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The Oversight Series

Accountability to the American People

Staff Report on the GM Ignition Switch Recall: Review of NHTSA



Prepared by the Energy and Commerce Committee, Majority Staff

I. Executive Summary

On a cloudy night in October 2006, three teenaged friends went out for a drive in a 2005 Chevrolet Cobalt. As they traveled down a two-lane road in Wisconsin, the driver veered off the roadway and lost control of the car. The vehicle went airborne before impacting a telephone utility box and multiple trees. The Cobalt's air bags did not deploy. Two passengers lost their lives and the driver sustained serious injuries.

A subsequent investigation by a Wisconsin State Trooper revealed that the vehicle's ignition switch was in the "accessory" position. The State Trooper located a Technical Service Bulletin (TSB) from the vehicle's manufacturer, General Motors (GM), which suggested the vehicle could be inadvertently turned off due to a low torque ignition switch. The State Trooper determined that the likely cause of the non-deployment of the frontal air bags was tied to the vehicle being in the "accessory" position, possibly due to the low torque ignition switch.

This accident and the State Trooper's February 2007 report provided the answer to a riddle that went unsolved by GM and the National Highway Traffic Safety Administration (NHTSA) for seven more years. This defect ultimately contributed to at least 13 fatalities prior to the recall of over 2 million vehicles in 2014. In 2007, however, both GM and NHTSA had received reports of severe accidents involving the Chevrolet Cobalt and Saturn Ion where the frontal air bags failed to deploy. Neither GM nor NHTSA could explain these cases, in part, because critical information, like the State Trooper's report, went unnoticed by GM and NHTSA for years. This report and how it was handled by GM and NHTSA, respectively, is one example of the numerous failures that prevented each institution from identifying the ignition switch defect and taking timely action.

In the case of GM, the company's internal investigation conducted by attorney Anton Valukas (Valukas Report) revealed that the company did receive a copy of the State Trooper's report. It was obtained by a GM contractor responsible for claims administration and saved in the electronic files of GM's Legal Department.¹ According to the Valukas Report, the only people to access this document at GM were employees responsible for providing claims data requested by NHTSA under the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act.² Tragically, GM investigators and attorneys reviewing Cobalt cases were unaware of the State Trooper's report for years.

Investigators at NHTSA, however, did review the State Trooper's report, along with the results of a separate, independent investigation of this crash commissioned by the agency. Both of these reports pointed to the ignition switch as a potential cause of the non-deployment of the frontal air bags and identified the GM Technical Service Bulletin related to the low torque ignition switch.

¹ Anton R. Valukas, Jenner & Block, Report to Board of Directors of General Motors Company Regarding Ignition Switch Recalls, at 117 (May 29, 2014) available at <http://www.nhtsa.gov/> (hereinafter, "Valukas Report").

² *Id.*

NHTSA investigators either overlooked or failed to understand these reports, contributing to the agency's failure to identify the similarities between this accident with prior and subsequent agency-commissioned crash investigations involving the Chevrolet Cobalt. This and other internal failures described in this Committee report contributed to NHTSA's inability to identify this defect.

GM's tragic failure to identify and remedy this defect is a source of tremendous concern and continued investigation by this Committee. Both the Committee's investigation and the Valukas Report uncovered many factors that contributed to this tragedy, including the company's failure to understand how its cars operated, a lack of accountability, and permitting investigations of potential safety problems to drift for years without resolution. Unquestionably, GM bears significant responsibility for the delay in identifying the Cobalt and Ion ignition switch defect and initiating a timely recall. Similarly, one question presented by the Committee's investigation is how GM's regulator, NHTSA, dealt with the data and information submitted by GM and consumers about the Cobalt and Ion and whether the agency took appropriate action. To answer this question, the Committee examined NHTSA's practices and procedures and the agency's review of the GM ignition switch safety defect. After reviewing documents produced by GM and NHTSA and conducting extensive interviews and briefings of relevant officials, Committee staff has identified the following key failures by the nation's automobile safety regulator:

- 1) *NHTSA had ample information to identify a potential safety defect as early as 2007.* Two Divisions of the Office of Defects Investigations (ODI) identified a potential defect related to the non-deployment of frontal air bags in the Cobalt and Ion through information reported by GM under the TREAD Act as well as consumer complaints and other information received by NHTSA. In addition, the agency received multiple reports — including a police report and agency-commissioned crash investigations — suggesting a link between a low torque ignition switch and air bag non-deployment. Despite numerous sources of information, when the agency considered a proposal to open an investigation into the non-deployment of frontal air bags in the Cobalt and Ion in 2007, investigators relied on a generalized trend analysis of consumer complaints to assess the potential for a defect. The number of consumer complaints related to the Cobalt and Ion did not stand out from peer vehicles, therefore the agency did not pursue an investigation.
- 2) *The agency failed to investigate or even explore the link between the air bags and ignition switch identified in the State Trooper's report or agency-commissioned crash investigation following the fatal crash in Wisconsin.* Investigators did not recall any agency discussions regarding the details of these reports, including the suggested link between the ignition switch and air bag deployment. The agency, instead, focused on the circumstances of the crash based on outdated perceptions of how air bag systems functioned. This contributed to the years of delay in identifying this defect.

- 3) *NHTSA failed to track or identify similarities in three independent investigations it commissioned of crashes involving non-deployment of the frontal air bags in the Chevrolet Cobalt.* No one at the agency tracked or identified the similarities between these reports. For example, none of the investigators interviewed by the Committee recalled any discussion of the vehicle power mode status in a 2005 report even after a 2007 report suggested a possible link between power mode status and air bag deployment. Further, when the 2007 report was updated to reference a potential link to a low torque ignition switch and included the GM Technical Service Bulletin, no one at the agency recalls revisiting the first crash investigation. In fact, key investigators told the Committee they were unaware of this potential link or the Technical Service Bulletin until after the GM recall in 2014. Similarly, few if any NHTSA employees recall reviewing the third crash investigation report, let alone comparing it to previous crash investigations.

- 4) *NHTSA's failure to follow-up on information provided to the agency was compounded by a lack of understanding of the vehicle systems and functions implemented in response to the agency's own standards.* Key investigators at NHTSA lacked a fundamental understanding of how advanced air bag systems functioned. Assessments of potential defects, therefore, were based on investigators' knowledge of previous generation air bag systems. It was not until after GM announced a recall of these vehicles in February 2014 that NHTSA understood the connection between the ignition switch position and air bag deployment – not only in GM vehicles but all vehicles.

This report details how these and other failures contributed to NHTSA's delay in identifying this safety defect. Section II provides background on the GM recall and the Committee's investigation. Section III offers background on NHTSA's oversight of safety defects and provides a detailed chronology of the agency's investigation of the Cobalt and Ion. Finally, Section IV outlines a number of key observations by the Committee based on this investigation.

II. The GM Recall and Committee Investigation

This section outlines GM's announcement of the ignition switch recall, subsequent actions and provides an overview of the Committee's investigative activities of the GM recall.

A. The GM Recall

On February 7, 2014, GM informed NHTSA it had determined a defect existed in the 2005-2007 model year (MY) Chevrolet Cobalt and the 2007 Pontiac G5 vehicles.³ GM stated that the

³ Letter from M. Carmen Benavides, Director, Product Investigations and Safety Regulations, General Motors LLC, to Nancy Lewis, Associate Administrator for Enforcement, NHTSA (Feb. 7, 2014) available at <http://www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM450012/RCDNN-14V047-1347P.pdf> (hereinafter "GM February 7, 2014, Letter to NHTSA").

“ignition switch torque performance” may not meet GM’s specifications. If the torque performance is not to specification, and the key ring is carrying added weight or the vehicle goes off-road or experiences some other jarring event, the ignition switch may inadvertently be moved out of the run position.⁴ GM explained that, depending on the time the ignition moved out of the “Run” position, the air bags of the affected vehicles would not deploy. The recall was announced on February 10, 2014, and applied to 619,122 vehicles. Two weeks later, on February 25, 2014, GM expanded the recall to include an additional 748,024 vehicles: the 2006-2007 MY Chevrolet HHR, the 2006-2007 MY Pontiac Solstice, the 2003-2007 MY Saturn Ion, and the 2007 MY Saturn Sky Vehicles.⁵ Between the first and second groups of recalled vehicles, GM identified 54 crashes, resulting in at least 13 fatalities, where this defect likely contributed to the non-deployment of the frontal air bags.⁶ In its recall notices, GM stated that it is “very important that customers remove all items from their key rings, leaving only the vehicle key. The key fob . . . should also be removed from the key ring.”⁷ In a March 17, 2014, notice to GM dealers, GM stated that they expected the initial supply of new ignition switch parts would be available on April 7, 2014.⁸

On March 28, 2014, GM again expanded the ignition switch recall to cover all model years of the Chevrolet Cobalt and HHR, the Pontiac G5 and Solstice, and the Saturn Ion and Sky in the United States. GM stated that its reason for expanding the recall was that faulty switches may have been used as service parts in these later models. GM further explained that it was “unaware of any reports of fatalities with this group of vehicles where a frontal impact occurred, the front air bags did not deploy and the ignition is in the ‘accessory’ or ‘off’ position.”⁹ This second expansion of the ignition switch recall covers an additional 823,788 vehicles in the U.S., bringing the total number of recalled vehicles to 2,191,934.

Following the initial recall, GM began extensive testing to evaluate the performance and safety of the existing ignition switch under a variety of conditions. GM concluded that the recalled vehicles were safe to drive until the ignition switch could be replaced as long as owners removed all heavy objects from the key ring. Despite calls for GM to “park” the recalled vehicles, Secretary of Transportation Anthony R. Foxx declined to advise owners of the recalled GM vehicles to cease

⁴ *Id.*

⁵ Letter from M. Carmen Benavides, Director, Product Investigations and Safety Regulations, General Motors LLC, to Nancy Lewis, Associate Administrator for Enforcement, NHTSA (Feb. 25, 2014) available at <http://www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM450732/RCDNN-14V047-7510.pdf> (hereinafter “GM February 24, 2014, Letter to NHTSA”).

⁶ Valukas Report, at [1].

⁷ *See, e.g.*, GM February 7, 2014, Letter to NHTSA; GM February 24, 2014, Letter to NHTSA; Letter from M. Carmen Benavides, Director, Product Investigations and Safety Regulations, General Motors LLC, to Nancy Lewis, Associate Administrator for Enforcement, NHTSA (Mar. 11, 2014) available at <http://www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM451430/RCDNN-14V047-9346P.pdf> (hereinafter “GM March 11, 2014, Letter to NHTSA”).

⁸ Memorandum from GM Customer Care and Aftersales to All General Motors Dealers (Mar. 17, 2014) available at <http://www-odi.nhtsa.dot.gov/acms/cs/jaxrs/download/doc/UCM452894/RCMN-14V047-3409.pdf> .

⁹ Press Release, General Motors, GM Moves to Secure Recalled Ignition Switches (Mar. 28, 2014) available at <http://media.gm.com/media/us/en/gm/news.detail.html/content/Pages/news/us/en/2014/mar/0328-ignition-service.html> .

driving their cars until the ignition switch was replaced, stating that such a warning was “not necessary.”¹⁰ In reaching this conclusion, Secretary Foxx stated that NHTSA had “thoroughly evaluated” GM’s interim guidance and testing and NHTSA’s own engineers had examined the “geometry and physics” of the ignition key, switch, and steering column in the recalled vehicles.¹¹

NHTSA opened a “Timeliness Query” on March 4, 2014, “to evaluate the timing of GM’s defect decision-making and reporting of the safety defect to NHTSA.”¹² On May 16, 2014, NHTSA announced a settlement of the Timeliness Query, stating that GM had “agreed to pay a record \$35 million civil penalty and to take part in unprecedented oversight requirements as a result of findings from NHTSA’s timeliness investigation regarding the Chevrolet Cobalt and the automaker’s failure to report a safety defect in the vehicle to the federal government in a timely manner.”¹³ GM admitted in the Consent Order that it had failed to notify NHTSA of a safety-related defect within five working days as required by the Safety Act.¹⁴ Pursuant to the Consent Order, GM agreed to have monthly meetings with NHTSA for one year following the date of the Consent Order to discuss its implementation of recommendations resulting from the Valukas Report.¹⁵ GM also agreed to establish improved internal reporting procedures for safety-related defects; improve employee training; and strengthen processes for identifying safety defects.¹⁶

Since January 2014, GM has initiated 60 recall campaigns affecting approximately 29 million vehicles worldwide, including more than 25 million in the United States. This is almost equal to the total number of vehicles recalled by the entire industry in 2013 (27.9 million) and more than doubles GM’s previous one year record of more than 11 million vehicles. In the first six months of 2014, the automobile industry as a whole has recalled nearly 40 million vehicles, surpassing the previous record of just over 33 million set in 2004.¹⁷

B. Committee’s Investigation

On March 10, 2014, the Committee announced that it would conduct a bipartisan investigation of the GM ignition switch recall. On March 11, 2014, Committee members sent letters to GM and NHTSA requesting certain documents and information about the GM recall. To date, the

¹⁰ See Letter from Anthony R. Foxx, Secretary, Department of Transportation, to Senator Edward J. Markey (May 6, 2014), available at <http://www.autonews.com/assets/PDF/CA9453057.PDF>.

¹¹ *Id.*

¹² Office of Defects Investigation Resume TQ14-001, NHTSA (February 26, 2014) available at, <http://www.nhtsa.gov/About+NHTSA/NHTSA+Timeliness+Query+on+2014+GM+Recall+of+Ignition+Switches>

¹³ Press Release, NHTSA, General Motors agrees to pay maximum \$35 million penalty for violating federal safety laws in Chevrolet Cobalt investigation (May 16, 2014) available at <http://www.nhtsa.gov/About+NHTSA/Press+Releases/2014/DOT-Announces-Record-Fines,-Unprecedented-Oversight-Requirements-in-GM-Investigation>.

¹⁴ United States Department of Transportation National Highway Traffic Safety Administration Consent Order In re: TQ14-001, NHTSA Recall No. 14V-047, at [4], (May 16, 2014).

¹⁵ *Id.*, at [6].

¹⁶ *Id.*, at [7-8].

¹⁷ *Total Recall: GM Pushes 2014 Auto Recalls into Record Territory*, NBC News, June 30, 2014, <http://www.nbcnews.com/storyline/gm-recall/total-recall-gm-pushes-2014-auto-recalls-record-territory-n144716>.

Oversight and Investigations Subcommittee has held two hearings. On April 1, 2014, the Subcommittee held its first hearing, entitled “The GM Ignition Switch Recall: Why Did It Take So Long?” GM CEO Mary Barra and NHTSA Acting Administrator David Friedman were the only witnesses. The second hearing, entitled “The GM Ignition Switch Recall: Investigation Update,” was held on June 18, 2014, to examine the findings of the Valukas Report. The Committee received testimony from Ms. Barra and Mr. Valukas.

In the course of the investigation, Committee staff received numerous briefings from GM. Committee staff was also briefed by two GM suppliers, Delphi (the ignition switch supplier for the recalled vehicles) and Continental Corporation (the supplier of the air bag Sensing and Diagnostic Module (SDM) for the recalled GM vehicles). In addition to briefings, the Committee conducted interviews, including transcribed interviews, with a number of current and former GM employees.

The Committee also received numerous briefings from NHTSA. These include a briefing from NHTSA ODI officials on March 10, 2014, a briefing from Special Crash Investigations Program staff on March 24, 2014, and a demonstration of NHTSA ODI software on March 24, 2014. In addition, Committee staff received briefings from employees of the two NHTSA contractors that performed on-site investigations for the Special Crash Investigations unit of Chevrolet Cobalts for non-deployment of air bags, Calspan Corporation and Indiana University Transportation Research Center. Finally, the Committee staff conducted multiple interviews with NHTSA employees from the Defects Assessment Division, Early Warning Division, Vehicle Integrity Division and Special Crash Investigation unit.

To date, the Committee has received and reviewed over 2 million pages of documents from GM, approximately 15,000 pages from NHTSA and more than 17,500 from Delphi. GM and Delphi continue to produce documents to the Committee. NHTSA informed the Committee on May 28, 2014, that it had completed its production of documents responsive to the Committee’s requests.

III. NHTSA’s Investigation of the Cobalt

This section details the actions NHTSA took when presented with information relating to the non-deployment of air bags in Chevrolet Cobalts and Saturn Ions. Parts A and B of the following section provide background information on the NHTSA offices and groups that are involved in safety defect investigations and the data NHTSA considers when examining defects. After establishing this baseline, Parts C through I provide a chronology of NHTSA’s investigation into non-deployment of frontal air bags in the Cobalt and Ion based on documents and testimony obtained by the Committee over the course of this investigation. The Committee notes, however, that gaps in NHTSA’s document production, coupled with employees’ limited memory of events that took place nearly a decade ago, hindered the Committee’s ability to develop a comprehensive and detailed picture of NHTSA’s actions. The information presented below reflects the Committee’s understanding of events based on the information available to us at the time of the investigation.

A. NHTSA Structure

NHTSA is an agency within the Department of Transportation (DOT) established by the Highway Safety Act of 1970. The agency administers safety programs authorized by the National Traffic and Motor Vehicle Safety Act of 1966 and the Highway Safety Act of 1966.¹⁸ In addition, the agency carries out consumer programs under the Motor Vehicle Information and Cost Savings Act.¹⁹

According to its website, NHTSA is responsible for “reducing deaths, injuries and economic losses resulting from motor vehicle crashes.”²⁰ The agency fulfills its mission by “setting and enforcing safety performance standards for motor vehicles and motor vehicle equipment, and through grants to state and local governments to enable them to conduct effective local highway safety programs.”²¹

Within NHTSA, responsibility for identifying safety defects rests with the Office of Defects Investigation (ODI), part of the Vehicle Safety-Enforcement organization. ODI conducts “testing, inspection, and investigation necessary for the identification and correction of safety-related defects in motor vehicles and motor vehicle equipment...[and]...to ensure that recalls are effective and are conducted in accordance with Federal law and regulation.”²² To accomplish this mission, ODI has seven different divisions that support three principle functions – screening, investigation and recall management.

Prior to opening a defect investigation, ODI reviews and analyzes data from multiple sources to identify potential defects. The Defects Assessment Division (DAD) has primary responsibility for screening potential defects. This group collects and analyzes information from multiple sources to identify potential defects or recall inadequacies.²³ The Defects Assessment Division’s mission is supported by the Early Warning Division (EWD). This division collects, manages and analyzes Early Warning Reporting (EWR) data submitted by manufacturers under the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act.²⁴ The Early Warning Division also reviews and monitors production data and foreign recall reporting. If the Early Warning Division identifies a specific concern or trend based on Early Warning Report data, they can formally refer this issue to the Defects Assessment Division. In addition to the Defects Assessment and Early Warning Divisions, the Correspondence Research Division

¹⁸ U.S.C. § 301(amended 2006).

¹⁹ Motor Vehicle Information and Cost Savings Act, Pub. L. 94-364 (1976).

²⁰ NHTSA, Who We Are and What We Do,

<http://www.nhtsa.gov/About+NHTSA/Who+We+Are+and+What+We+Do>

²¹ *Id.*

²² *The GM Ignition Switch Recall: Why Did It Take So Long? Before the H. Comm. on Energy and Commerce, Subcom. on Oversight and Investigations*, 113th Cong. (April 1, 2014) (NHTSA responses to Questions for the Record) (hereinafter “QFRs”).

²³ QFRs, at Attachment.

²⁴ Transportation Recall Enhancement, Accountability and Documentation (TREAD) Act, Pub. L. 106-414 (2000).

(CRD) contributes to NHTSA’s screening efforts. This division collects and reviews information and data submitted by consumers and prepares responses to correspondence related to ODI’s mission.²⁵

If a potential defect is identified through these screening efforts, the Defects Assessment Division opens an Issue Evaluation and develops a proposal for a formal investigation. This proposal, or “IE Package,” is presented to the ODI Investigations staff, as well as the Director of ODI and other senior leaders — depending on the issue — for consideration. The Investigations staff can choose to accept an Issue Evaluation and open an investigation without further discussion. If, however, there is debate about whether or not an issue merits an investigation, the Issue Evaluation package is submitted to an ODI panel. The panel is led by the Director of ODI, who is the ultimate decision-maker if there is any debate about whether or not to proceed on a specific issue. NHTSA’s screening efforts, including Issue Evaluations, are not public and are strictly used for internal deliberation of a potential defect.

Investigations are the second key function of the Office of Defects Investigation. If ODI decides to open a formal investigation based on an Issue Evaluation or other sources, the evaluation of the potential defect is assigned to one of three investigative divisions. The Vehicle Integrity Division (VID) conducts investigations into alleged safety defects involving the integrity of vehicles and their components.²⁶ This includes fuel, exhaust and electrical systems.²⁷ Similarly, the Vehicle Control Division (VCD) conducts investigations into alleged safety defects involving the control of vehicles or their components. This includes steering, brakes and suspension systems.²⁸ Finally, the Medium & Heavy Duty Division is responsible for investigations into alleged safety defects involving medium and heavy-duty trucks and their components.

An ODI defect investigation is noticed to the public and has two phases. The first phase is a Preliminary Evaluation (PE). During the PE, the agency may request information from the manufacturer in order to conduct further analysis of a potential defect. The second is an Engineering Analysis (EA). The EA is a more extensive investigation, and may involve additional requests to the manufacturer and other manufacturers and testing and inspection of vehicles.

The third primary responsibility for ODI is the oversight and enforcement of recalls. Recalls can be initiated by a manufacturer or NHTSA can influence or order a recall. According to the Acting Administrator of NHTSA, David Friedman, “[s]ince 2000, NHTSA has influenced, on average, the recall of nearly 9 million vehicles every year...”²⁹ Once a recall is announced,

²⁵ QFRs, at Attachment.

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.*

²⁹ *The GM Ignition Switch Recall: Why Did It Take So Long? Before the H. Comm. on Energy and Commerce, Subcom, on Oversight and Investigations*, 113th Cong. (April 1, 2014) (Written Testimony of David Friedman, Acting Administrator, NHTSA) (Hereinafter, “Written Testimony of David Friedman”).

oversight of the process transfers to the Recall Management Division (RMD). This division administers NHTSA's recall program and provides oversight of manufacturer compliance with recall requirements and notifications.³⁰

B. Data Available to NHTSA

During the course of its investigation, the Committee found that ODI reviews multiple sources of information from several different groups within NHTSA and from sources outside the agency. External sources include but are not limited to: customer complaints; Early Warning Report data; referrals from attorneys, insurance companies or consumer advocacy groups; manufacturer service bulletins; foreign recalls; and public information such as car forums, blogs and other online media.^{31,32} Internal sources include: reports from the Special Crash Investigation (SCI) program; referrals from Office of Vehicle Safety Compliance (OVCS); the National Automotive Sampling System (NASS); the Fatality Analysis Reporting System (FARS); and other offices and data related to the safety mission.³³ Despite this wide range of available data, three sources primarily inform ODI's work — customer complaints, Early Warning Report data and Special Crash Investigations reports.

During briefings with Committee staff, NHTSA officials stated that customer complaints — called a Vehicle Owner Questionnaire (VOQ) — are the most common and useful source of data for ODI investigations. These complaints may be submitted to NHTSA by letter, phone, or to a database located at www.safercar.gov. Each complaint is recorded in NHTSA's electronic database, ARTEMIS. In a briefing with Committee staff on March 10, 2014, NHTSA officials estimated that the agency receives 45,000 to 55,000 complaints a year to its database, although not all complaints submitted to the database refer to or implicate safety.³⁴ NHTSA states that each complaint in its database is read by an ODI reviewer. This is referred to as a "Level I" review. Certain complaints are then sent to an investigator where additional follow-up is conducted to determine the facts of a complaint. This is called a "Level II review."³⁵

ODI also reviews Early Warning Report data provided by manufacturers under the TREAD Act. Early Warning Report data includes quarterly aggregate counts of warranty claims, property damage claims and consumer reports. Manufacturers filter these aggregate counts into 23 "buckets," based on vehicle component or function. Upon review of the aggregate data, NHTSA can request additional information on any claims data provided by the

³⁰ QFRs, at Attachment.

³¹ See e.g., Draft Report, Frontal Crash Protection Team, NHTSA, at [27] (Bates NHTSA-HECC-015434-015524; on file with author) (hereinafter "FCPT Report").

³² Mining of online sources of information was recently adopted as a common practice in ODI. It was not standard practice at the time of the Cobalt investigation.

³³ FCPT Report, at [27].

³⁴ Briefing by NHTSA, Office of Defects Investigation to Committee Staff, H. Comm. on Energy and Commerce in Washington, D.C. (Mar. 24, 2014) (hereinafter "NHTSA ODI Briefing").

³⁵ *Id.*

manufacturers. In addition to the aggregate data, manufacturers provide physical copies of all field reports in their quarterly submissions. Manufacturers also report all individual claims involving an injury or fatality in their quarterly Early Warning Report submissions. NHTSA may request additional information on any of these incidents through a formal letter known as a Death and Injury Inquiry. In response, manufacturers provide additional information related to each requested claim including details of the claim, police reports and other information collected in response to the claim. NHTSA receives approximately 1,500 death and injury notifications each quarter and typically requests additional information on approximately 150 per quarter.³⁶ The Early Warning Division also reviews and monitors production data and foreign recall reporting.

In addition to reviewing customer complaints and Early Warning Report data, ODI evaluates accident investigations conducted by the Special Crash Investigations program of the National Center for Statistics and Analysis (NCSA). Special Crash Investigations cases provide the most in-depth accident analysis and data available to NHTSA. According to NHTSA, Special Crash Investigations benefits the agency through the “ability to locate unique real-world crashes anywhere in the country and perform in-depth clinical investigations in a timely manner that can be used by the automotive safety community to improve the performance of its advanced safety systems.”³⁷ Cases are identified through a variety of sources and selected “based on the current and evolving needs of the agency.”³⁸ Once selected, cases are assigned to professional crash investigators, retained under contract by the agency.³⁹ In a briefing with Committee staff, Special Crash Investigations program officials estimated that the office performs 100-125 investigations a year, depending on the complexity of the cases.⁴⁰ From 2000-2013, Special Crash Investigations conducted 2049 cases.⁴¹

The purpose of NHTSA’s Special Crash Investigations program is not to identify a defect or determine the cause of a crash. Instead, the purpose of these investigations is to document the condition of the vehicle as it was found after the crash and tie the injuries suffered by its occupants to the vehicle’s safety systems so that vehicle performance is improved.⁴² NHTSA officials explained during a briefing with Committee staff that the Special Crash Investigations program often focuses its investigations on new and emerging automobile technologies. For example, NHTSA Special Crash Investigations program officials explained that the office has been closely involved in

³⁶ QFRs, at [4].

³⁷ NHTSA, Special Crash Investigations (SCI), available at, <http://www.nhtsa.gov/SCI> (hereinafter, “SCI Website”).

³⁸ *Id.*

³⁹ NHTSA may either choose a specific crash or the contractor can propose a case to NHTSA for investigation; in most instances, the investigations are assigned to the contractors by NHTSA.

⁴⁰ Briefing by NHTSA, Special Crash Investigations Program to Committee Staff, H. Comm. on Energy and Commerce (March 24, 2014) (hereinafter “NHTSA SCI Briefing”).

⁴¹ QFRs, at [12]. This number excludes “special study-type investigations” which are specific, time-sensitive cases focused on a narrowly-defined issue.

⁴² *See id.*

investigations of air bag systems — in particular, the adoption of advanced systems in vehicles beginning in 2004 — in order to meet the requirements of Federal Motor Vehicle Safety Standard (FMVSS) 208.⁴³

C. August 2005: NHTSA Conducts First Special Crash Investigation of Maryland Incident

Employees within ODI first took notice of the non-deployment of frontal air bags in the Chevrolet Cobalt in the summer of 2005 following a fatal accident in Maryland. The investigating officer reported the accident to the NHTSA Office of Defects Investigation and, on August 15, 2005, NHTSA assigned a contractor, the Crash Data Research Center of Calspan Corporation, with conducting a Special Crash Investigation into the alleged non-deployment of the driver's air bag. Due to the proximity to NHTSA's headquarters, staff from the Defects Assessment Division accompanied Calspan contractors for the on-site investigation of the vehicle and crash scene in late August of 2005.⁴⁴ Investigators documented the crash scene and thoroughly inspected the vehicle, which included downloading the data from the Event Data Recorder (EDR).⁴⁵

The final report by Calspan documented the circumstances of the crash and summarized the data downloaded from the EDR. The unbelted driver was traveling at a high rate of speed when the vehicle left the roadway. The Cobalt had multiple impacts with smaller trees prior to a significant impact with a larger tree. According to the EDR data, the maximum change in velocity, known as Delta V, occurred 300 milliseconds (ms) after Algorithm Enable (AE).⁴⁶ Based on the EDR data, the report concluded “[t]he air bag system did not deploy as the SDM recorded a gradual ramp-up of the x-axis acceleration.”⁴⁷ There is no mention of the ignition switch position in the body of the report; however, the EDR report, included as an attachment, does note the Vehicle Power Mode Status in “Accessory.”⁴⁸

Aside from the final Special Crash Investigations report, NHTSA produced no additional documents to the Committee related to discussion of this accident or the resulting Special Crash Investigations report. It is unclear what, if any, actions the agency took as a result of this report. The head of the Defects Assessment Division believed the member of his staff who participated in the Special Crash Investigations investigation began to pull VOQs and other information

⁴³ *See id.*

⁴⁴ Calspan Corporation Crash Data Research Center, Calspan On-site Air Bag Non-deployment Investigation Case No: CA05-049, Vehicle: 2005 Chevrolet Cobalt (July 2005) (hereinafter “2005 SCI Report”); Interview of Chief, Defects Assessment Division, NHTSA and Team Leader, Special Crash Investigation Unit, NHTSA, by Committee Staff, H. Comm. on Energy and Commerce (May 21, 2014) (Hereinafter “DAD Interview”)

⁴⁵ 2005 SCI Report, at [1].

⁴⁶ Algorithm Enable (AE) describes the point at which GM's air bag sensor, called a Sensing and Diagnostic Module (SDM), is triggered by vehicle conditions to begin evaluating whether or to deploy the air bags.

⁴⁷ 2005 SCI Report, at [10].

⁴⁸ *Id.*, Appendix at [3].

related to non-deployments in the Cobalt after this accident.⁴⁹ He could not, however, state this definitively due the lack of documentation.⁵⁰

D. March 2007: The NHTSA Early Warning Division Refers Cobalt Air Bag Non-Deployments to the Defects Assessment Division for Further Investigation

Aside from the Special Crash Investigations report on the Maryland crash, there is no evidence of any discussion of non-deployment of frontal air bags in the Cobalt until March 2007. On March 6, 2007, the Chief of the Early Warning Division transmitted an Early Warning Report (EWR) Referral to the Chief of the Defects Assessment Division “concerning non-deploy air bags in frontal crashes involving the 2005-2006 Chevrolet Cobalts.”⁵¹

According to the March 6, 2007, referral memo, the NHTSA Early Warning Division initiated a review of non-deployment of air bags in Chevrolet Cobalts after analyzing death and injury incident data submitted by GM, as required by the TREAD Act, for the second quarter of 2006. One of the death and injury claims listed in the TREAD report was a fatal accident involving a 2006 Cobalt.⁵² The Office of Defects Investigation sent a Death and Injury inquiry to GM to obtain additional information on this death claim.⁵³ Based on the materials provided by GM in response to this request, Early Warning Division staff learned that the accident involved a vehicle that spun out of control and struck multiple trees. The decedent’s attorney did not present a defect claim; the vehicle was a rental and the rental car company alleged that the air bags failed to deploy.⁵⁴

Based on the review of this specific accident, the Early Warning Division staff researched additional reports of non-deployment in the Cobalt. The referral memo states that staff identified 15 VOQs and 28 Field Reports involving front impact collisions where the air bag allegedly failed to deploy.⁵⁵ They noted 43 crashes resulting in 27 injuries and four fatalities.⁵⁶ The referral memo prepared by the Early Warning Division also noted that the warranty claim rate for the Cobalt air bag system was significantly higher than other GM products and other manufacturers’ products.⁵⁷ In addition, the memo identified three Technical Service Bulletins (TSB) issued by GM in January 2005 concerning the air bag system.⁵⁸ The Early Warning

⁴⁹ DAD Interview

⁵⁰ *Id.*

⁵¹ Email with attachments from Chief, Early Warning Division, NHTSA to Chief, Defects Assessment Division, et al., NHTSA (March 6, 2007, 10:39 AM EST) (Bates NHTSA-HECC-007153-007154; Attachment Bates NHTSA-HECC-007155-00715656; on file with author) (hereinafter “EWR Referral”).

⁵² *Id.* at [NHTSA-HECC-007155].

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ *Id.*

Division recommended that the Defects Assessment Division initiate Issue Evaluation Screening — the first step in opening a formal investigation.⁵⁹

The Chiefs of the Early Warning and Defects Assessment Divisions told Committee staff there were likely discussions between them or their staff around the time of the March 6, 2007, referral.⁶⁰ Neither individual recalled a specific conversation, nor is there documentation showing any discussion of the referral between the two staffs. After receiving the referral, the Chief of the Defects Assessment Division assigned the case to one of his staff to consider for development of an Issue Evaluation package.⁶¹ He assigned this task to a different staff member than the individual who first started examining the Cobalt non-deployment issue in 2005 because he believed that this individual had more experience with air bags.⁶²

E. March 2007: NHTSA Defects Assessment Division Chief Raises Cobalt Air Bag Non-deployments with GM Officials during a NHTSA Meeting in Washington

Shortly after the Defects Assessment Division received the Early Warning Division's referral memo, on March 29, 2007, GM employees attended a technical training workshop and Quarterly Review at NHTSA's offices in Washington, D.C. According to an agenda for the meeting prepared by GM, the day-long meeting began with two technical training sessions by GM employees to educate NHTSA staff on frontal air bag sensing technology and air bag field assessment techniques.⁶³ The afternoon portion focused on GM's internal and external investigation metrics.⁶⁴

According to a document provided by NHTSA to the Committee, the Chiefs of the Defects Assessment and Early Warning Divisions were both invited to attend the March 29 meeting.⁶⁵ In interviews with the Committee, neither official could recall whether or not he or she attended.⁶⁶ The Chief of the Defects Assessment Division does not recall attending the training sessions, which focused on air bags. During his interview with Committee staff, he stated that he knew GM personnel were in the building and recalled a conversation with them

⁵⁹ *Id.*

⁶⁰ DAD Interview; Interview of Chief, Early Warning Division, NHTSA, by Committee Staff, H. Comm. on Energy and Commerce (June 3, 2014) (hereinafter "EWD Interview")

⁶¹ DAD Interview

⁶² *Id.*

⁶³ Email from Doug Wachtel, General Motors LLC to Christopher Janik, et al, General Motors LLC (March 27, 2007, 20:20:15 EST) (Bates GMHEC000003155; on file with author).

⁶⁴ Following a series of disagreements between GM and NHTSA in the early 2000s regarding ongoing investigations, in 2004 GM agreed to provide NHTSA with quarterly updates on their progress in addressing open investigations – both internal and external. *See e.g.*, Email from Keith Schultz, Product Investigations, General Motors LLC to Matthew Jerinsky and Brian Everest, et al., General Motors LLC (April 3, 2007, 15:32 EST); *see also*, Email with attachments from Gay Kent, Director, Product Investigations, General Motors to James Queen et al, General Motors (January 1, 2005, 21:39 EST) (Bates GMHEC000218819; on file with author).

⁶⁵ Calendar Invite from Chief, Vehicle Integrity Division, NHTSA to Staff, Office of Defects Investigation, NHTSA (March 1, 2007, 4:15:11 pm, EST) (Bates NHTSA-HECC-004373; on file with author).

⁶⁶ DAD Interview; EWD Interview.

about the non-deployment of air bags in the Cobalt.⁶⁷ Based on his recollection, in between training sessions he pulled aside two or three GM employees to ask them about the “design intent” of the Cobalt air bag system.⁶⁸ The Chief of the Defects Assessment Division explained to Committee staff that he also expressed discomfort to the GM officials over the crash documented in the 2005 Special Crash Investigations report.⁶⁹ He recalled that the GM officials expressed no awareness of a failure pattern involving the Cobalt air bag system.⁷⁰ He further stated during his interview that he did not ask the GM officials to look into the issue or provide any documents and he did not recall any follow-up with them after this discussion.⁷¹ Based on the information available to the Committee, it appears that this brief discussion is the only time GM and NHTSA discussed non-deployment of air bags in the Cobalt prior to the recall in 2014.

F. August/September 2007: The Defects Assessment Division Prepared an Issue Evaluation and Proposed Opening an Investigation of Chevrolet Cobalt and Saturn Ion Air Bags

On August 3, 2007, several months after receiving the referral from the Early Warning Division, the Defects Assessment Division formally opened an Issue Evaluation (IE) related to air bag non-deployment in MY 2003-2006 Chevrolet Cobalt and Saturn Ion vehicles.⁷² This decision is documented internally creating a form called a Defect Assessment Resume.⁷³ In its search for documents responsive to the Committee’s requests, NHTSA did not identify any records documenting the Defects Assessment Division’s work following the March 7, 2007, referral, so it is unclear what specific steps, if any, the agency took to review this matter prior to creating the Defects Assessment Resume in August 2007.

Interviews with NHTSA employees and the information contained in the Defects Assessment Resume suggest that Defects Assessment Division staff, possibly in coordination with other ODI staff, reviewed the materials provided by the Early Warning Division and further refined the “Issue Evaluation package,” a term NHTSA employees used to describe the collection of data and materials used to support the Issue Evaluation.⁷⁴ For example, the August 3, 2007, Issue Evaluation resume expanded the scope of the investigation to include Saturn Ions.⁷⁵ Accordingly, the number of non-deployment consumer complaints, or VOQs, increased relative to the number included in the referral from the Early Warning Division. Despite the

⁶⁷ DAD Interview.

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² Defect Assessment Resume for IE07-080, Office of Defects Investigation, NHTSA (August 3, 2007) (Bates NHTSA-HECC-007499; on file with author) (hereinafter “Defect Assessment Resume”).

⁷³ When the Defect Assessment Division opens an Issue Evaluation, it is documented in an internal form called a Defect Assessment Resume. This is a one-page summary outlining the issue and basic facts that serve as the basis for the Issue Evaluation

⁷⁴ DAD Interview

⁷⁵ See e.g., DAD Interview; also see Defect Assessment Resume

increase in vehicle population, however, the number of injuries, crashes, field reports and other information associated with non-deployments decreased compared to those provided in the Early Warning Division referral.⁷⁶ NHTSA employees explained to Committee staff that when the Early Warning Division identifies a potential defect, Defects Assessment Division employees conduct a more rigorous analysis of the material received from Early Warning Reports submitted by manufacturers and conduct their own research. This more detailed and granular review often results in specific incidents or information being added or excluded from the package.⁷⁷ The NHTSA officials who were involved in the Chevrolet Cobalt Issue Evaluation and interviewed by Committee staff could not explain the specific reasons for the differences in numbers in this case but speculated it was the result of this process.⁷⁸

A month later, on September 5, 2007, the Defects Assessment Division transmitted the final Issue Evaluation package to the Chief of the Vehicle Integrity Division, along with the Associate Administrator for Enforcement, the Director of the Office of Defects Investigations (ODI) and other senior leaders within ODI and Special Crash Investigations, in support of a proposal to launch a formal investigation into non-deployment of frontal air bags in the 2003-2006 Chevrolet Cobalt and Saturn Ion.⁷⁹ The package consisted of an Issue Evaluation Memorandum summarizing the Defects Assessment Division's work and findings, and a number of attachments including: VOQs; copies of four GM Technical Service Bulletins related to the air bag systems in the Cobalt and Ion; the referral memo and supporting documents from the Early Warning Division; copies of the 2005 Special Crash Investigations report; and a December 2006 draft of a second Special Crash Investigations report for an accident in Wisconsin.⁸⁰

In his transmittal email, the Defects Assessment Division Chief noted the work that went into developing the package, including support from the NHTSA Special Crash Investigations unit, a discussion with GM, and the Early Warning Division referral.⁸¹ Further, the Chief of the Defects Assessment Division stated:

Notwithstanding GM's indications that they see no specific problem pattern, DAD perceives a pattern of non-deployments in these vehicles that does not exist in their peers and that their circumstances are such that,

⁷⁶ See e.g., Defect Assessment Resume; see also, EWR Referral.

⁷⁷ DAD Interview.

⁷⁸ *Id.*

⁷⁹ The Chief of the Vehicle Integrity Division was the primary recipient of the package from the Defect Assessment Division because, as described earlier in the report, the investigators have an opportunity to accept an issue based on the substance of the Issue Evaluation package. The other recipients would participate in a panel discussion if the Vehicle Integrity Division had questions about the issue. See, Email from Chief, Defects Assessment Division, NHTSA, to Staff, NHTSA (Sept. 05, 2007, 4:54:16 PM EST), (Bates NHTSA-HEC-004491; on file with author) (hereinafter, "IE Package Transmittal Email").

⁸⁰ Issue Evaluation Memorandum from Defects Assessment Division, NHTSA to Staff, Office of Defects Investigation, NHTSA (September 5, 2007) (Bates NHTSA-HECC-004493-NHTSA-HECC-004618; on file with author) (hereinafter "IE Package").

⁸¹ IE Package Transmittal Email.

in our engineering judgment, merited a deployment, and that such a deployment would have reduced injury levels or saved lives.⁸²

The email requested a decision, “within two weeks (20-Sep-07).”⁸³

The Issue Evaluation Memorandum contained several key observations about the data supporting the recommendation, specifically, the consumer complaints, TREAD data, and Special Crash Investigations reports.

For consumer complaints, the memorandum observed that starting in 2003, NHTSA received over 29 consumer complaints related to this issue. There were more complaints for the Ion (15) compared to the Cobalt (14); however, there were more fatal accidents involving the Cobalt.⁸⁴ The memorandum stated eight complaints were received since May 2006, suggesting an “increasing trend in complaints and/or failures.”⁸⁵ The majority of the complaints received by NHTSA involved “a substantial collision at the time of failure (pre-crash speed > 30 MPH).”⁸⁶ In addition, the memorandum noted that six of the most serious crashes were off-road and involved collisions with natural objects.⁸⁷

The memorandum also outlined the Defects Assessment Division’s analysis of information reported by GM through Early Warning Reports (EWR), as required under the TREAD Act. Based on data obtained through Early Warning Reports, the Cobalt stood out from its peers in a number of categories. For air bag warranty claims, the Cobalt was at the top of the list in total claims (54,642) and claims per 1,000 vehicles (93.4).⁸⁸ In addition, the Cobalt had the most total property damage claims and second most property damage claims per 1,000 vehicles.⁸⁹

In addition to consumer complaints and TREAD data, the memorandum summarized and attached the two crash investigations conducted by Special Crash Investigations. Both accidents involved off-road crashes with multiple impacts and resulted in fatalities.⁹⁰ The memorandum also noted that NHTSA received a VOQ for one of these accidents, the October 2006 crash in Wisconsin. The Defects Assessment Division interviewed a relative of the driver in May 2007 and summarized this conversation in the memorandum.⁹¹ This was in addition to, but separate from, the Special Crash Investigations investigation of this crash.

⁸² *Id.*

⁸³ *Id.*

⁸⁴ IE Package, at [NHTSA-HECC-004499].

⁸⁵ *Id.*

⁸⁶ *Id.*, at [NHTSA-HECC-004496].

⁸⁷ *Id.*

⁸⁸ *Id.*, at [NHTSA-HECC-004497].

⁸⁹ *Id.*

⁹⁰ *Id.*, at [NHTSA-HECC-004496-4497].

⁹¹ *Id.*, at [NHTSA-HECC-004497].

While the Issue Evaluation Memorandum prepared by the Defects Assessment Division included important data about Cobalt and Ion non-deployments, it does not appear that NHTSA staff discussed or recognized key information in those documents that pointed to the ignition switch as the cause of the air bag non-deployments. For example, the package submitted to the Office of Defects Investigation included a December 28, 2006, draft of the Special Crash Investigations report for the October 2006 Wisconsin crash. The draft report included a critical observation:

...the vehicle power mode status was recorded as accessory. This would appear to indicate that the ignition switch was not in the run position at the time of the tree impact. This may explain why zeroes were recorded for vehicle speed and engine speed in the final two seconds of the pre-crash data [sic]. The reason the power mode status was recorded as accessory is not known. It is possible the ignition could have been knocked to the accessory position, perhaps by the driver's leg, at the time of the vault. It is also possible that the invalid responses recorded in the remaining pre-crash data items could have been the result of a power interruption due to the severity of the crash.

...given the EDR indication that the ignition switch was in the accessory position at the time of the impact, it is not known what role, if any, it may have played in the non-deployment of the air bags. This contractor is continuing its investigation into this aspect of the crash. At this point, it appears the yielding of the tree may have been the likely cause of the non-deployment.⁹²

Committee staff interviewed key NHTSA officials who participated in the consideration of this Issue Evaluation in 2007 and asked each one whether they remembered reading or discussing the observation in the Special Crash Investigations report about the ignition switch's potential link to the air bag. No official interviewed by Committee staff could recall discussion about this concern at any time in the process, even though NHTSA had this report in its possession for almost 8 months preceding the development of the Issue Evaluation package. Further, documents produced by NHTSA to the Committee do not show any discussion at any point about the contents of, or similarities between, the Special Crash Investigations reports on Cobalt air bag non-deployments.

The only discussion about these Special Crash Investigations reports recalled by NHTSA personnel focused on the characteristics of the accidents — specifically, that they were off-road, multiple impact events which, based on their assessment of the air bag systems, would have prevented deployment. Despite the fact that the Wisconsin crash report specifically references

⁹² *Id.*, at [NHTSA-HECC-004507].

the potential link between the ignition switch position and air bag non-deployment, there is no evidence to suggest anyone at the agency took note of this passage or conducted their own research to understand the link between power mode status and the air bag system. As a result, no one identified the connection between the power mode status of this crash and the previous Special Crash Investigations investigation from 2005 where the power mode was also recorded as “accessory.” Further, and perhaps more critically, no one at NHTSA reviewed information related to the ignition switch in the Cobalt and thus failed to locate the previously issued TSB.

In addition to overlooking or failing to consider the reference to the ignition switch in the draft Special Crash Investigations report, it also appears that NHTSA employees did not identify another critical piece of information that pointed to the ignition switch and was in the agency’s possession at the time the 2007 Issue Evaluation package was developed. In May 2007, NHTSA sent a Death and Injury inquiry to GM to obtain additional information on certain death and injury incidents included in GM’s Early Warning Report submission for the fourth quarter of 2006.⁹³ Of those incidents, the agency requested additional information related to the fatal October 2006 Cobalt accident in Wisconsin. GM’s response was received by NHTSA, specifically the Early Warning Division, on June 7, 2007.⁹⁴ As discussed below, it is unclear whether anyone in the Early Warning Division reviewed this material or shared it with other divisions of the Office of Defects Investigation.

Included in the response from GM was a February 2007 Collision Analysis and Reconstruction Report prepared by Trooper Keith Young of the Wisconsin State Patrol. Trooper Young’s report stated:

The ignition switch on the [Subject] vehicle appears to have been in the accessory position when it impacted the trees preventing the airbags from deploying. A search of the [NHTSA] web site indicates five complaints of 2005 Chevrolet Cobalt ignition switches turning off while the vehicle was being driven. Three of the complaints talk about the knee or leg touching the ignition or key chain causing the engine to turn off.

On December 12, 2006, a printout of General Motors Document ID# 1869035 (inadvertent turning of key cylinder, loss of electrical system and no DTSs # 05-02-35-007A-(10/25/2006)) for the 2005-2007 Chevrolet Cobalt was obtained. The bulletin discusses the potential for the driver to inadvertently turn off the ignition due to low key cylinder torque/effort.

⁹³ Letter from Chief, Early Warning Division, NHTSA to Director, Product Investigations, General Motors LLC (May 7, 2007) (Bates GMHEC000198410-198412; on file with author).

⁹⁴ Letter from Director, Product Investigations, General Motors LLC to Chief, Early Warning Division, NHTSA (June 7, 2007) (Bates GMHEC-000198413-198417; on file with author).

The bulletin goes on to mention that the condition is more likely to occur if the driver is short and the key chain is large and/or heavy. A shorter person would have the seat position closer to the steering column.

It appears likely that the vehicle's key turned to accessory as a result of the low key cylinder torque/effort.⁹⁵

Similar to the Special Crash Investigations report, Trooper Young's report identified the potential connection between the ignition switch, and its position, to the non-deployment of the frontal air bags in the Cobalt. In fact, Trooper Young's report was more explicit in this reference and even pointed to GM's Technical Service Bulletin regarding the low torque ignition switch to support this theory.

Committee staff asked the NHTSA officials responsible for overseeing the development of the Issue Evaluation for Cobalt air bag non-deployments in 2007 whether they were aware of Trooper Young's report. Based on documents and communications provided to the Committee, it is unclear who, if anyone, within the Early Warning Division or ODI reviewed GM's response prior to development of the Issue Evaluation package. What is clear, however, is that this report was not included in the Issue Evaluation package prepared by the Defects Assessment Division. Further, though the Issue Evaluation package contained several Technical Service Bulletins related to air bag systems, the Technical Service Bulletin regarding the low torque ignition switch identified in Trooper Young's report was excluded from the package. The Committee received no documents or testimony to explain why this information was not included in the Issue Evaluation package.

NHTSA had significant information in its possession – including two separate crash investigations of the same incident in Wisconsin - prior to the development of the Issue Evaluation package identifying a potential link between the ignition switch and air bag non-deployments. There is no evidence to suggest that this theory was considered or explored by the agency employees responsible for compiling the Issue Evaluation package. One of the key reports, which made explicit reference to the low torque ignition switch and the related Technical Service Bulletin, was omitted from the Issue Evaluation package. Further, despite the fact that the draft Special Crash Investigations report which mentioned the ignition switch as a possible cause of the non-deployment, but did not include a reference to the Technical Service Bulletin at that time, was included in the Issue Evaluation package, there is no mention in the Issue Evaluation Memorandum highlighting this potential theory for why the air bags did not deploy. These omissions, whether due to lack of information sharing between NHTSA offices, failure to understand the technology or simply a lack of attention to detail, likely contributed to the agency's failure to identify this defect.

⁹⁵ Report by Trooper Keith Young, Technical Reconstruction Unit, Wisconsin State Patrol Academy, Collision Analysis & Reconstruction Report, at [9] (February 14, 2007) (Bates GMHEC000284699-284711; on file with author) (hereinafter "Trooper Young Report").

G. November 2007: An Office of Defects Investigation Panel Rejects the Recommendation to Open an Initial Evaluation of Air Bag Non-Deployment Incidents in Cobalts and Ions

After the Chief of Defects Assessment Division transmitted the Issue Evaluation package for consideration in September 2007, it was assigned to an investigator in the Vehicle Integrity Division for review. Based on information presented to Committee staff, upon receipt of an Issue Evaluation package, ODI investigators evaluate the information and follow up as necessary with the Defects Assessment Division or the Early Warning Division staff with any questions.⁹⁶ NHTSA officials informed Committee staff that in cases where the defect or concern is obvious, investigators can agree to open an investigation without a formal review.⁹⁷ In most cases, however, the issue is referred to an Office of Defects Investigation panel for a decision on whether or not to proceed to an investigation.⁹⁸ Further, NHTSA officials told Committee staff that there is no formal panel structure or membership but it typically includes the Director of the Office of Defects Investigation, the respective Division Chiefs and their relevant staff, as well as any additional NHTSA offices or employees, such as Special Crash Investigations, if their work was relevant to the issues under consideration.⁹⁹ NHTSA employees explained that decisions typically occur through collaborative discussion but in cases where there is disagreement among the staff, the Director of ODI retains authority to make decisions.¹⁰⁰

Despite the Defects Assessment Division's request for a decision on the Issue Evaluation package within two weeks, the panel met on the Cobalt issue more than two months later, on November 15, 2007. When Committee staff questioned him on this point, the Chief of the Defects Assessment Division, who is responsible for convening the panel meetings, did not recall the specific reason for the delay but speculated it was due to a number of conflicting priorities and time commitments.¹⁰¹ It is believed that the November 15, 2007, meeting was the first time a panel met, on any issue, following the September 7, 2007 referral.¹⁰²

The only documentation produced by NHTSA associated with the November 15, 2007, panel meeting was the Defects Assessment Division's PowerPoint presentation summarizing each potential defect under consideration.¹⁰³ The Committee's understanding of the details surrounding the meeting, including the attendees, substance, and outcome of the discussion, is

⁹⁶ DAD Interview

⁹⁷ *Id.*

⁹⁸ *See e.g.*, DAD Interview; *also see* Interview with Safety Defects Engineer, Vehicle Integrity Division, NHTSA and Chief, Vehicle Integrity Division, NHTSA, conducted by Committee Staff, H. Comm. on Energy and Commerce (July 1, 2014) (hereinafter "VID Interview").

⁹⁹ DAD Interview.

¹⁰⁰ DAD Interview, VID Interview

¹⁰¹ DAD Interview

¹⁰² *Id.*

¹⁰³ Presentation by Defects Assessment Division, NHTSA to Panel, Office of Defects Investigation, NHTSA (Nov. 17, 2007) (Bates NHTSA-HECC-004462-4483; on file with author).

based on the recollection of NHTSA employees present for the meeting and limited contemporaneous email discussions.

According to the meeting attendees interviewed by the Committee, the Defects Assessment Division presented the Cobalt issue and summarized its findings in support of opening an investigation.¹⁰⁴ Some employees interviewed by Committee staff recalled limited discussion of the two Special Crash Investigations reports.¹⁰⁵ They recalled that the discussion, however, centered on the fact that both cases were off-road crashes with multiple impacts and involved unbelted occupants.¹⁰⁶ Based on NHTSA's understanding of air bag systems at the time, it was believed those factors contributed to the non-deployment.¹⁰⁷ Investigators from the Vehicle Integrity Division also voiced their opinion that the Cobalt did not stand out from peer vehicles.¹⁰⁸ The investigator assigned to this issue compared the exposure rate, or "E Rate," of the Cobalt to other small vehicles, based on consumer complaints, called VOQs, received by NHTSA.¹⁰⁹ He told Committee staff during an interview that the VOQs are the most reliable source of information because they provide an unbiased data sample.¹¹⁰ He added that Early Warning Reporting data can be difficult because some manufacturers, including GM, "over-report" incidents, making it difficult to compare across the population.¹¹¹ He acknowledged during his interview, however, that the fact that the Cobalt did not stand out from peer vehicles, alone, would not prevent NHTSA from opening an investigation if there was evidence of a specific defect theory.¹¹² At the time, however, NHTSA officials told the Committee staff that they did not see evidence of a specific defect, especially given the off-road nature of the crashes and that the occupants were unbelted.

No one interviewed by Committee staff about the November 2007 panel meeting recalled any discussion of the ignition switch position or the relevance of power mode status. Investigators from the Vehicle Integrity Division who reviewed the package after it was submitted by the Defects Assessment Division, and conducted their own analysis related to these vehicles, also failed to note or focus on the passage theorizing the link between power mode status and air bag non-deployment in the draft Special Crash Investigations report. In fact, the lead investigator for this issue at NHTSA told Committee staff that he did not learn of the October 25, 2006, GM Technical Service Bulletin noting a problem with the ignition switch moving from "Run" to "Accessory" until 2014, after the recall was announced.¹¹³ A member of the Vehicle Integrity Division stated, however, that had the Technical Service Bulletin related to

¹⁰⁴ DAD Interview

¹⁰⁵ DAD Interview, VID Interview

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ VID Interview

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*

the ignition switch been included in the package, it would have altered his perspective of this issue.¹¹⁴

The November 2007 panel ultimately concluded that more evidence was needed prior to opening an investigation.¹¹⁵ The panel directed the Defects Assessment Division to monitor the issue but with a focus on examples of air bag non-deployment in on-road accidents.¹¹⁶ A member of the Defects Assessment Division staff told Committee staff during his interview that the Defects Assessment Division staff was not asked to go out and look for new information or reevaluate existing data.¹¹⁷ Instead, they were asked to monitor new information reported to the agency, such as consumer complaints or Early Warning Report data, for on-road, clean impact incidents which may provide more information on a potential defect.

Shortly after the panel meeting, the Associate Administrator for Enforcement emailed the Director of the Office of Defects Investigation and the Chief of the Defects Assessment Division about the meeting.¹¹⁸ He had been invited to the panel meeting but was unable to attend. In his email he stated, “I have reviewed the handout and the [one] that most caught my eye was Issue Evaluation 07 080, which involves air bag non-deployment in the Ion and Cobalt. Given the reports of fatal crashes, this looks like one we want to jump on and learn as much as we can quickly.”¹¹⁹ The Chief of the Defects Assessment Division forwarded the message to his staff member responsible for tracking this issue noting, “This lends additional urgency to your review of vehicles in on road vehicle [to] vehicle collisions.”¹²⁰ Based on the information available to the Committee, it does not appear that the input from the Associate Administrator, despite his seniority in the chain of command, prompted the panel to re-examine its decision or perform additional analysis on existing data related to non-deployment incidents in the Cobalt or Ion.

Aside from monitoring new data or reports, as NHTSA would do in the normal course of business, the Office of Defects Investigation’s decision not to pursue a formal investigation effectively closed NHTSA’s examination of Cobalt air bag non-deployments. Thus, when new information did come to light in the coming months and years, Office of Defects Investigation employees’ perspective was biased by the conclusions of the panel. Specifically, the panel’s decision that absent a clear trend in consumer complaints, existing cases reviewed by the agency did not support an identifiable defect theory — especially in light of the fact that these incidents involved unbelted occupants and off-road, multiple impact events. As discussed below, this perspective influenced NHTSA employees’ analysis of new information related to these specific

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ DAD Interview

¹¹⁷ *Id.*

¹¹⁸ Email from Associate Administrator for Enforcement, NHTSA to Director, Office of Defects Investigation, NHTSA (November 19, 2007, 2:44 pm EST) (Bates NHTSA-HECC-006482; on file with author).

¹¹⁹ *Id.*

¹²⁰ *Id.*

incidents and future reports of non-deployment in these vehicles, including on-road incidents, were discounted in light of prior conclusions about the lack of an identifiable defect.

H. 2007-2008: NHTSA's Examination of Frontal Crashes and Air Bag Non-Deployment

During the same time that ODI considered and ultimately declined to pursue the Cobalt and Ion investigation, a series of articles in the *Kansas City Star* criticized the agency's handling of air bag problems. These articles prompted NHTSA to reevaluate the agency's work on air bag issues and ultimately form an internal working group to examine frontal crashes and air bag deployment.

Beginning in October 2007, the *Kansas City Star* published a series of stories focused on the number of fatal accidents where air bags failed to deploy, based on the paper's analysis of NHTSA's Fatality Analysis Reporting System (FARS) database.¹²¹¹²² The articles also raised questions about NHTSA's attention to the issue of air bag non-deployment.¹²³ Publicly, the agency objected to the story's conclusions. In an October 25, 2007, letter to the editor, NHTSA expressed disappointment that the paper "ignored warnings by the [NHTSA's] experts that the underlying premise of its recent air bag story was fundamentally flawed."¹²⁴

Despite the agency's public pushback, NHTSA's senior leadership established an internal working group to examine frontal crash safety issues in light of the issues raised by the *Kansas City Star* articles.¹²⁵ The Frontal Crash Protection Team (FCPT), led by the head of the Special Crash Investigations unit, was tasked with examining the effectiveness of existing occupant safety measures and systems for frontal crashes. A team of NHTSA employees from various offices were appointed to the working group. At least two ODI personnel were assigned to the team and other ODI personnel provided research and additional support for the project.¹²⁶

One assignment required staff from the Defects Assessment Division and the Vehicle Integrity Division to review previous Special Crash Investigations cases related to non-

¹²¹ See e.g., Mike Casey and Rick Montgomery, *Front air bags don't inflate in hundreds of head-on crashes*, The *Kansas City Star*, October 21, 2007, at A1, available at LEXIS; Rick Montgomery and Mike Casey, *As airbag recall process drags on, crash kills another driver*, The *Kansas City Star*, October 21, 2007, at A10, available at LEXIS; Rick Montgomery and Mike Casey, *Taking airbag cases to court can be tricky*, The *Kansas City Star*, October 21, 2007, at A12, available at LEXIS; Mike Casey and Rick Montgomery, *Lawsuits reflect what can go wrong with devices intended to save lives*, The *Kansas City Star*, October 21, 2007, available at LEXIS.

¹²² According to NHTSA, "FARS is a nationwide census providing NHTSA, Congress and the American public yearly data regarding fatal injuries suffered in motor vehicle traffic crashes." See NHTSA, Fatality Analysis Reporting System (FARS), <http://www.nhtsa.gov/FARS>.

¹²³ *Id.*

¹²⁴ Letter from Nicole Nason, Administrator, NHTSA to Ms. Miriam Pepper, Vice President, Editorial Page, The *Kansas City Star* (October 25, 2007) (Bates GMHEC000249069; on file with author).

¹²⁵ Presentation by the Frontal Crash Protection Team, NHTSA (June 2008) (Bates NHTSA-HECC-015525-15556; on file with author) (hereinafter "June 2008 FCPT Presentation").

¹²⁶ *Id.*

deployment, across all vehicles, to assess whether any cases required additional scrutiny.¹²⁷ This work required a substantial amount of time and effort in addition to the employees' normal work responsibilities. The investigators conducted an analysis of consumer complaints for each Special Crash Investigations subject vehicle to establish an exposure rate, based on vehicle population, for comparison across peer vehicles — the same method used evaluate the Cobalt and Ion issue a month earlier.¹²⁸ This analysis only included one of the two Cobalt Special Crash Investigations cases, and ultimately did not identify any significant concerns across all vehicles.¹²⁹ As one investigator observed in an email to the Director of the Office of Defects Investigation, “I think we are beating a ‘dead horse.’”¹³⁰

ODI air bag investigators also reviewed 18 fatal air bag non-deployment accidents that were included in Early Warning Reports filed with NHTSA, including details submitted by manufacturers in response to Death and Injury inquiries from NHTSA.¹³¹ Five of the 18 cases involved a Cobalt (4) or an Ion (1).¹³² Because the agency was only looking at front impact crashes, 15 of the 18 cases were ruled “Not Applicable” because they involved a “Roll Over Event,” “Side Impact Event,” or the fatality was not a vehicle occupant.¹³³ In total, three of the 18 cases were identified as potentially relevant to the working group. Of those three, one involved an Ion and another involved a Cobalt.¹³⁴

The Cobalt crash that was deemed relevant to the working group was the 2006 crash in Wisconsin. As noted previously, this crash was investigated through the Special Crash Investigations unit and a draft of that report was part of the Issue Evaluation package considered by the ODI panel in November 2007. NHTSA also obtained additional detail on this accident through a Death and Injury inquiry in June 2007. Based on documents produced by NHTSA and interviews with NHTSA employees, the Committee found no evidence that this information was reviewed, shared or discussed within the Office of Defects Investigation.

¹²⁷ See e.g. Email with attachments from Staff, Vehicle Integrity Division, NHTSA to Director, Office of Defects Investigation et al., NHTSA (December 19, 2007, 2:24 pm EST) (Bates NHTSA-HECC-007485-007486; on file with author); also see Email exchange with attachments between Director, Office of Defects Investigation, NHTSA and Staff, Vehicle Integrity Division and Staff, Defects Assessment Division, NHTSA (December 21, 2007) (Bates NHTSA-HECC-009480-009482; Attachment Bates, NHTSA-HECC-007669-7670; on file with author) (hereinafter, “December 21, 2007 email”).

¹²⁸ *Id.*

¹²⁹ The Committee did not receive a clear answer on why only one of the Cobalt cases was included in this review. Ultimately, this would not have altered the analysis or perspective of NHTSA investigators, especially in light of the fact that the same analysis was performed for the Cobalt a few months before.

¹³⁰ December 21, 2007 email

¹³¹ Email with attachments from Vehicle Integrity Division, NHTSA to Chief, Early Warning Division and Chief, Defect Assessment Division, et al, NHTSA (January 14, 2008) (Bates NHTSA-HECC-007628; Attachment Bates NHTSA-HECC-007635; on file with author) (hereinafter, “January 14, 2008 email”).

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *Id.*

The investigator who reviewed this case for the working group was the same investigator tasked with reviewing the Issue Evaluation package submitted by the Defects Assessment Division and who did not support opening an investigation into air bag non-deployment in the Cobalt and Ion in November 2007 because, based on his analysis at the time, there was not an identifiable defect. Further, in an interview with Committee staff, the investigator claimed to have no knowledge of the Technical Service Bulletin or the potential link between the ignition switch or power mode status and the air bag system until after the GM recall in February 2014.¹³⁵

According to documents provided by NHTSA, the investigator reviewed this case in support of the working group on November 26, 2007 – just less than two weeks after the November panel meeting on air bag non-deployment in the Cobalt and Ion.¹³⁶ The investigator evaluated a number of data sources, including the Special Crash Investigations report, EDR data and the police accident report (PAR).¹³⁷ Those three data sources, specifically the Police Accident Report and Special Crash Investigations report, provided information directly linking the ignition switch and the air bag system. In addition, the Police Accident Report supported its findings by referencing the GM Technical Service Bulletin about the low torque of the ignition switch which enabled the key to be moved from the “Run” position due to inadvertent contact by the driver or a heavy key chain. The investigator, however, told Committee staff during an interview that he was not aware of the Technical Service Bulletin or the potential link between the ignition and the air bag system until after the recall was announced in February 2014.¹³⁸ He further stated that if he had been aware of the connection, it would have suggested a potential pattern.¹³⁹ The documents produced by NHTSA to the Committee suggest that he did, in fact, review information that provided this critical link but failed to make the connection. As a result, a second review of the Wisconsin crash prompted no additional questions from the investigator or anyone at NHTSA.

This was not the last time NHTSA failed to adequately evaluate information provided to them identifying the link between the ignition switch and air bag system. In March of 2008, the agency received a final version of the Special Crash Investigations report for the Wisconsin crash. This updated version of the report expanded on its previous reference to the ignition switch position and power mode status to include a specific reference to the GM Technical Service Bulletin and the potential link between the low torque ignition switch and air bag non-deployment. The report noted:

The EDR data also indicated that the vehicle power mode status was recorded as "accessory". This indicates that the ignition switch was not in the "on" position at the time of the tree clump impact. This was supported

¹³⁵ VID Interview

¹³⁶ January 14, 2008 email, at [NHTSA-HECC-007635].

¹³⁷ *Id.*

¹³⁸ VID Interview

¹³⁹ *Id.*

by information from one of the investigating sheriff's deputies, who reported to this contractor that the ignition switch was found jammed in the "accessory" position following the crash. This may explain why zeros were recorded for vehicle speed and engine speed in the final two seconds of the pre-crash data. It is possible the ignition switch could have been knocked to the "accessory" position by the driver's leg or knee at the time of the vault. This investigation revealed that inadvertent contact with the ignition switch or a key chain in the 2005 Chevrolet Cobalt can in fact result in engine shut -down and loss of power. A GM service bulletin applicable to the 2005-2007 Chevrolet Cobalt entitled "Information on Inadvertent Turning of the Key Cylinder, Loss of Electrical System and No DTCs# 05-02-35-007A (10/25/2006)" describes this potential problem [see attached GM bulletin at the end of this report (Figure 25)]. The bulletin indicates that there is a potential for the driver to inadvertently turn off the ignition due to low ignition key cylinder torque/effort. The bulletin indicated this was more likely to occur if the driver is short and has a large and/or heavy key chain attached to the ignition key. The bulletin indicated the condition was documented to occur when a driver's knee contacted a key chain while the vehicle was turning and the steering column was adjusted all the way down. A search of the NHTSA, Office of Defects Investigation (ODI) web site, complaint tab, revealed at least six complaints (ODI identification numbers: 10144299, 10145959, 10129121, 10132335, 10151346, and 10197022) relating to the engine shutting off and loss of power in Chevrolet Cobalts when the ignition switch or key chain was contacted by the driver. Some of the complaints reported a simple "brushing" of the key chain or touching of the ignition switch was all that was required for the engine to shut off.

It is not known what role, if any, this may have played in the non-deployment of the air bags. Such a determination would most likely require an analysis of the air bag system and ignition wiring schematic in order to determine if in fact the air bag is capable of deploying when the ignition is switched from the “on” position to the “accessory” position. Such an undertaking is beyond the scope of this investigation.¹⁴⁰

Based on interviews with NHTSA officials and the documents produced to the Committee, it does not appear that anyone from NHTSA noticed this additional detail included in the final version of this Special Crash Investigations report. The investigator from the Vehicle

¹⁴⁰ Indiana University Transportation Research Center, On-site Air Bag Non-deployment Investigation Case No: IN06-033, Vehicle: 2005 Chevrolet Cobalt (Oct. 2006) (hereinafter “2006 SCI Report”), at 7 (Emphasis added).

Integrity Division who reviewed the Cobalt issue in 2007 and early 2008 in support of the working group told the Committee that he did not see the final Wisconsin Special Crash Investigations report until two weeks after the recall in February 2014.¹⁴¹ He explained that Special Crash Investigations is responsible for screening reports submitted by contractors and circulating them to the relevant offices.¹⁴² The Committee received no documentation demonstrating when or if Special Crash Investigations provided a final copy of this report to other NHTSA personnel.¹⁴³

I. 2008-2010: NHTSA's Monitoring of Cobalt Air Bag Non-deployment Complaints

After the panel rejected the recommendation in 2007 to investigate air bag non-deployment in the Cobalt and Ion, NHTSA staff continued to monitor VOQs and data for complaints presenting a safety defect issue, but they did not take any extra steps to monitor Cobalt and Ion claims in particular. Periodically, individual NHTSA staff inquired about the status of the Issue Evaluation package. Each time, NHTSA ultimately determined there was not sufficient evidence to warrant reconsideration of opening an investigation into the non-deployment of frontal air bags in the Cobalt and Ion. When new information did come to light, NHTSA employees once again failed to identify the safety defect.

i. 2008-2009: NHTSA Internal Discussions About Air Bag Non-Deployment Do Not Prompt Reconsideration of Opening an Investigation

In September 2008, a contractor working with the Early Warning Division contacted the Defects Assessment Division to inquire about the status of the Issue Evaluation package.¹⁴⁴ It is unclear what prompted this inquiry. In response, a Defects Assessment Division employee provided an update on the number of VOQs received since the Issue Evaluation was opened. The employee identified eight new complaints related to air bag non-deployment for the MY 2005-2006 Cobalt (4) and MY 2003-2006 Ion (4).¹⁴⁵ He concluded, "I don't know what the outcome was for Issue Evaluation 07-080. Based on the complaints received since that time, it does not appear that updating of the Issue Evaluation would change the previous outcome."¹⁴⁶ The Chief of the Defects Assessment Division told Committee staff during an interview that some of the new complaints would likely have been excluded from any update to the Issue Evaluation package due to the nature of the crash.¹⁴⁷ For example, some cases were below the deployment threshold, meaning they occurred at a low speed where the air bags would not normally be

¹⁴¹ VID Interview.

¹⁴² *Id.*

¹⁴³ As a matter of policy, NHTSA deletes all drafts and work product associated with SCI investigations once they receive a final report.

¹⁴⁴ Email from Early Warning Division, NHTSA to Defect Assessment Division, NHTSA (September 4, 2008) (Bates NHTSA- HECC007681; on file with author).

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ DAD Interview.

expected to deploy.¹⁴⁸ He also explained to Committee staff that this was not a significant increase in complaints, and based on the amount of work and discussion that led to the panel decision, nothing in these complaints pointed to a specific defect that would change the panel's decision.¹⁴⁹

The following summer, in July 2009, the Chief of the Defects Assessment Division was contacted by a member of his staff about the status of the Issue Evaluation package. In a July 21, 2009, email, the employee stated:

I'm finishing up a fatal review and have found 15 more complaints of non-deployment since the [Issue Evaluation] and I noted there was no PE. Some seem to have multiple impacts, circumstances why the AB might non deploy but I'd have to do some additional work to get the details. I wanted to see if you remembered the office reasoning in the panel and if I should be looking more closely/differently than the past.¹⁵⁰

The Chief of the Defects Assessment Division responded that the Issue Evaluation took two years to develop and "included a sitdown w/ GM."¹⁵¹ He explained that the panel declined to pursue the investigation because the fatal accidents "involved off-road relatively long duration events and unbelted occupants."¹⁵² He also explained his understanding of the air bag system. He stated:

After a certain length of time 'awake,' the EDR has to reset itself. We believe that that may have been part of the problem.

More significantly, we have been told that GM's algorithms are relatively 'tight,' refusing to deploy the air bag unless [sic] it is certain that an air bag deployment would reduce injury chances. I have been given to understand that the system rules an unbelted passenger as out of position. A concern is that if that passenger has moved forward into the deployment zone, the air bag can rise up underneath the chin, imposing significant head/neck injuries.¹⁵³

In conclusion, he explained the panel's instruction to look for on-road, clean impact non-deployments – in his words, "[a] tall order."¹⁵⁴

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ Email between Staff, Defect Assessment Division, NHTSA and Chief, Defects Assessment Division, NHTSA (July 21, 2009) (Bates NHTSA-HECC-006494-6495; on file with author).

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Id.*

In his interview with Committee staff, the Chief of the Defects Assessment Division explained his statement that GM’s algorithms were “tight” and described how that influenced NHTSA’s interpretation of these crash events. He informed Committee staff that early model year Cobalts included components of new advanced air bag systems but had not yet been certified for an out of position occupant.¹⁵⁵ The NHTSA staff’s assumption at the time, according to the Chief of the Defects Assessment Division, was that the manufacturer followed the engineering principle of “do no harm,” for out-of-position occupants.¹⁵⁶ This meant for unbelted occupants involved in a long duration crash, the air bag would not deploy. NHTSA officials told Committee staff this influenced NHTSA’s review of the previous Special Crash Investigations reports. Both cases involved long duration events and unbelted occupants, leading NHTSA to conclude that the air bags performed as intended, and the non-deployment was therefore based on the conditions of the crashes, not because of a failed part.¹⁵⁷

Documents produced to the Committee indicate that the next discussion of the Cobalt issue occurred in September 2009. Another contractor working with the Early Warning Division contacted the Chief of the Defects Assessment Division to inquire about the status of the Issue Evaluation package.¹⁵⁸ The contractor wanted to understand whether there was any action or resolution of the issue in order to complete his work “annotating” a specific death and injury incident.¹⁵⁹ This is an internal process for NHTSA to summarize and track the review of information provided by manufacturers in response to the agency’s Death and Injury inquiries.¹⁶⁰

In response to the contractor’s request, the Chief of the Defects Assessment Division summarized the history of the Issue Evaluation package and NHTSA’s conclusion of “no safety defect per se.”¹⁶¹ He noted that his staff recently started reevaluating the issue due to new crashes reported in VOQs, however; “we are skeptical that we will find anything that would alter the office position.”¹⁶² He further stated:

For a Cobalt non deployment IE package (or EWR Referral) to have a chance at good dialogue, we would need a substantial number (four per calendar year of exposure) of incidents showing a front non-deployment in an on-road crash with belted occupant and a clean impact (no underride; major injuries to chest/head; longitudinal primary direction of force). For

¹⁵⁵ DAD Interview.

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ Email between Contractor, Early Warning Division, NHTSA and Chief, Defect Assessment Division, NHTSA (September 11, 2009) (Bates NHTSA HECC-006492-6493; on file with author) (hereinafter, “September 11, 2009 Email)

¹⁵⁹ *Id.*

¹⁶⁰ As described previously in the report, NHTSA can send a formal letter – called a Death and Injury Inquiry – to a manufacturer to obtain additional information on specific death and injury incidents reported by the manufacturer in quarterly Early Warning Reports required under the TREAD Act.

¹⁶¹ September 11, 2009 Email.

¹⁶² *Id.*

success to be a possibility, we'd further need an indication of a particular flaw, e.g. liquid infiltration into the EDR or a wiring fault.¹⁶³

In his interview with Committee staff, the Chief of the Defects Assessment Division clarified that his statement about needing four incidents per calendar year of exposure was his empirical judgment, not a specific agency guideline.¹⁶⁴ This number reflected his belief at the time that they needed “to build a strong case,” based on evidence that was “discernibly different,” in order to submit the package for reconsideration.¹⁶⁵ It is unclear what, if any, additional follow-up took place after this exchange.

Several months later, the Chief of the Early Warning Division contacted the Chief of the Defects Assessment Division and his appropriate staff to request their input on Death and Injury inquiries based on Early Warning Report data from second quarter of 2009. The Early Warning Division specifically noted to the Defects Assessment Division staff that GM’s quarterly report contained “a lot of death and injury incident reported from the Chevy Cobalt and Chevy Trailblazer 360 where the primary component is air bag.”¹⁶⁶ Recalling the previous work involving the Cobalt, the Chief of the Early Warning Division inquired whether ODI was still interested in these cases. She added, “There is nothing in field reports or aggregate data that suggest we should be concerned. We have reviewed 6 previously reported D&I for Cobalt and 1 for Trailblazer.”¹⁶⁷ Based on subsequent discussions among the Early Warning Division staff, the Defects Assessment Division asked the Early Warning Division to obtain additional information from GM for all Cobalt death and injury incidents reported during this quarter.¹⁶⁸

It is unknown what, if anything, the Defects Assessment Division did with this information once it was received from GM. Around the same time, in the early months of 2010, NHTSA employees once again reviewed the Cobalt issue.¹⁶⁹ There is no documentation to demonstrate what prompted this review, who participated, or what it involved. Based on recollections of individual employees and statements by the agency, staff from the Defects Assessment Division and the Vehicle Integrity Division compared the current rate of VOQs against those observed in 2007.¹⁷⁰ This analysis revealed a decline in the rate of complaints

¹⁶³ *Id.*

¹⁶⁴ DAD Interview

¹⁶⁵ *Id.*

¹⁶⁶ Email from Chief, Early Warning Division, NHTSA to Chief, Defect Assessment Division, NHTSA (November 25, 2009) (Bates NHTSA HECC-007962; on file with author).

¹⁶⁷ *Id.*

¹⁶⁸ Email exchange between Staff, Early Warning Division, NHTSA (December 1, 2009) (Bates NHTSA-HECC-007411-7412; on file with author)

¹⁶⁹ Written Testimony of David Friedman, at [12].

¹⁷⁰ *See e.g.*, NHTSA ODI Briefing; *also see*, VID Interview.

related to this issue.¹⁷¹ This reinforced NHTSA’s belief that no specific defect existed in these vehicles.

ii. *An April 2009 Cobalt Crash Prompts NHTSA to Request a Third Special Crash Investigations Report*

NHTSA obtained one additional key piece of evidence that could have helped the agency link the ignition switch to the air bag long before the 2014 recall by GM. In April 2009, a NHTSA employee identified a news story about a fatal on-road crash in Pennsylvania involving a Cobalt where the air bags failed to deploy. Special Crash Investigations staff sent the story to the Chief of the Defects Assessment Division to see if it was of interest.¹⁷² The Chief of the Defects Assessment Division responded, “Given the severity, the vehicle model involved & the on-road nature of the crash, we’d like to learn more circumstances.”¹⁷³ This would be the third Special Crash Investigations report involving a fatal crash in a Cobalt where the air bags failed to deploy.

The agency received the final report in February 2010.¹⁷⁴ The case involved a head-on crash between a 2005 Chevrolet Cobalt and 2001 Hyundai Sonata. The vehicles were traveling opposite directions on a two lane road. The driver of the Sonata – who had a Blood Alcohol Content of .24 percent and was allegedly talking on his cell phone – crossed the center line, into the path of the oncoming Cobalt.¹⁷⁵ The driver of the Cobalt attempted to swerve but was unable to avoid the collision. While the air bag in the Sonata did deploy, the driver was not wearing his seat belt and did not survive the crash.¹⁷⁶ The air bags in the Cobalt did not deploy and the driver and front seat passenger, both of whom were not wearing their seat belts, did not survive the crash.¹⁷⁷ A one-year-old infant who was restrained in the back seat of the Cobalt survived the crash with serious injuries.¹⁷⁸

This was not a long duration event involving off-road conditions or multiple impacts, conditions that complicated NHTSA’s review of prior Special Crash Investigations cases. The Pennsylvania crash was a direct, on-road collision – exactly the type of case the Office of Defects Investigation panel tasked the Defects Assessment Division with identifying in November 2007. In its report, the Special Crash Investigations contractor noted that “the cause

¹⁷¹ See e.g. NHTSA ODI Briefing; also see, NHTSA Chart, “Change in E-Rate,” (Date Unknown) (Bates NHTSA-HECC-004621; on file with author).

¹⁷² Email exchange between Staff, Special Crash Investigations, NHTSA and Chief, Defect Assessment Division et al, NHTSA (April 3, 2009) (Bates NHTSA-HECC-006606-006608; on file with author).

¹⁷³ *Id.*

¹⁷⁴ Calspan Corporation Crash Data Research Center, Calspan On-site Air Bag Non-deployment Investigation SCI Case No: CA09022, Vehicle: 2005 Chevrolet Cobalt (April 2009) (hereinafter “2009 SCI Report”).

¹⁷⁵ 2009 SCI Report, at [4].

¹⁷⁶ *Id.*, at [1].

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

of the non-deployment could not be determined.”¹⁷⁹ The text of the report did not mention the ignition switch or power mode status, however, the attached Event Data Recorder data for the Cobalt recorded that the vehicle power mode status was in “accessory,” consistent with the two previous Special Crash Investigations cases.¹⁸⁰

There is no clear record of who within NHTSA received or reviewed this report. Individuals interviewed by Committee staff had very little to no recollection of the report. The investigator from the Vehicle Integrity Division recalled seeing the report, but did not remember any specific review or discussion of the case.¹⁸¹ The Chief of the Defects Assessment Division also told Committee staff that he knew of the report, given that he requested the Special Crash Investigations unit pursue the case, but did not recall reviewing it.¹⁸² During an interview by Committee staff, he explained that he relies on his staff to look at the details of a case to see if it raises new information.¹⁸³ Some NHTSA staff interviewed by Committee staff stated that the agency received this final report during the same period as the investigation into unintended acceleration in Toyota vehicles, which may have contributed to critical information being missed.¹⁸⁴ In fact, one member of the Vehicle Integrity Division told the Committee he did not learn of this crash until after the recall was announced.¹⁸⁵

NHTSA’s failure to identify the similarities and correlations evident in the information contained in the three Special Crash Investigations reports is troubling. By February 2010, the agency had three Special Crash Investigations reports documenting fatal crashes involving the Chevrolet Cobalt where the frontal air bags failed to deploy. One of these reports went as far as to suggest a potential defect — the relationship between a low torque ignition switch, the vehicle power mode status and the air bag system. Evidence available to the Committee shows that NHTSA did not explore this link or attempt to understand the correlation between the vehicle’s power mode and the air bag system. As a result of this failure, no one noticed that in all three Special Crash Investigations reports, the vehicle power mode status was recorded in “accessory.”

Agency staff were blinded by outdated perceptions about how air bag systems operated. Even as manufacturers began installing advanced air bag systems in response to new federal standards, NHTSA investigators lacked a fundamental understanding of how these new air bag systems functioned. For a decade, ODI investigators evaluated air bag concerns based on their knowledge of first generation air bag systems. They assumed that advanced air bag systems, like their predecessors, operated from an independent energy reserve and were completely unaware of the relationship between power mode and air bag systems.¹⁸⁶ Only after the GM recall, in

¹⁷⁹ *Id.*, at [8].

¹⁸⁰ *Id.*, Attachment, at [3].

¹⁸¹ VID Interview

¹⁸² DAD Interview

¹⁸³ *Id.*

¹⁸⁴ VID Interview

¹⁸⁵ *Id.*

¹⁸⁶ *Id.*

February 2014, did ODI investigators realize the chasm in their understanding of air bag technology.

After the spring of 2010 until the time of the recall in 2014, the issue of frontal air bag non-deployment in the Cobalt and Ion fell off the radar at NHTSA. The Issue Evaluation package opened in the fall of 2007 remained active but there was no further reconsideration of the issue. Based on the records provided by NHTSA, the issue briefly entered agency discussions in 2011, but only as part of a larger air bag screening exercise.

IV. Observations

A key function of congressional oversight is to expose shortcomings and provide an opportunity to correct and improve. NHTSA plays an important role in overseeing and ensuring the safety of automobiles in the United States. In the case of the GM ignition switch recall, it is clear there were shortcomings that prevented the agency from identifying the safety defect. A modern, effective agency must learn from past mistakes and be willing to adapt in a rapidly changing environment.

For this reason, the Committee offers the following observations about key problems in the agency's practices that resulted in its failure to identify the GM ignition switch defect.

A. Failure to Understand Technology Required by NHTSA

The GM recall exposed a fundamental challenge for NHTSA — the agency's ability to keep pace with the technology it regulates. As revealed by the Cobalt investigation, vehicle safety engineers in ODI did not understand the vehicle technology and safety systems implemented in response to the agency's own standards.

In 2003, NHTSA implemented FMVSS 208 for advanced frontal air bag systems to address performance and safety concerns in earlier generation air bag systems. At the time, most air bag systems deployed with a uniform force, regardless of occupant position or crash severity. This resulted in a significant number of fatalities and injuries to occupants located in close proximity to the air bag at the time of deployment. As of June 2003, NHTSA estimated approximately 231 people (144 children and 87 adults) lost their lives due to air bag deployment.¹⁸⁷

Advanced air bag systems were designed to make deployment decisions based on the conditions of the crash. The systems make determinations about whether to deploy and the force of air bag inflation based sensor inputs such as occupant size, seat position, occupant seat belt

¹⁸⁷NHTSA, Advanced Frontal Air Bags, <http://www.safercar.gov/Vehicle+Shoppers/Air+Bags/Advanced+Frontal+Air+Bags#1>

use, and crash severity.¹⁸⁸ Incorporating these factors into deployment decisions was intended to reduce the number of deaths and injuries due to out of position occupants and small children.¹⁸⁹ These systems were phased into the market beginning September 1, 2003, until September 1, 2006, at which point all cars and light trucks produced after that date were required to have advanced air bags.¹⁹⁰

When the MY 2005 Chevrolet Cobalt entered the market, the vehicle's air bag system was not yet certified but included significant components of advanced air bag systems required under FMVSS 208.¹⁹¹ The advanced features of the air bag system were part of the reason why the Defects Assessment Division and Special Crash Investigations took an interest in accidents involving these vehicles starting in 2005.¹⁹²

As manufacturers began implementing new advanced air bag systems, NHTSA's safety defect investigators' understanding of the systems failed to keep pace with the evolution of the technology. Critically, NHTSA investigators were completely unaware of the link between power mode and the air bag system until the GM recall in 2014.¹⁹³ ODI investigators assumed, based on previous generation air bags, that the air bag system had a reserve energy supply that would enable deployment for a significant period of time after a loss of power.¹⁹⁴ They failed to appreciate that requirements of the advanced air bag rule changed how these systems functioned. For example, given the need to account for occupant position, some manufacturers operated under the assumption that when a vehicle is turned off, the occupant will unbuckle, and thus be out of position.¹⁹⁵ NHTSA also failed to appreciate how the introduction of numerous sensors and other electrical inputs drained the energy reserves, thus limiting the amount of time the air bags system remained active.¹⁹⁶

After the GM recall, NHTSA canvassed all manufacturers and it became clear that the agency's knowledge gap on advanced air bag systems was not isolated to GM.¹⁹⁷ Different manufacturers had different approaches to how long the system remained active — ODI investigators understood none of them. This has forced the agency to reevaluate a number of issues.¹⁹⁸

In public statements and testimony after the recall, NHTSA personnel explained that they assumed GM's air bag system had a longer energy reserve, citing language in GM's service

¹⁸⁸ *Id.*

¹⁸⁹ *Id.*

¹⁹⁰ *Id.*

¹⁹¹ DAD Interview

¹⁹² NHTSA ODI Briefing

¹⁹³ VID Interview

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

¹⁹⁸ *Id.*

manual and emergency responder guidance.¹⁹⁹ The language warned technicians to wait up to 60 seconds after loss of power prior to servicing the air bag.²⁰⁰ It is not clear whether this information was considered at the time of the review in 2007 but NHTSA's own statements suggest the evaluation of this literature was contemporaneous to the recall in 2014.²⁰¹ ODI investigators interviewed by Committee staff did not have an explanation for why NHTSA failed to understand the importance of power mode in advanced air bag systems.²⁰² They added that it is NHTSA's responsibility to stay abreast of the technology they are responsible for regulating.²⁰³

ODI staff explained some of the challenges with staying current on vehicle safety technology.

- **Interactions with Manufacturers:** At the time of the Cobalt review in 2007, GM was one of only a few manufacturers to provide NHTSA with regular technical briefings on their vehicle systems, including advanced air bag systems.²⁰⁴ In fact, when the Chief of the Defects Assessment Division raised concerns about the Cobalt air bag system to GM personnel in March 2007, they were in NHTSA's offices to provide technical briefings on GM's advanced air bag systems and EDR capabilities. Some ODI staff questioned the benefit of technical briefings by manufacturers due to the inherent level of distrust between a regulator and regulated entity. They welcome the outreach but assume they only hear what the manufacturer is willing to share.²⁰⁵ ODI's responsibility for regulatory enforcement also limits their ability to reach out to manufacturers with specific questions or technical inquiries. This presents a specific challenge in situations outside of a formal investigation. Some ODI staff are hesitant to engage manufacturers outside of a formal investigation out of concern they will be accused of conducting shadow investigations or a lack of transparency.²⁰⁶
- **Training:** ODI investigators suggested that one of the best ways to stay up to speed on new technology is regular training, especially through technical seminars and other third party offerings.²⁰⁷ Due to budgetary constraints, however, training has been extremely limited.²⁰⁸ For example, the lead air bag investigator assigned to the Cobalt issue does not recall attending a paid training course in the past 6-8 years.²⁰⁹

¹⁹⁹ QFRs, at [3].

²⁰⁰ *Id.*

²⁰¹ *Id.*

²⁰² VID Interview

²⁰³ *Id.*

²⁰⁴ *Id.*

²⁰⁵ *Id.*

²⁰⁶ *Id.*

²⁰⁷ *Id.*

²⁰⁸ *Id.*

²⁰⁹ *Id.*

- **Expertise is not shared across agency:** ODI is one small part of NHTSA’s broad and diverse mission. Screeners and investigators in ODI typically focus on multiple vehicle functions or safety systems. Their colleagues in other divisions, however, have different responsibilities and varying levels of expertise on specific vehicles or safety systems. For example, staff responsible for compliance testing or research may have a greater awareness about the capabilities or operation of specific vehicles or systems of interest to ODI. Interactions between ODI and other offices or divisions within the agency are limited. After the GM recall, ODI staff canvassed other offices in NHTSA and identified a limited number of employees who understood the relationship between power mode and air bag systems.²¹⁰ None of the individuals were involved in the Cobalt review in 2007 and some were not even at the agency at the time.²¹¹

In light of these challenges, NHTSA investigators explained that currently, the best way to learn about vehicle systems and technology is through investigations — but often that is the point at which it is too late.²¹² As vehicle functions and safety systems become increasingly complex and interconnected, NHTSA needs to keep pace with these rapid advancements in technology. As evidenced by the GM recall, this may be a greater challenge than even NHTSA understands.

B. Information Silos/Data Use:

ODI relies heavily on several key data streams – VOQs, Early Warning Report data and Special Crash Investigations reports. The majority of ODI investigations result from VOQs and agency personnel routinely cite this data source as the most valuable for identifying defects.²¹³

Early Warning Report data presents a number of benefits and challenges for ODI. Most categories of aggregate data, such as warranty claims, are used to support investigations but rarely assist the agency in identifying defects. For example, the agency identified 16 cases since 2004 in which warranty claim data contributed to the defect trend analysis used to open an investigation.²¹⁴ ODI staff from all divisions routinely cited the aggregate data as the least useful information for defect investigations.²¹⁵

Other Early Warning Report data, specifically field reports and death and injury claims, can prove useful for identifying defects or corroborating concerns raised through VOQs. Multiple ODI employees cited field reports as the most useful source of Early Warning Report

²¹⁰ *Id.*

²¹¹ *Id.*

²¹² *Id.*

²¹³ *See e.g.* NHTSA ODI Briefing; *also see*, DAD Interview; *also see*, VID Interview

²¹⁴ QFRs, at [7].

²¹⁵ EWD Interview; DAD Interview

data.²¹⁶ These are technical assessments conducted by manufacturer technicians and experts and thus provide useful information about product issues and performance.²¹⁷ The Early Warning Division staff use word searches to facilitate review of these reports but the volume and time required remain a challenge to developing a thorough understanding of events.²¹⁸

Death and injury claims also assist the agency in identifying potential defects but they too require substantial time to review. The Early Warning Division receives approximately 1,500 death and injury claims per quarter. Each incident is summarized by vehicle make, model and other identifying information and categorized by the Early Warning Report category associated with the claim (e.g., “Air Bags,” “Fire,” etc). The Early Warning Division requests additional information on approximately 100-150 death and injury claims per quarter.²¹⁹ The individual cases are selected through a combination of a statistical analysis of historical death and injury data and input from other ODI divisions.²²⁰ Manufacturers’ responses are then reviewed by the Early Warning Division and incorporated into any ongoing screening or investigative efforts.

The time and effort required to review these responses to Death and Injury inquiries limits the Early Warning Division’s ability to request more individual cases.²²¹ For example, by end of 2011, for the quarterly death and injury claims reported by manufacturers to involve air bags, NHTSA had sent more Death and Injury inquiries for the model years 2005-2008 Cobalt than any other vehicle over the same period. The number of Cobalt incidents requested by the agency, however, still only amounted to approximately 10 percent of the total number of Cobalt death and injury claims involving air bags reported by GM.²²²

One of the reported challenges in utilizing sources of Early Warning Report data stems from differences in individual manufacturers’ reporting practices. Though Early Warning Report reporting fields are standardized, some companies are very conservative in filing Early Warning Report data.²²³ GM, for example, reports any deaths or injuries they learn about through press articles or other sources, also known as “rumor files,” regardless of whether or not the company received an actual claim.²²⁴ Some ODI staff suggested that different reporting standards made it

²¹⁶ *Id.*

²¹⁷ EWD Interview.

²¹⁸ *Id.*

²¹⁹ *See e.g.*, QFRs, at [4]; *also see*, EWD Interview

²²⁰ EWD Interview

²²¹ *Id.*

²²² NHTSA, Light Vehicle Injury Incidents for the Reporting Year and Quarter 2011Q4 (Bates NHTSA-HECC-015212; on file with author) (Total number of air bag claims includes all incidents where the air bags were identified by the manufacturer or claimant as a contributing factor to the incident. Thus, the number of claims is not limited to cases of non-deployment. Further, claims are often reported to involve a specific component – such as air bags – when, in fact, that component is not contributing factor to the incident.

²²³ VID Interview

²²⁴ EWD Interview

difficult to compare the Early Warning Report data against vehicle population or peer vehicles.²²⁵

Special Crash Investigations reports serve as another information source for identifying defects. The benefit of these reports is dependent on whether any work has been done relative to a specific vehicle. Even then, as evidenced by NHTSA's review of the Cobalt, the substance of these reports can be overlooked, misunderstood, or overshadowed by other evaluations such as a VOQ trend analysis.

VOQs may in fact be the most reliable source of unbiased data for detecting defects. This should not become an excuse for dependence or overreliance on this data source. In the case of the Cobalt, Early Warning Report data and Special Crash Investigations reports identified a problem – arguably THE problem. This information, tragically, was discounted due to a lack of an identifiable trend in the VOQ data.

Further, VOQs, Early Warning Report data and Special Crash Investigations reports may be the three main information sources used by ODI, but they are not the only data available to the agency. NHTSA collects vast amounts of data in support of research, compliance and other agency missions. Much of this information, however, is not routinely included in ODI's screening or investigative efforts. Investigators told the committee they do not always check other data collections, such as NASS or FARS, due to the time and effort required.²²⁶

A consistent theme among ODI staff interviewed by the Committee was the need for more efficient and effective use of existing data sources. The addition of new or expanded data streams, such as more detailed claims information through Early Warning Reports, would overwhelm staff resources and offer little benefit, to the detriment of ODI's mission. In the agency's responses to Questions for the Record submitted by the Committee following the April 1, 2014, hearing, NHTSA noted that more detailed claims information would likely require new information technology infrastructure and still provide little or no value, even if the information could be sorted to exclude non-safety related issues.²²⁷ A greater benefit would be realized through improved data collection, access and analytics.

NHTSA is taking steps to achieve this objective. In 2012, the agency acquired four IBM software packages including Cognos Business Intelligence, ICA Content Analytics, Advanced Case Manager and SPSS predictive analytics.²²⁸ The agency implemented initial capabilities for the Cognos and ICA packages; however, due to current limited capacity they have yet to provide

²²⁵VID Interview

²²⁶ See e.g., VID Interview; also see, FCPT Report, at [72]; see also, June 2008 FCPT Presentation.

²²⁷ QFRs, at [7].

²²⁸ QFRs, at [6].

a demonstrable impact on ODI's mission.²²⁹ The agency intends a fuller implementation of all four packages by the end of FY2015.²³⁰

A critical step necessary to realize the benefits of this new software involves developing an operational data store that will enable investigators to cross-link data from across the agency's business lines.²³¹ For example, this would enable ODI investigators to cross-reference an individual consumer complaint to corresponding Early Warning Report data, Special Crash Investigations case information and other agency data. NHTSA claims that the operational data store has been built and now must be integrated and tested prior to implementation.²³² Through this and other improvements, such as upgraded case management, NHTSA intends to breakdown existing information silos and reduce the burden on staff resources.

It remains to be seen how effective NHTSA's new software will be in eliminating the existing stovepipes that impede ODI's investigative efforts. Leveraging these existing data resources, combined with improved interoperability of existing ODI data, has the potential to expand NHTSA's investigative capabilities.

C. "NHTSA Shrug"²³³

A central criticism of GM in the Valukas Report was the company's culture. It described the "GM salute," pointing to others to assign responsibility, and the "GM nod," agreeing to a course of action and not following through.²³⁴ In short, GM's culture fostered a lack of accountability for one's actions, or lack thereof. The Committee's investigation of NHTSA suggests the agency suffers from a similar affliction.

NHTSA and its employees repeatedly criticized GM's failure to act on information in its possession. One example highlighted in the Consent Order, and cited by NHTSA employees, was the information GM's supplier provided in 2009 explaining the vehicle needed to be in the "run" position for the air bags to deploy.²³⁵ Some even referred to it as "the smoking gun."²³⁶ In his testimony before the Committee, Acting Administrator Friedman also focused on this specific information. He stated that if NHTSA had been aware of this information, it would have

²²⁹ *Id.*

²³⁰ *Id.*

²³¹ *Id.*

²³² QFRs, at [11].

²³³ Press Release, The Honorable Edward Markey, U.S. Senate, *Markey on GM Recall: While GM Nods, NHTSA Shrugs* (June 18, 2014) available at, <http://www.markey.senate.gov/news/press-releases/markey-on-gm-recall-while-gm-nods-nhtsa-shrugs>.

²³⁴ Valukas Report, at [255-256].

²³⁵ See e.g., Consent Order; see also, VID Interview; see also, *The GM Ignition Switch Recall: Why Did It Take So Long? Before the H. Comm. on Energy and Commerce, Subcom, on Oversight and Investigations*, 113th Cong. (April 1, 2014) (Testimony of David Friedman, Acting Administrator, NHTSA) (hereinafter, "Testimony of David Friedman").

²³⁶ VID Interview

pursued a different course of action regarding a potential investigation.²³⁷ This information was no doubt important because it linked the power mode of the vehicle to the operation of the air bag system. The assumption that NHTSA would have acted differently if it had this information overlooks the agency's own failure to act on similar information already in its possession.

As documented previously in this report, NHTSA had substantial evidence to suggest a link between non-deployment of frontal air bags and the ignition switch. Specifically, the findings in Trooper Young's accident report and the Special Crash Investigations report from the 2006 crash in Wisconsin suggested the non-deployment was linked to the vehicle power mode being in "accessory," possibly due to a low torque ignition switch. In contrast, while the 2009 report from the SDM supplier provided technical confirmation of the link between power mode and air bag deployment, it made no reference to the low torque ignition switch. The potential cause of the air bag non-deployment developed in response to the Wisconsin crash, while unproven at the time, provided a more detailed and granular defect theory than the 2009 report. There is no evidence, however, that anyone at NHTSA explored this theory or even sought to understand the relationship between power mode and air bag systems.

In interviews with the Committee, NHTSA employees consistently justified their review by suggesting others failed to provide them with information. Investigators who overlooked this information in 2007 told Committee staff that if they had been aware of the TSB or potential link to the ignition switch, they would have considered the issue differently.²³⁸ They excuse their inaction by stating that the TSB was not included in the Issue Evaluation package prepared by the Defects Assessment Division and they did not see the final Special Crash Investigations report until after the GM recall in February 2014. Yet at least one of these individuals reviewed Trooper Young's report in 2007, which included the TSB, and did not take action.

Similarly, the Chief of the Defects Assessment Division explained that the TSB was not included in the Issue Evaluation package because it does not mention air bags.²³⁹ At the time the Issue Evaluation package was developed, however, NHTSA had received a copy of Trooper Young's accident report from GM in June 2007. Trooper Young's report cited the low torque ignition switch as a possible cause of the air bag non-deployment and included the TSB. NHTSA clearly had evidence suggesting a link between the air bag and ignition switch but did nothing to explore the potential defect theory.

The responses of individual NHTSA employees echo the tone set by the agency in the wake of this recall. At the April 1, 2014, hearing before the Committee, Acting Administrator Friedman summarized NHTSA's opinion about why the agency failed to identify this defect. In his written testimony, he stated:

²³⁷ Testimony of David Friedman

²³⁸ VID Interview

²³⁹ DAD Interview.

Based on our review of NHTSA's actions concerning airbag non-deployment in the recently recalled GM vehicles, we know the agency examined the available information multiple times using consumer complaints, early warning data, special crash investigations, manufacturer information about how air bags function, and other tools, but did not find sufficient evidence of a possible safety defect or defect trend that would warrant opening a formal investigation. This was a difficult case pursued by experts in the field of screening, investigations and technology involving airbags that are designed to deploy in some cases, but not in cases where they are not needed or would cause greater harm than good. GM had critical information that would have helped identify this defect.²⁴⁰

While these statements are accurate, they are incomplete. NHTSA likewise had critical information in its possession which pointed to this defect. Whether the information was not understood, overlooked or lost in organizational stove-pipes, the agency's failure to follow-up on this information contributed to NHTSA's inability to identify this defect. The agency would not tolerate similar conduct from a manufacturer. Case-in-point, GM employees failed to appreciate the significance of the 2009 report from the SDM supplier and NHTSA now cites their inaction as a basis holding the company accountable.

The Acting Administrator also outlined the agency's intended response to this recall. He highlighted the NHTSA's progress in implementing changes recommended by the Inspector General in the wake of the massive Toyota recalls of 2009 through 2010.²⁴¹ He also described additional evaluations underway at the agency. In his written testimony, he stated:

NHTSA continually seeks new ways to improve our processes. We are reviewing the events leading up to this recall to see if there areas that can be improved. We are looking to improve our understanding of the way that various manufacturers design airbags to function when the vehicle loses power, considering whether we need to improve the use of Special Crash Investigation (SCI) in our defects screening process, reviewing ways to better incorporate information about remote defect possibilities into the investigative process, and evaluating our process for engaging manufacturers around issue evaluations.²⁴²

While these statements are positive signs, five months later, there is no evidence, at least publicly, that anything has changed at the agency. No one has been held accountable and no substantial changes have been made. NHTSA and its employees admit they made mistakes but the lack of urgency in identifying and resolving those shortcomings raises questions about the agency's commitment to learning from this recall.

²⁴⁰ Written Testimony of David Friedman, at [2-3].

²⁴¹ Written Testimony of David Friedman, at [8].

²⁴² Written Testimony of David Friedman, at [14].

D. Organizational Tunnel Vision

Another theme highlighted by NHTSA employees was the burden imposed by large, public or long-term investigations. Examples included Ford Firestone, Toyota and the current GM recall. Staff from different divisions within ODI are pulled away from existing work to focus on these investigations. As a result, other investigations languish and new issues fall through the cracks. Agency staff, for example, suggested that the 2009 Special Crash Investigations report involving the Cobalt may have been overlooked because it was received by ODI in the midst of the Toyota recall in 2010.²⁴³

The diversion of staff resources is not limited to large, high priority safety defect investigations. For example, the agency's response to the 2007 *Kansas City Star* articles on air bag non-deployments required significant time and effort on the part of staff from the Vehicle Integrity Division and the Early Warning Division. In addition to their normal duties investigating safety defects or evaluating Early Warning Report data, respectively, ODI staff spent several months conducting research and drafting a portion of a large report for the Frontal Crash Protection Working Group established in the wake of the 2007 stories. The Committee received as much, if not more, documentation of the staff's work related to the *Kansas City Star* response as it did for the agency's work on the Cobalt investigation.²⁴⁴ Despite the time investment, this report was never published.²⁴⁵

The Committee also observed the effect of long-term or stalled investigations. In 2011, the Defects Assessment Division and the Early Warning Division identified numerous potential safety issues related to air bag systems but struggled to get support for investigations. At the time, the Vehicle Integrity Division was embroiled in two difficult air bag investigations in which the agency identified what it believed to be defects but struggled to close the investigations because the vehicles complied with existing federal standards.²⁴⁶ These were precedent setting investigations involving side air bags and the Occupant Classification System (OCS) so the Vehicle Integrity Division was reluctant to open any related air bag investigations until they were resolved.²⁴⁷

In an effort to prioritize their screening efforts and resolve the back-log of OCS and side-air bag concerns, in the summer of 2011 the Early Warning Division and the Defects Assessment Division conducted a "sweep" of all known air bag issues to develop a list of "top offenders," and potential issues.²⁴⁸ Staff from the Early Warning Division and the Defects Assessment

²⁴³ VID Interview; DAD Interview

²⁴⁴ Materials related to the Cobalt were reviewed in support of the Frontal Crash Protection Working Group but in the context of research for the working group, not a specific defect investigation involving these vehicles.

²⁴⁵ VID Interview

²⁴⁶ *Id.*

²⁴⁷ *Id.*

²⁴⁸ See e.g. Presentation by Early Warning Division, NHTSA, "Airbag Screening Issues Review" (August 4, 2011) (Bates NHTSA-HECC-007865-7891; on file with author); see also, Email from Chief, Defect Assessment Division,

Division spent two months researching and narrowing their list. Ultimately, nothing changed — the Vehicle Integrity Division remained reluctant to open any further investigations until the existing cases were resolved.²⁴⁹

Twice in the span of four years, ODI staff and other NHTSA employees devoted substantial time and effort broad air bag evaluations that ultimately went nowhere. The 2011 air bag sweep was arguably a useful exercise for ODI and its mission, even if it produced no results. The FCPT, however, lasted for over a year, involved staff from multiple divisions within NHTSA, and led to a draft report that was never finalized or publicized – all in response to media reports. These are just two examples of the burdens imposed on staff by assignments outside of their normal responsibilities. The prevalence of these distractions, their burden on the staff and the relative benefit to the agency or the public — especially in cases where nothing is finalized or publicized — all warrant further consideration.

V. Conclusion

The GM recall exposed troubling questions about manufacturers’ and regulators’ approach to vehicle safety. This report focuses on the latter. The Committee’s investigation revealed that NHTSA — the federal regulator responsible for motor vehicle safety — is an agency struggling to keep pace with the industry it is responsible for overseeing. Specifically, the Committee made several key observations:

- 1) The GM recall exposed NHTSA’s fundamental misunderstanding of how advanced air bag systems, implemented in response to the agency’s own regulations, operate. Technology is advancing at a rapid pace and NHTSA must be able to stay abreast of the latest developments.
- 2) NHTSA collects and analyzes vast amounts of data in support of its mission, but these data sources are disjointed and often isolated to specific divisions or functions. Similarly, specific expertise or knowledge of vehicle systems and performance is not leveraged across the agency.
- 3) The NHTSA Shrug: The agency does not hold itself to the same standard of accountability as those it regulates. There is a tendency to deflect blame and point the finger at others rather than accept responsibility and learn from its own failures. It is no different than the “GM salute.”

NHTSA to Staff, Defects Assessment Division and Staff, Early Warning Division, NHTSA (June 7, 2011) (Bates NHTSA-HECC-007895; on file with author)

²⁴⁹ EWD Interview; VID Interview

- 4) NHTSA has a tendency to get bogged down on specific issues or investigations. This diverts staff from their normal responsibilities and prevents new issues from being raised for consideration.

There are no simple solutions to the failures exposed by this recall. This was not the result of lack of data or specific information – both GM and NHTSA had ample information necessary to identify this defect. It was a failure to process, share and utilize that information within each entity that enabled this safety defect to persist

This tragedy must serve as a reminder that safety is a collective responsibility. GM, as a company, lost sight of this and thus failed to identify a defect that was staring them in the face for over a decade. This was not isolated to one individual, division or team. GM suffered from a culture of complacency. There is no excuse for GM's inaction and as a result, the company will be held accountable by not only NHTSA, but also Congress, plaintiffs, shareholders and consumers. Although GM took a hard look at its failures and adopted certain measures to reevaluate and improve its approach to safety, their actions – both in the past and in the future – remain of interest to the Committee.

NHTSA also lacked the focus and rigor expected of a federal safety regulator. The agency's repeated failure to identify, let alone explore, the potential defect theory related to the ignition switch — even after it was spelled out in a report the agency commissioned — is inexcusable. This was compounded by NHTSA staff's lack of knowledge and awareness regarding the evolution of vehicle safety systems they regulate.

Regulators should not be held to a different standard. NHTSA's conduct needs to reflect its mission and serve as a model to those it regulates. The agency, therefore, must be willing to hold itself accountable and learn from past mistakes.

In response to the Toyota recalls, NHTSA began implementing changes to improve its defect investigations. Though it is too soon to evaluate the effectiveness of these improvements, these are positive steps. The years-long chain of events leading up to the GM ignition switch recall, however, suggests additional actions may be necessary. Identifying those improvements requires a meaningful and thorough discussion about NHTSA's future. Vehicle technology is advancing rapidly and NHTSA must be willing, and able, to keep pace.