

REVIEW OF THE OFFICE OF DEFECTS INVESTIGATION

National Highway Traffic Safety Administration

Report Number: MH-2002-071

Date Issued: January 3, 2002



Memorandum

U.S. Department of
Transportation
Office of the Secretary
of Transportation
Office of Inspector General

Subject: ACTION: Review of the Office of Defects
Investigation, National Highway Traffic Safety
Administration
MH-2002-071

Date: January 3, 2002

From: Alexis M. Stefani 
Assistant Inspector General for Auditing

Reply to
Attn. of: JA-40

To: National Highway Traffic Safety Administrator

This report presents the results of our review of the National Highway Traffic Safety Administration (NHTSA) Office of Defects Investigation (ODI). Our review was performed at the request of Senator John McCain, Ranking Minority Member, Senate Committee on Commerce, Science, and Transportation. During a September 12, 2000 hearing on the Firestone tire recall, the Committee questioned ODI's preparedness for handling information that may contain early warning signs of product defects. In October 2000, Congress passed the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act requiring NHTSA to establish early warning reporting requirements for manufacturers so that it is aware of potential defects as soon as possible.

Our objectives were to: (1) evaluate NHTSA's progress and challenges in implementing the TREAD Act; (2) assess the adequacy of NHTSA's processes and procedures for assessing potential defects and opening investigations; (3) evaluate the risks associated with NHTSA's approach for developing a new defect information management system; and (4) identify notification, investigation and recall requirements considered as "best practices" by other regulatory agencies and that may be used as models for improving ODI.

We are recommending that NHTSA ensure the timely completion of TREAD Act rulemakings by adhering to established milestones for each rulemaking stage. Further, departmental offices and other entities that must review the proposed rules will also need to adhere to the rulemaking schedules. We are also recommending that NHTSA ensure consistency in recommending and opening investigations by establishing a peer review process, and ensure the new defect information system development project is completed on time and within budget

by having an independent entity validate and verify that the new system will meet NHTSA's needs and reduce development risk.

We obtained comments on a draft of this report from NHTSA. NHTSA agreed to implement all of the recommendations or proposed an acceptable alternative action with one exception. NHTSA did not agree with a recommendation in the draft report to assign a full-time project manager to oversee the contractor's development of a new defect information system.

Given NHTSA's agreement to obtain the services of an independent entity to validate and verify the contractor's progress and reduce development risk, we have eliminated a recommendation to assign a full-time project manager. NHTSA's comments are presented in the Appendix to this report.

In accordance with Department of Transportation Order 8000.1C, we request that, within 30 days, NHTSA provide target dates for completing each recommended action.

We appreciate the courtesies and cooperation of the NHTSA representatives during this review. If I can answer any questions or be of further assistance, please feel free to contact me at (202) 366-1992, or Thomas J. Howard, Deputy Assistant Inspector General for Maritime and Highway Safety Programs, at (202) 366-5630.

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Executive Summary

Review of the Office of Defects Investigation National Highway Traffic Safety Administration

MH-2002-071

January 3, 2002

INTRODUCTION

This report presents the results of our review of the National Highway Traffic Safety Administration (NHTSA) Office of Defects Investigation (ODI). Our review was performed at the request of Senator John McCain, Ranking Minority Member, Senate Committee on Commerce, Science, and Transportation. During a September 12, 2000 hearing on the Firestone tire recall, the Committee questioned ODI's preparedness for handling information that may contain early warning signs of product defects. In October 2000, Congress passed the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act requiring NHTSA to establish early warning reporting requirements for manufacturers so that it is aware of potential defects as soon as possible.

Our objectives were to: (1) evaluate NHTSA's progress and challenges in implementing the TREAD Act; (2) assess the adequacy of NHTSA's processes and procedures for assessing potential defects and opening investigations; (3) evaluate the risks associated with NHTSA's approach for developing a new defect information management system; and (4) identify notification, investigation and recall requirements considered as "best practices" by other regulatory agencies and that may be used as models for improving ODI. The scope of our review and the methodology used to achieve our objectives are discussed in Exhibit B.

RESULTS IN BRIEF

In September 2000, Congress held hearings to determine why NHTSA, Firestone, and Ford did not identify tread separation defects sooner to prevent the numerous deaths and injuries associated with defective Firestone tires. During the hearings, Congress noted that the data available to ODI regarding the problems with Firestone tires were insufficient. However, while acknowledging that ODI lacked data, Congress also stated that ODI did not use the data it did possess to spot trends related to failures in these tires.

To address concerns that the motoring public is protected from future "Firestone incidents," Congress passed the TREAD Act in October 2000. For example, the Act

requires vehicle and equipment manufacturers to routinely report to NHTSA early warning data, such as information on property damage claims, communications to customers, and knowledge of fatalities or serious injuries caused by possible defects in a vehicle in the United States or a foreign country. The early warning reporting requirements rule is critical to ensuring that the motoring public is protected because it will increase the amount and improve the quality of data ODI currently uses to identify potential safety-related defects.

NHTSA has made progress in meeting the requirements of the TREAD Act; however, it still faces several challenges in fully implementing the Act and improving its ability to identify potential safety defects. Specifically, NHTSA must:

- **complete TREAD Act rulemakings, most importantly the early warning reporting requirements rule, in a timely and comprehensive manner. NHTSA has already completed 3 final rulemakings, but must still complete 12 other final rulemakings,¹ several of which are complex and controversial and have statutory deadlines ranging from November 1, 2001 to November 1, 2002. These rules include requiring a tire pressure warning device in new vehicles; updating the tire standards; establishing early warning reporting requirements for vehicle and equipment manufacturers; and improving child safety restraints. Although due by November 1, 2001, NHTSA has yet to issue the tire pressure warning device final rule.**
- **establish a peer review panel to ensure that data used to identify potential defects are comprehensively and thoroughly analyzed and that investigations are opened and prioritized in a consistent manner. A peer review panel can be effectively used to provide a thorough and consistent assessment of the quality of ODI's support for recommending and opening an investigation. The panel would draw on the institutional knowledge of the ODI staff and bring management together to identify high priority cases and to ensure a degree of consistency in the decision making process.**
- **develop a new defect information management system to replace the currently flawed system. This is important because the success of the TREAD Act depends on the quality and usefulness of the new information system and ODI's ability to identify potential defects.**

Adhering to TREAD Act deadlines will require extensive coordination among NHTSA and other entities involved in the rulemaking process. To date, NHTSA has made progress completing TREAD Act rules, such as the one requiring individuals to report to NHTSA the sale or lease of defective tires, and issuing several proposed

¹ The 12 rules only reflect final rules and do not include other stages of the rulemaking process, such as an Advance Notice of Proposed Rulemaking (ANPRM) or a Notice of Proposed Rulemaking (NPRM).

rules. Unlike the rules completed thus far, many of the remaining rules are complex and controversial and have statutory deadlines. For example, although due by November 1, 2001, NHTSA has yet to issue the tire pressure warning device final rule.

The issue with the TREAD Act rulemakings is not just the number of rules NHTSA has to complete. Rather, the issue is the timely completion of complex and/or controversial rules with statutory deadlines. For example, completing the early warning reporting requirements rule by June 30, 2002, is not fully within NHTSA's control and will require extensive coordination with other offices and entities who have a role in approving or commenting on proposed rules. On December 21, 2001, NHTSA issued the Notice of Proposed Rulemaking, which describes the proposed early warning reporting parameters for vehicle and equipment manufacturers and requests comments from the public.

The early warning rule is at the heart of the TREAD Act. NHTSA has established milestone dates for the TREAD Act rules. However, to keep NHTSA on course in completing the TREAD Act rulemakings, both the Department and NHTSA will have to adhere to the milestone dates and work with the Office of Management and Budget (OMB) when its review is required. NHTSA, as well as other entities that must review the proposed rules, will need to adhere to the rulemaking schedules.

However, we have found that factors such as differing views on the substance of a proposed rule, requirements for cost/benefit analysis, and the need to have other entities review a proposed rule, will influence the time it takes to issue a rule.² In July 2000, we reported that the Department of Transportation (DOT) took an average of 3.8 years to complete significant rules. Further, when Congress established a statutory deadline for completing a rule, DOT met only 10 percent of the deadlines.

The Secretary of Transportation identified the timely completion of rules as a departmentwide priority. In its comments to our report, NHTSA agreed to continue working with the Department and other entities to meet the TREAD Act deadlines.

ODI's procedures for identifying defects and deciding to open investigations can be strengthened by establishing a peer review process. We found that ODI's processes and procedures, as well as the data used for identifying potential defects and opening investigations, need major improvements. A peer review panel can be effectively used to provide a thorough and consistent assessment of the quality of ODI's support

² In contrast to the TREAD Act, the recently enacted Aviation and Transportation Security Act authorizes the Under Secretary of Transportation for Security, to waive requirements for an analysis that estimates the number of lives that will be saved by the regulation and the monetary value of such lives if the Under Secretary determines that it is not feasible to make such an estimate. Further, any regulation or security directive issued shall remain effective unless disapproved by the Transportation Security Oversight Board or rescinded by the Under Secretary.

for recommending and opening an investigation. A permanent peer review panel meeting regularly to discuss actions to be taken regarding recommended cases would ensure a degree of consistency in the decision making process. Further, a peer review panel would also draw on the institutional knowledge of both defects analysis and investigation staff and bring management together to identify high priority cases.

We found several instances where ODI's decision to open or not open an investigation was not consistent with the seriousness or frequency of the complaint. (See pages 12 to 16.) For example, ODI decided to open an investigation when it received three complaints over 1 year alleging a suspension problem that could cause the driver to lose control of the vehicle. In comparison, in another case ODI did not open an investigation although the number of complaints, period of time, alleged defect, and potential consequences were similar.

In addition, the data ODI currently uses to identify defect trends, primarily complaints by consumers, significantly understate the number of potential safety defects. Although the TREAD Act requires that manufacturers report early warning information to ODI, it does not require that ODI receive or solicit information from other sources, such as safety groups, plaintiff attorneys or insurance companies. Therefore, rather than relying on consumer complaints and, in the future, manufacturer data, ODI needs to develop innovative techniques for collecting and analyzing information from a wider range of sources to help identify potential trends sooner.

NHTSA concurred with our recommendations to ensure consistency in recommending and opening investigations by agreeing to establish a peer review panel and process, to develop new defect analysis and case opening procedures and train personnel regarding these procedures, and to identify innovative techniques for collecting and analyzing data from a wider range of sources.

An independent assessment would help to ensure that ODI's new defect information system meets quality, cost and schedule goals. The success of the TREAD Act will ultimately rise or fall on the quality and usefulness of the new information system and ODI's ability to identify potential defects. ODI describes its new defect information system efforts as an acquisition of commercial off-the-shelf software; however, the software will require modifications and involve systems development work.

ODI's plan to have a new \$5 million information management system for identifying defects fully operational by fall 2002 is at risk because of poor project planning and management. The plan does not provide a sufficient roadmap of the work that needs to be done and how and when it will be accomplished to ensure that the new system is operating soon after the early warning reporting requirements rule is issued. Poorly defined system goals and requirements can lead to project scope changes, cost increases, and schedule delays.

The National Institute of Standards and Technology (NIST) outlines procedures to ensure that software development efforts are successful.³ One of these procedures includes having an independent entity validate and verify that the system will meet the user's needs.

An independent assessment of ODI's information system development project could help ODI spot problems before they result in major cost increases and schedule slippages. This will require NHTSA to obtain the services of an independent entity to validate and verify the contractor's progress, reduce development risk and advise NHTSA of its findings. Given NHTSA's agreement to obtain the services of an independent entity, we have eliminated a recommendation in the draft report to assign a full-time project manager.

PRINCIPAL FINDINGS

Adhering to TREAD Act Deadlines Will Require Extensive Coordination Among NHTSA and Other Entities Involved in the Rulemaking Process

The challenges that lie ahead for NHTSA are that it must complete several complex and/or controversial TREAD Act rules and meet statutory deadlines. Thus far, NHTSA has issued three final rules, including one requiring individuals to report to NHTSA the sale or lease of defective tires, and several proposed rules. Further, NHTSA completed a study on the feasibility of using automobile insurance data to help identify possible defects, concluding that certain data from insurance companies, for example non-crash fire data, might be useful in helping to identify potential defect trends. However, NHTSA must still complete 12 final rulemakings.

Unlike the rules completed thus far, several of the remaining rules are complex and/or controversial and also have statutory deadlines, such as requiring a tire pressure warning device in new vehicles by November 1, 2001; updating the tire standards by June 1, 2002; improving child safety restraints by November 1, 2002; and most important, establishing early warning reporting requirements of defects for vehicle and equipment manufacturers by June 30, 2002. Although due by November 1, 2001, NHTSA has yet to issue the tire pressure warning device final rule.

For the early warning rule, NHTSA must determine what information manufacturers will be required to report, while taking into account the manufacturer's cost of complying with the reporting requirements. Further, NHTSA must integrate the

³ NIST Special Publications 500-234 and 500-165

manufacturer data into a new information system capable of handling the reporting needs resulting from the TREAD Act's early warning reporting requirement.

On December 21, 2001, NHTSA issued its proposed rule specifying the early warning data that manufacturers will be required to report, and anticipates issuing a final rule by the June 30, 2002 deadline. The proposed rule is likely to generate controversy because it specifies what data manufacturers will be required to routinely report to NHTSA. Complying with the rule may require a significant commitment of resources on the part of the manufacturers, such as new computer programs and additional staff.

We have found that factors such as differing views on the substance of a proposed rule, requirements for cost/benefit analysis, and the need to have other entities review a proposed rule, can influence the time it takes to issue a rule. NHTSA has established milestone dates for the TREAD Act rules. However, to keep NHTSA on course in completing the TREAD Act rulemakings, both the Department and NHTSA will have to adhere to the milestone dates and work with the OMB when its review is required. NHTSA, as well as other entities that must review the proposed rules, will need to adhere to the rulemaking schedules.

ODI's Procedures for Identifying Defects and Deciding to Open Investigations Can Be Strengthened by Establishing a Peer Review Process

ODI's current processes for using and analyzing data to identify potential defects and decide that potential defects should be investigated are in need of major improvements. Two factors currently affect ODI's ability to effectively identify potential defects and open investigations: (1) an unstructured approach for analyzing data and determining if a potential defect exists and warrants further investigation, and (2) the limited amount and poor quality of data ODI uses to spot defect trends.

We recognize that it is not possible to define processes and procedures that will enable ODI staff to identify potential defects with 100 percent accuracy. However, ODI will be receiving a significant amount of early warning data from manufacturers and is planning to hire 18 additional staff - a 39 percent increase. Therefore, it is particularly important that ODI establish a peer review panel, develop new defect analysis and investigative processes that define parameters for analyzing data and opening investigations, and train new staff to use these procedures.

ODI's current procedures do not provide a methodology for analyzing complaints. For example, the procedures state that defects analysis staff may review the defect database for complaints and review previous/current investigations for relevant issues, but do not describe how to conduct a thorough search of available data or how to analyze the data to identify trends.

The defect analysis procedures do not require ODI's defects analysis staff to notify senior management when they receive a complaint involving a serious injury so a timely decision to recommend or open an investigation can be made. In contrast, the Consumer Product Safety Commission (CPSC), the Federal agency responsible for regulating and investigating consumer products, requires that its Emerging Hazards Division immediately notify the Director of Recalls and Compliance and pertinent staff of any data indicating grievous injury, death, or multiple incidents.

NHTSA's Associate Administrator for Safety Assurance told us that there are not specific processes or procedures for opening investigations. Rather, investigators prioritize the opening of investigations based on the seriousness and frequency of the complaint(s). We noted several instances in which ODI's defects analysis staff recommended an investigation based on the seriousness and frequency of the complaint(s). However, the investigative staff did not prioritize and open the investigations. For example,

- Over a 4-month period, ODI received six complaints alleging that airbags did not deploy in a 1998 sedan after a frontal crash. All of the complaints noted injuries and one complaint stated the driver was seriously injured. Although ODI's defects analysis staff recommended an investigation, ODI's investigative staff did not conduct one. Within 1 year after an investigation was recommended, the number of complaints quadrupled from 6 to 24 complaints, but ODI still did not open an investigation.
- Over a 9-year period, from 1989 to 1998, ODI had 153 complaints with reports of injuries and alleged fires and burning, smoking, or melting in the steering column of two specific 1987-1989 vehicle models. Although ODI defects analysis staff recommended an investigation be opened, one was never started.

ODI's Special Assistant to the Director told us that, at the time the investigation was recommended, the National Traffic and Motor Vehicle Safety Act only required manufacturers to provide a free remedy for recalled vehicles up to 8 years old. In contrast, the vehicles cited in the complaints were older than 8 years old. However, we question why ODI's defects analysis division did not spot the possible defect trend before 1998. ODI received 86 percent of its complaints, 131 complaints of a total of 153 complaints, between 1989 and 1996.

A peer review panel meeting regularly to discuss actions to be taken regarding recommended cases would improve ODI's consistency in opening investigations. Peer review is effective for answering questions such as how data supporting the opening of an investigation compare to the data in a similar case that was investigated. The following example illustrates how ODI may benefit from establishing a peer review panel and process. Over a 4-month period, ODI received three complaints alleging front suspension torsion bar breakage in 1993-1994 minivans, that could cause the driver to lose control of the vehicle and increase the

risk of a crash; however, no investigation was opened. In contrast, another case had three complaints with no reports of crashes over a 1-year period alleging front suspension coil spring breakage that could pose a potential compromise to the driver's ability to control the vehicle, and ODI opened an investigation.

A peer review panel can be effectively used to provide a thorough and consistent assessment of the quality of ODI's support for recommending and opening an investigation. The panel could consist of the Chiefs of the Defects Analysis and Investigation Divisions, as well as defects analysis and investigative staff. The panel would draw on the institutional knowledge of the ODI staff and bring management together to identify high priority cases and *to ensure a degree of consistency in the decision making process.*

ODI's defect database, the primary tool ODI uses to identify potential safety-related defects in vehicles and equipment, significantly understates the number of potential safety defects. For example, ODI's database contains less than 10 percent of the complaints that consumers make to manufacturers. In one case, we found that the manufacturer received 1,411 complaints regarding transmission failures resulting in the loss of fluid and increasing the risk of fire, while ODI received 32 complaints.

Further, the defect database contains incomplete and incorrectly recorded information regarding a potential defect. For example, we found complaints whereby consumers described problems with failed brakes that led to accidents in that the airbags did not deploy. However, only the airbags and not the brakes were recorded as problems in the database. Also, although complaints can be recorded to reflect the severity of the defect reported, such as "Significant Hazard without Warning," the data element is not consistently recorded. ODI staff told us that they primarily rely on the complaint descriptions for determining the alleged defect because they believe the other data elements are not consistently recorded, accurate or useful.

ODI receives and assesses on average over 34,000 safety-related and non-safety-related complaints per year. The ODI staff responsible for reviewing complaints each receive and assess an average of 200 complaints per week, allowing an average of about 12 minutes per complaint to review the information; search the defect database for similar complaints, related investigations, and recalls; and decide whether to recommend an investigation.

An Independent Assessment Would Help to Ensure That ODI's New Defect Information System Meets Quality, Cost, and Schedule Goals

ODI's project with Volpe National Transportation Systems Center (Volpe) to replace its defect database with a new information system by the fall 2002 is significantly at risk. ODI has incurred costs of at least \$200,000 and has obligated \$2.3 million since it started the project with Volpe in April 2001 to identify the

requirements for, and subsequently develop the new information system. Officials at Volpe told us they will meet ODI's fall 2002 deadline and \$5 million budget for having the new system fully operational and ready to accept and store consumer complaints, as well as the additional early warning data resulting from the TREAD Act, that will not be defined until June 30, 2002.

However, since Volpe and ODI do not have a detailed budget for the project, we do not know if the projected \$5 million is a reasonable estimate. Therefore, it is imperative that NHTSA report to the Secretary and Congress on a routine basis the status of the new information system including whether it will meet the fall 2002 schedule and the estimated budget.

ODI plans to design and fully implement the new information system within about 20 months. However, Volpe officials told us the industry typically takes 3 to 5 years to complete a new information system. Further, a systems analyst consultant that assisted us in analyzing the new system concept told us it would take at least 2 to 3 years to develop and fully implement a new information system based on the information available from ODI to date. Although both ODI and Volpe officials told us they will meet the fall 2002 deadline, they could not explain or provide us with the specific steps they plan to take to beat by over 1 year, the time typically taken to design and implement a new information system.

Historically, the Department's systems development projects, including those using commercial off-the-shelf software,⁴ have been plagued by cost overruns and implementation delays.⁵ For example, DOT had incurred contract costs of at least \$26 million to develop a new financial management system using commercial off-the-shelf software. However, 1 year after the original implementation date, the system was still not fully operating as intended. Further, the costs of NHTSA's National Advanced Driving Simulator grew to almost twice the original estimate and the simulator was completed 3 years later than originally estimated.⁶

The NIST outlines procedures to ensure that software development efforts are successful. One of these procedures includes having an independent entity validate and verify that the system will meet the user's needs. ODI describes its new information system efforts as an acquisition of commercial off-the-shelf software. However, the software will require modifications and involve systems development work. An independent assessment of ODI's new defect information system project could help ODI spot problems before they result in major cost increases and schedule slippages. This will require NHTSA to obtain the services of an independent entity to

⁴ Implementing a New Financial Management System (OIG Report FI-2001-074, August 7, 2001).

⁵ Observations on FAA's Satellite Navigation Efforts (OIG Report AV-2000-113, July 26, 2000).

⁶ Development of the National Advanced Driving Simulator Resulted in Substantial Cost Increases and Schedule Delays (OIG Report IN-2001-104, September 28, 2001).

validate and verify the contractor's progress, reduce development risk, and advise NHTSA of its findings - a step NHTSA now plans to take.

The existing data in the defect database will serve as the foundation for the new information system. Therefore, it is particularly important that ODI review and edit the existing data in the defect database, including the descriptions of complaints, for accuracy and completeness before transferring the data to the new information system. Most if not all of the pertinent information in the defect database is contained in the text description of the complaint. If ODI simply transfers the data from the current defect database to the new system, it will continue to have a seriously flawed system.

SUMMARY OF RECOMMENDATIONS

We recommend that the NHTSA Administrator:

- Continue to report to the Secretary and begin reporting to Congress the milestone dates, budget estimates, and actions required to complete the TREAD Act rulemakings/actions, as well as ODI's new information system. To keep NHTSA on course in completing the TREAD Act rulemakings, both the Department and NHTSA will have to adhere to the milestone dates and work with the OMB when its review is required. NHTSA, as well as other entities that must review the proposed rules, will need to adhere to the rulemaking schedules.
- Establish a peer review panel and process to ensure that data used to identify potential defects are comprehensively and thoroughly analyzed and that investigations are opened and prioritized in a consistent manner. The panel could include the Chiefs of the Defects Analysis and Investigation Divisions, as well as defects analysis and investigative staff. Further, the peer review should be conducted on a routine basis and decisions documented to ensure consistency in the decision making process.
- Obtain the services of an independent entity to validate and verify the contractor's progress, reduce development risk, and advise NHTSA of its findings. Also, review and edit the data in the defect database for accuracy and completeness before transferring the data to the new information system.

MANAGEMENT RESPONSE AND OFFICE OF INSPECTOR GENERAL COMMENTS

The draft report was provided to NHTSA on November 7, 2001. OIG staff subsequently met with the Associate Administrator for Safety Assurance and the ODI Director to discuss the draft report findings and recommendations. In its December 4, 2001 written response to the draft report, NHTSA agreed to implement all of the recommendations or proposed an acceptable alternative action, with one exception. NHTSA's comments are presented in the Appendix to this report.

In its reply, NHTSA commented that the numerous complex TREAD Act rulemakings involving key safety issues with statutory deadlines, such as updating the tire standards and improving the safety of child restraints, should have little or no impact on the ability of NHTSA to issue the early warning rule in a timely manner.

However, as stated in our report, the issue with the TREAD Act rulemakings is not just the number of rules NHTSA has to complete. Rather, the issue is the timely completion of complex and/or controversial rules with statutory deadlines. For example, completing the early warning reporting requirements rule by June 30, 2002, is not fully within NHTSA's control and will require extensive coordination with other offices and entities who have a role in approving or commenting on proposed rules.

In the Fiscal Year 2002 DOT Appropriations Conference Report, Congress directed NHTSA to submit a notification letter to the House and Senate Committees on Appropriations if there is reasonable likelihood that the agency will not meet the deadlines specified in the TREAD Act. For these reasons, we recommended that, to keep NHTSA on course in completing the TREAD Act rulemakings, both the Department and NHTSA will have to adhere to the milestone dates and work with OMB when its review is required. NHTSA, as well as other entities that must review the proposed rules, will need to adhere to the rulemaking schedules.

NHTSA did not agree with our draft report's recommendation to assign a full-time experienced project manager to the new information system project. Given NHTSA's agreement to obtain the services of an independent entity, we have eliminated a recommendation to assign a full-time project manager.

We request that, within 30 days, NHTSA provide target dates for completing each recommended action.

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Background

In October 2000, Congress passed the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act to establish early warning reporting requirements for manufacturers so the National Highway Traffic Safety Administration (NHTSA) Office of Defects Investigation (ODI) is aware of potential defects as soon as possible. Congress passed the Act in response to the Bridgestone/Firestone, Inc. recall of 14.4 million tires. In its September 2000 hearings, Congress questioned why ODI, Firestone and Ford did not act sooner to prevent the 103 deaths and over 400 injuries associated with the defective tires. As of October 2001, these numbers have increased to over 200 deaths and 800 injuries. Congress noted that ODI had insufficient data regarding the problems with Firestone tires. However, Congress also stated that ODI did not use available data to spot trends related to failures in these tires.

The Act requires manufacturers to routinely report to NHTSA early warning data such as information on property damage claims, communications to customers, and knowledge of fatalities or serious injuries caused by possible defects in a vehicle in the United States or a foreign country. NHTSA is required to issue the early reporting requirements final rule by June 30, 2002. To carry out the TREAD Act requirements, Congress nearly doubled ODI's budget from \$8,854,000 in fiscal year 2000 to \$16,144,000 in fiscal year 2001. Exhibit C presents the actions taken by NHTSA to implement the TREAD Act.

NHTSA was established in 1970 as a separate operating administration within the Department of Transportation to administer the Department's motor vehicle and highway safety programs. NHTSA's ODI is responsible for identifying motor vehicles and equipment that contain safety-related defects and ensuring that the public is notified so these safety problems can be corrected. Exhibit D includes ODI's organizational chart and mission statements.

The notification and remedy provisions of the National Traffic and Motor Vehicle Safety Act require that the manufacturer notify NHTSA and vehicle owners if it determines that one of its products contains a defect that relates to motor vehicle safety. The Act also gives NHTSA the authority to investigate possible defects and to order a manufacturer to provide a remedy for any defect.

ODI's process for identifying possible defects in motor vehicles and equipment begins with a review of the complaints it receives from consumers. Complaint information is entered into a database. Staff in ODI's Defects and Recall Information Analysis Division (Defects Analysis Division) may search the database for similar complaints and related information, such as prior investigations, that may indicate a systemic safety concern. If the staff determine

that a systemic problem may exist, they prepare a report to ODI's Investigation Division recommending an investigation.

If ODI's Investigation Division agrees that a potential safety defect exists, it opens an investigation. ODI then requests information from the manufacturer such as complaints, crashes, injuries, warranty claims, and lawsuits. ODI may also supplement the manufacturer's data with inspections, tests, and surveys. Each year, ODI's Defects Analysis Division recommends on average 83 investigations, and ODI's Investigation Division opens about 67 investigations.

At any time during the investigation, ODI may decide to close the investigation because (1) the investigation did not indicate a defect existed, or (2) the manufacturer decided to conduct a recall. If ODI concludes that the data indicate a defect exists and the manufacturer does not agree, the NHTSA Administrator may issue a "Final Decision" that a safety defect exists and order the manufacturer to conduct a recall.

Findings

Adhering to TREAD Act Deadlines Will Require Extensive Coordination Among NHTSA and Other Entities Involved in the Rulemaking Process

The Deputy Secretary of Transportation recently testified before the House Committee on Energy and Commerce that NHTSA is on schedule to implement the TREAD Act's various safety requirements and plans to meet the deadlines set by Congress. To date, NHTSA has issued nine proposed rules and three final rules, including one requiring individuals to report to NHTSA the sale or lease of defective tires. Further, NHTSA completed a study on the feasibility of using automobile insurance data to help identify possible defects, concluding that certain data from insurance companies, for example non-crash fire data, might be useful in helping to identify potential defect trends. However, NHTSA must still complete 12 final rulemakings. For example, although due by November 1, 2001, NHTSA has yet to issue the tire pressure warning device final rule.

Unlike the rules completed thus far, several of the remaining rules are complex and/or controversial and have statutory deadlines, such as requiring a tire pressure warning device in new vehicles by November 1, 2001; updating the tire standards by June 1, 2002; improving the safety of child restraints by November 1, 2002; and most important, establishing early warning reporting requirements of defects for vehicle and equipment manufacturers by June 30, 2002. Therefore, the issue is not just that NHTSA has a number of rules to complete. Rather, the issue is that the timely completion of complex and/or controversial rules with statutory deadlines is not fully within NHTSA's control and will require extensive coordination with other offices and entities who have a role in approving or commenting on proposed rules.

We have found that factors such as differing views on the substance of a proposed rule, requirements for cost/benefit analysis, and the need to have other entities review a proposed rule, can influence the time it takes to issue a rule.¹ In July 2000, we reported that the Department of Transportation (DOT) took an average of 3.8 years to complete significant rules. Further, when Congress established a

¹ In contrast to the TREAD Act, the recently enacted Aviation and Transportation Security Act authorizes the Under Secretary of Transportation for Security to waive requirements for an analysis that estimates the number of lives that will be saved by the regulation and the monetary value of such lives if the Under Secretary determines that it is not feasible to make such an estimate. Further, any regulation or security directive issued shall remain effective unless disapproved by the Transportation Security Oversight Board or rescinded by the Under Secretary.

statutory deadline for completing a rule, DOT met only 10 percent of the deadlines. The Secretary of Transportation has identified the timely completion of rules as a departmentwide priority.

NHTSA has established milestone dates for TREAD Act rules. However, to keep NHTSA on course in completing the TREAD Act rulemakings, both the Department and NHTSA will have to adhere to the milestone dates and work with the Office of Management and Budget (OMB) when its review is required. NHTSA, as well as other entities that must review the proposed rules, will need to adhere to the rulemaking schedules.

The early warning reporting requirement rule is expected to be one of the most controversial and complex TREAD Act rules facing NHTSA. The rule is likely to be controversial because it will require manufacturers to routinely report data to NHTSA and may require an increase in resources on the part of the manufacturers. Further, NHTSA must also integrate the data it will receive into a new information system capable of handling the reporting needs resulting from the TREAD Act. Once the proposed rule is issued, there will likely be disagreements between NHTSA and affected parties, such as the vehicle and equipment manufacturers, over the content of the proposed rule, resulting in the final rule not being issued by the June 30, 2002 deadline.

The Alliance of Automobile Manufacturers, an association of 13 domestic and foreign automobile manufacturers, said that the early warning reporting requirement rule will not only be significant in terms of its annual effect on the economy, but that it will also likely raise novel legal or policy issues. Further, in its response to NHTSA's Advance Notice of Proposed Rulemaking, the Alliance reported that the early warning reporting rule will require a "significant commitment of resources on the part of the manufacturers" including new computer programs and additional staff.

In January 2001, NHTSA issued its Advance Notice of Proposed Rulemaking for the early warning requirements. The notice generally posed questions to the public as to who should be covered, what type of information and data should be reported, how the information should be reported, and how NHTSA might handle and utilize the information. On December 21, 2001, NHTSA issued the Notice of Proposed Rulemaking, which describes the proposed early warning reporting parameters for vehicle and equipment manufacturers and requests comments from the public.

With the technology available today, ODI can develop an early warning information system that could handle the complex and high volume reporting needs required by the TREAD Act. A sound planning process, management accountability, and strong oversight will facilitate the success of a new system. However, any delays in issuing the early warning reporting requirements final rule

also means a delay in ODI's new information system for processing the additional early warning data to help ODI identify potential defects sooner.

An Independent Assessment Would Help to Ensure That ODI's New Defect Information System Meets Quality, Cost and Schedule Goals

ODI's project with Volpe National Transportation Systems Center (Volpe) to replace its current defect database with a new information system by the fall 2002 is significantly at risk because of poor project management and planning. Specifically, a detailed project schedule and resource requirements have not been developed, project duties and responsibilities have not been finalized, and the project scope has not been fully defined. The success of the TREAD Act ultimately relies on the quality and usefulness of the new information system and ODI's ability to identify potential defects.

At our request, a systems analyst consultant assisted us in evaluating ODI's progress in developing the new information system with regards to the following general standards for system development and project planning:

- Project Schedule/Resource Management
- Project Duties and Responsibilities
- Project Scope
- Risk Management/Mitigation
- Reporting and Communications
- Documentation and Standards
- Change Management

We found several risks that may affect the quality, timeliness, and cost of the new information system. Table 1 summarizes the key risk areas, the specific risks identified, and actions that NHTSA should consider to mitigate these risks.

Table 1. Key Risk Areas and OIG Recommended Mitigation Actions for ODI's New Defect Information Management System

Risk Area 1:

Project Schedule and Resource Requirements

Risk Identified:

- Project Plan is general.
- Project tasks normally performed sequentially are scheduled to be performed concurrently.
- Resource requirements have not been established

Recommended Risk Mitigation Actions:

- Create a detailed project plan that will show specific tasks linked to a starting and ending date, resources, deliverables, and dependencies. A task dependency would be whether the start or conclusion of this task relies or depends on the start or conclusion of another task. In addition, include the team (e.g., ODI, Volpe) responsible for accomplishing the task.
- Create a roadmap for the project including a project plan with a detailed timeline and task list of how the project will be completed. This would also define areas where time constraints are tight and provide an opportunity for “what if” analysis if these tasks were to slip by days, weeks, etc.

Risk Area 2:

Project Duties and Responsibilities

Risk Identified:

- Project organization, duties, and responsibilities have not been clearly defined.
- An overall Project Manager for ODI has not been designated.

Recommended Risk Mitigation Actions:

- Create a detailed organizational structure that identifies roles and clearly defines responsibility for major task areas.
- Define project team members and specific tasks assigned.
- Assign a full-time project manager experienced in the delivery of a project of comparable scope and complexity.

Risk Area 3:
Project Scope

Risk Identified:

- Data inputs, user requirements, and the parameters of migrating old data to the new system have not been defined.
- Current defect database has not been evaluated for weaknesses and strengths.

Recommended Risk Mitigation Actions:

- Define the full scope of the new system and users' expectations including management needs for information.
- Define and address the specific system needs of defects analysts, investigators and managers.
- Complete system requirements prior to working on any other subsequent concept, design and architecture tasks to avoid the need to repeat system development work and to prevent cost and time overruns.
- Update detailed project plan upon completing the detailed system requirements to address final project scope.
- Finalize a realistic timeframe for completion, given time constraints, full scope, system availability, and availability of TREAD Act data.
- Obtain the services of an independent entity to validate and verify the contractor's progress, reduce development risk, and advise NHTSA of its findings.

ODI has incurred costs of at least \$200,000 and has obligated \$2.3 million since it started the project with Volpe in April 2001 to identify the requirements for, and subsequently develop, the new information system. Officials at Volpe told us they will meet ODI's fall 2002 deadline and \$5 million budget for having the new system fully operational and ready to accept and store consumer complaints, as well as the additional early warning data resulting from the TREAD Act. However, since Volpe and ODI do not have a detailed budget for the project, we do not know if the projected \$5 million is a reasonable estimate.

ODI plans to design and fully implement the new information system within about 20 months after starting the project in April 2001. In comparison, Volpe officials told us the industry typically takes 3 to 5 years to complete a new information system. Further, the systems analyst consultant that assisted us in analyzing the new system concept told us it would take at least 2 to 3 years to develop and fully implement a new information system based on the information available from ODI to date. Although, both ODI and Volpe officials told us they will meet the fall 2002 deadline, they could not explain or provide us with the specific steps they plan to take to beat by over 1 year, the time typically taken to design and implement a new information system.

The current project plan does not provide a sufficient roadmap of project activities. Therefore, actual activity and progress cannot be compared to planned activity and progress. The plan lists general descriptions of tasks, but does not describe how the task will be accomplished or provide timeframes. For example, the plan lists broad work items and a description, such as “*System Development Plan: Create and maintain the system development plan.*”

Further, the plan does not allocate time or costs to the tasks. Also, the only milestone dates in the project plan are for major events affecting the delivery of the new system, such as “*Development Commercial Off-the-Shelf Hardware and Software Procurement Issued – June 29, 2001*” or “*Data Migration Plan Submitted for ODI Approval – May 31, 2002.*” However, several of the major events do not have an estimated date and are labeled “to be determined.”

Poorly defined system goals and requirements may lead to expanding the scope of the project and changing the proposed system. As a result, costs and timeframes may significantly increase. Historically, the Department's systems development projects, including those using commercial off-the-shelf software, have been plagued by cost overruns and implementation delays.

For example, DOT had incurred contract costs of at least \$26 million to develop a new financial management system using commercial off-the-shelf software. However, 1 year after the original implementation date, the system was still not fully operating as intended. Further, the costs of NHTSA's National Advanced Driving Simulator grew to almost twice the original estimate and the simulator was completed 3 years later than originally estimated.

ODI describes its new information system efforts as an acquisition of commercial off-the-shelf software. However, the software will require modifications and involve systems development work.

The National Institute of Standards and Technology (NIST) outlines validation and verification procedures to ensure that software development efforts are successful. One of these procedures includes having an independent entity validate and verify that the system meets the user's needs. Given that this project has a fixed deadline and uses a time and materials contract, it is critical that NHTSA obtain the services of an independent entity to assess ODI's and Volpe's ability to complete a quality information system on time and within budget. Specifically, the independent entity would validate and verify the contractor's progress, reduce development risk, and advise NHTSA of its findings. An independent assessment of the new defect information system project can help ODI spot problems before they result in major cost increases and schedule slippages - a step NHTSA now plans to take.

Currently, the Chief of the Information Management Division of the Office of Safety Assurance serves as the project manager on an as-needed basis and retains his other information management responsibilities. Given NHTSA's agreement to obtain the services of an independent entity to validate and verify the contractor's progress and reduce development risk, we have eliminated a recommendation in the draft report to assign a full-time project manager.

The Chief of Volpe's Computer Center told us that about 12 of the Center's staff will be involved in the project. Further, Computer Science Corporation, a contractor for Volpe, will have an equivalent of 16 full-time individuals assigned on the project. But their roles, responsibilities and tasks have not been clearly defined.

To further prevent cost overruns and changes in the scope of the project, ODI must examine and clearly define its staff duties and responsibilities and the processes and procedures required to address how the system will be used. Further, ODI must conduct a technical analysis of the current defect database to determine the accuracy and completeness of the data, and to determine whether the database is serving the purpose for which it was designed. From August 2001 through January 2002, Volpe and ODI are holding workshops to define the detailed system requirements. Although the workshops are planned through January 2002, Volpe completed a draft of the detailed system requirements in November 2001. Further, Volpe officials have already begun designing the system.

In addition to the key risk areas previously discussed, Table 2 summarizes additional risk areas and describes how the risks can be mitigated.

Table 2. Additional Risk Areas and Recommended Mitigation Actions

Risk Area 1:

Risk Management

Risk Identified:

- Risk mitigation is not clearly defined in the project plan

Recommended Risk Mitigation Actions:

- Incorporate into the detailed project plan the risk mitigation plan identifying the testing phases and readiness assessment tasks.

Risk Area 2:

Reporting and Communications

Risk Identified:

- Project status reporting is not frequent enough for project size and timeframes.

Recommended Risk Mitigation Actions:

- Due to the short timeframe planned for the project, submit bi-weekly status reports instead of monthly reports and include decisions pending, deliverables submitted, and resources used by task.
- Include an updated project plan with each status report submitted.

Risk Area 3:

Documentation and Standards

Risk Identified:

- Formalized structure for deliverable sign-off does not exist

Recommended Risk Mitigation Actions:

- Establish formal procedures for review and acceptance of deliverables.

Risk Area 4:

Change Management

Risk Identified:

- Processes or procedures for tracking issues or changes in scope are not clearly defined.

Recommended Risk Mitigation Actions:

- Develop and document a process for issue tracking, including resolution procedures or the final impact to the overall project.
- Track the number of revisions and the frequency for the occurrences.
- Develop a mitigation plan for limiting the impacts and/or frequency for change.

NHTSA's Defect Database Is Not an Effective Early Warning System

NHTSA's defect database, which is the primary tool used by ODI to identify potential safety-related defects in vehicles and equipment, does not include comprehensive and available data that is representative of the extent of potential safety defects. The database is comprised of consumer complaints to NHTSA, past and ongoing ODI investigations, manufacturer recalls, and manufacturer-issued technical service bulletins.

Manufacturer data, such as warranty claims and accident investigation data from other NHTSA databases, are not included in the defect database. ODI relies primarily on its assessment of consumer complaints to NHTSA to determine whether a potential defect exists and warrants opening an investigation. Once ODI opens an investigation, it requests information from the manufacturer, such as the number of complaints, warranty claims, and lawsuits regarding the potential defect. However, with the TREAD Act's early warning reporting requirements, manufacturers will report such data to ODI on an ongoing basis, before an investigation is opened.

ODI's database significantly understates the number of potential safety defects. For example, ODI's database contains less than 10 percent of the complaints that consumers make to manufacturers. In our review of a random sample of 59 investigations opened by ODI in 1998, we found that ODI's complaint database contained 483 complaints while the manufacturers' databases contained 5,235 complaints. In one case, we found that the manufacturer received 1,411 complaints regarding transmission failures resulting in the loss of fluid and increasing the risk of fire, while ODI received 32 complaints.

ODI receives on average over 34,000 safety-related and non-safety-related complaints per year. The ODI staff responsible for reviewing complaints each receive and assess an average of 200 complaints per week, allowing an average of about 12 minutes per complaint to review the information and search the defect database for similar complaints, related investigations and recalls. However, ODI is planning to hire 18 additional staff – a 39 percent increase in staff. ODI intends to hire four defects analysis staff, seven investigators, one statistician, two data entry and control staff, and four administrative staff. ODI has hired four defects analysis staff, three investigators and three administrative staff.

Also, the defect database contains incorrectly recorded information and does not contain complete information regarding a potential defect. For example, we found complaints where consumers described problems with failed brakes that led to accidents in which the airbags did not deploy. However, only the airbags and not the brakes were recorded as problems in the database. Also, although complaints can be recorded to reflect the severity of the defect reported, such as “Significant Hazard without Warning,” the data element is not consistently recorded. ODI staff told us that they primarily rely on the complaint descriptions for determining the alleged defect because they believe the other data elements are not consistently recorded, accurate or useful.

ODI defects analysts told us they search the text descriptions of complaints using keywords and read the descriptions to identify whether complaints are similar and may warrant further investigation. However, keyword searches are time-consuming and may produce different results, depending on the word used. For

example, we searched the database for complaints that described problems with the brakes in a 1995 minivan. Using the keyword "brakes," we identified 77 complaints. However, by using the keyword "braking" we only identified 13 complaints. Likewise, different ODI staff members often do not come up with the same results due to the slight variances in the queries entered. Therefore, relevant complaints and a potential defect trend may not be identified.

ODI defects analysts also develop their own methods to keep track of complaints and potential trends because similar complaints regarding a possible defect and new complaints are not flagged in the defect database. One staff member said he keeps hard copies of specific complaints in a file organized by make, model and year of the vehicle and periodically reviews the files.

The existing data in the defect database will serve as the foundation for the new information system. Therefore, it is particularly important that ODI review and edit the existing data in the defect database for accuracy and completeness. However, the Associate Administrator told us that except for changing dates to a consistent format and the spelling of manufacturers' names and models, ODI does not plan to identify and correct improperly/inconsistently recorded data. He further stated the review of all complaint descriptions for accurate coding would be too time-consuming and burdensome. Further, Volpe officials told us that, since they have yet to conduct a technical analysis of the defect database, they do not know the extent that data will be reviewed and edited for accuracy and completeness.

We agree that reviewing and editing complaint descriptions would be time-consuming. However, most, if not all of the pertinent information in the defect database is contained in the complaint description field. Simply transferring data from the defect database to the new system will result in ODI continuing to have a seriously flawed system.

Sources Other Than the Defect Database Rarely Sought to Supplement Complaints

ODI rarely solicits internal and external information sources, such as NHTSA's accident databases, insurance companies, and plaintiff attorneys, to determine the scope of a potential defect. Outside of the defects analysts contacting complainants to verify complaints, none of the 38 cases we reviewed that recommended opening an investigation indicated that additional sources were solicited.

ODI's defect analysis procedures state "in rare cases, request information from insurance companies, automotive clubs, and other outside agency sources." According to the ODI Director, outside sources are used on a case-by-case basis. Further, the Special Assistant to the ODI Director told us that the defects analysis

staff are encouraged to seek information from outside sources; however, staff must balance the need for further information with the possible premature negative publicity for a vehicle or manufacturer because of an outside data inquiry. However, the defect analysis procedures do not provide examples or guidance for determining when it is appropriate to contact additional sources.

NHTSA has databases, such as the Fatality Analysis Reporting System (FARS) and the National Automotive Sampling System (NASS), that contain data on motor vehicle accidents, including the vehicle manufacturer, model and model year. NHTSA's databases may be useful for identifying trends by comparing the complaints with accident results. The data elements in FARS/NASS that might be useful include whether or not the vehicle rolled over, the number of vehicle occupants injured or killed, severity of injuries sustained, fire involvement, and the most serious aspect of the incident.

The Firestone tire incident illustrates the need for ODI to be more proactive and innovative in its information gathering techniques. The extent and the severity of the defect was not evident until ODI solicited and analyzed data from other sources. For example, by the time ODI opened an investigation, Firestone had already recorded 193 personal injury claims and 2,288 property damage claims, and it was a defendant in 66 lawsuits related to the ATX and Wilderness tires. Further, plaintiff attorneys also had information regarding lawsuits. However, ODI was not aware of the additional information until after it opened the investigation and requested the specific data.

Although the TREAD Act requires that manufacturers report such early warning information to ODI on a periodic basis, it does not require that ODI be provided or solicit information from other sources, such as plaintiff attorneys or insurance companies. Therefore, rather than relying on consumer complaints and, in the future, manufacturer data, ODI needs to develop innovative techniques to collect and analyze information from a wider range of sources to help identify potential trends sooner.

ODI's Procedures for Identifying Defects and Deciding to Open Investigations Can Be Strengthened by Establishing a Peer Review Process

ODI's current processes and procedures for analyzing consumer complaints are not structured. The procedures do not provide a methodology or process for analyzing complaints. For example, the procedures state that defects analysis staff may review the defect database for complaints and review previous/current investigations for relevant issues, but do not describe how to conduct a thorough search of available data or how to analyze the data to identify trends.

The procedures state that defects analysis staff may recommend an investigation when, for example, they receive a number of complaints about the same problem within a short period of time or a single complaint indicating a severe safety consequence. We reviewed the defect database for 1995 through 1999 to identify the action taken by ODI in response to complaints citing at least one death. We found instances where there was no record of ODI recommending or opening an investigation. Further there was no record as to why action was not taken. For example,

- ODI received a complaint with a related death alleging the airbag in a 1995 luxury vehicle did not deploy. However, the defect database had no record of an investigation being recommended/conducted or why action was not taken.
- ODI received a complaint with a related death alleging problems with a child safety seat (e.g., child ejected from the booster seat). The defect database had no record of an investigation being recommended/conducted for the same make/model child safety seat. Also, there was no record as to why action was not taken.

The defect analysis procedures do not require, for example, that ODI's defects analysis staff notify senior management when they receive a complaint involving a serious injury so a timely decision can be made to recommend or open an investigation. In contrast, the Consumer Product Safety Commission (CPSC) requires that its Emerging Hazards Division, responsible for analyzing hazard data, immediately notify the Director of Recalls and Compliance and pertinent staff of any data indicating grievous injury, death, or multiple incidents.

NHTSA's Associate Administrator for Safety Assurance told us that there are not specific processes or procedures for opening investigations. Rather, investigators prioritize the opening of investigations based on the seriousness and frequency of the complaint(s). We noted several instances in which ODI's defects analysis staff recommended an investigation based on the seriousness and frequency of the complaint(s). However, the investigative staff did not prioritize and open the investigations.

Specifically, in 38 of the 59 cases in our random sample, ODI's Defects Analysis Division recommended that an investigation be opened based on its analysis of complaint data.² However, ODI's Investigation Division did not open an investigation in 10 of the 38 or 26.3 percent of the cases. For example,

- Over a 9-year period, from 1989 to 1998, ODI had 153 complaints with reports of injuries and alleged fires and burning, smoking, or melting in the steering

² The remaining 21 cases started immediately as investigations, bypassing the defect analysis phase.

column of two specific 1987-1989 vehicle models. Although ODI defects analysis staff recommended an investigation be opened, one was never started.

ODI's investigative staff does not document the reason(s) for not opening an investigation. However, ODI's Special Assistant to the Director told us that, at the time this investigation was recommended, the National Traffic and Motor Vehicle Safety Act only required manufacturers to provide a free remedy for recalled vehicles up to 8 years. The vehicles cited in the complaints were older than 8 years old. However, we question why ODI's Defects Analysis Division did not spot the possible defect trend before 1998. ODI received 86 percent of its complaints, 131 complaints of a total of 153 complaints, between 1989 and 1996.

- Over a 4-month period, ODI received six complaints alleging airbag non-deployment in a specific 1998 sedan after a frontal crash. All complainants noted injuries with one complainant seriously injured. ODI did not open an investigation although a crash reconstruction specialist investigating the accident involving the seriously injured driver concluded that the airbag should have deployed.

ODI officials told us they did not open an investigation because the accident involving the seriously injured driver was an isolated incident. Furthermore, regarding the other five complaints, an ODI Chief in investigations said the crashes did not involve sufficient impact to warrant airbag deployment since they were driving at a low speed when the crashes occurred.

- Over a 4-month period, ODI received three complaints alleging front suspension torsion bar breakage in two specific 1993-94 minivan models that could cause the driver to lose control of the vehicle and increase the risk of a crash. Although ODI's Defects Analysis Division recommended an investigation be opened, one was not conducted.

An ODI Chief in investigations said that an investigation was not warranted because it had no reports of crashes or loss of vehicle control and because three complaints did not constitute a high enough failure rate to warrant an investigation. In contrast, another case that ODI recommended investigating had three complaints in a 1-year period. The complaints had no reports of crashes, but alleged front suspension coil spring breakage, which posed a potential compromise to the driver's ability to control the vehicle. In this case, ODI opened an investigation.

- Over a 22-month period, from February 1997 to November 1998, ODI received 23 complaints alleging exhaust leakage in a specific 1993 minivan with some complainants reporting headaches, nausea, and dizziness. The manufacturer issued three technical service bulletins regarding broken exhaust

manifolds and odors in the minivan. Although ODI defects analysis staff recommended opening an investigation, one was not conducted.

ODI's Chief of Defects and Recall Information Analysis told us that a defect trend was not supported and that it was highly unlikely that exhaust fumes into the cabin would cause the reported complaints of sickness. However, the manufacturer issued three technical service bulletins over 2 1/2 years, and ODI received multiple complaints on this problem. Therefore, we question why an investigation was not opened.

A peer review panel meeting regularly to discuss actions to be taken regarding recommended cases would improve ODI's consistency in opening investigations. Peer review is effective for answering questions such as how data supporting the opening of an investigation compare to the data in a similar case that was investigated. The prior examples regarding the torsion bar and coil spring breakages illustrate how ODI may benefit from establishing a peer review panel and process.

A peer review panel can be effectively used to provide a thorough and consistent assessment of the quality of ODI's support for recommending and opening an investigation. The panel could consist of the Chiefs of the Defects Analysis and Investigation Divisions, as well as defects analysis and investigative staff. The panel would draw on the institutional knowledge of the ODI staff and bring management together to identify high priority cases and to ensure a degree of consistency in the decision making process.

We recognize that it is not possible to define processes and procedures that will enable ODI staff to identify potential defects with 100 percent accuracy. But, ODI can improve the quality of its decision making by clarifying its defect analysis and investigative procedures and documenting the process for recommending and opening investigations. The new procedures should instruct ODI staff on how to (1) conduct a thorough search of available data for potential defects; (2) analyze the data and identify trends; (3) develop a recommendation for opening an investigation; and (4) document in the new information system why action was not taken. Also, the procedures should describe the purpose and objectives of the peer review panel and the peer review process.

In addition, ODI can ensure consistency by conducting training for its entire staff regarding the revised procedures. This is imperative since ODI plans to hire an additional 18 staff, a 39 percent increase in staff. Further, more specific procedures are needed because ODI will receive and analyze a high volume of new data, such as warranty claims from vehicle manufacturers.

ODI Does Not Have a Process for Monitoring the Opening of Investigations

The ODI Director stated that cases that do not result in an investigation remain open for monitoring and are never closed. ODI staff are responsible for monitoring the cases for new complaints and trends, but are not required to submit progress or status reports on their efforts. Therefore, ODI senior managers do not know whether staff search for new complaints or whether a case should be re-evaluated for investigation. We searched the defect database for the 10 cases in our random sample that did not result in an investigation. We identified additional complaints in 7 of the 10 cases, and in 2 of the cases the number of complaints significantly increased; however, ODI did not open an investigation. Specifically,

- Within 1 year after ODI decided not to open an investigation into the non-deployment of airbags in the 1998 sedan previously cited, the number of complaints quadrupled from 6 complaints to 24 complaints, but ODI still did not open an investigation. Since ODI does not maintain monitoring records, we do not know whether ODI staff tracked/reported the additional complaints or recommended again that an investigation be opened.
- Within 1 year after deciding not to open the investigation into the exhaust leaks in the 1993 minivan previously cited, we found the complaints more than doubled from 23 to 53 complaints. However, ODI still did not open an investigation.

Most ODI Investigations Result in a Recall

Our analysis of the random sample of investigative cases indicated that over 60 percent of ODI investigations result in a recall. Specifically, 30 of the 49 investigations in our sample resulted in a recall. However, as shown in Table 3, from 1996 to 2000, manufacturers, without an ODI investigation, initiated 80.9 percent of the safety-related recalls. ODI investigations accounted for the remaining 19.1 percent. However, ODI is responsible for almost 55 percent of the total number of vehicles and equipment recalled during this same period.

Table 3. Manufacturer Initiated and NHTSA Influenced Safety Recalls 1996-2000

Manufacturer Issued Recall Totals

- 1996 had 181 recalls with 4,138,029 vehicles, equipment and tires involved.
- 1997 had 200 recalls with 4,439,297 vehicles, equipment and tires involved.
- 1998 had 247 recalls with 5,711,377 vehicles, equipment and tires involved.

- 1999 had 254 recalls with 39,132,966 vehicles, equipment and tires involved.
- 2000 had 383 recalls with 9,785,402 vehicles, equipment and tires involved.

The total number of manufacturer issued recalls for the years 1996 through 2000 was 1,265 recalls with 63,207,071 vehicles, equipment and tires involved.

The median number of manufacturer issued recalls for the years 1996 through 2000 was 247 recalls with 5,711,377 vehicles, equipment and tires involved.

The average number of manufacturer issued recalls for the years 1996 through 2000 was 253 recalls with 12,641,414 vehicles, equipment and tires involved.

Manufacturer Issued Recalls accounted for 80.9 percent of the total defect recalls for the years 1996 through 2000 and 45.2 percent of the vehicles, equipment, and tires involved.

NHTSA Influenced Recall Totals

- 1996 had 58 recalls with 12,794,558 vehicles, equipment and tires involved.
- 1997 had 51 recalls with 10,378,302 vehicles, equipment and tires involved.
- 1998 had 61 recalls with 11,839,715 vehicles, equipment and tires involved.
- 1999 had 66 recalls with 12,409,361 vehicles, equipment and tires involved.
- 2000 had 63 recalls with 29,077,793 vehicles, equipment and tires involved.

The total number of NHTSA influenced recalls for the years 1996 through 2000 was 299 recalls with 76,499,729 vehicles, equipment and tires involved.

The median number of NHTSA influenced recalls for the years 1996 through 2000 was 61 recalls with 12,409,361 vehicles, equipment and tires involved.

The average number of NHTSA influenced recalls for the years 1996 through 2000 was 60 recalls with 15,299,946 vehicles, equipment and tires involved.

NHTSA influenced recalls accounted for 19.1 percent of the total defect recalls for the years 1996 through 2000 and 54.8 percent of the vehicles, equipment, and tires involved.

Total Defect Recalls

- 1996 had 239 recalls with 16,932,587 vehicles, equipment and tires involved.
- 1997 had 251 recalls with 14,817,599 vehicles, equipment and tires involved.
- 1998 had 308 recalls with 17,551,092 vehicles, equipment and tires involved.
- 1999 had 320 recalls with 51,542,327 vehicles, equipment and tires involved.
- 2000 had 446 recalls with 38,863,195 vehicles, equipment and tires involved.

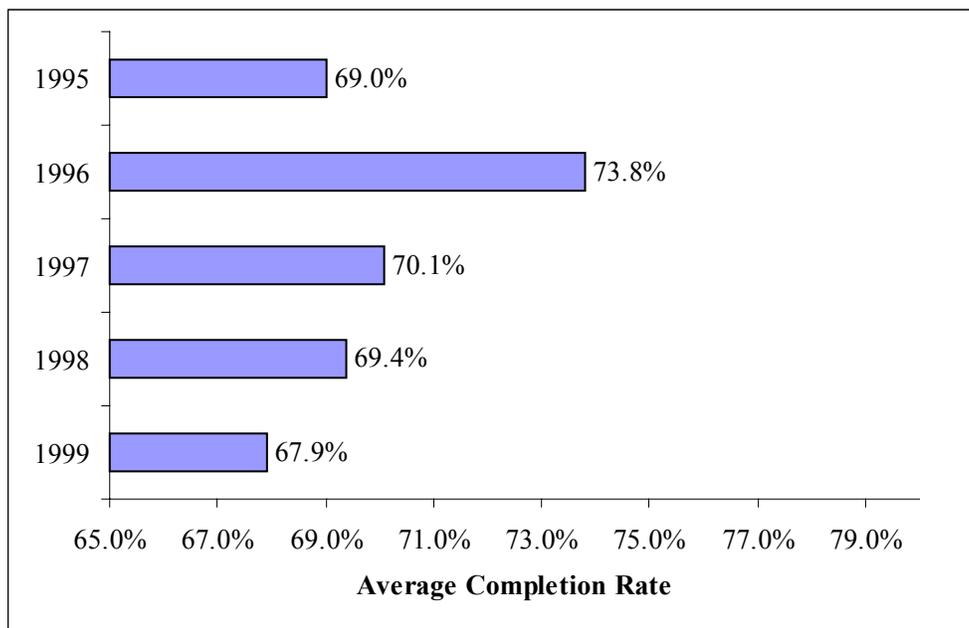
The total number of defect recalls for the years 1996 through 2000 was 1,564 recalls with 139,706,800 vehicles, equipment and tires involved.

The median number of defect recalls for the years 1996 through 2000 was 308 recalls with 17,551,092 vehicles, equipment and tires involved.

The average number of defect recalls for the years 1996 through 2000 was 313 recalls with 27,941,360 vehicles, equipment and tires involved.

As shown in Figure 1, recalled vehicles and equipment that were actually repaired remained relatively constant at 70 percent on average from 1995 to 1999. ODI's Chief of Defects and Recall Information Analysis told us that he considers a recall adequate if the manufacturer repairs at least 60 percent of the vehicles/equipment recalled. Further, he stated that generally the more severe the defect the higher the recall completion rate. For example, an owner is more likely to bring a vehicle in for repair if one of the consequences of the defect is a fire while using the vehicle. In contrast, if the owner decides that the defect may not impact their vehicle, such as overheating of a headlight switch when towing, then the completion rate tends to be lower.

**Figure 1. Safety Recall Completion Rates
1995 to 1999**



Using Best Practices Can Improve ODI's Defect Analysis and Investigation Processes

In our review of regulatory agencies' authority and practices, we found that the scope and extent of CPSC's regulatory authority most closely parallels NHTSA's. Over the years, CPSC has made changes, such as the use of multiple information sources, in how it collects data to identify hazards. These changes were the result of CPSC's own efforts, as well as in response to a 1997 U.S. General Accounting Office report. CPSC employs several methods that may be used by ODI to identify defects, prioritize investigations, publicize recalls, and involve senior management in the decision making process. The best practices are illustrated in the following examples.

Multiple Sources of Information Are Used to Identify Defects

CPSC uses several sources of information and databases to detect safety-related problems in products. The sources of information include: (1) data from coroners, fire departments, hospitals, emergency rooms and trade associations as well as product liability lawsuits, newspaper articles on accidents, hotline complaints and written consumer complaints; (2) field data collected by investigators including investigation reports and findings; and (3) compliance data that include corrective actions taken by manufacturers.

Investigations and Recalls Are Prioritized Based on Severity of Hazard

CPSC requires that its Emerging Hazards Division, responsible for analyzing hazard data, immediately notify the Director of Recalls and Compliance and pertinent staff, of any data indicating grievous injury, death, or multiple incidents. Also, CPSC establishes criteria for selecting potential hazards to address. These criteria are written in agency regulations and include the severity of the risk, the intended or foreseeable use or misuse of the product, and the population group exposed to the products including children, the elderly, and the handicapped.

CPSC uses a hazard priority classification system to assist in selecting the level and intensity of the corrective action the manufacturer should initiate as part of a recall. For example, a Class A hazard, the highest priority, is reserved for product defects that present a strong likelihood of death or grievous injury to the consumer. Class A hazards warrant the highest level of manufacturer and Commission attention. Manufacturers must take immediate and comprehensive corrective action to identify and notify consumers, retailers, and distributors.

Corrective Actions Are Developed by CPSC and the Manufacturer

Once CPSC and the manufacturer agree on the need for a remedy to correct a product defect, they work together to develop an effective plan for notifying the public and implementing the recall. One condition of the recall is that the company must agree that CPSC may publicize the terms of the corrective action plan to inform the public of the hazard. CPSC publicizes recall information in a variety of ways. For example, CPSC develops the wording of the press release, and the press release is then issued jointly with the manufacturer. Manufacturers may also be required to use additional methods to publicize the recall, such as television announcements, recall posters in stores that sold the defective product, and website announcements.

Senior Management Is Involved in the Investigation and Recall Process

Commissioners meet weekly with senior compliance managers to discuss the status of investigations and recent emerging hazards data. Additionally, the Commissioners receive monthly reports from the Director of Compliance summarizing potential defects, ongoing investigations, newly opened investigations, and recall remedy plans. Also, the Commissioners are immediately informed of complaints or notices involving a death or risk of serious injury.

Recommendations

We recommend that the NHTSA Administrator:

1. Ensure the timely completion of TREAD Act rulemakings and other actions by:
 - Continuing to report to the Secretary and begin reporting to Congress on a routine basis, the milestone dates, budget estimates, and actions required to complete the TREAD Act rulemakings/actions, as well as ODI's new information system. To keep NHTSA on course in completing the TREAD Act rulemakings, both the Department and NHTSA will have to adhere to the milestone dates and work with OMB when its review is required. NHTSA, as well as other entities that must review the proposed rules, will need to adhere to the rulemaking schedules.
2. Ensure consistency in recommending and opening investigations and that highest priority cases are investigated by:
 - Establishing a peer review panel and process to ensure data used to identify potential defects are comprehensively and thoroughly analyzed and that

investigations are opened and prioritized in a consistent manner. The panel could include the Chiefs of the Defects Analysis and Investigation Divisions, as well as defects analysis and investigative staff. Further, the peer review should be conducted on a routine basis and decisions documented to ensure consistency in the decision making process.

- Developing new defect analysis and case opening procedures.
- Training personnel regarding the new defect analysis and investigative procedures.
- Identifying innovative techniques for collecting and analyzing defect information from a wider range of sources.
- Evaluating best practices and using them as appropriate.

3. Ensure that ODI has the appropriate information system infrastructure and processes in place to promptly identify potential defects as intended by the TREAD Act by:
 - Obtaining the services of an independent entity to validate and verify the contractor's progress, reduce development risk, and advise NHTSA of its findings.
 - Mitigating the risks identified in this report regarding the new defect information system.
 - Reviewing and editing the existing data in the defect database for accuracy and completeness before transferring the data to the new information system.

Management Response and OIG Comments

The draft report was provided to NHTSA on November 7, 2001. OIG staff subsequently met with the Associate Administrator for Safety Assurance and ODI Director to discuss the draft report findings and recommendations. In its December 4, 2001 written response to the draft report, NHTSA agreed to implement all of the recommendations or proposed an acceptable alternative action with one exception. NHTSA's comments are presented in the Appendix to this report.

In response to our recommendations, NHTSA agreed to ensure the timely completion of TREAD Act rulemakings and other actions by continuing to work with the Department and other entities to meet the TREAD Act deadlines. Although we also recommended that NHTSA begin reporting the status of its TREAD Act efforts to Congress, NHTSA proposed that it continue to brief congressional committee staff on the status of the TREAD Act requirements and provide further information when specifically requested by Congress. We consider NHTSA's proposed alternative action acceptable.

In its reply, NHTSA commented that the numerous complex TREAD Act rulemakings involving key safety issues with statutory deadlines, such as updating the tire standards and improving the safety of child restraints, should have little or no impact on the ability of NHTSA to issue the early warning rule in a timely manner.

However, as stated in our report, the issue with the TREAD Act rulemakings is not just the number of rules NHTSA has to complete. Rather, the issue is the timely completion of complex and/or controversial rules with statutory deadlines. For example, completing the early warning reporting requirements rule by June 30,

2002, is not fully within NHTSA's control and will require extensive coordination with other offices and entities who have a role in approving or commenting on proposed rules.

In the Fiscal Year 2002 DOT Appropriations Conference Report, Congress directed NHTSA to submit a notification letter to the House and Senate Committees on Appropriations if there is reasonable likelihood that the agency will not meet the deadlines specified in the TREAD Act. For these reasons we recommended that, to keep NHTSA on course in completing the TREAD Act rulemakings, both the Department and NHTSA will have to adhere to the milestone dates and work with OMB when its review is required. NHTSA, as well as other entities that must review the proposed rules, will need to adhere to the rulemaking schedules.

To ensure consistency in recommending and opening investigations and that high priority cases are investigated, NHTSA agreed to:

- develop new defect analysis and case opening procedures and train personnel in these new procedures;
- establish a peer review panel and process; and
- identify innovative techniques for collecting and analyzing defect information from a wider range of sources.

Although NHTSA agreed to develop new defect analysis and case opening procedures and processes, it also stated that the procedures currently used by ODI to identify potential safety defects that warrant formal investigation have worked well and that few, if any, significant safety defects have escaped detection. We strongly disagree with this statement. The Firestone tire incident, subsequent passage of the TREAD Act, and the case examples cited in our report clearly illustrate that ODI's processes and procedures need major improvements.

In addition, although NHTSA agreed that it is appropriate to identify and adopt "best practices" for identifying and investigating defects, it needs to specify how it plans to evaluate the best practices and which best practices it will use.

NHTSA also agreed to ensure that ODI has the appropriate information system infrastructure and processes in place to promptly identify potential defects as intended by the TREAD Act. Specifically, NHTSA agreed to:

- review and edit the existing data in the defect database for accuracy and completeness before transferring the data to a new information system;
- mitigate the risks identified in this report regarding the development of a new defect information system; and

- obtain the services of an independent entity to validate and verify the contractor's progress, reduce development risk, and advise NHTSA of its findings.

NHTSA needs to provide a target date for mitigating the risks identified in this report and obtaining the services of an independent contractor.

NHTSA did not agree with our draft report's recommendation to assign a full-time experienced project manager to the new information system project. Given NHTSA's agreement to obtain the services of an independent entity to validate and verify the contractor's progress and reduce development risk, we have eliminated a recommendation in the draft report to assign a full-time project manager.

Exhibit A. Major Contributors to This Report

THE FOLLOWING INDIVIDUALS CONTRIBUTED TO THIS REPORT.

<u>Name</u>	<u>Title</u>
Ronald H. Hoogenboom	Program Director
Madeline M. Chulumovich	Project Manager
Sara J. Ancona	Management and Program Analyst
Wendy M. Harris	Auditor
Danielle E. Roeber	Management and Program Analyst
Mark A. Stiglitz	Management and Program Analyst

Exhibit B. Objectives, Scope and Methodology

Our review was performed at the request of Senator John McCain, Ranking Minority Member, Senate Committee on Commerce, Science, and Transportation. The Committee, at its September 12, 2000 Firestone tire recall hearing, examined the manner in which ODI handles information received from consumers, insurance companies, and manufacturers, and questioned ODI's preparedness for handling information that may contain early warning signs of product defects.

Senator McCain specifically requested that we: (1) evaluate the quality and quantity of data and criteria NHTSA uses to identify vehicle safety problems; (2) assess the efficiency of NHTSA procedures/processes for initiating and investigating problems, and issuing consumer alerts or recalls; and (3) identify notification, investigation and recall requirements considered as "best practices" by other regulatory agencies and that may be used as models for improving ODI.

To evaluate the quality and quantity of data and criteria NHTSA uses to identify vehicle safety problems and assess the efficiency of NHTSA procedures/processes, we took a stratified random sample of 316 investigative phases started by ODI in 1998. The stratified random sample was taken from 1998 to ensure that the investigations chosen for review included the manufacturers' reporting of recall completion rates for six quarters.

Using a 90 percent confidence level we took a stratified random sample of the 316 investigative phases resulting in a total of 59 cases for in-depth review – 20 initial evaluations, 12 preliminary evaluations, 5 engineering analyses, 6 service queries, 5 recall queries, and 11 recalls. In selecting our sample we focused on individual investigative phases; however, once the sample was selected we reviewed all phases of a case from start to finish. For example, if an initial evaluation was selected in the sample, we reviewed the entire investigative case including the initial evaluation and the corresponding preliminary evaluation, engineering analysis, and/or recall. Therefore, the case was reviewed from the first action taken by ODI to the last action taken.

For the 59 cases, ODI provided us with pertinent documents in the public file, such as the opening and closing reports, information requests, manufacturer responses, and recall notification letters. We reviewed and analyzed the information in each case, focusing on the action taken by ODI. We evaluated the cases for triggers or criteria for opening an investigation, such as complaints, complaint rate, crashes, injuries, deaths, and fires. We reviewed the timeframes to complete each phase. We also compared the cases at each investigative phase. Based on our analysis, we determined whether the action taken by ODI was "reasonable."

To further assess the quality and quantity of data NHTSA used to identify vehicle safety problems, we contracted with a systems analyst consultant to assist us in performing database and trend analysis of NHTSA's (1) Defect Information Management System (DIMS) database, (2) Fatality Analysis Reporting System (FARS), and (3) National Automotive Sampling System (NASS)/General Estimate System (GES).

The focus of the DIMS analysis included: (1) examining the ability of the system to maintain/support data integrity; (2) evaluating the ability of the system to support complaint analysis, relationships and associations, such as the relationship of complaint to investigation information; and (3) determining the system's potential for detecting complaint trends or for using DIMS as an early warning system. We also identified the weaknesses and strengths of using DIMS as a primary tool and FARS and NASS as secondary tools for identifying potential defects. In addition, we evaluated DIMS' ability to support the additional information and analysis requirements resulting from the TREAD Act.

Further, the consultant assisted us in evaluating ODI's and Volpe National Transportation Systems Center's proposed information system architecture and implementation plans to replace DIMS. Specifically, the consultant (1) evaluated ODI's progress in developing the new system, and (2) identified the risks, if any, with the proposed system and how the risks could be mitigated.

To assess the efficiency of NHTSA procedures and processes for initiating and investigating safety problems, we reviewed and analyzed applicable laws, regulations, orders/notices, guidelines and policy statements regarding motor vehicle safety and safety-related defects. We also evaluated ODI's processes and procedures as part of the in-depth case reviews. We interviewed NHTSA's Associate Administrator for Safety Assurance, as well as ODI's Director, Division Chiefs, investigators, and defects analysts. In addition, we interviewed NHTSA officials from the Office of General Counsel and the Office of Plans and Policy.

To identify notification, investigation and recall requirements considered as "best practices" by other regulatory agencies, we reviewed and analyzed laws and regulations pertaining to the Consumer Product Safety Commission (CPSC), Food and Drug Administration (FDA), and Research and Special Programs Administration - Office of Pipeline Safety (RSPA-OPS). We also interviewed senior management officials from CPSC, Environmental Protection Agency, Federal Aviation Administration, Federal Railroad Administration, FDA, Occupational Safety and Health Administration, United States Coast Guard, and RSPA-OPS.

To further evaluate NHTSA's efforts to identify potential safety-related defects and to implement the TREAD Act, we interviewed the previously cited NHTSA officials as well as former NHTSA senior executives. We also interviewed

officials from: (1) safety organizations including Advocates for Highway and Auto Safety, Center for Auto Safety, Insurance Institute for Highway Safety, Public Citizen, and Safety Forum; (2) automobile manufacturers including DaimlerChrysler Corporation; Ford Motor Company; General Motors Corporation; Toyota Motor Sales, USA, Inc.; and Volkswagen of America, Inc.; and (3) the Alliance of Automobile Manufacturers.

Our work was performed at NHTSA Headquarters in Washington, D.C., from October 2000 to September 2001 in accordance with Government Auditing Standards prescribed by the Comptroller General of the United States.

PRIOR AUDIT COVERAGE

Reviews by the Office of Inspector General

We have not issued any reports on NHTSA's Office of Defects Investigation within the past 5 years.

Reviews by the U.S. General Accounting Office (GAO)

In January 2001, GAO issued a report on NHTSA's ability to detect and recall defective replacement crash parts because of potential concerns about the safety of aftermarket crash parts and recycled airbags. GAO found that NHTSA has broad authority to set safety standards for aftermarket crash parts. However, NHTSA has not determined that these parts pose a significant safety concern and has not developed safety standards for them. GAO also found that NHTSA's ability to identify and recall unsafe aftermarket parts is limited.

Exhibit C. Actions Taken by NHTSA to Implement the TREAD Act

(As of December 2001)

§ 3(c): Sale or Lease of Defective Tires requires individuals to report to the Secretary when knowingly and willfully selling or leasing for use on a vehicle a defective or noncompliant tire when having actual knowledge that the manufacturer has notified dealers of such defect or noncompliance. A rulemaking with a statutory deadline of 01/29/01 was required by the TREAD Act and the final rule was issued 07/23/01.

§ 5(b): Safe Harbor precludes individuals from receiving criminal punishment if the person (1) at the time of the violation, did not know that the violation would cause death or serious injury and (2) corrects the improper report or failure to report within a reasonable time. The Secretary shall establish by regulation what constitutes reasonable time and sufficient correction. A rulemaking with a statutory deadline of 01/29/01 was required by the TREAD Act and the final rule was issued 07/24/01.

§ 3(d): Insurance Study requires the Secretary to determine the capability and benefits of obtaining aggregate information regarding insurance claims. A study with a statutory deadline of 03/01/01 was required by the TREAD Act and the study was completed on 03/05/01.

§ 13: Tire Pressure Warning Device requires a warning system in new vehicles to indicate to the driver when a tire is significantly under-inflated. The requirement will become effective 2 years after the completion of the rulemaking. A rulemaking with a statutory deadline of 11/01/01 is required by the TREAD Act and the Notice of Proposed Rulemaking was issued 07/26/01.

§ 14(h): Booster Seat Study requires the Secretary to study the use and effectiveness of booster seats and submit the results to Congress. A study with a statutory deadline of 11/01/01 is required by the TREAD Act and the draft report is undergoing final Agency review.

§ 14(i): Education Program requires the Secretary to develop a 5-year strategic plan to reduce deaths and injuries, caused by failure to use booster seats, by 25% among 4 to 8 year olds. A program with a statutory deadline of 11/01/01 is required by the TREAD Act and the draft plan is undergoing final Agency review.

§ 15: Recall Criteria requires the Secretary to review and update all standards, criteria, procedures, and methods in determining whether to open a defect or noncompliance investigation. The Secretary shall report findings to Congress. A report with a statutory deadline of 11/01/01 is required by the TREAD Act and no action has been taken by NHTSA.

§ 16: Follow-Up Report requires the Secretary to report to Congress on the implementation of the TREAD Act and provide recommendations for additional amendments. A report with a statutory deadline of 11/01/01 is required by the TREAD Act and the draft report is undergoing final Agency review.

§ 10: Tire Standards requires the Secretary to update the tire standards (Standards 109 and 119). A rulemaking with a statutory deadline of 06/01/02 is required by the TREAD Act. A Notice of Proposed Rulemaking was sent to the Office of the Secretary (OST) on 09/10/01.

§ 11: Improved Tire Information requires the Secretary to improve the labeling of tires to assist consumers in identifying tires that may be subject to a recall. A rulemaking with a statutory deadline of 06/01/02 is required by the TREAD Act. A Notice of Proposed Rulemaking was issued 12/19/01.

§ 3(b): Early Warning requires manufacturers to report claims data, warranty data, customer satisfaction campaigns and recalls, and any incidents of serious injuries or fatalities (allegedly or proven to be caused by a possible defect) for which the manufacturer receives actual notice. A rulemaking with a statutory deadline of 06/30/02 is required by the TREAD Act. A Notice of Proposed Rulemaking was issued 12/21/01.

§ 12: Rollover Tests requires the development of a dynamic test on rollovers by 11/01/02 and the creation of a consumer information program. The Secretary shall conduct a rulemaking to determine how best to disseminate the test results. Ratings Program. The rulemaking with a statutory deadline of 11/01/02 is required by the TREAD Act. A request for comments was published on 07/03/01.

§ 14(a): Safety of Child Restraints requires the Secretary to draft regulations for improving the safety of child restraints, including minimizing head injuries from side impact collisions. The Secretary must consider several criteria, therefore resulting in multiple rulemakings. A rulemaking with a statutory deadline of 11/01/02 is required by the TREAD Act. A Notice of Proposed Rulemaking was sent to OST on 12/03/01.

§ 14(g): Ratings Program requires the Secretary to establish by regulation a child restraint safety rating consumer information program. A rulemaking with a statutory deadline of 11/01/02 is required by the TREAD Act. A Notice of Proposed Rulemaking was issued 11/06/01.

§ 3(a): Report on Defects in Foreign Countries requires manufacturers to report within 5 working days when conducting a safety recall or other safety campaign in a foreign country for an identical or substantially similar vehicle as a vehicle offered for sale in the United States. A rulemaking with no statutory deadline is required by the TREAD Act. A Notice of Proposed Rulemaking was issued 10/11/01.

§ 5(a): Civil Penalties amends the regulations to reflect changes in the National Traffic and Motor Vehicle Safety Act regarding civil penalties. A rulemaking with no statutory deadline was required by the TREAD Act and the Final Rule was issued 11/14/00.

§ 6(a): Acceleration of Remedy permits the Secretary to require manufacturers to accelerate the remedy program if the Secretary finds that there is a risk of serious injury or death and that the acceleration can be reasonably achieved by expanding the sources of replacement parts, authorized repair facilities, or both. A rulemaking with no statutory deadline is required by the TREAD Act. A Notice of Proposed Rulemaking was issued on 12/11/01.

§ 6(b): Reimbursement Prior to Recall requires manufacturers to include in their remedy programs a plan for reimbursing owners who incurred the cost of the remedy within a reasonable time in advance of the manufacturers' notification of recalls. The Secretary may establish by regulation what constitutes a reasonable time and other reasonable conditions for the reimbursement plan. A rulemaking with no statutory deadline is required by the TREAD Act. A Notice of Proposed Rulemaking was issued on 12/11/01.

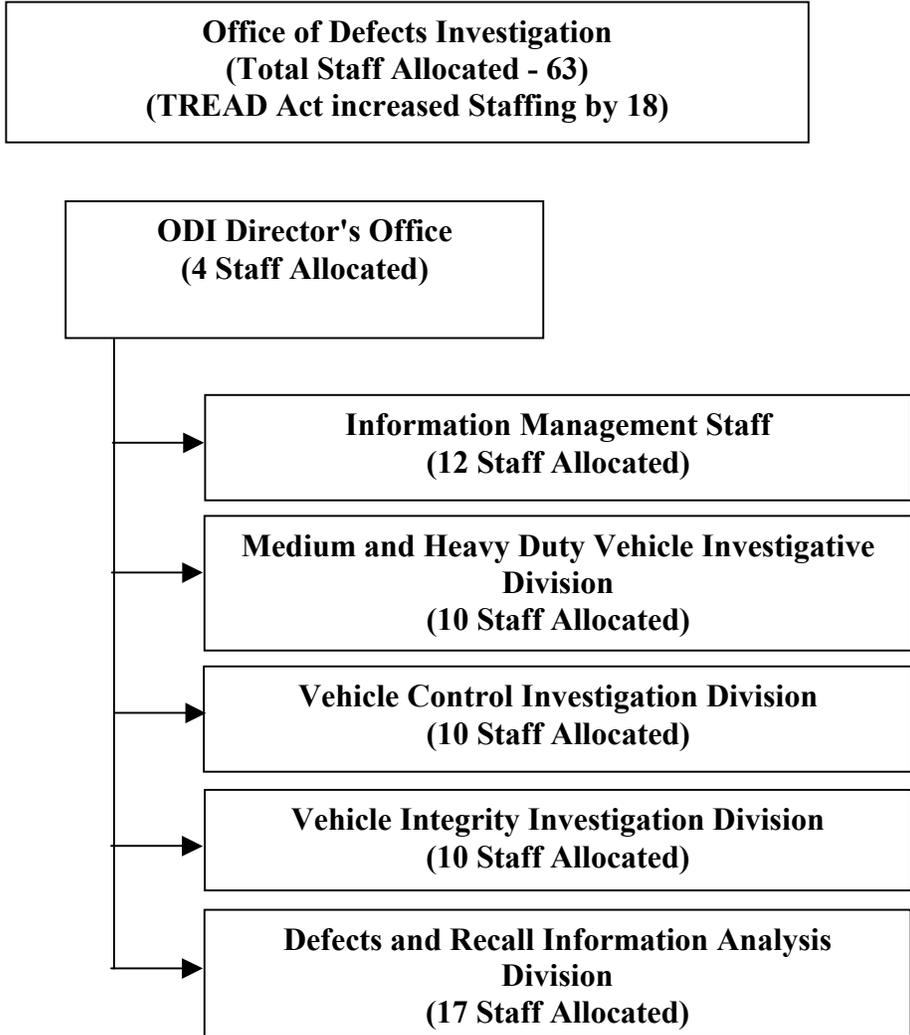
§ 7: Sale of Replaced Tires requires manufacturers to include in remedy programs a plan for how manufacturers will prevent replaced tires from being resold and how to limit disposal of replaced tires in landfills. Manufacturer will include information about the implementation of the plan in each quarterly report to the Secretary. A rulemaking with no statutory deadline is required by the TREAD Act. A Notice of Proposed Rulemaking was issued on 12/18/01.

§ 8: Sale of Replaced Equipment prohibits the sale or lease of any vehicle equipment (including tires) for installation on vehicles when the equipment is subject to a recall. An exception exists if the defect or noncompliance is

remedied before delivery. A rulemaking with no statutory deadline is required by the TREAD Act. A Notice of Proposed Rulemaking was issued 07/23/01.

§ 9: Certification Label requires intermediate or final stage manufacturers, for vehicles built in more than one stage, to certify that they complied with specifications provided by the first manufacturers or that they have elected to assume responsibility for complying with the Federal Motor Vehicle Safety Standards. A rulemaking with no statutory deadline is required by the TREAD Act. NHTSA is drafting a Rulemaking Support Paper.

Exhibit D. ODI's Organizational Structure and Mission Statements



Office of Defects Investigation Mission Statements

Office of Defects Investigation

Mission: Conduct testing, inspections, and investigations necessary for the identification and correction of safety-related defects disclosed in motor vehicles and equipment, and administer the safety-related defect notification requirements of the National Traffic and Motor Vehicle Safety Act of 1966, as amended.

Information Management Staff

Mission: Compile information and data provided by consumers concerning potential safety-related defects. Provide and operate a data management system for collection, storage, retrieval, and analysis of all information and data received in ODI pertinent to accomplishing the office mission. Develop supportive special reports, statistical data, presentations and analyses, and prepare in-depth replies to correspondence relating to the ODI mission.

Defects and Recall Information Analysis Division

Mission: Collect and analyze complaint and defect information and data for the identification and technical determination of incidents and trends indicating the existence of a potential safety-related defect that may lead to a recall campaign or public disclosure of a safety problem. Perform the initial technical analysis of all data that ODI receives, and conduct field investigations, surveys, and testing to locate and identify potential safety-related defects in motor vehicles and related equipment. Administer the manufacturers' defect notification systems and recall procedures for motor vehicles and related equipment.

Investigation Divisions - Vehicle Control, Vehicle Integrity, and Medium and Heavy Duty Vehicle Divisions

Mission: Perform the initial and in-depth engineering and technical analysis of all data received by ODI and other sources to locate and identify potential safety-related defects in motor vehicles and related equipment. Provide the investigative and technical expertise and the initiative required to support each phase of the investigation through testing, field investigations, and surveys. Assure the creation of appropriate investigative documentation to support official defect determinations and for use in the event of litigation.

Appendix. Management Comments



Memorandum

U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

Subject: NHTSA's Response to the Recommendations in
the OIG Draft Report, "Review of the Office of
Defects Investigation;" Project No. 00M3017M000

Date: December 4, 2001

From: Jeffrey W. Runge, M.D.
Administrator

Reply to
Attn of:

To: Thomas J. Howard
Deputy Assistant Inspector General
for Maritime and Highway Safety Programs

This memorandum sets forth the response of the National Highway Traffic Safety Administration (NHTSA) to the recommendations contained in the subject draft report prepared by your office. We thank you and your staff for the extensive efforts exerted in preparing the draft and look forward to working with your office on this and other matters of mutual interest.

Recommendation No. 1: Ensure the timely completion of TREAD Act rulemakings and other actions by:

- Continuing to report to the Secretary and begin reporting to Congress on a routine basis, the milestone dates, budget estimates, and actions required to complete the TREAD Act rulemakings/actions as well as ODI's new information system. To keep NHTSA on course in completing the TREAD Act rulemakings, the Department will have to establish schedules for meeting deadlines at each rulemaking stage and work with OMB when its review is required.

NHTSA Response:

NHTSA concurs with this recommendation. Soon after the TREAD Act was enacted, the agency developed a detailed monitoring system, including milestone dates for interim

activities, to keep track of progress in implementing the statute. NHTSA has also had a series of regular monthly meetings attended by senior management on the four main subject matter areas covered by the Act: tires, child restraint systems, defects, and rollover. We have also regularly submitted progress reports to the Office of the Secretary (OST) (including a monthly report to the Deputy Secretary) and met with senior OST officials when appropriate. We have also worked with OMB on rulemaking and related issues.

We wish to point out, however, that the discussion in the draft report with respect to TREAD Act rulemakings goes well beyond the subject of the report; i.e., most of those rulemakings are not related to the activities of the Office of Defects Investigation. In fact, the agency has met all of its statutory deadlines with respect to the defect-related provisions of the Act (section 3(c) (reporting the sale or lease of defective tires), section 3(d) (study of possible use of insurance company data), section 5(a) (increased civil penalties), and section 5(b) (new criminal penalties)) and is continuing to move forward to promptly implement several other defect-related provisions that do not have such deadlines. While the TREAD Act also requires NHTSA to engage in numerous complex rulemakings involving other key safety areas (tires, child restraints, and rollover), those should have little or no impact upon the ability of the agency to issue the early warning rule in a timely manner.

With respect to the recommendation regarding reporting to Congress, we have conducted several informal briefings of the staff of the relevant committees on our progress, and we will be submitting a formal status report in the near future pursuant to section 16 of the Act. We will continue to work with the relevant committees and provide any additional reporting that they may desire.

Recommendation No. 2: Ensure consistency in recommending and opening investigations and that highest priority cases are investigated by:

- Establishing a peer review panel and process to ensure data used to identify potential defects are comprehensively and thoroughly analyzed and that investigations are opened and prioritized in a consistent manner
- Developing new defect analysis and investigative procedures.
- Training personnel in the new defect analysis and investigation procedures.
- Developing innovative techniques to collect and analyze defect information from a wide range of sources.
- Evaluating best practices and using them as appropriate.

NHTSA Response:

NHTSA concurs with this recommendation. We wish to note, however, that we believe that the procedures currently used by the Office of Defects Investigation (ODI) to identify potential safety defects that warrant a formal investigation have worked well, given the limitations of the data and information that has been available. Over the past few years, ODI investigations have influenced well over half of the vehicles that have been recalled to remedy safety defects. In addition, the number of ODI-influenced recalls has steadily risen over the past 10 years, and well over half of ODI's investigations have led to recalls. We do believe that very few, if any, significant safety defects have escaped detection, even given the relatively limited data that has been available to date.

Nevertheless, we agree that there is room for improvement in ODI's screening procedures. Therefore, we concur with the OIG recommendation to establish a review panel comprised of the Division Chiefs and selected staff investigators that would review the screeners' recommendations for opening defect investigations. We agree that such a panel would bring increased consistency and help to properly prioritize the office's investigative resources. We have implemented this approach, with the first panel meeting on November 29, 2001.

We also concur in the recommendation to develop and formalize the procedures to be used by the ODI screeners in the Defect and Recall Information and Analysis Division to analyze the available information about potential defects. This will be particularly important in view of the extensive amount of new information that will be available under the forthcoming "early warning" reporting regulations. (The recommendation refers to "defect analysis and investigative procedures." However, the entire report focuses on the way ODI identifies potential defects for investigation rather than the manner in which it conducts its investigations. At this time, we do not see any need to revise ODI's procedures and processes for conducting its defect investigations.) ODI is currently in the process of developing a "control plan" for the screening process. We plan to finalize it after the issuance of the early warning final rule, in the fall 2002. Of course, we will then promptly train all screeners to assure that they understand and properly implement the new procedures.

ODI is always looking to increase its sources of information about potential defects. For several years, we have conducted a variety of outreach programs to encourage wider reporting of such information. We have given presentations to numerous audiences, including consumer groups, accident investigators, industry groups, insurance companies, state government employees, law enforcement groups, civic organizations, and at automotive trade shows, which have engendered new sources of information about potential safety defects. Under the TREAD Act, we will be receiving extensive information from manufacturers, yet we will continue to pursue additional sources of relevant information.

ODI concurs that it is appropriate to attempt to identify and adopt "best practices" for identifying and investigating defects, and we will continue to do so. However, we have previously considered some of the practices referred to in the OIG report, such as those used by the Consumer Product Safety Commission (CPSC), and have concluded that they would not be practical in the ODI context. For example, we do not have the field staff that the CPSC uses to contact local coroners and other individuals across the country.

Recommendation No. 3: Ensure that ODI has the appropriate infrastructure and processes in place to promptly identify potential defects as intended by the TREAD Act by:

- Assigning a full-time project manager to manage ODI's project to develop a new information system. The project manager must have experience in the delivery of a project of comparable scope and complexity.
- Obtaining the services of an independent contractor to conduct an independent validation and verification of the project's progress and risks.
- Reviewing and editing the existing data in the defect database for accuracy and completeness before transferring the data to the new information system.

- Implementing the recommended risk mitigation plan for ODI’s new defect information management system, as appropriate.

NHTSA Response:

NHTSA does not believe that the project to develop and implement the new information system for ODI is at significant risk – risk being defined as the inability of ODI to bring on line, on time, and within budget an information system that will allow the office to successfully perform its duties and responsibilities. Any information system development project has some associated risks. However, from the outset, ODI has structured the project to address and reduce these risks. It did so by contracting with the Volpe National Transportation Systems Center (Volpe Center) to assist in managing the project, by engaging in detailed project planning, by arranging for constant ODI staff involvement and collaboration through numerous working groups and meetings, by utilizing a proven development methodology, and by deciding to use well known, widely used, and widely available commercial software products, rather than products designed and developed exclusively for ODI.

ODI and the Volpe Center have taken numerous actions to minimize the risks associated with this project. ODI evaluated risk mitigation strategies during the project initiation phase and discussed these issues with several independent firms. In addition, ODI has identified and documented potential risks in its internal project plan, which will allow it to promptly take action if any impediments arise. Moreover, the project management methodology used by the Volpe Center is an iterative process, involving constant interaction between the developers and the client (ODI), which maximizes the developers’ understanding of the client’s requirements and minimizes the need for changes and delays.

It is relevant that the new ODI system will rely on proven, widely used, and widely available commercial products. Thus, we do not believe that the projects identified in the OIG report as having experienced significant delays and cost overruns are analogous, since the ODI system will be based on proven technologies and available commercial-off-the-shelf products that will require minimal customization.

Even though NHTSA is confident that the project will be completed on time and within the allocated budget, in response to the OIG recommendation, we plan to acquire the services of an independent contractor to assess the quality and completeness of the new information system’s development. Included in this task will be an analysis of risks and mitigation strategies, including those already identified by ODI, and the periodic review of all key deliverables and potential exposure to new risks. NHTSA does not agree that it would be beneficial to hire a “full-time project manager,” particularly at this point in the project. We believe that the current project management structure has worked well and will continue to do so. The Chief of the Information Management Division of the Office of Safety Assurance serves as the project manager, who is responsible for assuring that ODI’s needs are met in a proper and timely manner. Although he retains the other responsibilities of his position, the major portion of his time is devoted to this project. He is assisted within ODI by the Office Director, who is the project “sponsor,” and by other ODI managers and key users. The Volpe Center is responsible for the day-to-day management of design and development. This matrix management structure ensures that all parties play a significant role and minimizes the risks of failure and delay. In addition, ODI uses an internal project plan to track critical performance measures.

Adding an additional level of management (presumably to supervise the Volpe Center's management efforts) would not be productive. ODI selected the Volpe Center to participate in this project based on its reputation and past successes. It has information technology (IT) professionals located on-site who provide IT expertise and who have become very familiar with ODI's information requirements. In NHTSA's view, these Volpe Center experts can and will provide appropriate technical direction and guidance as the project continues.

Even apart from the IT experience of the existing project management, those individuals have also amassed a great deal of knowledge regarding the ODI's procedures and information needs. A new independent project manager would not have this background, and educating him or her would detract from the project and would likely lead to delays.

ODI and the Volpe Center are developing a Data Migration Plan to assure that all appropriate data that is in the current defects database will be transferred to the new system. That data will be reviewed for quality under a Data Quality Control Plan, which will identify improperly or inconsistently recorded data. All records that do not comply with the quality standards will be retained in "Hold-Files." They will then be assessed by ODI and either included in the new database, corrected, or disposed of. Both the Data Migration Plan and the Data Quality Control Plan will be completed by June 30, 2002.

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