata presents to Honda a theory that its methodology for calculating propellant density in 2000 and 2001 could have led to invalid measurements and recommends expanding the previous recall. <p>June 30</p> <ul style="list-style-type: none"> Honda issues a recall (09V-259), which expands the November 2008 recall to cover 440,000 vehicles in the U.S. <p>November 2</p> <ul style="list-style-type: none"> NHTSA opens an investigation (RQ09-004) intended to evaluate the scope and timeliness of Honda's two recalls. <p>December 24</p> <ul style="list-style-type: none"> Shrapnel from a rupturing driver-side inflator in a 2001 Honda Accord in Virginia causes the death of the driver.
2010	<p>February 9</p> <ul style="list-style-type: none"> Honda issues a recall (10V-041) of 379,000 vehicles in the U.S. with potentially defective driver-side inflators. <p>May 6</p> <ul style="list-style-type: none"> NHTSA closes its investigation into Honda's handling of the recalls, finding insufficient information to suggest that Honda failed to make timely recall decisions.

2011	<p>April 27</p> <ul style="list-style-type: none"> Honda issues a recall (11V-260) of 833,277 U.S. vehicles to capture approximately 2,430 defective replacement driver-side inflators that could have been installed in vehicles. <p>December 1</p> <ul style="list-style-type: none"> After learning of a new incident, Honda expands recall 11V-260 to include an additional 277,779 U.S. vehicles due to uncertainty over which driver-side inflators contain the suspect propellant. In addition, Honda says it will contact 603,421 U.S. vehicle owners to account for 604 potentially defective driver-side inflators that may have been sold in the U.S.
2012	<p>March-October</p> <ul style="list-style-type: none"> Five alleged rupture incidents occur in 2012, all involving Honda vehicles.
2013	<p>February-March</p> <ul style="list-style-type: none"> Takata learns of two manufacturing problems with the propellant used in some passenger-side inflators: (1) some propellant tablets may not have been adequately compressed because a machine's auto-reject function was turned off and (2) some propellant tablets may have been exposed to moisture. Honda issues a recall (13V-132) of 561,422 U.S. vehicles with potentially defective passenger-side inflators. <p>April 10</p> <ul style="list-style-type: none"> Mazda issues a recall (13V-130) of 149 U.S. vehicles with potentially defective passenger-side inflators. <p>April 11</p> <ul style="list-style-type: none"> Takata submits a Defect Information Report to NHTSA informing the agency of a potential defect in passenger-side inflators. Toyota issues a recall (13V-133) of 844,277 U.S. vehicles with potentially defective passenger-side inflators. Toyota explains that it will not replace all inflators but rather will ask owners to bring their vehicles to dealers for inspection. Nissan issues a recall (13V-136) of 438,302 U.S. vehicles with potentially defective passenger-side inflators. <p>May 3</p> <ul style="list-style-type: none"> BMW issues a recall (13V-172) of 42,080 U.S. vehicles with potentially defective passenger-side inflators. <p>September 3</p> <ul style="list-style-type: none"> Shrapnel from a rupturing driver-side inflator in a 2002 Acura TL in California causes the death of the driver.
2014	<p>June</p> <ul style="list-style-type: none"> Takata notifies automakers that some of its records were incomplete, allowing for the possibility that some propellant was stored – and thus exposed to moisture – for up to three months before being used in inflators. Takata recommends expanding the recall of vehicles with certain passenger-side inflators. NHTSA requests Takata's support for a regional field action that would allow for the collection and testing of passenger-side and driver-side inflators from high humidity regions. In addition, Takata finds that its production records and methodology for determining the recall range of cars subject to some 2013 recalls may have been incomplete. <p>June 10</p> <ul style="list-style-type: none"> Toyota issues a recall (14V-312) modifying its April 11, 2013, recall so that all 844,277 previously identified vehicles will have their inflators replaced.

June 11

- NHTSA opens a formal Preliminary Evaluation into airbag inflator ruptures (PE14-016).

June 19

- Nissan launches a recall (14V-340) covering 29,998 U.S. vehicles to collect passenger-side inflators from high humidity regions (FL, HI, PR, and VI).
- Ford launches a recall (14V-343) covering 58,669 U.S. vehicles to collect driver and passenger inflators from high humidity regions (FL, HI, PR, and VI).
- Mazda launches a recall (14V-344) to collect driver and passenger-side inflators from high humidity regions (FL, HI, PR, VI).
- Toyota issues a recall (14V-350) to collect passenger-side inflators from high humidity regions (FL, HI, PR, and VI).

June 20

- BMW launches a recall (14V-348) covering 140,696 U.S. vehicles to collect driver-side inflators from high humidity regions (FL, HI, PR, and VI).
- Honda issues a recall (14V-349) of 988,440 U.S. vehicles with potentially defective passenger-side inflators.
- Honda issues a recall (14V-351) covering 2,803,214 U.S. vehicles to collect driver-side inflators from high humidity regions (FL, HI, PR, VI, AL, GA, LA, MS, SC, and TX).
- Honda issues a recall (14V-353) covering 698,288 U.S. vehicles to collect passenger-side inflators from high humidity regions (FL, HI, PR, VI, AL, GA, LA, MS, SC, and TX).
- Chrysler issues a recall (14V-354) covering 371,309 U.S. vehicles to collect passenger and driver-side inflators from high humidity regions (FL, HI, PR, and VI).

June 23

- Mazda issues a recall (14V-362) covering 18,050 U.S. vehicles that may contain defective passenger-side inflators.

June 24

- Nissan issues a recall (14V-361) of 226,326 U.S. vehicles with potentially defective passenger-side inflators.

July 7

- Subaru issues a recall (14V-399) of 8,557 U.S. vehicles with potentially defective passenger-side inflators.

July 11

- Mitsubishi launches a regional recall (14V-421) covering 11,985 vehicles to collect passenger-side inflators from high humidity regions (FL, HI, PR, and VI).

July 15

- BMW issues a recall (14V-428) expanding a previous recall (13V-172) for passenger-side airbag inflators covering 573,935 vehicles.

August 1

- Subaru launches a regional recall (14V-471) covering 8,959 vehicles to collect passenger-side inflators from high humidity regions (FL, HI, PR, and VI).

August 17

- A driver-side airbag inflator in a 2007 Ford Mustang ruptures in North Carolina.

September 29

- Shrapnel from a rupturing inflator in a 2001 Honda Accord in Florida causes the death of the driver.

October 19

- Toyota issues a recall (14V-655) of 247,000 vehicles in high absolute humidity areas (FL, PR, HI, VI, and along the Gulf Coast).

October 29

- NHTSA sends a letter to all 10 manufacturers (Toyota, Honda, Mazda, BMW, Nissan, Mitsubishi, Subaru, Chrysler, Ford and General Motors) to “take aggressive and proactive action to expedite [their] remedy of the recalled vehicles and to supplement Takata’s testing with [their] own.”

October 30

- NHTSA issues a Special Order to Takata demanding information on its defective airbags.
- Nissan notifies NHTSA that it will expand Recall 14V-340 into a Recall 14V-701 covering 22,738 additional vehicles for a total of 52,738 potentially affected by defective Takata airbag inflators in high humidity areas (FL, GA, PR, HI, VI, AL, LA, MS, and TX).

November 3

- Honda issues a recall (14V-700) of 807,599 vehicles with potentially defective passenger-side inflators in high humidity regions (AL, FL, GA, HI, LA, MS, SC, TX, PR, and VI).

November 13

- A July 27, 2014, death from shrapnel from a rupturing inflator in a 2003 Honda City in Malaysia is linked to a Takata airbag. Honda subsequently recalls 170,000 vehicles in Asia and Europe.

November 18

- NHTSA calls for an expansion of regional recalls to national recalls of driver-side airbag inflators affecting 5 automakers (BMW, Chrysler, Ford, Honda, and Mazda).
- NHTSA issues a General Order to the 10 affected automakers demanding a detailed report and production of documents related to the testing of Takata inflators outside the regional recall areas.
- NHTSA issues a second Special Order to Takata for information related to the propellant within the inflators.

November 21

- The U.S. Senate Commerce Committee holds a hearing titled *Examining Takata Airbag Defects and the Vehicle Recall Process*. Witnesses include a Takata victim, NHTSA Deputy Administrator David Friedman, and Takata, Honda, and Chrysler executives.

November 24

- Mitsubishi issues a recall (14V-752), which expands Recall 14V-421 to cover 22,259 vehicles in the U.S.

November 26

- NHTSA sends a Recall Request Letter to Takata formally demanding that it acknowledge the existence of a defect and issue a national recall for driver-side airbag inflators.

2014	<p>December 2</p> <ul style="list-style-type: none"> Takata responds to NHTSA’s Recall Request Letter stating that the data and currently available information did not support a national recall. <p>December 3</p> <ul style="list-style-type: none"> Chrysler issues a regional recall (14V-770) superseding a regional recall (14V-354), covering 420,564 vehicles. The U.S. House Energy & Commerce Committee holds a hearing on Takata airbag ruptures and recalls. Witnesses include Takata, Toyota, Honda, and BMW executives and NHTSA Deputy Administrator David Friedman. <p>December 10</p> <ul style="list-style-type: none"> Ford launches a regional recall (14V-787), which expands regional Recall 14V-343, to cover 40,952 vehicles in high absolute humidity areas (FL, HI, PR, VI, AL, MS, LA, TX, and GA). <p>December 18</p> <ul style="list-style-type: none"> Ford launches a national recall (14V-802) partially superseding a regional recall (14V-343) to cover 462,911 vehicles. <p>December 23</p> <ul style="list-style-type: none"> Chrysler (FCA) issues a national recall (14V-817), which expands a regional recall (14V-354) to cover 2,908,790 vehicles. <p>December</p> <ul style="list-style-type: none"> A group of 10 auto manufactures affected by defective Takata airbags create the Independent Testing Coalition (ITC). In February 2015, the ITC contracts with Orbital ATK to conduct independent testing of the defective inflators to find the root cause of the ruptures and selects former NHTSA Acting Administrator David Kelly to lead the investigation.
2015	<p>January 18</p> <ul style="list-style-type: none"> Shrapnel from a rupturing driver-side inflator in a 2002 Honda Accord in Texas causes the death of the driver. <p>February 20</p> <ul style="list-style-type: none"> NHTSA imposes a civil penalty of \$14,000 per day against Takata for failing to fully respond to NHTSA’s Special Orders issued on October 30, 2014 and November 18, 2014. <p>February 25</p> <ul style="list-style-type: none"> NHTSA announces that it will upgrade the Takata investigation to an engineering analysis, a formal step in the agency’s defect investigation process. NHTSA issues a Preservation Order requiring Takata to preserve inflators recovered from recalled vehicles for inspection, testing, and analysis. Takata also agrees to submit a written protocol detailing how it would implement the requirements of the Preservation Order. <p>March 16</p> <ul style="list-style-type: none"> Honda issues a national recall (15V-153), which expands a regional recall (14V-351) to cover 88,549 vehicles. <p>April 16</p> <ul style="list-style-type: none"> Nissan issues a regional recall (15V-226), which expands a previous regional recall (14V-701) to cover 45,000 vehicles in high absolute humidity locations (PR, HI, VI, FL, GA, AL, LA, MS, and TX).

April 23

- NHTSA publishes Takata’s written protocol detailing how it will implement and comply with the Preservation Order.

May 13

- Toyota issues a recall (15V-286), which expands previous regional recall 14V-655 involving defective passenger-side inflators covering an additional 300,000, bringing the total number of affected vehicles to 644,000 vehicles.
- Toyota issues a national recall (14V-312), which expands a previous recall (13V-133) to cover an additional 176,000 vehicles, bringing the total number of recalled vehicles to 747,000.
- Toyota issues a new recall (15V-284) to cover 159,700 driver-side inflators in 2004-2005 RAV4 vehicles.

May 14

- Nissan issues a national recall (15V-287), which expands two previous recalls (14V-701 and 15V-226) to cover 263,692 vehicles.

May 18

- Takata files four Defect Information Reports acknowledging a defect exists in 17.6 million driver-side inflators and 16.2 million passenger-side airbag inflators for a total of approximately 33.8 million defective Takata inflators in the U.S. Based on independent research performed by Fraunhofer ICT, Takata’s preliminary conclusion for inflator ruptures is a “multi-factor root cause that includes the slow-acting effects of a persistent and long-term exposure to climates with high temperatures and high absolute humidity” that may lead to moisture intrusion in some inflators.

May 19

- NHTSA announces Takata’s acknowledgement of a defect in certain airbag inflators and issues a Consent Order that requires Takata to cooperate with all future NHTSA actions. This Consent Order also ends the \$14,000 per day fine that NHTSA imposed on Takata in February 2015.

May 22

- NHTSA publishes a notice of intent to open a coordinated remedy program proceeding for the replacement of certain Takata airbag inflators affecting 11 auto manufactures – BMW, Chrysler, Daimler, Ford, General Motors, Honda, Mazda, Mitsubishi, Nissan, Subaru, and Toyota.

May 26

- Chrysler issues a recall (15V-312), which expands a previous recall to cover 438,156 vehicles.
- Chrysler expands recall (15V-313) for driver-side inflators, superseding recall 14V-817, to cover 4,066,732 vehicles.

May 27

- Mitsubishi issues a national recall (15V-321), which expands previous regional recall 14V-752 involving defective passenger-side inflators covering 82,784 vehicles.
- Ford issues a recall (15V-319), which expands a previous recall (14-V802) involving driver-side airbag inflators to cover 1,019,081 vehicles.
- Ford launches a recall (15V-322) of 361,523 vehicles with potentially defective passenger-side inflators.
- BMW expands a recall (14V-328) to Recall 15V-318, increasing the affected vehicle population from 140,696 to 420,661.

2015

May 28

- GM issues a recall (15V-324), which expands a previous recall of passenger-side airbag inflators to cover 330,198 vehicles.
- Subaru issues a recall (15V-323) for passenger-side airbags to cover 81,100 vehicles.

May 29

- Nissan notifies NHTSA that none of its vehicles are affected by Takata’s recent recall expansion and that its previous recalls cover the defective Takata airbags in its vehicles.

June 1

- Honda issues a recall (15V-320) of driver-side airbag inflators in approximately 5.1 million vehicles. The recall covered inflators that were installed at the time of manufacture as well as replacement inflators that had been installed as part of prior recalls of Takata inflators.

June 2

- The U.S. House Energy & Commerce Committee conducts a follow-up hearing on the Takata defective airbags and the recall process. Witnesses include NHTSA Administrator Mark Rosekind, ITC Project Director David Kelly, and Takata, Global Automakers, and Alliance of Automobile Manufacturers executives.

June 4

- Mazda issues recalls (15V-345 and 15V-346) of approximately 445,000 driver-side airbag inflators and 27,000 passenger-side airbag inflators.

June 5

- NHTSA publishes a Notice of Coordinated Remedy Program Proceeding for the Replacement of Certain Takata Air Bag Inflators in the Federal Register. The agency explains that coordination could include acceleration, prioritization, organization, and/or phasing of the remedy programs.

June 9

- Daimler Trucks issues a recall (15V-361) of 2,564 driver-side airbag inflators, increasing the total number affected automakers to 11.

June 12

- Honda confirms that a rupturing airbag killed the driver of a 2005 Honda Civic on April 5, 2015, in Lafayette, Louisiana. The vehicle involved in the crash was included in a June 2014 recall, and a recall notice was mailed to the victim on April 2, 2015; however, it did not arrive before the fatal accident.
- Daimler Vans issues a recall (15V-354) of passenger-side airbag inflators in approximately 40,061 vehicles.

June 15

- Honda issues a recall (15V-370) of approximately 1.39 million cars to replace passenger airbag inflators.

June 16

- Toyota expands a recall (15V-285) to include an additional 1.36 million cars with defective passenger-side airbags.

June 19

- Honda confirms an eighth death caused by a rupturing Takata airbag in a 2001 Honda Civic in Los Angeles.
- Takata is aware of at least eight deaths and over 100 injuries allegedly caused by its defective airbags. Nearly 34 million vehicles may be subject to a recall, making this potentially the largest collection of recalls of any consumer product in U.S. history.

List of Vehicles Affected by Takata Air Bag Recalls (as of June 19, 2015)*

Acura:
 2002 - 2003 Acura TL
 2003 Acura CL
 2003 - 2006 Acura MDX
 2005 Acura RL

2008 - 2010 Dodge Ram 4500
 2008 - 2010 Dodge Ram 4500/5500 Cab Chassis
 2008 - 2010 Dodge Ram 5500

2004 - 2006 B-Series Truck
 2004 - 2008 Mazda RX-8
 2006 - 2007 MazdaSpeed6

BMW:
 2000 BMW 328i
 2000 - 2006 BMW 325i
 2001 - 2005 BMW M3
 2001 - 2006 BMW 325xi/330i/330xi
 2002 - 2003 BMW M5/525i/530i/540i
 2002 - 2003 BMW 525iT/540iT
 2003 - 2004 BMW X5 3.0i/4.4i
 2002 - 2005 BMW 325XiT/325iT
 2002 - 2006 BMW 325Ci/330Ci
 2002 - 2006 BMW 325Cic/330Cic

Ford:
 2004 - 2006 Ford Ranger
 2005 - 2006 Ford GT
 2005 - 2014 Ford Mustang

Mitsubishi:
 2004 Mitsubishi Lancer Sportback
 2004 - 2006 Mitsubishi Lancer/Lancer Evolution
 2006 - 2010 Mitsubishi Raider

Chrysler:
 2005 - 2010 Chrysler 300/300C/SRT8
 2007 - 2008 Chrysler Aspen

GM:
 2007 - 2008 Chevrolet Silverado 2500/4500
 2007 - 2008 GMC Sierra 2500/3500

Nissan:
 2002 - 2003 Nissan Maxima
 2002 - 2004 Nissan Pathfinder
 2002 - 2006 Nissan Sentra

Daimler:
 2006 - 2008 Dodge Sprinter 2500/3500
 2006 - 2008 Freightliner Sprinter 2500/3500
 2008 - 2009 Sterling Bullet 4500/5500

Honda:
 2001 - 2005 Honda Civic
 2001 - 2007 Honda Accord
 2002 - 2004 Honda Odyssey
 2002 - 2006 Honda CR-V
 2002 - 2006 Honda Ridgeline
 2003 - 2005 Honda Civic Hybrid
 2003 - 2008 Honda Pilot
 2003 - 2011 Honda Element

Pontiac:
 2003 - 2007 Pontiac Vibe

Dodge:
 2003 - 2008 Dodge Ram 1500
 2003 - 2009 Dodge Ram 2500
 2003 - 2009 Dodge Ram 3500
 2004 - 2008 Dodge Durango
 2005 - 2010 Dodge Charger/Magnum
 2005 - 2011 Dodge Dakota
 2007 - 2009 Dodge Ram 3500 Cab Chassis
 2008 - 2009 Sterling 4500/5500 Cab Chassis

Infiniti:
 2001 Infiniti I30
 2002 - 2003 Infiniti QX4
 2002 - 2004 Infiniti I35
 2003 - 2005 Infiniti FX35,45
 2006 Infiniti M35,45

Saab:
 2005 Saab 92X

Subaru:
 2003 - 2005 Subaru Baja
 2003 - 2005 Subaru Legacy
 2003 - 2005 Subaru Outback
 2004 - 2005 Subaru Impreza

Lexus:
 2002 - 2007 Lexus SC

Toyota:
 2002 - 2007 Toyota Sequoia
 2003 - 2006 Toyota Tundra
 2003 - 2007 Toyota Corolla
 2003 - 2007 Toyota Matrix
 2004 - 2005 Toyota Rav4

Mazda:
 2003 - 2008 Mazda6
 2004 - 2005 MPV

***Please visit www.safercar.gov**

From: [REDACTED]
To: [REDACTED]
Sent: 4/5/2011 10:56:47 AM
Subject: RE: GPS audit

Thank you so much for your support.

Global safety audits had stopped for financial reasons for last 2 years. Good to start at least locally.

From: [REDACTED]
Sent: Tuesday, April 05, 2011 10:52 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: GPS audit

[REDACTED] this is a good opportunity, please support [REDACTED] plan as below

From: [REDACTED]
Sent: Tuesday, April 05, 2011 9:12 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: FW: GPS audit

Dear [REDACTED];

For information, help and support. We need your help.

[REDACTED] is a coordinator for Global Pyro Safety. He has over 30 years of experience in safety and processing. He has audited all Takata plants worldwide for safety. Last week, he was in [REDACTED] for a global audit.

I would like [REDACTED] to carry of safety audit of MTY1 [REDACTED] (new and scrap) handling and storage and also; for [REDACTED] handling and storage.

[REDACTED] plans to visit MTY1 on the 19th May afternoon and 20th May morning, after his safety audit of MIO plant. Please provide name of the MTY1 safety person that [REDACTED] can contact for coordinating this visit.

I sincerely appreciate all your help.

Regards;

From: [REDACTED]
Sent: Tuesday, April 05, 2011 9:52 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: GPS audit

I would like to perform a mini audit at Moses Lake (Propellant and Assembly) , Monclova (Assembly and Propellant Handling/Storage not CAP) and Monterrey (Steering wheels).

Here is what I propose:

1. Moses Lake April 18th (PM) to April 20th (AM if needed)
2. Monclova May 16th to May 18th
Pick in Monterrey 16th at noon, travel to Monclova
Return to Monterrey morning 19th
Monterrey Steering wheel (Magnesium areas) May 19th and morning May 20th
Travel to Detroit

Thank you

[REDACTED]

From: [REDACTED]
Sent: Wednesday, March 23, 2011 2:06 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: GPS audit

Please let me know what dates your guys will be proposing, need to schedule properly at Monclova too many audits and activities going on right now, we need to make sure we give the proper support during this audit.
Thank you

From: [REDACTED]
Sent: Wednesday, March 23, 2011 11:47 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: GPS audit

[REDACTED]

Don't wait till Fall. You and [REDACTED] should do MLIO and MIO soon.

When is it good for you two? Don't worry about everybody, just two of you.

Please help.

Regards;

[REDACTED]

From: [REDACTED]
Sent: Wednesday, March 23, 2011 8:36 AM
To: [REDACTED]
Subject: RE: GPS audit

[REDACTED]

January 2009

The plan will be to Audit North America Fall 2011

From: [REDACTED]
Sent: Tuesday, March 22, 2011 5:08 PM
To: [REDACTED]

Subject: GPS audit

██████████;

When is the last time you did GPS audit for MLIO and MIO?

If you have reports for their audits can you send them to me?

When is the next time you will go there for GPS audit?

Regards;

██████████

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Think Green - Please consider the environment before printing this email.

From : [REDACTED]
Sent : 3/30/2011 6:32:08 PM
To : [REDACTED]

Subject: Defects and defects and defects!!!!

[REDACTED]

Yesterday our customer reported an UNWELDED part, from YOUR shift.
TODAY they have reported a part with the label rotated 180 degrees from YOUR shift.

[REDACTED]

Today 38 complete inflators were thrown away because of incorrect CAP

EVERYBODY

I'm giving your colleagues as an example but the MESSAGE is general

Exhibit B

We need to strengthen inspection on line, and our associates must follow the internal control procedures to the letter

We cannot be faced with findings / defects of this sort and NOT do ANYTHING

One unwelded part = one less life, which means that we are NOT accomplishing the mission

Remember that here WE SAVE LIVES with our products. Therefore I need ALL your support in the DISCIPLINE and verification activities that take place before, during, and after each operation

You must always be on line to guarantee this and to answer any questions from your PERSONNEL

Let me know if you have any questions

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Think Green - Please consider the environment before printing this email.

From : [REDACTED]

Sent : 3/31/2011 10:34:36 PM

To : [REDACTED]

[REDACTED]

[REDACTED]

Subject: RE: Reworking station 100 parts to 120
Attachments: RE: Defects and defects and defects!!!!

Supervisors, ME and QEs

As [REDACTED] says in his email, we are in a very critical situation because of the most recent problems that we have detected on the line.

Situations like this can give rise to a Recall.

We need the support of every one of you to make the operatives aware of good practices:

- Abnormal situations Response Plan (critical defects such as missing welds, reversed parts, incorrect weights, incorrect components, etc.)
- Accumulation of parts (this leads to operators having two parts in their hands at the same time and makes it easier for them to mix parts)
- Inspection of parts before, during, and after processing.
- Attention to the operation

The eyes of all the top management will be on us

Let's pause and reconsider everything I have described above and correct what has to be corrected.

Discuss your plan of action at the daily meeting.

Regards

[REDACTED]