



**COMMITTEE ON COMMERCE,  
SCIENCE, AND TRANSPORTATION**

**BILL NELSON  
RANKING MEMBER**

**The Takata Recalls: Consumers Are Still  
Stuck in Neutral**

Investigation of Takata Recalls Shows Low Recall  
Completion Rates, Use of Ammonium-Nitrate  
Inflators as Replacements, and Continued Sale  
of New Vehicles with Problem Inflators

**OFFICE OF OVERSIGHT AND INVESTIGATIONS  
MINORITY STAFF REPORT**

**JUNE 1, 2016**

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## **EXECUTIVE SUMMARY**

For well over a year, Ranking Member Bill Nelson of the Senate Committee on Commerce, Science, and Transportation has been conducting a wide-ranging investigation into issues surrounding defective Takata airbag inflators – a crisis that has now grown into the largest series of safety recalls in U.S. history. To date, the Committee has conducted two hearings on the issue, and Committee Minority staff have released a report and an addendum for Ranking Member Nelson detailing widespread manipulation of data by Takata and missed warning signs in the years leading up to a series of deadly incidents that led to the current recalls.

This report examines the effectiveness of the current recalls, including Takata, the National Highway Traffic Safety Administration (NHTSA), and automakers' efforts to help consumers impacted by this crisis. Based on the information provided by the 14 automakers affected by the Takata recalls, Committee Minority staff found:

- 1) Recall completion rates across automakers remain unacceptably low. As of March 2016, the nationwide recall completion rates ranged from .04% to 39.5%.
- 2) To date, the majority of replacement inflators that have been installed – approximately 4.6 million – are Takata ammonium-nitrate inflators. At least 2.1 million of these replacement inflators are non-desiccated – the very type of inflator that is now being recalled – and they will have to be replaced again in the future.
- 3) Takata inflators, including non-desiccated inflators, continue to be produced and installed as replacement inflators in recalled vehicles.
- 4) Four automakers are still selling – or have plans to sell – new vehicles equipped with Takata non-desiccated ammonium-nitrate inflators, even though they will all be subject to recall by the end of 2018.

## I. BACKGROUND

The Takata airbag recalls continue to grow and are now the largest safety recalls in history. On May 4, 2016, the National Highway Traffic Safety Administration (NHTSA) expanded the Takata recalls to include all non-desiccated frontal Takata ammonium-nitrate inflators.<sup>1</sup> This expansion is projected to add an estimated 35-40 million inflators to the 28 million inflators formerly recalled.<sup>2</sup> In all, more than 60 million inflators in the United States eventually may be recalled, potentially affecting almost one out of every four cars on the road today.<sup>3</sup>

Studies to date conducted by NHTSA and certain outside parties suggest that the likely root cause of the ruptures of Takata's ammonium-nitrate airbags is a function of time, temperature cycling, and environmental factors.<sup>4</sup> When these factors combine, an airbag may deploy with excessive force, rupturing the airbag inflator's casing and sending fragments of metal at the driver or passenger of the vehicle. These ruptures are responsible for more than 100 injuries in the U.S. and at least 13 deaths worldwide.<sup>5</sup>

For over a year, Ranking Member Bill Nelson of the Senate Committee on Commerce, Science, and Transportation has been investigating issues surrounding the Takata recalls. As part of this investigation, Ranking Member Nelson previously released a report and an addendum focusing on serious safety and quality lapses at Takata, including the widespread manipulation of inflator testing data.<sup>6</sup>

On March 9, 2016, Senator Nelson wrote to all 14 automakers that have vehicles subject to the Takata recalls and requested information on their efforts to replace each recalled inflator with a safe replacement.<sup>7</sup> Senator Nelson received responses from all 14 automakers. In those

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<sup>1</sup> National Highway Traffic Safety Administration, In re: EA15-001 Air Bag Inflator Rupture, Amendment to November 3, 2015 Consent Order (May 4, 2016) (hereinafter "Amended Consent Order").

<sup>2</sup> National Highway Traffic Safety Administration, *Takata Recall Expansion: What Consumers Need to Know* (online at <http://www.safercar.gov/rs/takata/takata-explainer.html>).

<sup>3</sup> *Takata Airbag Recall Is Said to Grow by 35 Million*, New York Times (May 3, 2016).

<sup>4</sup> Amended Consent Order, at 3.

<sup>5</sup> *Takata Hires Lazard, Seeks Cash Infusion After Air Bag Deaths*, Reuters (May 25, 2016).

<sup>6</sup> Senate Committee on Commerce, Science, and Transportation, *Danger Behind the Wheel: The Takata Airbag Crisis and How to Fix Our Broken Auto Recall Process*, 114<sup>th</sup> Cong. (2015); Senate Committee on Commerce, Science, and Transportation, *Total Recall: Internal Documents Detail Takata's Broken Safety Culture and the Need for a More Effective Recall Process, Addendum to Danger Behind the Wheel: The Takata Airbag Crisis and How to Fix Our Broken Auto Recall Process*, 114<sup>th</sup> Cong. (2016).

<sup>7</sup> See Letter from Ranking Member Bill Nelson to the 14 automakers (Mar. 9, 2016). The 14 automakers include: BMW of North America, LLC (BMW), Daimler Trucks North America (Daimler Trucks), Daimler Vans USA (Daimler Vans), FCA US LLC (FCA), Ford Motor Company (Ford), General Motors LLC (GM), Honda North America, Inc. (Honda), Mazda USA (Mazda), Mercedes-Benz USA (Mercedes-Benz), Mitsubishi Motors North America (Mitsubishi), Nissan North America, Inc. (Nissan), Subaru of America, Inc. (Subaru), Toyota Motor North America, Inc. (Toyota), and Volkswagen Group of America (Volkswagen).

responses, three automakers – all of which were only recently subject to the Takata recalls – indicated that they had not started replacing defective Takata airbags.<sup>8</sup>

On May 4, 2016, NHTSA entered into an Amendment to the November 3, 2015 Consent Order (Amended Consent Order) with Takata in which Takata agreed to declare all frontal non-desiccated ammonium-nitrate inflators defective, and further agreed to recall all impacted vehicles by the end of 2019.<sup>9</sup> This Amended Consent Order follows NHTSA’s November 2015 Consent Order with Takata, which requires the phase-out of certain new ammonium-nitrate inflators, and NHTSA’s November 2015 Coordinated Remedy Order, which requires automakers to prioritize recall repairs.<sup>10</sup>

## II. FINDINGS

### A. Recall Completion Rates Remain Unacceptably Low

The responses from the automakers reveal very low nationwide recall completion rates – the percentage of defective vehicles repaired. According to the 11 automakers that had launched their recalls, as of March 2016,<sup>11</sup> the nationwide recall completion rates for individual automakers ranged from .04% to 39.5%:

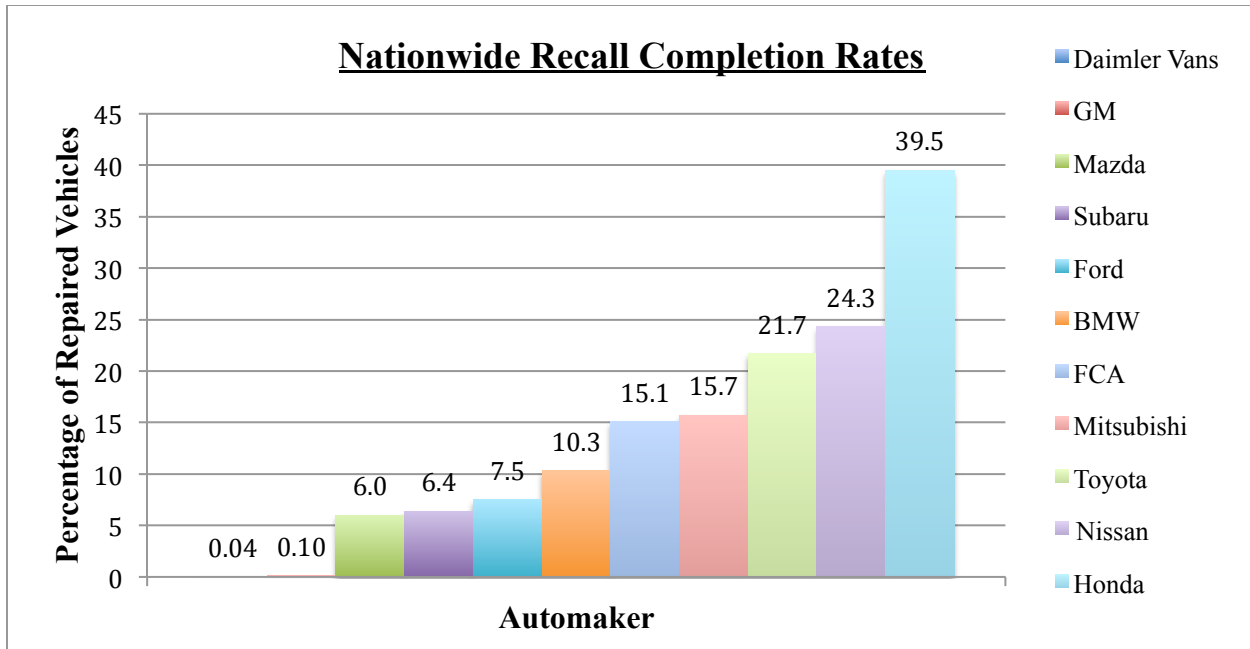
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<sup>8</sup> At the time of their responses, Mercedes-Benz, Daimler Trucks, and Volkswagen had not launched their recalls. *See* Letter from Mercedes-Benz to Ranking Member Bill Nelson, 2 (Apr. 1, 2016) (“[G]iven that the recall was decided in February 2016, and optimized replacement inflators still have to be developed, the recall completion rate is at 0.”); Letter from Daimler Trucks to Ranking Member Bill Nelson, 1 (Mar. 31, 2016) (“We have already notified all our affected customers and are also working with our dealer network to ensure defective airbags are replaced quickly and conveniently with minimum disruption.”); Letter from Volkswagen to Ranking Member Bill Nelson, 2 (Apr. 19, 2016) (“The recall has not yet been launched. Although a final remedy action is not yet available, the required interim customer mailing was sent on April 11, 2016.”). Since that time, at least one automaker, Daimler Trucks, has launched its recall. *See* National Highway Traffic Safety Administration, *Completion Rates* (May 20, 2016) (online at <http://www.safercar.gov/rs/takata/takata-completion-rates.html>).

<sup>9</sup> Amended Consent Order.

<sup>10</sup> National Highway Traffic Safety Administration, In re: EA15-001 Air Bag Inflator Rupture, Consent Order (Nov. 3, 2015); National Highway Traffic Safety Administration, In re: Docked No. NHTSA-2015-0055, Coordinated Remedy Order (Nov. 3, 2015).

<sup>11</sup> According to the nine automakers that provided a date, the data was current as of March 8-25, 2016.



Recall completion rates for the High Absolute Humidity (HAH)<sup>12</sup> priority region were also notably low.<sup>13</sup> As of March 2016, the completion rates of the nine automakers that provided data for the HAH region ranged from 0% to 39.6%. GM, FCA, and BMW provided HAH completion rates for individual recall campaigns.

**Recall Completion Rates for the High Absolute Humidity Region**

GM	FCA	BMW	Ford	Mazda	Nissan	Subaru	Toyota	Honda
0%, 0.7%	0%, 0%, 2%, 17%, 18%	0%, 24%, 38%, 38.5%	9%	9.1%	20%	22.1%	29.7%	39.6%

Comparing the automaker-provided recall completion rates to NHTSA’s most recent data also confirms that nationwide recall completion rates remain low.<sup>14</sup> NHTSA’s data as of May

<sup>12</sup> In the November 2015 Coordinated Remedy Order, NHTSA defined the HAH region to include: Alabama, Florida, Georgia, Hawaii, Louisiana, Mississippi, Texas, Puerto Rico, American Samoa, Guam, Saipan, and the U.S. Virgin Islands. National Highway Traffic Safety Administration, In re: Docket NO. NHTSA-2015-0055, Coordinated Remedy Order, at 15 n.8 (Nov. 3, 2015). In the May 2016 Amended Consent Order, NHTSA updated the definition to include California and South Carolina. Amended Consent Order, at 4.

<sup>13</sup> The definition for “HAH region” varied in the automakers’ responses. Most automakers did not provide a definition, but one automaker defined the HAH region to include only three states and territories, one automaker used NHTSA’s definition under the Coordinated Remedy Order, and two automakers had a more expansive definition than NHTSA’s definition under the Coordinated Remedy Order.

<sup>14</sup> According to NHTSA, recall completion rate information “is not intended to represent the real-time status of any individual recall’s performance or any group of recalls’ performance. There are inherent delays between the time an

20, 2016 shows that some progress has been made since March 2016, with the nationwide completion rates ranging from .16% to 57.1%.<sup>15</sup>

According to NHTSA, on average only about 70% of vehicles subject to a recall are repaired within the 18-month period during which automakers provide recall completion data to NHTSA.<sup>16</sup> A Government Accountability Office (GAO) study found the average recall completion rate to be around 65%.<sup>17</sup> An automaker's recall completion rate may be affected by various factors, including the automaker's inability to reach recalled vehicles due to scrapping, export to foreign countries, or theft.<sup>18</sup>

In addition, identifying and notifying vehicle owners presents challenges, because some vehicle owners do not keep their mailing addresses updated with their state departments of motor vehicles.<sup>19</sup> Identifying mailing addresses for older vehicles has proven to be difficult due to successive ownership and the fact that they may no longer be on the road.<sup>20</sup> Furthermore, the recall completion rate of older vehicles tends to be lower, because owners of older vehicles are less likely to fix these vehicles.<sup>21</sup> Due to the potential risk of severe injury or death posed by defective Takata inflators, however, additional steps must be undertaken to identify all impacted vehicles still in service and repair them as soon as possible.

#### **B. The Majority of Replacement Inflators Installed to Date Are Takata Ammonium-Nitrate Inflators, Including Non-Desiccated Inflators That Will Be Recalled and Replaced Again**

According to the automakers' responses, the majority of the replacement inflators installed in vehicles as of March 2016 are Takata's ammonium-nitrate inflators.

The 11 automakers<sup>22</sup> that had launched their recalls<sup>23</sup> at the time of responding have all

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individual car is repaired, when its repair status is reported to the manufacturer, and when the status is then reported to NHTSA." National Highway Traffic Safety Administration, *Completion Rates* (May 20, 2016) (online at <http://www.safercar.gov/rs/takata/takata-completion-rates.html>).

<sup>15</sup> *Id.*

<sup>16</sup> Government Accountability Office, *Auto Safety: NHTSA Has Options to Improve the Safety Defect Recall Process*, GAO-11-603, at 1 (June 2011).

<sup>17</sup> GAO analyzed NHTSA's completion rate data for passenger vehicle recalls from 2000 through 2008. *Id.* at 24-25. GAO additionally found that recall completion rates for some automakers were as low as 23%-53% per year, while other automakers were as high as 90%-96% per year. Recall completion rates specifically involving airbags averaged 60%. *Id.* at 25-26.

<sup>18</sup> *Id.* at 12.

<sup>19</sup> *Id.* at 20.

<sup>20</sup> *Id.*

<sup>21</sup> The perception of the severity of a safety defect by the consumer also impacts the completion rate. *Id.* at 12-13.

<sup>22</sup> BMW, Daimler Vans, FCA, Ford, GM, Honda, Mazda, Mitsubishi, Nissan, Subaru, and Toyota.

<sup>23</sup> *See supra* fn 8.

used at least some Takata ammonium-nitrate inflators as replacements, with seven automakers<sup>24</sup> using exclusively Takata inflators. As of March 2016, the total number of Takata ammonium-nitrate replacements installed in U.S. vehicles was at least 4,688,487 – or 61% of all replacements that had been installed at the time of the automakers’ responses.<sup>25</sup>

Furthermore, all 11 automakers<sup>26</sup> that had launched their recalls at the time of their responses have installed at least some Takata replacements that contain non-desiccated ammonium nitrate. Six<sup>27</sup> of these automakers had used exclusively Takata’s non-desiccated ammonium-nitrate inflators as replacements at the time of their responses. According to the responses, as of March 2016, more than 2.1 million non-desiccated ammonium-nitrate replacement inflators have been installed in U.S. vehicles.

These non-desiccated replacements are a temporary remedy that is, according to NHTSA, at least in the short term, safer than the old recalled inflators. Current studies suggest that a rupture event is the result of a combination of three factors: temperature cycling, moisture, and time.<sup>28</sup> Based on this theory, a new non-desiccated Takata inflator is safer than an older non-desiccated Takata inflator, because the inflator has not been exposed to years of environmental moisture and temperature cycling. However, the use of non-desiccated Takata replacements is only a temporary remedy, and all of these replacement inflators will also have to be recalled by December 31, 2019, according to NHTSA’s Amended Consent Order.<sup>29</sup>

### **C. Takata Replacement Inflators, Including Non-Desiccated Inflators, Continue to Be Produced and Installed in Recalled Vehicles**

In addition to the replacement inflators already installed in vehicles, automakers’ current supplies of replacement inflators contain numerous additional Takata inflators. At the time of the automakers’ responses, more than 1.6 million Takata inflators were stocked, awaiting installation in recalled vehicles. Of the 10 automakers<sup>30</sup> that provided a detailed breakdown of their current supplies of replacement inflators, nine<sup>31</sup> had stocks of non-desiccated inflators totaling more than 580,000.

At least eight automakers<sup>32</sup> indicated in their responses that they planned to continue using Takata replacement inflators, and at least two automakers<sup>33</sup> indicated that their future

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<sup>24</sup> BMW, Daimler Vans, Ford, GM, Mazda, Nissan, and Subaru.

<sup>25</sup> At least 7,664,280 total inflators had been installed at the time of the automakers’ responses.

<sup>26</sup> BMW, Daimler Vans, FCA, Ford, GM, Honda, Mazda, Mitsubishi, Nissan, Subaru, and Toyota.

<sup>27</sup> BMW, Daimler Vans, Ford, GM, Nissan, and Subaru.

<sup>28</sup> Amended Consent Order, at 3.

<sup>29</sup> *Id.* at 7.

<sup>30</sup> BMW, Daimler Vans, FCA, Ford, GM, Honda, Mazda, Nissan, Subaru, and Toyota.

<sup>31</sup> BMW, Daimler Vans, FCA, Ford, GM, Mazda, Nissan, Subaru, and Toyota.

<sup>32</sup> FCA, GM, Honda, Mazda, Mitsubishi, Subaru, Toyota, and Volkswagen.

<sup>33</sup> FCA and Honda.



supply of Takata replacements would include non-desiccated inflators. One automaker stated that there was no expiration date on its contract with Takata for the supply of replacements. The Amended Consent Order does not prohibit automakers from using replacement inflators manufactured by Takata, including non-desiccated inflators.<sup>34</sup> As noted previously, current studies indicate a new non-desiccated inflator is safer than an old non-desiccated inflator. However, under the Amended Consent Order, all non-desiccated Takata replacement inflators must be recalled by the end of 2019.<sup>35</sup>

Many automakers are in the process of securing other suppliers for replacement inflators. At least 10 automakers were using suppliers other than Takata or were developing plans to move to new suppliers for their replacements.

In addition, some automakers are moving away from Takata entirely. For example, one automaker stated that its supply of Takata replacement inflators would conclude in May 2016, and another automaker explained that it would not be receiving any additional replacements from Takata beyond what has already been provided.

#### **D. Four Automakers Are Still Selling – or Have Plans to Sell – New Vehicles Equipped with Takata Ammonium-Nitrate Inflators, Including Non-Desiccated Inflators That Will All Be Recalled by The End of 2018**

Of the 11 automakers that provided detailed information about the use of Takata airbags in new vehicles, at least nine<sup>36</sup> stated that they currently offer – or plan to offer – new vehicles containing Takata ammonium-nitrate inflators. Of those nine, at least four automakers<sup>37</sup> also indicated that some new vehicles were still being equipped with non-desiccated Takata inflators – the type of inflator that will be subject to recall by the end of 2018 and that is responsible for nearly all the deaths and injuries from Takata airbag ruptures.<sup>38</sup> The majority of the four

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<sup>34</sup> Amended Consent Order.

<sup>35</sup> *Id.* at 7.

<sup>36</sup> Daimler Vans, FCA, Ford, Honda, Mitsubishi, Nissan, Subaru, Toyota, and Volkswagen.

<sup>37</sup> FCA, Mitsubishi, Toyota, and Volkswagen.

<sup>38</sup> The model and year of new vehicles equipped with non-desiccated inflators that were provided by Mitsubishi and Volkswagen include: 2016 and 2017 Mitsubishi i-MiEV (front passenger-side inflator); 2016 Volkswagen CC (front driver-side inflator); 2016 Audi TT (front driver-side inflator); and 2017 Audi R8 (front driver-side inflator). Honda's response stated that 17,000 new vehicles are equipped with non-desiccated inflators; however, in a May 31, 2016 phone conversation, a Honda representative stated that no new vehicles are or will be equipped with non-desiccated inflators. Toyota did not provide the model and year of their new vehicles containing non-desiccated inflators but provided the following information regarding front passenger-side inflators: "Between March 2016 and July 2017, production forecasts are for approximately 175,000 vehicles with non-desiccated PSAN [Phase Stabilized Ammonium Nitrate] inflators." FCA also did not provide this information but stated: "One current model contains a passenger side airbag inflator that is non-desiccated." Based on the information provided, it is possible that only some – not all – of the vehicles in those new model segments are equipped with non-desiccated Takata inflators. While all U.S. deaths reported to date have been caused by driver-side inflators that ruptured, NHTSA's Consent Orders cover both non-desiccated driver-side and passenger-side inflators. Specifically, the Amended Consent Order states that its purpose is to "address the potential for safety risks to develop in non-desiccated frontal Takata PSAN inflators that have not previously been subject to recalls in the United States." Amended Consent Order, at 3.

automakers currently selling new vehicles that contain these inflators also shared details in their responses of plans to stop using any non-desiccated Takata inflators in the near future.<sup>39</sup>

The Consent Orders currently permit automakers to continue selling new vehicles equipped with desiccated and non-desiccated Takata inflators, because, as discussed above, studies conducted by NHTSA and certain outside organizations suggest the degradation of ammonium nitrate that can lead to a rupture event occurs over time as a result of exposure to high heat cycles and humidity.<sup>40</sup> The original Consent Order, however, states that – if Takata cannot demonstrate that it has established a root cause of the ruptures or demonstrate to NHTSA’s satisfaction that its inflators are safe – NHTSA can issue an order requiring Takata to declare all desiccated ammonium-nitrate inflators defective.<sup>41</sup> Additionally, the Amended Consent Order requires that all vehicles equipped with non-desiccated inflators must be declared defective and recalled by the end of 2018.<sup>42</sup>

One automaker stated that its contract with Takata for the supply of airbags in new vehicles contained no expiration date. On the other hand, another automaker stated that it did not offer any 2016 model year vehicles that contained Takata ammonium-nitrate inflators and had no plans to produce vehicles containing Takata inflators. Additional automakers explained that they were in the process of moving away from offering any vehicles equipped with Takata airbags.

### **III. CONCLUSION**

The Takata airbag crisis is an unprecedented safety recall of airbags – safety devices that are supposed to save lives, not injure or even cause death. As an initial matter, the sale of new vehicles containing Takata non-desiccated ammonium-nitrate inflators should be stopped until these vehicles are repaired. NHTSA, Takata, and the automakers should also take urgent coordinated action to increase the supply of non-ammonium-nitrate replacement inflators. Finally, NHTSA, Takata, and the automakers must continue to keep consumers fully informed of what vehicles are subject to the recalls and when replacement parts will be available, and take all possible action to ensure that impacted vehicles are repaired as soon as possible.

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<sup>39</sup> FCA stated that it has engaged its internal engineering team to develop an alternative solution to the non-desiccated inflator it is currently using in one new vehicle; Mitsubishi stated that future models will not use Takata ammonium-nitrate inflators; Toyota stated that it remains committed to taking appropriate steps to replace both desiccated and non-desiccated inflators as necessary in the future; and Volkswagen did not address its future plans regarding the use of non-desiccated Takata inflators. Honda stated that during calendar year 2016 it will convert to non-Takata inflators for all new vehicles.

<sup>40</sup> *E.g.*, Amended Consent Order, at 3.

<sup>41</sup> National Highway Traffic Safety Administration, In re: EA15-001 Air Bag Inflator Rupture, Consent Order, at 16 (Nov. 3, 2015).

<sup>42</sup> Amended Consent Order, at 7.