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NHTSA's Efforts To Identify Safety-Related Vehicle Defects

Statement of
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Chairman Thune, Ranking Member Nelson, and Members of the Committee:

Thank you for inviting me to this important hearing on your ongoing efforts to examine the National Highway Traffic Safety Administration's (NHTSA) vehicle safety oversight program. In April 2014, I testified at this Committee's hearing[1] on the General Motors Corporation's (GM) delay in recalling 8.7 million vehicles[2] for a faulty ignition switch—a defect, which as of this month, has been linked to more than 110 fatalities and 220 injuries—and committed to determining what NHTSA knew of this safety defect, when the Agency knew it, and what actions were taken to address it. In addition, the Secretary of Transportation requested that we examine NHTSA's current safety defect investigation processes and make recommendations for improvement.

My testimony today highlights our findings, which we recently reported[3]—specifically, our assessment of the procedures NHTSA's Office of Defects Investigation (ODI) uses to (1) collect vehicle safety data, (2) analyze the data and identify potential safety issues, and (3) determine which issues warrant further investigation.

SUMMARY

ODI lacks the procedures needed to collect complete and accurate vehicle safety data. Notably, ODI guidance specifies 24 categories for reporting potential vehicle defects related to an average of over 15,000 vehicle components, leaving manufacturers to use broad discretion in reporting early warning data. Further, ODI does not adequately verify the data manufacturers submit. Consumer complaints—ODI's primary source for identifying safety concerns—similarly lack information to correctly identify the vehicle systems involved.

When analyzing early warning reporting data, ODI does not follow standard statistical practices. Consequently, it cannot differentiate outliers and trends that represent random variation from those that are statistically significant. In addition, ODI does not thoroughly screen consumer complaints or adequately train or supervise its staff in screening complaints. Collectively, these weaknesses have resulted in significant safety concerns being overlooked.

ODI's process for determining when to investigate potential safety defects further undermines efforts to identify needed recalls and other corrective actions. ODI emphasizes investigating issues that are most likely to result in recalls, which has led to considerable investigative duties being performed during the pre-investigative phase,

[1] *Identifying and Investigating Vehicle Safety Defects* (OIG Testimony CC-2014-015), Apr. 2, 2014. OIG testimonies and reports are available on our Web site: www.oig.dot.gov.

[2] Recalled vehicles include Chevrolet Cobalts and HHRs, Saturn Ions and Skys, and Pontiac G5s and Solstices that were manufactured between 2003 and 2011.

[3] *Inadequate Data and Analysis Undermine NHTSA's Efforts To Identify and Investigate Vehicle Safety Concerns* (OIG Report No. ST-2015-063), June 18, 2015.

often by screeners who are not trained to carry out these responsibilities. In addition, ODI does not always document the justifications for its decisions not to investigate potential safety issues and does not always make timely decisions on opening investigations.

BACKGROUND

ODI is responsible for reviewing vehicle safety data, identifying and investigating potential vehicle safety issues, and requiring and overseeing manufacturers' vehicle and equipment recalls (see table 1). NHTSA reports that it has influenced, on average, the recall of nearly 9 million vehicles every year since 2000.

Table 1. ODI's Vehicle Safety Oversight Process

Phase	Number of Staff	Description
Pre-Investigation	13	ODI collects and analyzes vehicle safety data to identify and select potential safety issues for further investigation.
Investigation	20	ODI investigates the potential safety issue to determine whether a recall is warranted.
Recall management	8	ODI ensures that manufacturer recalls comply with statutory requirements.

Source: OIG analysis

ODI's pre-investigative phase includes four key elements:

- **Collect and analyze early warning reporting data.** The Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act[4] of 2000 authorized NHTSA to require manufacturers to report on a variety of early warning data. This data includes property damage claims, consumer complaints, warranty claims, and field reports from incidents involving certain vehicle components and conditions defined in NHTSA regulations.[5] In addition, manufacturers are required to report all death and injury claims and notices. ODI's Early Warning Division staff[6] are responsible for verifying that manufacturers submit these data, prioritizing the data using statistical tests, and identifying and referring potential safety trends to the Defects Assessment Division for further analysis.

- **Collect and analyze consumer complaints.** ODI receives consumer complaints through a variety of sources including letters, vehicle safety hotline calls, and submissions through NHTSA's safercar.gov Web site. ODI's Defects Assessment

[4] Pub. L. 106-414.
[5] Title 49, Code of Federal Regulations (CFR), Part 579.
[6] The Early Warning Division currently has four staff including two safety defects analysts, one statistician, and one safety defects engineer.

Division screens all complaints and forwards ones with potential safety significance for additional review.[7]

- **Identify potential safety issues.** If a potential safety issue is identified, the Defects Assessment Division researches and analyzes available safety data and prepares an investigation proposal for ODI's investigative division chiefs to review.[8]

- **Select potential safety issues to investigate.** ODI's investigative division chiefs review investigation proposals and recommend to the Director of ODI whether to open an investigation, decline an investigation, or refer the proposal to the Defects Assessment Panel for further review.

In October 2011, we reported on NHTSA's vehicle safety oversight and made 10 recommendations for improving ODI's processes for identifying and addressing safety defects.[9] As of May 29, 2013, ODI had taken action to address nine recommendations; at the end of April 2015, NHTSA completed a workforce assessment, our remaining recommendation. We are conducting a separate audit to assess these actions and plan to report our findings later this year.

ODI LACKS EFFECTIVE PROCEDURES FOR COLLECTING COMPLETE AND ACCURATE VEHICLE SAFETY DATA

ODI lacks effective guidance and verification procedures to obtain complete and accurate early warning reporting data and take timely action to correct identified inaccuracies and omissions. ODI received some early warning reporting data and consumer complaints related to the GM ignition switch defect more than a decade before GM notified ODI of the recall.

ODI Lacks Detailed Guidance and Verification Processes To Obtain Complete and Accurate Early Warning Reporting Data

The TREAD Act and related regulations require vehicle and equipment manufacturers to report quarterly to NHTSA on a variety of early warning reporting data that could indicate a potential safety defect. Such data include warranty and property damage claims, consumer advisories, and foreign recalls of vehicles substantially similar to ones sold in the United States.

Regulations specify 24 broad vehicle codes that manufacturers assign to reported early warning safety data. However, ODI notes that an average vehicle may have over

[7] The Defect Assessment Division currently has nine staff including eight screeners and a Division Chief.
[8] ODI has three investigative divisions: the Vehicle Control Division, Vehicle Integrity Division, and the Medium and Heavy Duty Vehicle Division.
[9] *Process Improvements Are Needed for Identifying and Addressing Vehicle Safety Defects*, (OIG Report Number MH-2012-001), Oct. 6, 2011. OIG reports are available on our Web site at www.oig.dot.gov.

15,000 components, and categorizing them can be open to interpretation. For example, ODI staff told us that a manufacturer could assign one of three vehicle codes to a malfunction of an air bag component located in a seat: air bags, seats, or electrical system. Additionally, the regulations allow manufacturers to decide if an incident not included in the 24 defined codes should be reported, with the exception of incidents related to death and injury claims, which must be reported.

Despite this complexity, ODI does not provide detailed guidance to help ensure manufacturers appropriately interpret and apply the codes.[10] ODI investigative chiefs and vehicle safety advocates told us that ODI's early warning aggregate data are ultimately of little use due to the inconsistencies in manufacturers' categorizations of safety incidents.

According to ODI staff and a January 2008 report issued by the Volpe National Transportation Systems Center,[11] non-dealer field reports[12] are the most important source of early warning reporting data because they can provide a specific, technical basis for launching investigations. However, lacking guidance on what information should be reported, manufacturers submit reports of varying usefulness. For example, one manufacturer's non-dealer field reports include detailed information—such as the technician's analysis of the condition, root cause analysis, corrective actions taken, and whether the action resolved the condition—while another manufacturer's reports contain brief descriptions of consumers complaints.

ODI staff check that manufacturers submit early warning reporting data on time and may request underlying documentation for aggregate data—particularly if they identify an anomaly in the data—and for death and injury data. However, ODI staff noted that their requests for such documentation have declined, from an average of 23 annually between 2006 and 2009 to an average of 4 annually between 2010 and 2014, as a result of their increased workload.

Moreover, ODI does not verify that manufacturers' early warning reporting data are complete and accurate. Although ODI has the authority to inspect manufacturers' records for compliance with early warning reporting requirements,[13] NHTSA officials told us the Agency has never used this authority. In addition, the ODI has no processes in place for systematically assessing the quality of early warning reporting data or internal guidance on using oversight tools to enforce data reporting requirements. The Agency also has not established best practices for providing early warning reporting data and does not periodically review manufacturers' early warning reporting procedures. Instead, the Director of ODI told us ODI relies on the "honor system." However, according to ODI

[10] According to ODI staff, such guidance would require additional rulemaking.
[11] In 2006, ODI initiated an evaluation of its early warning reporting system, with support from Volpe.
[12] Non-dealer field reports are communications between consumers, authorized service facilities, and manufacturers regarding the failure, malfunction, lack of durability, or other performance problem related to a vehicle or vehicle part.
[13] Title 49 United States Code (U.S.C.) Section 30166 establishes NHTSA's subpoena power and its authority to inspect manufacturers' records and require recordkeeping to assess compliance with early warning reporting requirements.

staff, manufacturers routinely miscategorize safety incidents. For example, staff told us that some manufacturers avoid using the word "fire" in non-dealer field reports and instead use phrases such as "strange odor" to avoid categorizing an incident as fire-related. Miscategorizations such as these compromise ODI's efforts to quickly identify potential safety defect trends.

Yet even in cases where ODI suspects noncompliance, it has not taken prompt enforcement action. For example:

- ODI officials told us they were aware that a vehicle manufacturer was "conservative" in reporting early warning reporting data. According to a November 2014 audit prepared for the manufacturer, two ODI employees called the manufacturer's officials in late 2011 or early 2012 to ask about inconsistencies between previously reported early warning reporting data and reported death and injury incidents pertaining to an air bag recall.[14] However, ODI took no enforcement action to address this issue until the manufacturer self-reported the omission of about 1,700 death and injury claims in October 2014. NHTSA subsequently required the manufacturer to describe its procedures for complying with early warning reporting requirements and provide the Agency with supporting documentation for all third-party audits of its reporting.

- In November 2004, ODI discovered that a major recreational vehicle manufacturer did not report required death and injury data and other early warning reporting data. However, ODI did not take action until nearly a decade later, when the office opened an investigation into the manufacturer's reporting following a suspected recall noncompliance issue. During the investigation, the manufacturer stated that it failed to report the early warning reporting data because of internal miscommunications and a software failure.

ODI Does Not Provide Sufficient Guidance to Consumers on the Type of Information To Include When Submitting Complaints

ODI relies primarily on consumer complaints—most of which are submitted through NHTSA's safercar.gov Web site—to identify potential safety defects. The online complaint form requires consumers to select up to 3 affected parts from a drop-down list of 18 options, such as air bags and electronic stability control. Additionally, the Web site provides a text field for consumers to describe the incidents underlying their complaints.

ODI's initial screener estimates that 50 to 75 percent of complaints incorrectly identify the affected parts, and roughly 25 percent do not provide adequate information to determine the existence of safety concerns. These data quality issues occur in part because ODI does not provide consumers with detailed guidance on submitting complaints. For example, safercar.gov does not define the 18 affected parts categories—

[14] The manufacturer officials did not follow up with ODI to provide a full explanation of the inconsistencies.

some of which may be unfamiliar to consumers, such as "adaptive equipment." Furthermore, safercar.gov does not allow consumers to submit, or encourage them to retain, supporting documentation (such as photographs or police reports), which ODI's screeners and management have indicated are valuable in identifying potential safety concerns. In contrast, the U.S. Consumer Product Safety Commission's complaint Web site (saferproducts.gov) allows consumers to upload as many as 25 documents or photos related to their complaints.

ODI Received Early Warning and Consumer Complaint Data Related to GM's Ignition Switch Defect

From 2003 through 2013, GM submitted about 15,600 non-dealer field reports and about 2,000 death and injury reports on vehicles subject to the ignition switch recall. A 2011 ODI analysis of early warning reports for 22 vehicles with potential air bag issues ranked the 2005 to 2010 Chevrolet Cobalt models fourth for fatal incidents and second for injury incidents involving air bags.[15]

However, GM's categorization of early warning reporting data related to the faulty ignition switch may have masked potential trends. Specifically, GM assigned different codes to non-dealer field reports describing ignition switch problems. For example, GM assigned the "Engine and Engine Cooling" code to a non-dealer field report on a 2005 Chevrolet Cobalt that concluded a minor impact to the ignition key could easily cause the engine to shut off. In another case, GM assigned the "Electrical" code to a non-dealer field report on a 2006 Pontiac Solstice that described the vehicle ignition system turning off several times while driving when his knee hit the key ring.

Moreover, underlying documentation did not support GM's categorization of the early warning reporting data. NHTSA regulations require manufacturers to identify each vehicle system or component that allegedly contributed to incidents related to death and injury claims and notices.[16] Documentation underlying a death and injury report related to a fatal accident involving a 2005 Chevrolet Cobalt included a Wisconsin State trooper's report indicating that the ignition switch and air bags were both involved in the accident. However, GM categorized the death and injury report as not involving any of the systems, components, or conditions defined in regulations.

Some consumer complaints were also miscategorized or lacked sufficient detail to link them to the ignition switch defect.[17] For example:

[15] In addition to the Cobalt, ODI analyzed consumer complaints and death and injury data categorized as air bag-related for 21 other passenger vehicles from GM and other manufacturers.
[16] 49 CFR §§ 579.21(b)(1)-(2).
[17] From January 1, 2003, through February 7, 2014, ODI received 9,266 complaints involving the vehicles subject to the GM ignition switch recall—including 72 complaints indicating at least 1 injury and 3 complaints indicating at least 1 fatality. The majority of these complaints involved the 2005 to 2010 Chevrolet Cobalt and the 2003 to 2007 Saturn Ion.

- ODI contractors used the codes "Unknown or Other" and "Exterior Lighting: Headlights: Switch" when entering a September 2003 complaint into Artemis—ODI's primary database for storing data used to identify and address potential safety defects. However, the complaint described engine shutoffs in a 2003 Saturn Ion when the driver's knee accidently hit the car keys, so the incident that should have been coded as "Electrical Systems: Ignition: Switch"

- A June 2005 complaint related to an accident involving a 2005 Chevrolet Cobalt did not specify whether the accident occurred on or off the road, or whether the impact was to the front, side, or back of the vehicle—essential details to ODI's analysis of air bag non-deployment in these vehicles. Instead, the complaint only stated that an accident had destroyed the vehicle and injured one person and that the air bags did not deploy.

WEAK DATA ANALYSES AND REVIEWS UNDERMINE ODI'S EFFORTS TO IDENTIFY VEHICLE DEFECTS

ODI does not follow standard statistical practices when analyzing early warning reporting data, conduct thorough reviews of consumer complaints, or provide adequate supervision or training for staff responsible for reviewing these data and complaints. As a result, it cannot reliably identify the most statistically significant safety issues to pursue. In the case of GM, ODI missed multiple opportunities to link the ignition switch defect to air bag non-deployments because ODI staff lacked technical expertise and did not consider all available information.

ODI Does Not Follow Standard Statistical Practice When Analyzing Early Warning Reporting Data

ODI uses four statistical tests to analyze aggregate early warning reporting data (such as consumer complaints, warranty claims, and property damage claims)—as well as a fifth test to analyze non-dealer field reports (see table 2).

Table 2. ODI's Statistical Tests for Analyzing Early Warning Reporting Data

Statistical test	Description
Crow-AMSAA	Trend analysis used to analyze aggregate data
Mahalanobis distance	Test used to analyze aggregate data
Probability measure	Test used to analyze aggregate data
Logistic regression	Regression test used to analyze death and injury aggregate data
CRM-114	Filter used to analyze non-dealer field reports

Source: OIG analysis

While the statistical experts we consulted[18] note that conducting multiple tests provides a sound basis for analysis, ODI does not follow standard statistical practices when implementing tests of aggregate data. Specifically, ODI does not consistently identify a model (a set of assumptions) for the aggregate data to establish a base case—that is, what the test results would be in the absence of safety defects. Without a base case, ODI cannot differentiate outliers that represent random variation from trends that are statistically significant and indicate a safety issue should be pursued.

ODI has missed opportunities to update and improve its statistical methods for analyzing early warning reporting data. For example:

- ODI does not regularly assess the performance of its aggregate data tests. According to the statistical experts, out-of-sample testing—a standard statistical assessment practice—would allow ODI to determine whether potential safety issues identified in one portion of its aggregate data turn up in the remaining portion. However, ODI performed out-of-sample testing on only one aggregate data test and only when the test was first implemented. ODI also conducted out-of-sample tests on non-dealer field reports, but it has not done so since 2009.

- Despite recent developments in data analytics, ODI has not updated its statistical tests from initial implementation in 2006 through 2009, so it has not taken advantage of recent methodological advances. Although ODI has periodically recalibrated some of its tests using current data, it has not updated the analytical methodologies it uses.

- Volpe conducted the only external review of ODI's aggregate data tests since their implementation. According to its January 2008 report, Volpe reported that the review's scope was limited because of concerns about the informational burden on ODI and manufacturers. As a result, Volpe was unable to reach any conclusions about the tests' effectiveness. ODI has not requested any other external reviews of its statistical tests.

ODI similarly lacks procedures to promote timely screening of early warning reporting data. For example, ODI's Early Warning Division staff review non-dealer field reports based on the results they receive from a statistical test; however, there is no process for ensuring that all non-dealer field reports are included in the universe from which the sample is drawn. ODI has overlooked non-dealer field reports for months or even years if, for example, manufacturers submit the reports in formats that ODI's statistical test cannot process.

In addition, advanced screeners, who are responsible for proposing safety defect investigations, told us that they are less likely to rely on early warning reporting data because of the data's lack of timeliness. The information in early warning reporting data

[18] The statistical experts we consulted with are from academia and research institutes.

can be delayed by months because manufacturers submit the reports quarterly.

ODI Does Not Thoroughly Screen Consumer Complaints

In 2014, ODI received nearly 78,000 consumer complaints—or roughly 330 complaints each day. Despite the volume of complaints, ODI's two-tiered screening process leaves the office vulnerable to a single point of failure and the risk that complaints with potential safety significance may not be selected for further review.

Currently, one employee reviews all submitted consumer complaints, determines which complaints have potential safety implications, and forwards those complaints to eight advanced screeners who perform more in-depth reviews. Determinations of whether complaints warrant further review are made within a matter of seconds—in part because the initial screener spends roughly half of the day carrying out other work responsibilities. According to the initial screener and our independent verification, about 10 percent of complaints are forwarded to advanced screeners for in-depth reviews,[19] leaving no assurance that the remaining 90 percent of complaints receive additional review. ODI recently completed a workforce assessment to determine the number of staff required to meet ODI's objectives and determine the most effective mix of skill sets, a recommendation we made in 2011.

ODI also lacks formal guidance for screening complaints. The initial screener relies on professional experience and judgment, as well as informal guidance and precedent to determine which complaints to forward to the advanced screeners. He noted that some complaint categories automatically warrant further analysis—including most air bag non-deployments and seatbelt issues—and that he prioritizes incidents that occur suddenly, with little warning for the consumer. He also noted that he assigns lower priority to engine, transmission, and vehicle body issues and generally does not forward certain incidents that most likely do not lead to investigations, such as sharp door edges. The initial screener does not forward complaints he believes are covered by existing recalls.

Like the initial screener, ODI's eight advanced screeners have access to a variety of data sources—such as technical service bulletins and special crash investigation reports—and have the authority to reach out to consumers and perform field inspections to augment their research. However, three advanced screeners said they rely mainly on consumer complaints to identify safety concerns, and four advanced screeners said they only occasionally use other sources of data. While screeners are encouraged to query all complaints for issues in their areas of concentration, four screeners told us they do not consistently do this—in some cases because it takes too much time. Advanced screeners also have access to early warning reporting data; however, four advanced screeners told us that they are less likely to rely on these data because they are untimely. Two screeners

[19] We independently verified that, in 1 week of review, the initial screener forwarded about 10 percent of complaints to advanced screeners.

were also concerned about the early warning reporting data's lack of usefulness because they felt the data provided no significant additional detail.

In 2013, ODI began requiring advanced screeners to annotate the complaints they review by documenting the condition that led to the incident and their reasons for deciding not to pursue potential issues. According to the Defects Assessment Division Chief, the annotations are intended to identify and correct inconsistencies and inaccuracies in complaints—and thereby enable ODI to properly link them to relevant safety concerns—and provide a record of review. However, an ODI internal audit found that roughly half the complaints were incorrectly annotated or lacked critical information. Additionally, we analyzed annotations for complaints received in the fourth quarter of 2013 and found that about 57 percent of the complaints that screeners determined did not warrant further review lacked justifications. Advanced screeners told us that annotating complaints is time consuming.

ODI's Pre-Investigation Staff Lack the Training and Supervision To Effectively Analyze Vehicle Safety Data

NHTSA has not adequately prepared ODI staff who review early warning reporting data and consumer complaints to carry out their responsibilities. For example:

- ODI staff charged with interpreting statistical test results for early warning reporting data told us they have no training or background in statistics.

- Three screeners assigned to analyze air bag incidents lacked training in air bags. One screener who was originally hired to review child seat restraint issues was assigned in 2008 to review air bag issues—without any air bag training and without an engineering or automotive background.

- Screeners told us that training to maintain professional certifications—such as the Automotive Service Excellence certification for automotive mechanics—must be completed on their own time and generally at their own expense.

- Screeners also noted that ODI lacked the funding to allow them to attend training to stay abreast of the latest developments in vehicle technology.

In addition, ODI has not established an adequate supervisory review process to evaluate the quality of screeners' work in identifying potential safety issues. For example, the Defects Assessment Division Chief characterized his oversight of the initial complaint screener's work as "minimal" and acknowledged that he does not provide much guidance to the initial screener. Advanced screeners agreed that supervisory review is often informal and that the Defects Assessment Division Chief does not regularly review their complaint annotations. In addition, ODI staff told us that their data analysis and screening efforts were generally not reviewed and that they received little feedback on the quality

of their work.

Inadequate training and supervisory review have led to deficient analyses of early warning reporting and complaint data. For example, the developer of one statistical test that ODI uses to analyze early warning reporting data stated that the test should produce the same results every time for the same data input in the same order. However, ODI staff told us that different test runs produce different results, and management has not considered this to be a problem.

ODI Staff Overlooked Documentation Pointing to the GM Ignition Switch Defect

In their reviews of non-dealer field reports and death and injury and special crash investigation reports, ODI staff missed opportunities to connect the GM ignition switch defect to air bag non-deployments. For example, ODI employees overlooked documentation on a fatal accident involving a 2005 Chevrolet Cobalt that linked the ignition switch defect to the vehicle's air bag non-deployment:

- A Wisconsin State Trooper's report that identified the ignition switch defect as a possible cause of air bag non-deployment during the accident.

- Event data recorder data[20] that showed the vehicle's power mode status had been in the "accessory" position during the accident—a key indicator of the ignition switch defect.

- A NHTSA special crash investigation report that concluded the vehicle's air bags failed to deploy possibly due to "power loss due to movement of the ignition switch just prior to the impact."

Between the second quarter of 2012 and the fourth quarter of 2013, ODI received 13 non-dealer field reports on the 2005 to 2010 Chevrolet Cobalts that GM categorized as air bag-related and that we determined may be related to the ignition switch defect.[21] However, ODI staff reviewed only one of these non-dealer field reports before the February 2014 recall. According to ODI staff, they did not review the majority of these reports because in the second quarter of 2012, GM began using a new file format for most of their document submissions, which could not be read by the statistical test ODI uses to analyze these reports. ODI staff acknowledged that they did not notice the reports were not analyzed until after the recall.

[20] An event data recorder is a device installed in a vehicle to record technical vehicle and occupant information for a brief period of time (seconds, not minutes) before, during, and after a crash.

[21] To determine which non-dealer field reports were related to the ignition switch recall, we limited this analysis to vehicle models, model years, facts, and circumstances that would make an incident eligible for compensation through the GM ignition switch compensation fund.

ODI also received 9,266 consumer complaints between January 1, 2003, and February 7, 2014, that involved GM vehicles subject to the ignition switch recall. Because ODI's screeners were not required to annotate their reviews of complaints until 2013, ODI cannot establish a full picture of why it did not investigate complaints related to the GM ignition switch and air bag non-deployment issues prior to 2013. From the time that the annotations were required to the date of the recall, ODI received 926 consumer complaints involving the recalled vehicles. ODI's initial screener advanced 27—or 3 percent—of these complaints for further review, compared to the average of 10 percent that are typically forwarded. ODI's advanced screeners noted in their annotations that 11 of the 27 complaints included allegations of front air bag non-deployment, but they did not advance these complaints for further consideration because they concluded there was either "no actionable trend indicated" or "minimal hazard." ODI staff did not thoroughly understand when air bags were supposed to deploy in these vehicles, which prevented them from linking the ignition switch defect to the air bag non-deployment. This may be explained by ODI staff's acknowledged lack of training on air bags.

ODI prepared three proposals for investigating the loss of power steering and air bag non-deployment in the Chevrolet Cobalt and Saturn Ion. While each proposal was supported by early warning reporting referrals, ODI staff did not establish the ignition switch defect as a potential root cause for these issues. ODI officials told us that they did not understand the safety consequences of the ignition switch defect before the GM recall.

ODI INITIATES INVESTIGATIONS WITHOUT ASSURANCE THAT THE MOST SIGNIFICANT SAFETY DEFECTS ARE TARGETED

ODI's decisions on whether to open an investigation are not backed by guidance for applying the factors it established for opening an investigation. In addition, decisions lack transparency and accountability. This was the case with ODI's decision not to investigate the GM air bag non-deployment defect.

ODI Lacks Consensus and Detailed Guidance on the Amount and Type of Information Needed To Open Investigations

According to ODI's Defects Assessment Division Chief, ODI considers three factors when proposing a vehicle safety defect investigation: (1) rate of consumer complaints,[22] (2) severity of the potential safety issue, and (3) identification of a potentially defective vehicle component or root cause. However, ODI has not developed specific guidance on how screeners should apply these factors, and there is a lack of consensus among ODI leadership on the factors necessary to open an investigation—leaving screeners uncertain about how much support is needed to propose an investigation.

[22] The rate of complaints is the number of relevant complaints received by NHTSA divided by the number of vehicles in production.

Attorneys in NHTSA's Office of Chief Counsel state that while NHTSA must establish severity for all cases, it can establish either frequency or root cause to force a manufacturer to initiate a recall. The Director of ODI prefers screeners to focus on establishing the safety consequences of a potential defect rather than determining root cause, and ODI's two investigative chiefs agree that establishing a pattern of safety concerns is more important than identifying root cause. However, ODI's Defects Assessment Division Chief expects advanced screeners to find the root cause in order to build a compelling proposal for an investigation.

The Director of ODI can also unilaterally decide not to open an investigation after discussion with Defects Assessment Panel participants. For example, the Director of ODI decided not to pursue two investigative proposals after concluding that they presented minimal hazards. The first proposal, made in June 2014, related to 2007 to 2011 vehicles that suddenly lost steering power assist; the second, made in July 2014, related to 2012 model vehicles that experienced intermittent loss of electrical power. Both proposals established the rate of complaints, severity of the issue, and the defective components.

Without specific guidance on the amount and type of information needed to launch an investigation, screeners largely rely on precedent and professional judgment to determine which issues merit investigation. One screener told us he uses his "gut feeling" when reviewing complaints to gauge the "appetite" of the office for specific issues. Another screener told us he only proposes investigations that have the greatest chance of being selected to avoid the extra work of proposing investigations that are ultimately denied. Three screeners said they are hesitant to propose investigations if similar proposals have been rejected in the past.

In general, ODI officials prefer to open investigations that are most likely to result in a manufacturer recall—an assertion echoed by four of the eight screeners we spoke with. In 2011 and 2012—the most recent years for which ODI has actionable data—about 70 percent of the investigations eventually resulted in recalls. According to an ODI investigative division chief, repeatedly opening investigations that do not result in a recall could cause ODI to lose credibility with manufacturers. However, ODI's focus on issues most likely to result in recalls creates the potential for missed opportunities to investigate issues that have serious safety implications.

Targeting potential safety defects that most likely lead to recalls also blurs the line between pre-investigative and investigative duties. Considerable investigative duties—such as research and engineering analysis work—are being performed in the pre-investigative phase, often by screeners who are not adequately trained to perform this work. In one case, a screener told us he could not detect any exhaust odor in a vehicle, but subsequent work by investigative staff found that the carbon monoxide level reached Consumer Product Safety Commission thresholds for noticeable headache, fatigue, and

nausea, and exceeded Occupational Safety and Health Administration standards if exposure exceeded 8 hours.

In addition, screeners may not have access to the data needed to prompt an investigation, such as manufacturer data. While NHTSA's Office of Chief Counsel stated that ODI may compel information from manufacturers during the pre-investigative stage, the Defects Assessment Division Chief told us they generally do not compel this information without first launching an investigation. Regardless, three screeners were unaware that their division has the authority to compel information from manufacturers without launching an investigation. These added duties not only take time away from the advanced screeners' primary duty of screening safety data, which can result in backlogs of those data, but can cause potential safety defects to be overlooked.

ODI's Investigation Decision Process Lacks Transparency and Accountability

ODI's investigation decision process involves several steps. First, the Defects Assessment Chief provides a list of proposals to ODI's investigative division chiefs—along with supporting documentation, such as consumer complaints and warranty claims. The division chiefs then review the proposals and decide whether to open an investigation, decline to investigate, or send the proposal to ODI's Defects Assessment Panel for further review.[23] According to ODI's written policy, division chiefs have 2 weeks to complete their review. However, the investigative division chiefs consider the 2-week requirement to be a suggested timeframe that should be balanced against other competing priorities.

If a proposal is sent to the Defects Assessment Panel, investigation decisions are frequently delayed. The panel often reschedules meetings, and according to some screeners, the meetings tend to be pro forma. For example, one screener stated the meetings focus on the reasons for not opening an investigation rather than reasons for opening one. The panel also repeatedly delays decisions on proposals to obtain additional information. For example:

- In August 2014, the panel reviewed a proposal to investigate a side air bag non-deployment that resulted in a fatality. At that meeting, the Director of ODI, who sits on the panel, requested additional information. By October, the manufacturer had responded to ODI's questions, but an investigative division chief requested that an investigation not be opened until his team had completed an on-site inspection of the vehicle involved in the accident. As of the most recent panel meeting in February 2015—5 months after the panel first reviewed the potential defect—a decision to investigate this issue remains pending.

[23] The Defects Assessment Panel is a body chaired by the Director of ODI that is intended to meet monthly to review investigation proposals and decide whether to open an investigation.

- In January 2014, the panel discussed a proposal on a vehicle's steering failure. However, the panel has delayed the decision whether to investigate this issue for over a year—despite a recommendation from the investigative division to open an investigation.

In addition to delays, ODI's decisions are not transparent. Of the 56 investigation proposals for light vehicle safety defects in 2013, 32 were not investigated—18 of which lacked documented justifications for not investigating. While the panel may provide a reason for declining an investigation, such as "minimal hazard," it does not document the evidence that supports its decision. In addition, a proposal may be rejected by investigation divisions, which do not always document reasons for declining to investigate. Lack of transparency exacerbates the problems created by reliance on precedent because screeners do not learn what management deems worthy of investigation.

Transparency and accountability are especially critical since ODI generally does not revisit proposals once they are declined for investigation. Screeners told us that there is a need for ever increasing numbers of incidents to consider reopening previously rejected investigative proposals. While ODI lists declined proposals in Artemis as being "monitored," it does not track who monitors these issues. Half of the advanced screeners consider monitored proposals to be essentially denied and rarely resubmit proposals unless there is a new angle or "smoking gun." One screener said resubmitting a proposal is like "beating a dead horse."

ODI Did Not Investigate or Adequately Monitor the GM Air Bag Non-Deployment or Ignition Switch Issues

At a November 2007 Defects Assessment Panel meeting, ODI management and staff discussed a proposal to investigate frontal air bag non-deployments related to the Chevrolet Cobalt and Saturn Ion. ODI ultimately declined the proposal but did not document its justification for doing so. According to ODI staff, the decision not to investigate was based on a flawed understanding of air bag technology. Specifically, the Defects Assessment Panel believed the air bags did not deploy because the drivers were not wearing their seatbelts and because the vehicles left the road during the accidents.[24] At the same panel meeting, an ODI air bag investigator advocated against opening an investigation because he had concluded, based on his analysis of complaints, that the rate of air bag non-deployment complaints for the Cobalt and Ion was similar to that of peer vehicles.

According to ODI staff who attended the 2007 panel meeting, the Defects Assessment Panel had requested that the potential safety defect be monitored to identify future air bag

[24] According to GM, frontal air bag deployment takes into consideration factors such as speed of the vehicle, severity and location of the impact, and rate of deceleration. Air bags are programmed not to deploy in non-accident circumstances, such as driving over potholes or rough terrain.

non-deployments occurring on the road, where air bag deployment would be expected. In addition, NHTSA's Associate Administrator for Enforcement, who did not attend the panel discussion, told the Director of ODI and the Defects Assessment Division Chief that "given the reports of fatal crashes, this [investigation proposal] looks like one we want to jump on and learn as much as we can quickly." The ODI screener who prepared the investigation proposal was initially assigned to monitor the issue. However, the Defects Assessment Division Chief did not reassign that responsibility after the screener responsible for monitoring the issue left NHTSA in 2008.

ODI missed other opportunities to investigate the air bag non-deployment issue. For example, in April 2009, the Defects Assessment Division Chief requested a special crash investigation of a collision involving air bag non-deployment in a 2005 Chevrolet Cobalt. However, ODI did not follow up on the investigation's results, and the Defects Assessment Division Chief had no explanation for why ODI did not pursue the issue. Two ODI staff members reviewed the findings of the special crash investigation in February 2010, but neither reported the results of their reviews. The first, an investigator, told us he did not report the results because he was not responsible for screening safety issues. The second, an advanced screener, told us that while he does not recall reviewing the report, he would only have noted issues in his area of concentration: engine, power train, and speed control.

According to ODI officials, in 2010, an ODI screener suggested revisiting the 2007 investigation proposal on air bag non-deployments in the Chevrolet Cobalt because of new consumer complaints. However, after the air bag investigator updated his analysis of consumer complaints and identified a downward rate of complaints for the vehicles, the screener decided that the issue did not present enough of a safety trend to warrant renewing the investigation proposal.

While ODI identified air bag non-deployments as a potential safety issue, it did not identify or propose an investigation of the GM ignition switch issue. According to ODI staff, there were no discussions of the ignition switch defect prior to the February 2014 recall.

This concludes my prepared statement. I will be happy to answer any questions you and other Committee Members may have for me.