FOLLOW-UP AUDIT OF THE OFFICE OF DEFECTS INVESTIGATION

National Highway Traffic Safety Administration

Report Number: MH-2004-088

Date Issued: September 23, 2004

Memorandum

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

Subject: ACTION: Report on Follow-up Audit of the National Highway Traffic Safety Administration's Office of Defects Investigation Report No. MH-2004-088

Date: September 23, 2004

From: Alexis M. Stefani
Principal Assistant Inspector General for Auditing and Evaluation

Reply to Attn. of: JA-40

To: National Highway Traffic Safety Administrator

This report presents the results of our follow-up audit of the National Highway Traffic Safety Administration (NHTSA) Office of Defects Investigation's (ODI) implementation of the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act.[1] In January 2002, we reported that NHTSA faced challenges in fully implementing the TREAD Act and improving its ability to identify potential safety defects.[2] The report recommended that NHTSA: (1) adhere to rulemaking milestones; (2) ensure its new defects information system would meet NHTSA's needs by having an independent entity validate and verify the new system, and (3) establish procedures for identifying defects, create a peer review panel, and train personnel to ensure consistency in recommending and opening defect investigations.

The objectives of this audit were to evaluate the progress NHTSA has made in implementing the recommendations from our January 2002 report. Specifically, we examined the status of NHTSA's effort to: (1) implement the TREAD Act rulemakings; (2) ensure ODI has the appropriate information system infrastructure and processes in place to promptly identify potential defects as intended by the TREAD Act; and (3) establish processes to ensure consistency in recommending

[1] Public Law No. 106-414, 114 Stat. 1800 (2000).

[2] Report Number MH-2002-071, "Review of the Office of Defects Investigation," U.S. Department of Transportation, Office of Inspector General, January 3, 2002. OIG reports can be accessed on our website: www.oig.dot.gov.

and opening defect investigations in order to ensure the highest priority cases are investigated. Details of our audit scope and methodology, and prior audit coverage are in Exhibits A and B, respectively.

RESULTS IN BRIEF

Since our January 2002 report, NHTSA has made significant progress in implementing the 22 requirements of the TREAD Act, and developing a new safety defects information system called ARTEMIS[3] to receive manufacturer early warning reporting (EWR) information. EWR information includes the number of vehicles, tires, and child restraints produced; claims and notices involving death, personal injury, and property damage caused by possible safety defects; and the number of paid warranty claims. It also includes reports from manufacturers' employees, representatives, and dealers related to product defects and consumer complaints. A more detailed description of the EWR information and ARTEMIS is provided in Exhibits C and D, respectively.

In developing ARTEMIS, NHTSA encountered some serious problems requiring the attention of senior officials in the Office of the Secretary, including the Departmental Chief Information Officer (CIO), as well as senior NHTSA officials. For example, the ARTEMIS development effort proceeded without a systems development strategy, the proper sequencing of events and milestones, and reliable cost and schedule estimates. Consequently, development cost estimates increased from $5.35 million to $9.4 million[4] (76 percent) and the schedule has been extended four times from October 2002 to July 2004. We also found that an additional $17.12 million NHTSA identified as future operations and maintenance (O&M) costs for ARTEMIS for fiscal years (FY) 2005 through 2010[5] could not be verified. However, after we questioned how these costs were derived, NHTSA reduced the amount to $11.46 million and the period covered from FYs 2005 through 2009. The budget reduction totaled $2.61 million through FY 2009 and $5.66 million through FY 2010, thus creating an opportunity to put funds to better use.

Although ARTEMIS became fully operational in July 2004, it does not have the advanced analytical capabilities originally envisioned[6] to help point analysts to

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[3] Advanced Retrieval (Tire, Equipment, Motor Vehicle) Information System.

[4] NHTSA also estimated spending an additional $3.8 million in operations and maintenance costs for the phases of ARTEMIS that have been incrementally deployed, for a total of $13.2 million through July 31, 2004.

[5] NHTSA's planned completion date for ARTEMIS in both its original and revised business case is September 30, 2009; however, NHTSA's original business case contained conflicting dates, including a table that attributed $3.05 million of anticipated O&M expenses to FY 2010.

[6] As described by the NHTSA Executive Director in testimony presented on April 26, 2001, before the House Committee on Appropriations, Transportation Subcommittee.

potential safety defects. For example, the system cannot automatically notify analysts if consumer-reported complaints and manufacturer-reported warranty claims are both increasing due to vehicle steering problems. According to NHTSA officials, delays in acquiring these capabilities will prevent NHTSA from obtaining full value from the EWR information manufacturers report.

While ARTEMIS will automatically point analysts to deaths that manufacturers report so that trends in small numbers of fatalities can be detected, ARTEMIS will not, as currently developed, link deaths to an alleged defect or identify relationships between the categories of EWR information. In short, ARTEMIS cannot perform more advanced trend and predictive analyses that were originally envisioned as being needed to identify defects warranting investigation. Nevertheless, NHTSA now has much more information from which to identify potential safety defects than it ever had before.

NHTSA plans to separately acquire more advanced analytical capabilities to complement ARTEMIS and has published a draft data analysis plan presenting a "high-level" description of these capabilities. In addition, NHTSA is currently working with the Federal Aviation Administration (FAA) and other organizations to develop tools to review and analyze EWR reports submitted by manufacturers. However, NHTSA has not finished defining the capabilities needed, identified all software needed to analyze the EWR information, outlined associated costs, or a schedule for implementing these capabilities.

Ensuring that the EWR information is thoroughly and consistently analyzed to identify potential safety defects is especially critical since in July 2003 NHTSA announced it would publicly release only the claims and notices involving death, personal injury, and property damage, and production numbers for light vehicles. NHTSA decided not to release all other EWR information relating to warranty claims, consumer complaints, and field reports because it believes doing so could cause competitive harm to manufacturers or impair the Government's ability to obtain like information in the future, or both.

As a result of NHTSA's decision, the public will have access to only a portion of the EWR information being reported by manufacturers prior to NHTSA formally opening a defect investigation. Since only NHTSA will have access to the majority of the EWR information, it is critical that it establish procedures to ensure congressional concerns expressed in September 2000 about NHTSA's ability to use the data it possessed to spot trends related to failures in Firestone tires have been addressed. Consequently, much will be riding on the ability of NHTSA's eight analysts, who are responsible for reviewing the large volume of EWR information and drawing conclusions about potential safety defects. This will be especially true until such time as more advanced analytical capabilities are acquired to complement ARTEMIS.

In summary, our audit found that:

Most of TREAD Act Rulemakings Are Completed. To date, NHTSA has successfully implemented 20 of the 22 TREAD Act requirements, including 13 of the 15 required rules. NHTSA is rewriting the Tire Pressure Monitoring System rule it completed in June 2002, which was overturned on August 6, 2003, by the U.S. Court of Appeals for the Second Circuit. In addition, on June 2, 2004, the NHTSA Administrator notified Congress that he had decided against pursuing the remaining rulemaking on Certification Labels implementing Section 9 of the TREAD Act. NHTSA issued the "significant" rules[7] in an average of 2.1 years[8], which is considerably quicker than the U.S. Department of Transportation (DOT) average of 3.0 years.[9] NHTSA also met 58 percent of the TREAD Act rulemaking statutory deadlines, greatly exceeding the DOT average of 27 percent.[10]

ARTEMIS Cost and Schedule Have Significantly Increased. NHTSA has completed ARTEMIS, but not without significant cost increases and schedule delays. Since the project's inception in January 2001, total cost estimates for full system development have increased from $5.35 million in June 2001 to $9.4 million in March 2004. Schedule estimates increased from 21 to 42 months during the same time period. Corrective actions were taken beginning in April 2003 to limit additional cost and schedule increases, in part, after our audit raised questions concerning poor project planning and execution of the development effort. In addition, MITRE Corporation, which had been hired to provide oversight assistance, informed the NHTSA Administrator of the extraordinarily high cost estimate for project completion, and Volpe announced it needed more money to continue work on the project. The actions taken by NHTSA included stopping work on the project until a full set of system requirements and a better cost estimate were developed, and delaying acquisition of pointer-type analytical capabilities.

In February 2004, NHTSA identified $17.12 million in anticipated O&M expenses for ARTEMIS for FYs 2005 through 2010. After we questioned how these costs were derived, in March 2004, NHTSA reduced this amount to $11.46 million, or

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[7] These are rules that are costly, controversial, or of substantial public interest. Significant rules are reviewed by the DOT Office of the Secretary and the Office of Management and Budget prior to issuance.

[8] This average includes the time to complete the rulemaking on the Tire Pressure Monitoring System, which was overturned on August 6, 2003 by the U.S. Court of Appeals for the Second Circuit.

[9] The Department average is calculated from a "snapshot" of significant rulemaking activities, as cited in the DOT Office of the Assistant General Counsel for Regulation and Enforcement, "Report on DOT Significant Rulemakings," between October 2002 and September 2003.

[10] This average was taken from January through June 2003 data reported in Report Number SC-2004-035, "Audit of DOT's Rulemaking Process and Tracking System," Office of Inspector General, March 2, 2004.

by 33 percent, and the period covered to FY 2009. While the $11.46 million is a more reasonable estimate, portions of the revised estimate still contain weak justification. For example, NHTSA identified $537,356 in FY 2005 maintenance costs for "security" but $211,956 was undefined.

ARTEMIS Captures Manufacturer Information, But Provides Only a Limited Analytical Capability for "Early Warning" Analysis. NHTSA deployed a portion (Phase I) of ARTEMIS in December 2002 replacing two legacy safety defects information systems.[11] NHTSA also finished developing the capabilities to receive and store manufacturers' aggregate statistical EWR information (Phase IIA) and foreign recall information submissions (Phase IIB) in October 2003, and December 2003, respectively. The capability to receive and process field reports was completed in March 2004 (Phase IIC). Full ARTEMIS deployment, including remediation of remaining Phase I problems; public Web site operations for EWR information; the actual receipt of field reports; and completion of all acceptance testing and systems documentation was completed by July 30, 2004.

Although ARTEMIS has been completed, it does not have the analytical capabilities originally envisioned to help analysts sort through the large volume of EWR information anticipated from manufacturers and point them towards potential safety defects. As currently developed, ARTEMIS automatically points analysts to all deaths that manufacturers report so that even trends in small numbers of fatalities can be detected, which partially addresses concerns expressed by the Senate over NHTSA's ability to spot trends related to failures in Firestone tires. ARTEMIS also permits analysts to retrieve field reports based on vehicle or equipment specifications. However, ARTEMIS cannot perform more advanced trend analyses needed to find patterns and subtle relationships among the various types of EWR information to point analysts to potential defects warranting investigation. For example, the system cannot automatically notify analysts if consumer-reported complaints and manufacturer-reported warranty claims are increasing due to vehicle steering problems.

In June 2003, senior NHTSA officials decided they could more effectively acquire these advanced analytical capabilities outside of the ARTEMIS development effort. NHTSA has developed a draft data analysis plan and is working with FAA and other organizations to determine how best to provide the needed capabilities, including purchasing commercially available software. However, NHTSA has not identified all of the software needed to analyze the EWR information, outlined the associated costs, or developed a schedule for implementing these capabilities.

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[11] The Defect Information Management System (DIMS) and the Electronic Document Information Management System (EDIMS).

Until the capabilities are implemented, analysts will not be able to fully utilize the EWR information to help identify potential safety defects.

Safety Defect Screening and Investigation Process has Been Improved but More Needs to be Done. Since our 2002 report, NHTSA has established a peer review panel for reviewing safety defect issues and determining whether or not to open safety defect investigations. The review panel has improved the defect screening process by documenting all potential investigations, and if an investigation was not opened, the reasons why. However, NHTSA has not finalized screening procedures to ensure that analysts identify potential defects for the peer review panel's consideration because it has been waiting to begin receiving the EWR information before determining how best to revise its procedures for evaluating the information.

It is important that NHTSA finalize these procedures as soon as possible given the large volume of field reports it began receiving in June 2004. Without these procedures, analysts will not be able to thoroughly and consistently consider all EWR and other sources of information, such as technical service bulletins, when identifying potential defects for peer review panel consideration. The completion of procedures for analyzing defects, which NHTSA agreed to accomplish in response to our January 2002 report, is especially important given that it is uncertain when "pointer-type" analytical capabilities originally envisioned as part of ARTEMIS will be fully developed and deployed. Additionally, NHTSA needs to finalize and train its analysts on these new procedures as soon as possible.

Only Limited EWR Information Will be Publicly Released for Analysis by Others. NHTSA has issued a final rule limiting public disclosure of the information submitted by manufacturers. Based on its interpretation of the TREAD Act and Freedom of Information Act (FOIA),[12] NHTSA decided that it will release only information related to claims and notices involving death and personal injury, the number of property damage claims, and production numbers for light vehicles. NHTSA determined that all other information is exempt from public release prior to the formal opening of a defect investigation. This includes information related to warranty claims, consumer complaints, field reports,[13] and all other production numbers. NHTSA reasoned that such release may cause manufacturers competitive harm, impair the Government's ability to obtain like information in the future, or both. For example, NHTSA believes release of the information could lead to less candor from field personnel, resulting in less

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[12] The FOIA requires that all Federal agencies disclose records to the public unless they meet certain exemptions or exclusions specified by the FOIA.

[13] Depending on the manufacturer, a field report can range from a technical investigation of a problem detected through warranty, consumer complaint, or other data available to the company (see 68 Fed. Reg 44,223, dated July 28, 2003).

reliable information, and would discourage manufacturers' marketing efforts that lead to more complete and useful information.

Some manufacturers and public interest groups disagree with NHTSA's interpretation of what EWR information is subject to public disclosure. For example, in its comments on NHTSA's proposed rule limiting the public release of EWR information, the Rubber Manufacturers Association opined that until the opening of a formal defect investigation, all EWR information should be exempt from public disclosure. In contrast, certain public interest groups, such as Public Citizen,[14] maintain that the public should not be required to wait until NHTSA formally opens an investigation to have access to EWR information.

NHTSA's interpretation of the TREAD Act and FOIA and their application to the public release of EWR information in now a matter before the courts. It is our opinion, however, that limiting the release of EWR information makes it more critical that NHTSA ensures it has an effective system for thoroughly and consistently analyzing the information to protect the public from safety defects.

RECOMMENDATIONS

To move ahead with the use of EWR information for opening defects investigations, we recommend that the NHTSA Administrator:

1. Ensure the March 2004 $11.46 million O&M cost estimate for FYs 2005 through 2009 is adequately supported.

2. Revise the EWR data analysis plan to better define the advanced analytical capabilities needed, identify the software NHTSA intends to purchase and the associated costs, and establish a schedule with milestone dates for obtaining these capabilities.

3. Establish milestones for completing procedures to incorporate EWR information into the defects screening process and train defect analysts on the new procedures to provide reasonable assurance that decisions relating to the opening of safety defect investigations are based on thorough and consistent analyses of all available defects information.

[14] A national, nonprofit consumer safety advocacy organization founded by Ralph Nader in 1971 to represent consumer interests in Congress, the Executive Branch, and the Courts.

MANAGEMENT COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

A draft of this report was provided to the NHTSA Administrator on July 9, 2004. In its September 15, 2004 response to the draft report (see Appendix), NHTSA concurred with the recommendations, stating that it is taking appropriate actions to implement them. However, NHTSA's comments did not explain what those actions were or when they would be implemented. Therefore, we are requesting more details on the specific steps that NHTSA will take and the time frames for implementing each of the three report recommendations.

NHTSA also expressed concern that the report does not represent an accurate discussion of the agency's estimates of future ARTEMIS O&M costs, overstates the role of EWR data in the identification of safety defects, and does not sufficiently describe the process used by the agency in developing tools to analyze the EWR data. We believe the report accurately discusses these issues and have addressed each of NHTSA's concerns on pages 18 through 21 of this report.

BACKGROUND

Congress passed the TREAD Act in October 2000 to address concerns that the motoring public should be better protected from future "Firestone incidents." Congress was specifically concerned about the sufficiency of defect information and NHTSA's use of this information to identify potential safety defects.

The Act requires the DOT, through NHTSA, to complete 15 rulemakings and 7 studies, reports, and programs in areas such as tire standards and the safety of child restraints. One of the key features of the Act is the requirement for vehicle and equipment manufacturers to routinely submit EWR information, such as property damage claims, communications with customers, and notices of fatalities or serious injuries caused by possible safety defects in vehicles to NHTSA. Manufacturers will submit five categories of information: (1) production data; (2) claims and notices involving death, personal injury, or property damage; (3) information regarding warranty claims; (4) field reports about performance problems; and (5) consumer complaints. To receive and analyze the EWR information submitted by manufacturers, NHTSA established a new safety defects information system called ARTEMIS.

ARTEMIS was developed by the Research and Special Programs Administration's (RSPA) Volpe National Transportation System Center (Volpe). Volpe and its subcontractor, Computer Sciences Corporation (CSC), were to provide project management and technical expertise for the development and integration of ARTEMIS with NHTSA's defects screening and investigation process, while NHTSA retained overall responsibility for the development effort.

RESULTS

NHTSA Has Completed Most of the TREAD Act Requirements

NHTSA has made significant progress implementing the TREAD Act, which imposed 22 separate requirements on NHTSA—the issuance of 15 rulemakings and 7 reports, studies, and programs. Of the 22 requirements, NHTSA has completed 20, including 13[15] of the 15 rulemakings, and the 7 reports, studies, and programs. NHTSA is rewriting the Tire Pressure Monitoring System rule it completed in June 2002, which was overturned by the U.S. Court of Appeals for the Second Circuit on August 6, 2003. In addition, on June 2, 2004, the NHTSA Administrator notified the appropriate congressional committees[16] that he had decided against pursuing the remaining rulemaking on Certification Labels to implement Section 9 of the TREAD Act.[17] See Exhibit E for a detailed listing of these requirements and their completion status.

Completed Requirements. Of the 15 required rulemakings, 6 were categorized as "significant" rules. NHTSA took an average of 2.1 years to issue these rules, which is considerably quicker than the DOT average of 3.0 years. Table 1 provides details on the significant rules required by the TREAD Act and their completion times. Although Table 1 reflects the Tire Pressure Monitoring System rule as being completed in June 2002, as noted above, NHTSA is rewriting this rule based on a ruling from the U.S. Court of Appeals for the Second Circuit.

Table 1
Time to Complete Significant Rules Required by the TREAD Act

Section	Requirement	Completion Date	Years to Complete
3(a)	Report on Defects in Foreign Countries	10/11/02	1.9
3(b)	Early Warning Reporting Requirements	07/10/02	1.7

[15] One rule, regarding Section 13 tire pressure warnings, which was completed on June 15, 2002, was subsequently overturned by the U.S. Court of Appeals for the Second Circuit and is currently being rewritten by NHTSA.

[16] The House Committee on Energy and Commerce, and the Senate Committee on Commerce, Science and Transportation.

[17] This decision was made because Section 9 of the TREAD Act does not require NHTSA to engage in rulemaking to implement it.

10	Endurance and Resistance Standards for Tires	06/26/03	2.6
11	Improved Tire Information	11/18/02	2.0
13	Tire Pressure Monitoring System	06/05/02	1.6
14	Improving the Safety of Child Restraints	06/24/03	2.6
Average Time for Completion			2.1

Source: OIG analysis of NHTSA Final Rules published in the Federal Register.

Of the 15 required rulemakings, 12 had statutory deadlines, of which NHTSA met 7 (58 percent)—greatly exceeding the DOT average of 27 percent. These deadlines consisted of both interim and final deadlines—NHTSA met three of four interim deadlines and four of eight final deadlines. The statutory deadlines that were not met involved complex and controversial requirements, or were being addressed concurrently. For example, NHTSA personnel were responsible for concurrently implementing six separate TREAD Act requirements—two on tire standards and information, three on child restraints, and one on the rollover test program. Of these requirements, two were completed on time and four were completed an average of 9.5 months beyond their statutory deadlines.

The Tire Pressure Monitoring System rule is an example of a complex and controversial requirement. After the Office of Management and Budget (OMB) reviewed the draft final rule, it returned the rule to NHTSA for reconsideration, stating that the draft rule and regulatory impact analysis did not adequately demonstrate that NHTSA had selected the best available method of improving overall vehicle safety. The reconsideration of alternative methods was the primary reason the issuance of the final rule was delayed beyond the statutory deadline. The final rule, published in June 2002, was subsequently challenged in court[18] by consumer advocacy groups who claimed the rule was arbitrary and capricious and did not meet the law's requirements. The U.S. Court of Appeals for the Second Circuit subsequently overturned the rule on August 6, 2003. On September 16, 2004 NHTSA published a revised version of this proposed rulemaking in the Federal Register, and solicited public comments due no later than November 15, 2004.

Initial ARTEMIS Cost and Schedule Estimates Were Not Reliable

NHTSA has completed its new safety defects information system, ARTEMIS. However, the system development effort encountered significant cost increases and schedule delays. As shown in Table 2, the initial cost estimate for the development of ARTEMIS increased from $5.35 million in June 2001 to $9.4

[18] Public Citizen v. Mineta, 340 F.3d 39 (2nd Cir. 2003).

million (76 percent) in March 2004. Project schedule estimates also doubled since the project's inception.

Table 2
Growth in ARTEMIS Cost and Schedule Estimates

	Date Estimate Was Prepared				
	June 2001	**August 2002**	**February 2003**	**June 2003**	**March 2004**
Cost Estimate ($ in Millions)	$5.35	$6.1	$7.1	$9.4	$9.4
Estimated Time to Complete ARTEMIS (Months)	21	26	28	40	42

Source: NHTSA and Volpe Project Documentation

Until June 2003, cost estimates for ARTEMIS were not developed using generally accepted cost estimating techniques. For example, none of the prior estimates were based on detailed system requirements. According to senior Volpe and CSC managers, Volpe cost estimates were based on "high-level" requirements, "experience on the project," and "professional judgment." In addition, these estimates were difficult to compare because, for example, each was developed by different people using different assumptions, and sometimes with little documentation. As a result, none of the prior estimates were reliable for decision-making purposes.

The project schedule has also doubled since inception. When initiated in January 2001, the project was estimated to be completed in 21 months, or by October 2002. As shown in Table 2, the schedule has been extended four times, with actual project completion taking 42 months. NHTSA completed ARTEMIS deployment, including remediation of remaining Phase I problems; establishment of the public Web site for EWR information; receipt of field reports; and completion of all acceptance testing and systems documentation by July 30, 2004.

To compensate for these delays and in response to petitions from manufacturers, NHTSA extended the deadline for receiving the manufacturers' first quarterly EWR aggregate statistical information from August 29, 2003, as originally specified in the EWR rule, to December 1, 2003. Additionally, submission of required historical information was also delayed from September 30, 2003 to January 15, 2004, and the submission of field reports was postponed by an additional 7 months from December 1, 2003 to June 30, 2004. NHTSA subsequently met these milestones.

Senior DOT Officials Took Action to Strengthen Oversight of the ARTEMIS Project

On April 15, 2003, the NHTSA Administrator issued a stop-work order on Phase II systems development in response to cost and schedule concerns regarding the development effort, a lack of available funding for continued work on the project, and the need to assess potential courses of action, brought to his attention, in part, by OIG disclosures. The former Deputy Secretary and the new DOT CIO[19] also became personally involved in oversight of the development efforts, and the preparation of an action plan for completing ARTEMIS. Exhibit F describes the planning and oversight weaknesses that previously existed with the development effort.

Volpe's new project manager, assigned to provide more operational experience to the development team, worked with NHTSA officials and the DOT CIO to address outstanding Phase I performance-related issues and finalize Phase II requirements and acceptance criteria. The new program manager also developed a revised project cost estimate using these requirements and generally accepted estimating techniques, Function Points Analysis,[20] as well as a bottom-up approach.[21] In June 2003, Volpe completed the requirements and revised the development cost estimate to $9.4 million.[22]

Because $8.3 million had been expended as of June 2003, an additional $3.8 million was required to cover the increased cost estimate. Of this amount, $0.4 million was provided from uncommitted funds, $1.1 million of prior year contract recoveries from NHTSA's Operations and Research account was reprogrammed to fund ARTEMIS, and $2.3 million was provided from Volpe's risk mitigation account.[23]

On September 5, 2003, the Secretary of Transportation notified Congress of the corrective actions DOT had taken to complete systems work and limit development costs, including shifting the burden of any future cost overruns related to Volpe program management or oversight deficiencies to the Volpe risk

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[19] Appointed in March 2003.

[20] According to the Software Engineering Institute, Function Points Anaylsis has become generally accepted as an effective way for estimating a software project's size, evaluating support requirements, and estimating system change costs.

[21] This involves subdividing the anticipated project into tasks needed to complete the work, and estimating the cost of each task.

[22] NHTSA also anticipated spending an additional $2.7 million for operations and maintenance costs associated with the phases of ARTEMIS to be incrementally deployed for a total of $12.1 million.

[23] The risk mitigation account was established on July 28, 2003 as a means to hold Volpe accountable for deficiencies like the ARTEMIS cost and schedule problems attributed to Volpe's program management and oversight. This permanent overhead account is available to all Volpe customers with similar problems. The ARTEMIS project is the first project to receive funding from this account.

mitigation account. Changes were also made to formally document these corrective actions, as appropriate. Specifically, the General Working Agreement between NHTSA and Volpe was amended to reflect Volpe's assumption of responsibility for any future cost overruns attributable to its program management and oversight deficiencies. Additionally, the DOT CIO, NHTSA, and RSPA officials agreed to create a formal configuration control board,[24] to approve any changes to these documents.

Support for Life-Cycle Cost Estimates Needed Improvement

In a February 13, 2004 briefing of the DOT Information Technology Investment Review Board,[25] NHTSA identified $17.12 million that it needed for ARTEMIS O&M costs for FYs 2005 through 2009 and beyond. This funding request, detailed in Table 3, was developed as part of NHTSA's Capital Asset Plan and Business Case submission to the Office of Management and Budget (OMB) for FY 2005.

Table 3
Summary of Funding Requests
($ in millions)

Category	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009 And Beyond	Total
Maintenance	$2.50	$2.78	$2.87	$2.93	$6.04	$17.12

Source: December 22, 2003, ARTEMIS Capital Asset Plan and Business Case.

NHTSA officials could not fully support how the estimated $17.12 million in O&M costs were derived. For example, NHTSA identified $537,356 in FY 2005 maintenance costs for "security," of which $211,956 was undefined. NHTSA officials indicated they relied on Volpe to estimate the O&M costs and did not know what process Volpe used to develop and support the estimate. Without support for the entire O&M cost estimate, it is difficult to determine whether all of the requested funding is reasonable.

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[24] The configuration control board is responsible for managing changes to the program baseline. The role of the board is to review and make decisions regarding system change requests, business process changes, and project baseline changes.

[25] This Board, chaired by the DOT Deputy Secretary, includes the DOT Chief Financial Officer, Chief Information Officer, General Counsel, and the Assistant Secretary for Administration, and is responsible for ensuring the DOT's information technology (IT) investments are cost-effective and significantly improve mission performance. To carry out this responsibility, the Board has the authority to approve, modify, or terminate major IT investments.

At a March 26, 2004, special meeting on the ARTEMIS development effort, NHTSA informed the Investment Review Board that it had reduced projected O&M costs to $11.46 million and the period covered from FYs 2005 through 2010 to FYs 2005 through 2009. The budget reduction totaled $2.61 million through FY 2009 and $5.66 million through FY 2010, thus creating an opportunity to put funds to better use. However, we found that NHTSA officials could not provide supporting data to explain the significant decrease in the O&M estimates.

Advanced Analytical Capabilities Needed to Fully Evaluate EWR Information Will Be Obtained Outside of ARTEMIS

As currently developed, ARTEMIS will automatically point analysts to all deaths that manufacturers report so that trends in small numbers of fatalities can be detected. This partially addresses concerns expressed by the Senate over NHTSA's ability to spot trends related to failures in Firestone tires. ARTEMIS will also permit analysts to retrieve field reports based on vehicle or equipment specifications. However, ARTEMIS cannot perform more advanced trend and predictive analyses that were originally envisioned as being needed to identify defects warranting investigation. For example, the system cannot automatically notify analysts if consumer-reported complaints and manufacturer-reported warranty claims are both increasing due to vehicle steering problems.

In June 2003, senior NHTSA officials decided these more advanced analytical capabilities could be more effectively acquired outside of the systems development effort. This decision was made to give NHTSA time to obtain some experience working with the EWR information and to better understand how different manufacturers reported the information.

In January 2004, NHTSA published a draft data analysis plan presenting a "high-level" description of the analytical capabilities needed to analyze EWR information. However, NHTSA has not finished defining these capabilities, identified all software needed to analyze the EWR information, outlined associated costs, or established a schedule for implementing these capabilities.

On May 10, 2004, NHTSA and the Federal Aviation Administration (FAA) signed a Memorandum of Understanding in which the FAA agreed to help NHTSA develop a prototype data system to review EWR reports submitted by manufacturers. NHTSA is working with the FAA's National Aviation Safety Data Analysis Center, an experienced leader in safety-data analysis and data-management technologies, to take advantage of this expertise and identify advanced analytical capability options. NHTSA has also consulted with the Consumer Product Safety Commission and others. Until advanced analytical capabilities are implemented; however, analysts will not be able to fully utilize the EWR information for identifying potential safety defects.

NHTSA's Process for Screening Defects and Opening Priority Investigations Has Improved, but has Not Yet Fully Incorporated Analysis of EWR Information

In January 2002, we reported that NHTSA did not have a consistent process for identifying defects and opening defect investigations to ensure the highest priority cases were investigated. We recommended that NHTSA: (1) develop new procedures for analyzing defects and opening investigations; (2) 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; and (3) train personnel on new defect analysis and investigative procedures. See Exhibit G for a description of the screening and investigation process.

In response to prior OIG recommendations, NHTSA established a peer review panel to help ensure that safety defect information is thoroughly and consistently analyzed and to make decisions on whether defect investigations should be opened. Establishing the peer review panel has improved the defect screening process by documenting all potential investigations, and if an investigation is not opened, the reasons why. However, until an advanced analytical capability is developed and implemented, safety defect analysts will be unable to fully utilize the EWR information. For example, NHTSA will not be able to perform data and text mining[26] of the several terabytes of EWR information anticipated from manufacturers to find trends and identify potential defects.

In the absence of the advanced analytical capabilities, procedures to guide defect analysts in evaluating safety defect information are essential. However, NHTSA has not yet fully determined how to incorporate the EWR information into the screening process because it was waiting to begin receiving the large volume of EWR information before determining how best to revise the process.

We recognize that decisions to open investigations involve considerable professional judgment. However, without procedures to guide analysts on how to use the EWR information, NHTSA cannot ensure that EWR and other sources of information, such as technical service bulletins, have been thoroughly and consistently analyzed to determine what information should be presented for peer review panel consideration. This situation is of particular concern because a primary finding from Senate hearings held in September 2000, which led Congress to pass the TREAD Act, was that NHTSA did not use the data it possessed to spot

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[26] An information extraction activity designed to discover hidden facts contained in databases. Using a combination of machine learning, statistical analysis, modeling techniques and database technology, data mining finds patterns and subtle relationships in data and infers rules that allow the prediction of future results.

trends related to failures in Firestone tires.[27] Also, NHTSA has not yet developed a formal training program to guide defect analysts and help ensure consistency in safety defect screening operations as it agreed to do in response to recommendations from our January 2002 report. NHTSA has put on hold its plans for doing this until after it has determined how best to use EWR information submissions from manufacturers.

NHTSA Will Publicly Release Only Some of the EWR Information

In July 2003, NHTSA issued a final rule establishing public disclosure guidelines for EWR information submitted by manufacturers.[28] There are five categories of EWR information: (1) manufacturers' production numbers; (2) claims and notices (including lawsuits) involving death, personal injury, or property damage; (3) warranty claims; (4) field reports regarding failure, malfunction, lack of durability, or other performance problems; and (5) number of consumer complaints (see Exhibit C for complete category definitions).

Although all of the EWR information would be available for NHTSA's identification of potential safety defects, NHTSA will release all information on claims and notices (involving death, personal injury, and property damage) and production numbers for only light vehicles prior to opening a defect investigation. This information, representing one of five categories and part of a second category of EWR data, is only a portion of the information to be reported by manufacturers. NHTSA reasoned, in part, that this information was often publicly available, and, therefore, should not be withheld from public disclosure by the FOIA. Once an investigation is initiated, NHTSA customarily releases certain otherwise confidential information in its possession.

Based on its interpretation of the TREAD Act and FOIA, NHTSA concluded that information related to warranty claims, consumer complaints, most production numbers, and field reports is not subject to disclosure because the release of this information could: (1) lead to less candor from field personnel, resulting in less reliable information, and would discourage marketing efforts that lead to more complete and useful information; (2) be analyzed by competitors to identify suppliers, production cycles, and the reliability of products; (3) cause manufacturers to limit current warranty policies, and discourage their expansion; and (4) discourage companies from actively pursuing or restrict their ability to

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[27] In September 2000, Senator John McCain, then Ranking Minority Member of the Committee on Commerce, Science, and Transportation, held hearings to determine why NHTSA, Firestone Tire, and Ford Motor Company did not identify tread separation defects sooner to prevent the 103 deaths and over 400 injuries associated with defective Firestone tires. As of October 2001, these numbers had increased to over 400 deaths and 800 injuries.

[28] 68 Fed. Reg. 44,209 (July 28, 2003) codified at 49 C.F.R. Part 512.

receive customer feedback. NHTSA concluded that disclosure, therefore, could cause competitive harm to manufacturers or impair the Government's ability to obtain like information in the future, or both.[29]

Some public interest groups, such as Public Citizen, and some manufacturers do not agree with NHTSA's interpretation of what EWR information is subject to public disclosure. Public interest groups maintain that the public should not be required to wait until NHTSA formally opens an investigation to have access to EWR information. In the notice and comment period for NHTSA's rule, Public Citizen argued that the public is entitled to all EWR information submitted in order to make informed decisions regarding vehicle safety. On March 22, 2004, Public Citizen filed a lawsuit in the U.S. District Court for the District of Columbia challenging NHTSA's disclosure rule[30] and whether adequate notice was given regarding the scope of the rulemaking. As of September 21, 2004 this litigation was still pending.[31]

Contrary to Public Citizen's position, the Rubber Manufacturers Association believes that until the opening of a formal defect investigation, all EWR information should be exempt from public disclosure because disclosure would result in competitive harm. They have also argued that a colloquy on the House Floor during consideration of the TREAD Act in October 2000, shows that Congress intended to protect all EWR information from disclosure before a defect investigation is initiated. The Association relies on the colloquy in which two members agreed that "to protect the confidentiality of this new early stage information, the bill provides . . . that such information shall be treated as confidential unless the Secretary makes a finding that disclosure would assist in ensuring public safety."[32]

NHTSA's interpretation of the TREAD Act and FOIA and their application to the public release of EWR information is now before the courts. We are not taking a position on this issue. However, it is our opinion that limiting the release of EWR information makes it more critical for NHTSA to ensure it is carefully analyzing the information to protect the public from safety defects at as early a stage as possible.

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[29] 49 CFR Part 512, Appendix C.

[30] *Public Citizen, Inc. v. Mineta*, Civ. No. 04-463, filed March 22, 2004 (D.D.C.).

[31] The Rubber Manufacturer's Association filed a motion to intervene on June 21, 2004, which the court granted on June 25, 2004. The DOT filed its answer to Public Citizen's complaint on June 21, 2004.

[32] Congressional Record H9629 (October 10, 2000).

RECOMMENDATIONS

We recommend that the NHTSA Administrator:

1. Ensure the March 2004 $11.46 million O&M cost estimate for FYs 2005 through 2009 is adequately supported.

2. Revise the EWR data analysis plan to better define the advanced analytical capabilities needed, identify the software NHTSA intends to purchase and the associated costs, and establish a schedule with milestone dates for obtaining these capabilities.

3. Establish milestones for completing procedures to incorporate EWR information into the defects screening process and train defect analysts on the new procedures to provide reasonable assurance that decisions relating to the opening of safety defect investigations are based on thorough and consistent analyses of all available defects information.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

In its September 15, 2004 response to the draft report (see Appendix), NHTSA concurred with the recommendations, stating that it is taking appropriate actions to implement them. However, NHTSA's comments did not explain what those actions were or when they would be implemented. Therefore, we are requesting more details on the specific steps that NHTSA will take and the time frames for implementing each of the three report recommendations. We also updated our report to reflect the August 13, 2004 issuance of NHTSA's rule on the Disposition of Recalled Tires, which implements section 7 of the Tread Act.

NHTSA also expressed concern that the report does not represent an accurate discussion of the agency's estimates of future ARTEMIS O&M costs, overstates the role of EWR data in the identification of safety defects, and does not sufficiently describe the process used by the agency in developing tools to analyze the EWR data. We believe the report accurately discusses these issues and have addressed each of NHTSA's concerns below.

ARTEMIS Costs. NHTSA takes issue with the report's description of the process by which the O&M cost estimates were reduced and the OIG's finding that there is "weak justification" for the current estimate. NHTSA states that as the OIG is aware, the initial O&M estimate was put into the ARTEMIS business case in the fall of 2003 merely as a "place holder" and was derived by extrapolating from early, pre-production estimates. As the Agency gained experience in operating ARTEMIS, in early 2004, it prepared (and the NHTSA

CIO approved) a detailed O&M estimate that reflected the actual cost experience. Finally, NHTSA never sought long-term O&M funds, and considers it inappropriate for the OIG to suggest that its efforts contributed to "creating an opportunity to put funds to better use."

We believe NHTSA's characterization of the initial cost estimate as "merely a place holder" further supports our finding that the justification for the initial cost estimate was weak. When we questioned the original estimate, NHTSA officials told us they relied on Volpe to develop the cost estimate and did not know what process Volpe used in estimating the cost. Also, not all components of ARTEMIS were in pre-production in the fall of 2003, as NHTSA's response claims. NHTSA incrementally deployed ARTEMIS, with Phase I becoming operational in December 2002. As a result, NHTSA should have had 9 months of actual O&M cost experience on Phase I upon which to base a portion of its initial estimate.

NHTSA's response also suggests that the OIG, knowing that the original cost estimate was a place holder, should not have criticized the reliability of the estimate. Yet, NHTSA presented this estimate to the IRB for its FY 2005 budget submission to the OMB. In March 2004, NHTSA reduced its cost estimate from $17.12 million to $11.46 million and the period covered from FYs 2005 to 2010 to FYs 2005 to 2009. While we found the $11.46 million estimate to be more reasonable, portions of the revised estimate, such as the "security" costs still contain weak justification.

Finally, the Inspector General (IG) Act of 1978, as amended, directs each Inspector General to prepare a semi-annual report to the Congress that, among other things, identifies the dollar value of "recommended funds that can be put to better use" by management. The Act specifies that these funds should include planned outlays and does not differentiate between short-term and long-term outlays. As mentioned earlier, the ARTEMIS funding request, developed as part of NHTSA's FY 2005 budget submission to OMB, reduced projected O&M outlays for ARTEMIS from $17.12 million to $11.46 million after the OIG questioned these costs. Therefore, the report's characterization of the O&M funds that could be put to better use is appropriate and consistent with the provisions of the IG Act.

EWR Data and Analytical Tools. NHTSA expressed concern that the report could be read to overstate the ability of EWR data to point to safety defects in the absence of further inquiry and investigation. For example, according to NHTSA, the data do not contain sufficient detail to allow identification of potential safety defects without further inquiry and investigation, primarily because the categories of components and systems in vehicles, child restraint systems, and tires are extremely broad.

NHTSA also believes that the report does not sufficiently describe its efforts to develop analytical tools to analyze the EWR data. NHTSA states that it is in the process of developing these tools to help it use the EWR data as a pointer to issues worthy of further assessment, which was impossible to do earlier without first having access to at least a sampling of actual EWR data from manufacturers. Further, NHTSA asserts that its decision not to incorporate advanced analytical capabilities into ARTEMIS was made in the interest of efficiency, quality, and cost. NHTSA states that ARTEMIS provides some analytical capabilities, but the use of cost-effective commercial off-the-shelf products would provide greater flexibility at a lower cost.

We do not believe the report overstates the ability of ARTEMIS to point to safety defects. The report contains no references to the use of the EWR data to identify safety defects without further analysis or investigation. In fact the report states that ARTEMIS cannot provide the more advanced trend analyses needed to find patterns and subtle relationships among the various types of EWR data to point analysts to potential defects *warranting investigation* (emphasis added).

Further, the report describes OIG's knowledge of NHTSA's efforts to develop analytical tools to analyze the EWR data. Despite repeated attempts to get more details, none was forthcoming. For example, the audit team attempted on May 20, 21, and 25, and August 2, 2004 to obtain additional details about NHTSA's plans, but NHTSA did not provide the OIG a description of its efforts beyond what is noted in the report. We also note that NHTSA's response to the report asserts insufficient discussion is given to agency efforts to develop these tools, but does not provide any details about its efforts, which could have been incorporated into the final report.

Finally, the report acknowledges that ARTEMIS has some analytical capabilities. We also do not take issue with NHTSA's decision to acquire more advanced analytical capabilities outside of the systems development effort. If NHTSA can acquire the advanced analytical capabilities more cost effectively through the use of commercially available software, it should expeditiously do so, especially since NHTSA began receiving EWR information in December 2003. We are requesting more details from NHTSA on the specific analytical tools it will use and its time frames for acquiring them.

Confidentiality of EWR Data. NHTSA expressed concern with the report's characterization of the Agency's regulation on the disclosure of EWR data. NHTSA states that it reviewed public comments and carefully construed the significant legal issues. Although NHTSA does not specify what its concern is with the report's characterization of the regulation, it states that disclosure decisions should be made not with regard to the volume of information disclosed, but rather with regard to the character of the data and applicable law.

We believe the report's characterization of the EWR rule is a factual presentation of the information that will be released under the rule, the criteria NHTSA used in determining what information would be subject to disclosure, and the disagreement between public interest groups and manufacturers over NHTSA's interpretation of what EWR information to disclose. In fact, the report states that the OIG is not taking a position on the reasonableness of NHTSA's interpretation of the Tread Act and the FOIA regarding this issue.

ACTION REQUIRED

Although NHTSA concurred with the recommendations, stating that it is taking appropriate actions to implement them, the agency did not explain what those actions were or when they would be implemented. Therefore, we do not have enough information to consider NHTSA's comments responsive to the report recommendations. In accordance with DOT Order 8000.1C, we are requesting that NHTSA provide more details, within 30 days, on the specific steps that it will take and the time frames for implementing each of the three report recommendations.

We appreciate the courtesies and cooperation of NHTSA, RSPA, Volpe National Transportation Systems Center, and representatives of the Office of the DOT Chief Information Officer during this audit. If you have any questions concerning this report, please call me at (202) 366-1992 or Debra Ritt, Assistant Inspector General for Surface and Maritime Programs, at (202) 366-5630.

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cc: Deputy Administrator, Research and Special Programs Administration
Acting Deputy Director, Volpe National Transportation Systems Center
DOT Chief Information Officer

EXHIBIT A. SCOPE AND METHODOLOGY

We conducted our audit in accordance with Government Auditing Standards as prescribed by the Comptroller General of the United States. We performed our work from January 2003 through June 2004 at NHTSA Headquarters in Washington, D.C., and the Volpe National Transportation Systems Center in Cambridge, Massachusetts. We accomplished the audit objectives by interviewing key staff, such as the DOT CIO, NHTSA's Administrator, Chief Counsel, Assistant Administrator for Enforcement, and Director of the Office of Safety Defects Investigation. We also obtained and reviewed documentation, and verified the status of actions taken by NHTSA and Volpe personnel.

To determine NHTSA's progress in implementing required TREAD Act rulemakings, studies, reports, and programs, we reviewed the TREAD Act requirements and associated statutory deadlines, and evaluated NHTSA's actions to complete the requirements.[1] We assessed the status of actions not yet completed, determined when NHTSA planned to complete the remaining TREAD Act requirements, and assessed reasons for meeting or not meeting deadlines through discussions with key management officials. In addition, we discussed the effectiveness of NHTSA's actions to implement TREAD Act requirements with officials from a public safety advocacy organization.

To determine whether ODI had the appropriate information systems infrastructure and processes in place to promptly identify potential defects as intended by the TREAD Act, we analyzed the status of the safety defects information system called ARTEMIS—Advanced Retrieval (Tire, Equipment, Motor Vehicle) Information System—under development at Volpe. We evaluated Volpe's progress in developing software for the new system, assessed the reliability of system development costs and project duration estimates, and discussed development progress with Volpe and their contractor, CSC. We also evaluated the contract oversight and administrative services provided by Arthur Andersen and MITRE, reviewed their reports to NHTSA assessing ARTEMIS quality and completeness, and discussed their impact with MITRE representatives.

To evaluate whether sufficient support was available for NHTSA's O&M cost estimates for ARTEMIS, we reviewed information NHTSA provided to the DOT Investment Review Board supporting the cost estimates made as part of the capital asset plan and business case submission to the OMB. As part of the DOT capital planning and investment control process, NHTSA was required to develop a business case for ARTEMIS with accurate, reliable, and up-to-date data on project costs. We met with NHTSA officials responsible for preparing the O&M cost

[1] Any action completed within 10 days of the statutory deadline was considered to have met the deadline.

estimates for ARTEMIS to discuss the basis for and the assumptions used in formulating the O&M cost estimates. We also reviewed a "high-level" breakdown of the O&M cost estimates for ARTEMIS provided by NHTSA.

We obtained information from NHTSA and Volpe financial management systems (the Departmental Accounting and Financial Information System and its replacement system, Delphi) to determine the cumulative expenditures for ARTEMIS. However, we did not verify that the computer-provided output was correctly processed.

We also assessed the actions NHTSA, Volpe, and DOT CIO officials were taking to mitigate development risk, and ensure ARTEMIS would meet TREAD Act requirements as well as cost and schedule estimates. We evaluated NHTSA's actions to ensure that data transferred from ODI's two legacy systems to ARTEMIS would be accurate and complete.

To determine whether NHTSA had established processes to ensure consistency in recommending and opening defect investigations and ensuring the highest priority cases are investigated, we reviewed NHTSA's actions to establish a peer review panel. We assessed NHTSA's efforts to integrate the panel into NHTSA's overall safety defect screening and investigation process. We determined whether the peer review function had written procedures, documented decisions, and required specific analyses for opening defect investigation cases. We also verified the extent that a formal training program existed for screeners and whether personnel had been trained in defect analysis procedures in preparation to open new cases.

We also examined NHTSA's actions related to publishing a final rule establishing guidelines for limiting public disclosure of EWR information. To do this, we reviewed TREAD Act and FOIA requirements, NHTSA documentation related to the final rule, and public comments concerning the rule, and held discussions with NHTSA officials and a public safety advocacy organization.

EXHIBIT B. PRIOR AUDIT COVERAGE

Reviews by the Office of Inspector General

In response to a request from Senator John McCain, then Ranking Minority Member of the Committee on Commerce, Science, and Transportation, in January 2002, the Office of Inspector General (OIG) issued, Report Number MH-2002-071, "Review of the Office of Defects Investigation." The OIG found that NHTSA had made progress in meeting TREAD Act requirements, but still faced challenges in fully implementing the Act and improving its ability to identify potential safety defects. Specifically, the report recommended that NHTSA:

- Complete TREAD Act rulemakings, most importantly the rule on EWR requirements, in a timely and comprehensive manner.

- Develop a new defect information management system to replace the 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.

- 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.

Reviews by the U.S. General Accounting Office

In January 2001, the General Accounting Office (GAO)[1] issued a report GAO-01-225, "NHTSA's Ability to Detect and Recall Defective Replacement Crash-Parts Is Limited." The review was initiated because of potential concerns about the safety of aftermarket crash parts and recycled airbags. Crash parts are generally made of sheet metal or plastic, installed on the exterior of a motor vehicle, and include bumper components, hoods, doors, fenders, and trunk lids.

GAO found that NHTSA has broad authority to set safety standards for aftermarket crash parts. However, because NHTSA had not determined that these parts posed a significant safety concern, it had not developed safety standards for them. GAO also found that NHTSA's ability to identify and recall unsafe aftermarket parts was limited, because NHTSA relies heavily on a complaint database that may contain only a small portion of complaints that customers make

[1] Renamed the Government Accountability Office as of July 7, 2004.

to manufacturers. In addition, aftermarket crash parts may not be identified as such in the database.

Exhibit B. Prior Audit Coverage

EXHIBIT C. DESCRIPTION OF EWR INFORMATION CATEGORIES

The following generally describes the categories of EWR information to be submitted by vehicle and equipment manufacturers.[1]

1. Production Numbers

The number of vehicles, tires, and child restraint systems, by make, model, and model (or production) year.

2. Claims and Notices Involving Death, Personal Injury, and Property Damage

The make, model, model year, and vehicle identification number (VIN) of the vehicle involved, the date of the incident, the number of deaths and/or injuries involved, the state or foreign country in which the incident occurred, and each system or component that is referred to in the claim or notice involving:

- a death that occurred in the United States that is identified in a claim;
- a death in the United States that is identified in a notice alleging or proving that the death was caused by a possible defect in the manufacturer's product;
- each death occurring in a foreign country that is identified in a claim involving the manufacturer's product, if it is identical or substantially similar to a product that the manufacturer has offered for sale in the United States; and
- an injury that occurred in the United States that is identified in a claim, or that is identified in a notice alleging or proving that the injury was caused by a possible defect in the manufacturer's product.

In addition, the larger vehicle and tire manufacturers must report the numbers of property damage claims that occurred in the United States that involve specified components and systems, regardless of the amount of such claims.

[1] NHTSA's Final Rule on Confidential Business Information, 68 Fed. Reg. 44209 (July 28, 2003).

3. Information Regarding Warranty Claims

The number of paid warranty claims (adjustments for tire manufacturers), including extended warranty and good will, that involved specified components and systems and that arose in the United States. Manufacturers of child restraint systems must combine these with the number of reportable consumer complaints.

4. Field Reports

The total number of field reports received from the manufacturer's employees, representatives, and dealers; from fleets, that are related to problems with specified components and systems; and for vehicles and restraints offered for sale, sold, or leased in the United States. In addition, manufacturers must provide copies of certain field reports received from their employees, representatives, and fleets, but are not required to provide copies of reports received from dealers.

5. Consumer Complaints[2]

Communication of any kind that is made by a consumer (or other person) to or with a manufacturer addressed to the company, an officer thereof or an entity thereof that handles consumer matters, a manufacturer Web site that receives consumer complaints, a manufacturer electronic mail system that receives such information at the corporate level, or otherwise received by a unit within the manufacturer that receives consumer inquiries or complaints. These include telephonic complaints expressing dissatisfaction with a product or relating the unsatisfactory performance of a product, any actual or potential defect in a product, or any event that allegedly was caused by any actual or potential defect in a product, but not including a claim of any kind or a notice involving a fatality or injury.

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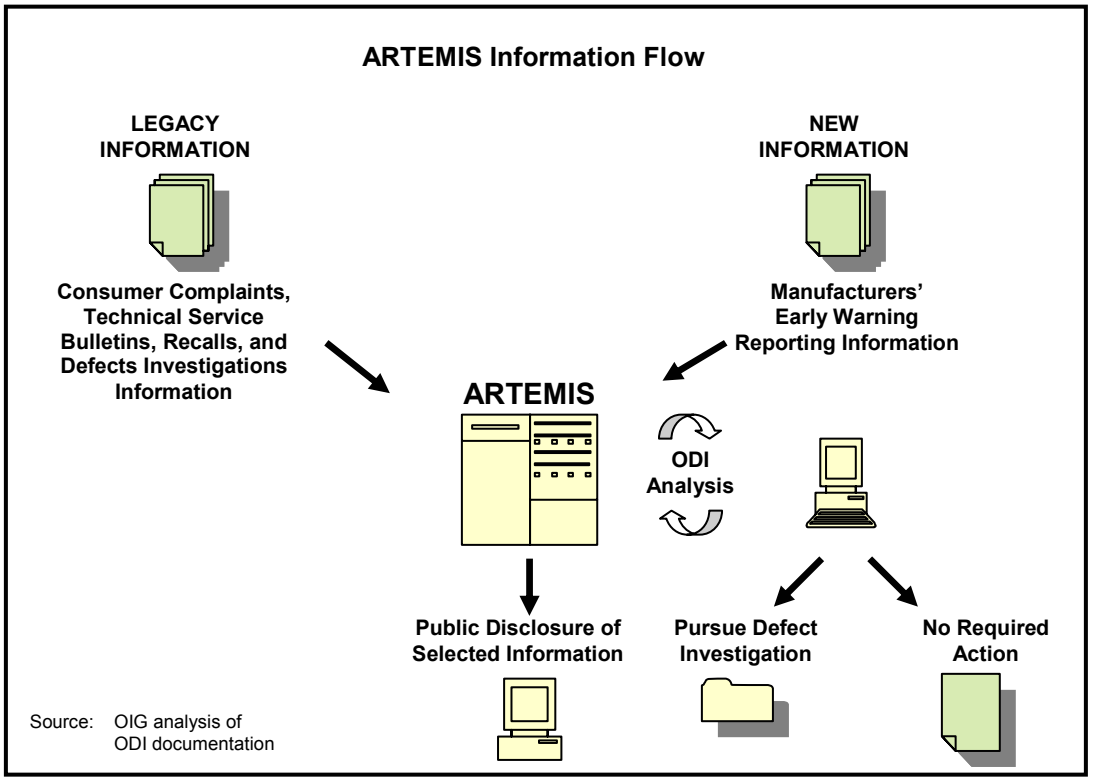
[2] Child restraint system manufacturers will report consumer complaints and warranty data together. As to those manufacturers, the data are considered warranty data for purposes of this rule.

EXHIBIT D. DESCRIPTION OF ARTEMIS

ARTEMIS is a defect data storage and monitoring system and is being developed in two phases. Phase I replaces two existing legacy safety defect information systems[1] by combining these systems through the linking of the information database to the corresponding electronic images of relevant documents, such as letters and reports that had been scanned into the system. ARTEMIS enhances legacy system capabilities by providing new capabilities for ad hoc query and reporting, data analysis and monitoring, automated workflow including the electronic routing and tracking of work-related documents, and automatic system-assisted document generation, such as response letters to consumers. Phase II creates new capabilities for receiving, storing, and analyzing EWR information that vehicle and equipment manufacturers periodically submit as required by the TREAD Act. The Figure below generally depicts the ARTEMIS information flow.



[1] The Defect Information Management System (DIMS) and the Electronic Document Information Management System (EDIMS).

ARTEMIS consists of both an Intranet application for internal NHTSA use as well as an Internet application for public access. Internally, NHTSA analysts and investigators use ARTEMIS to identify potential safety defects and develop the rationale for initiating safety defect investigations. The public Web site, which can be found at http://www-odi.nhtsa.dot.gov/cars/problems/defect/, allows consumers access to information on safety recalls, consumer complaints, defect investigations, and service bulletins concerning vehicles, vehicle equipment, tires, and child safety seats to facilitate more fully informed decisionmaking. Consumers can also electronically file safety defect complaints directly into the vehicle owner complaint portion of the ARTEMIS database.

EXHIBIT E. STATUS OF TREAD ACT REQUIREMENTS

TREAD Act Required Rulemakings						
Requirement		**NHTSA Action**	**Statutory Deadline**	**Date Complete**	**Timeliness vs. Statute**	**Status**
1	**Section 3(a). Report on Defects in Foreign Countries**	ANPRM[1]	None	01/22/01	N/A	COMPLETED. One petition for reconsideration had been received and resolved.
		NPRM	None	10/11/01	N/A	
		Final Rule	None	10/11/02	N/A	
2	**Section 3(b). Early Warning Reporting Requirements**	ANPRM	02/01/01	01/22/01	10 Days Early	COMPLETED. Petitions for reconsideration were grouped into two sets. The first set was addressed on April 15, 2003; the second set was addressed on June 11, 2003.
		NPRM	None	12/21/01	N/A	
		Final Rule	06/30/02	07/10/02	10 Days Late	
3	**Section 3(c). Sale or Lease of Defective or Noncompliant Tire**	IFR[2]	01/29/01	12/26/00	1 Month Early	COMPLETED. IFR was issued before deadline. Comments were considered in Final Rule.
		Final Rule	None	07/23/01	N/A	
4	**Section 5(a). Civil Penalties**	Final Rule	None	11/14/00	N/A	COMPLETED. Final Rule issued.
5	**Section 5(b). Criminal Penalties**	IFR	01/29/01	12/26/00	1 Month Early	COMPLETED. IFR issued by deadline; however, NHTSA was unable to issue the notice for comment and final rule within 90-day requirement.
		Final Rule	None	07/24/01	N/A	

Source: OIG analysis of NHTSA rulemaking activities published in the Federal Register.

[1] Advance Notice of Proposed Rulemaking.

[2] Interim Final Rule.

TREAD Act Required Rulemakings						
Requirement		**NHTSA Action**	**Statutory Deadline**	**Date Complete**	**Timeliness vs. Statute**	**Status**
6	**Section 6(a). Acceleration of Manufacturer Remedy Program**	NPRM	None	12/11/01	N/A	COMPLETED.
		Final Rule	None	12/05/02	N/A	
7	**Section 6(b). Reimbursement Prior to Recall**	NPRM	None	12/11/01	N/A	COMPLETED.
		Final Rule	None	10/17/02	N/A	
8	**Section 7. Disposition of Recalled Tires**	NPRM	None	12/18/01	N/A	COMPLETED.
		Supplemental NPRM	None	07/26/02	N/A	
		Final Rule	None	08/13/04	N/A	
9	**Section 8. Sales of Replaced Equipment**	NPRM	None	07/23/01	N/A	COMPLETED.
		Final Rule	None	04/23/02	N/A	
10	**Section 9. Certification Label**	NPRM	None	06/02/04	N/A	CLOSED. On June 2, 2004, the NHTSA Administrator decided against pursuing rulemaking to implement this section of the TREAD Act.
		Final Rule	None	06/02/04	N/A	
11	**Section 10. Endurance and Resistance Standards for Tires**	NPRM	None	03/05/02	N/A	COMPLETED. Scope of NPRM was revised due to comments regarding costs/benefits of rule. Comment period extended 60 days.
		Correction to NPRM	None	04/03/02	N/A	
		Final Rule	06/01/02	06/26/03	13 Months Late	

Exhibit E. Status of Tread Act Requirements

TREAD Act Required Rulemakings						
Requirement		**NHTSA Action**	**Statutory Deadline**	**Date Complete**	**Timeliness vs. Statute**	**Status**
12	**Section 11. Improved Tire Information**	ANPRM	12/01/00	12/01/00	Met Deadline	COMPLETED. Did not meet deadline. Due to concerns relating to costs/benefits of rulemaking, it took additional time to obtain OST and OMB approval.
		NPRM	None	12/19/01	N/A	
		Final Rule	06/01/02	11/18/02	5 ½ Months Late	
13	**Section 13. Tire Pressure Warning**	NPRM	None	07/26/01	N/A	RULE IS BEING REWRITTEN. A final rule was issued June 5, 2002. However, on August 6, 2003, the U.S. Court of Appeals for the Second Circuit overturned the rule, citing that the rule was unsafe, and ordering NHTSA to rewrite the rule. NHTSA is planning to publish a new Notice of Proposed Rulemaking in the Federal Register by September 30, 2004.
		Final Rule (overturned)	11/01/01	06/05/02	7 Months Late	
14	**Section 14. Improving the Safety of Child Restraints**	NPRM (initiate)	11/01/01	05/01/02	6 Months Late	RULE COMPLETED; REPORT TO CONGRESS PENDING. The rule was to include both frontal and side impact issues. Due to lack of side impact data, OST/OMB requested the two issues be separated. This rule addresses frontal impact issues.
		Final Rule	11/01/02	06/24/03	8 Months Late	
		Report to Congress	07/24/03	Pending	TBD	

Exhibit E. Status of Tread Act Requirements

TREAD Act Required Rulemakings						
Requirement		**NHTSA Action**	**Statutory Deadline**	**Date Complete**	**Timeliness vs. Statute**	**Status**
15	**Section 14 (b)(5). Improve Child Restraint Labeling**	NPRM (initiate)	11/01/01	11/01/01	Met Deadline	COMPLETED. Final rule on Improving Child Restraint Labeling was issued separately from the remainder of Section 14, Improving the Safety of Child Restraints.
		Final Rule	11/01/02	10/01/02	1 Month Early	

TREAD Act Required Reports, Studies, and Programs						
Requirement		**NHTSA Action**	**Statutory Deadline**	**Date Complete**	**Timeliness vs. Statute**	**Status**
1	**Section 3(d). Insurance Study**	Transmit to Congress	03/01/01	03/05/01	4 Days Late	COMPLETED.
2	**Section 12. Rollover Tests**	Publish Request for Comments	None	07/03/01	N/A	COMPLETED. Controversy surrounding sport utility vehicle (SUV) rollovers further delayed issuance.
		NPRM	None	10/07/02	N/A	
		Final Policy Statement	11/01/02	10/14/03	11 ½ Months Late	
3	**Section 14(g). Child Restraint Safety Ratings Program**	Publish notice on test results, proposal, and request for comments	11/01/01	11/06/01	5 Days Late	COMPLETED. Consumer information programs are established upon notification of the public rather than through issuance of NPRM/Final rule.
		Publish notice announcing CRS rating system	11/01/02	11/05/02	4 Days Late	

Exhibit E. Status of Tread Act Requirements

TREAD Act Required Reports, Studies, and Programs						
Requirement		**NHTSA Action**	**Statutory Deadline**	**Date Complete**	**Timeliness vs. Statute**	**Status**
4	**Section 14(h). Booster Seat Study**	Report to Congress	11/01/01	11/27/02	13 Months Late	COMPLETED. The Booster Seat Report to Congress was initially linked to the Booster Seat Education Program, both mandated by the Act. A decision was made, after the initial deadline, to separate the reports.
5	**Section 14(i). Booster Seat Education Program**	Publish Strategic Plan	11/01/01	08/07/02	9 Months Late	COMPLETED. NHTSA determined that the specified goal was not attainable, and therefore had to develop revised goals.
6	**Section 15. Improving Criteria Used in a Recall**	Report to Congress	11/01/01	01/31/02	3 Months Late	COMPLETED. OIG Report "Review of the Office of Defects Investigation," January 3, 2002, was used by NHTSA to satisfy requirement.
	Section 16. Follow-Up Report on Implementation of the Act	Report to Congress	11/01/01	12/17/01	1 ½ Months Late	COMPLETED.

Exhibit E. Status of Tread Act Requirements

EXHIBIT F. ARTEMIS DEVELOPMENT PLANNING AND OVERSIGHT WEAKNESSES

The cost and schedule problems experienced in developing ARTEMIS were attributable to Volpe and NHTSA's poor project planning and execution.[1] Specifically:

- Volpe initiated the ARTEMIS software development without a completed project management plan or finalized system requirements. It also did not follow a structured information systems development process as required by its May 1993 system software development manual. As a result, the ARTEMIS development effort proceeded without an appropriate systems development strategy, sequence of events and milestones, or reliable cost and schedule estimates for the design, development, and implementation of the project.

- In response to concerns about the project development effort, in April 2003, senior DOT officials,[2] and NHTSA, RSPA, and Volpe officials significantly increased oversight of NHTSA's formalization of ARTEMIS Phase II requirements. These requirements were finalized in June 2003; however, the systems development effort was permitted to continue before there was clear agreement of what was to be developed in an attempt to meet the then July 1, 2003, schedule milestone for deploying the first part of Phase II.[3]

- Because NHTSA did not have its own CIO until May 2003, it relied too heavily on Volpe for technical guidance to monitor the performance of information technology programs. Additionally, its project team lacked

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[1] On July 10, 2003, at the request of the Chairman of the House Appropriations Subcommittee on Transportation, Treasury and Independent Agencies, the Office of Inspector General initiated an audit of Volpe to determine: (1) how Volpe's role and functions have changed over the years and whether current Volpe activities meet DOT needs; (2) if Volpe has the necessary financial controls in place to ensure its service fees are appropriate; and (3) DOT's role in overseeing Volpe and whether the role is adequate to ensure that Volpe provides cost-effective services. On August 4, 2004 the Office of Inspector General issued the first two of three reports addressing these objectives, and is awaiting management comments on the third report, which will be issued later this year.

[2] Including the Secretary, former Deputy Secretary, and Chief Information Officer.

[3] After Phase II requirements were defined in June 2003, milestone dates for EWR information submissions from manufacturers were revised. Phase II was then divided into three subphases to meet the newly revised milestones. Phase IIA (manufacturers' aggregate statistical information submission) was completed in October 2003. Phase IIB (foreign recall information submission) was completed in December 2003. Phase IIC (capability to receipt and process manufacturers' field reports) was completed in March 2004.

expertise in information systems development. As a result, NHTSA did not always act on problem indicators identified by project staff. For example, two ARTEMIS program status briefings to the ARTEMIS Oversight Committee and the NHTSA Investment Review Board in January 2003 identified problems with the development, such as multiple revisions to completion dates, unclear requirements, and changing priorities. Although Volpe briefed NHTSA that the project's cost and schedule were under control, within 1 month of the January briefings, cost estimates increased by $1 million; and within 2 months project completion slipped by 5 months.

- In addition, the DOT CIO staff was not actively engaged in monitoring and evaluating the performance of the ARTEMIS project, as required by the Clinger-Cohen Act,[4] until April 2003—after significant cost, schedule, and funding problems had been identified. In our opinion, prior to this time, CIO personnel did not have a solid basis for advising the Secretary on whether or not to continue, modify, or terminate the project. Increased DOT CIO involvement throughout the ARTEMIS development effort would have been especially beneficial, given the lack of a NHTSA CIO, and because the NHTSA project team lacked information systems development expertise.

In February 2002, NHTSA contracted with Arthur Andersen to assess ARTEMIS project management activities, and in July 2002, contracted with MITRE Corporation to provide independent program management guidance for the ARTEMIS development effort. However, neither contractor performed an independent verification and validation (IV&V), as recommended in our January 2002 report, to ensure that ARTEMIS would meet NHTSA's needs and that problems were identified early before they resulted in significant cost increases and schedule slippages. IV&V is a comprehensive independent test of system software during development that primarily determines whether (1) software requirements are correctly and completely implemented, and (2) software correctly performs its intended functions and does not perform unintended functions.[5] NHTSA officials told us they did not contract for IV&V because they believed it to be "very expensive" and could not afford it since monies had not been budgeted for this purpose.

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[4] Division E of Public Law 104-106, "National Defense Authorization Act for Fiscal Year 1996," February 10, 1996.

[5] National Institute of Standards and Technology Special Publication 500-234, "Reference Information for the Software Verification and Validation Process," March 29, 1996.

EXHIBIT G. DESCRIPTION OF THE SCREENING AND INVESTIGATION PROCESS

NHTSA's defect screening and investigation process is conducted among four divisions within ODI (see Figure below for details). This process consists of an analysis to identify potential safety defects (screening), an agreement to begin an investigation (review panel), preliminary evaluation (investigation), engineering analysis, and product recall. Within the Defect Analysis Division, 8 analysts conduct the "screening" for potential safety defects, and 24 investigators in the Vehicle Control, Vehicle Integrity, and Medium and Heavy Duty Vehicle Divisions conduct the defects investigations. ODI has also established a review panel consisting of the ODI Director, Assistant Director, the four ODI Division Chiefs, and is usually augmented by screening and investigative staff members who present the merits of each proposed investigation for panel consideration.

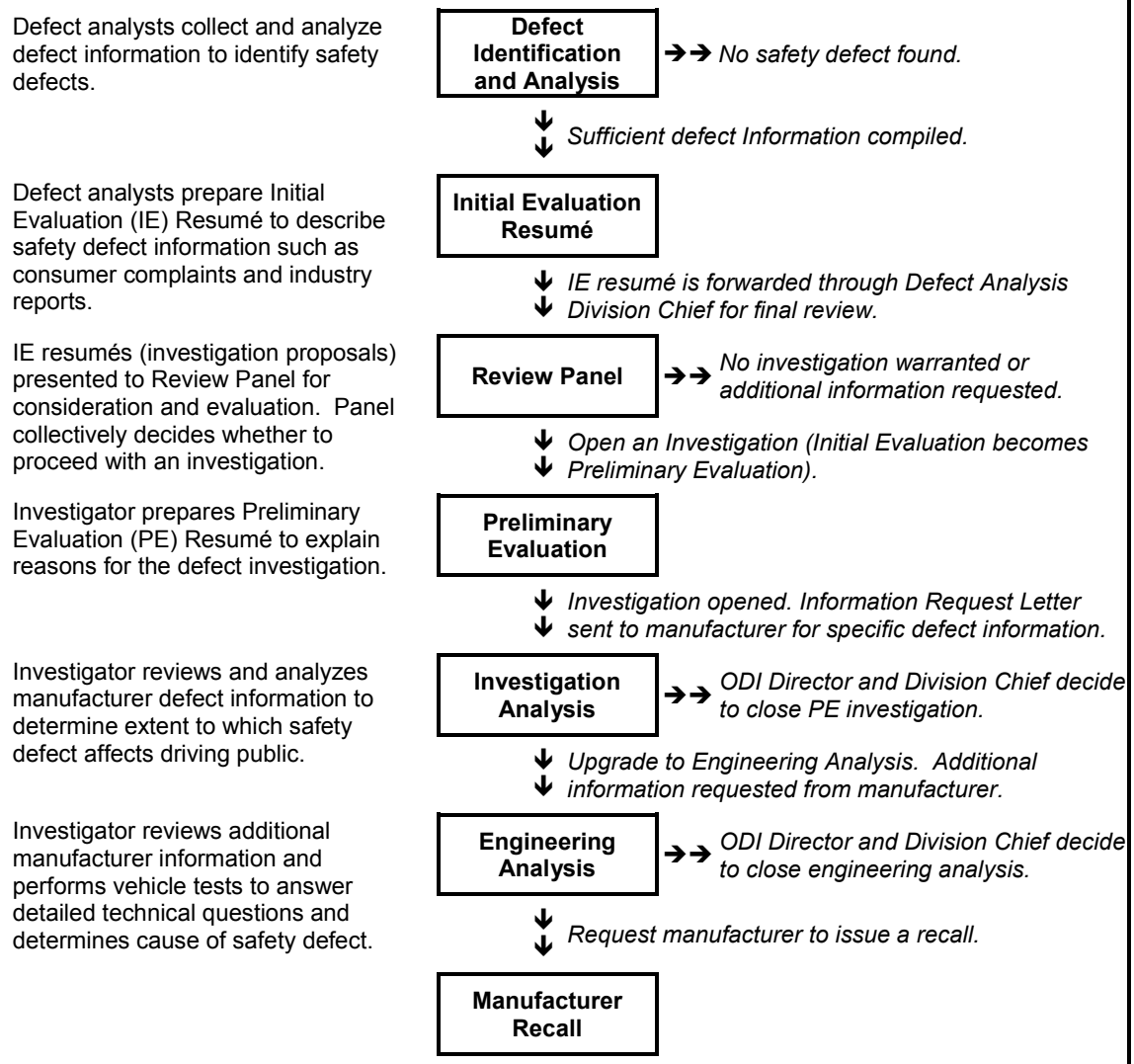
Defect Analysis and Identification. The Defect Analysis Division is responsible for collecting and analyzing information to identify potential safety defects, which can take 1 to 3 months. When sufficient consumer complaint and industry information is compiled to indicate a potential safety defect, an analyst in the Defect Analysis Division prepares an initial evaluation (IE) package describing pertinent information about the potential defect, and forwards it to the Defect Analysis Division Chief for final review and preparation. After the Chief's review, the package is forwarded to members of the review panel 2 weeks before the review panel meeting.

Review Panel. The review panel meets biweekly to discuss and evaluate investigation proposals presented in IE packages. The panel decides whether or not to open an investigation. If a decision is made to open an investigation, personnel in the appropriate investigative division prepare a preliminary evaluation (PE) opening resumé to explain the reasons for opening the investigation. A PE usually lasts 4 months.

Engineering Analysis. During the PE stage, if the ODI Director and responsible Division Chief decide that more analysis of the potential safety defect is needed, they recommend an upgrade to an engineering analysis (EA). During an EA, the ODI Director or Division Chief may request additional technical information from the manufacturer to answer questions raised during the PE. At the completion of the EA, a decision is made to either close the EA or request the manufacturer to issue a recall of the defective part. An EA can last up to 1 year.

Figure

ODI DEFECT SCREENING AND INVESTIGATION PROCESS



Source: ODI Office Procedures for Conducting Defect Investigations (1997),
ODI Office Procedures for Screening Complaints (1998),
ODI Initial Evaluation Review Panel Procedures (2003)

Exhibit G. Description of the Screening and Investigation Process

EXHIBIT H. MAJOR CONTRIBUTORS TO THIS REPORT

THE FOLLOWING INDIVIDUALS CONTRIBUTED TO THIS REPORT.

Name	Title
Debra Ritt	Assistant Inspector General for Surface and Maritime Programs
Jim H. Crumpacker	Program Director
Mike Siviy	Project Manager
Michael Marshlick	Senior Computer Scientist
Thomas Lehrich	Chief Counsel
Seth Kaufman	Associate Counsel
Frank Schutz	Senior Auditor
Richard Hatcher	Auditor
Scott Williams	Analyst
Harriet Lambert	Editor

APPENDIX. MANAGEMENT COMMENTS

U.S. Department of Transportation
National Highway Traffic Safety Administration

Memorandum

Subject: NHTSA's Response to the Recommendations in the OIG Draft Report, "Follow-up Audit of the Office of Defects Investigation"

Date: SEP 15 2004

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

Reply to Attn. of:

To: Alexis M. Stefani
Principal Assistant Inspector General
for Auditing and Evaluation

This memorandum sets forth the response of the National Highway Traffic Safety Administration (NHTSA) to the report prepared by the Office of Inspector General (OIG). The recommendations made by the report's authors (at page 17) are as follows:

> Recommendation No. 1: Ensure the March 2004 $11.46 million [operations and maintenance] O&M cost estimate for FYs 2005 through 2009 is adequately supported.
>
> Recommendation No. 2: Revise the [early warning reporting] EWR data analysis plan to better define the advanced analytical capabilities needed, identify the software NHTSA intends to purchase and the associated costs, and establish a schedule with milestone dates for obtaining these capabilities.
>
> Recommendation No. 3: Establish milestones for completing procedures to incorporate EWR information into the defects screening process and train defect analysts on the new procedures to provide reasonable assurance that decisions relating to the opening of safety defect investigations are based on thorough and consistent analyses of all available defects information.

NHTSA Response:

NHTSA agrees with these recommendations and is taking appropriate actions to implement them. However, we are concerned about several aspects of the report. We believe the report does not present an accurate discussion of the agency's estimates of future ARTEMIS operations and maintenance (O&M) costs, overstates the role of EWR data in the identification of safety defects, and does not sufficiently describe the process used by the agency in developing tools to analyze the EWR data.

SAFETY BELTS SAVE LIVES

A. ARTEMIS Costs

We take issue with the report's description of the process by which the O&M estimates were reduced and its statement that there is "weak justification" for the current estimates. As the OIG is aware, the initial O&M estimates were put into the ARTEMIS business case in the fall of 2003 merely as a placeholder and were derived by extrapolating from early, pre-production estimates. The business case is a living document that is revised every year. As the agency gained experience in operating ARTEMIS, in early 2004 the project manager prepared detailed O&M estimates that reflected the actual cost experience. The NHTSA CIO reviewed these estimates and found them to be reasonable, and they were submitted to the DOT Investment Review Board (IRB) in March 2004 as part of the normal capital planning process.

At that time, the OIG requested that an explanation for the reduction in the O&M estimate be documented in the ARTEMIS business case. We did so, and the explanation was provided prior to the IRB meeting. The OIG raised no concerns about the explanation or about any other aspects of the business case and raised no objection to the DOT CIO's recommendation to remove ARTEMIS from the watch list, which the IRB did. Thus, we take exception with the statement (at page 13) that "NHTSA officials could not provide supporting data to explain the significant decrease in the O&M estimates."

Finally, NHTSA never sought long-term O&M funds, and we never would have done so on the basis of the original, pre-production estimates. Therefore, we consider it inappropriate to suggest, as the report does on several occasions, that the OIG's efforts contributed to "creating an opportunity to put funds to better use."

B. EWR Data and Analytical Tools.

We are concerned that the report could be read to overstate the ability of EWR data to point to safety defects in the absence of further inquiry and investigation. We also believe that the report does not sufficiently describe ODI's efforts to develop analytical tools to analyze the EWR data.

The analysis of EWR aggregate data cannot, standing alone, provide a "predictive" method to identify safety defects. That data does not contain sufficient detail to allow identification of potential safety defects without further inquiry and investigation, primarily because the categories of components and systems in vehicles, child restraint systems, and tires are extremely broad. For example, warranty claims, consumer complaints, and field reports on the subject of "steering" may be based on a wide variety of different steering-based problems or concerns, ranging from the shape of the steering wheel, to the steering wheel being hard to turn, to the steering wheel coming off. EWR aggregate data can support other information available to ODI, but in the absence of clarification it lacks the detail to be a predictive indicator of a safety defect.

We are in the process of developing analytical tools that will help us to use the EWR data as a pointer to issues worthy of further assessment. In view of the fact that EWR data had never been collected before, statisticians both within NHTSA and external to NHTSA unanimously stated that it would be impossible to develop appropriate analytical tools without first having access to at least a sampling of actual EWR data from manufacturers – not simply a description as set forth in the final EWR regulation. ODI first began to receive that data in December 2003 and it has undertaken a variety of efforts to develop such tools since that time.

We also want to make clear that the decision not to incorporate "advanced analytical capabilities" into ARTEMIS was one made in the interest of efficiency, quality, and cost. The agency had initially anticipated that some analytical capabilities would be included in the system. However, as project development proceeded, we concluded that it would be risky and inefficient to attempt to design such tools into ARTEMIS, particularly since we did not know at that time what the EWR data would look like. Thus, we determined that use of cost-effective commercial-off-the-shelf products would provide greater flexibility to ODI analysts at a lower cost. Moreover, ARTEMIS does provide some analytical capabilities. For example, there are automatic pointers to every fatality, which will help ODI to identify certain potential defects despite a relatively low number of serious incidents.

C. Confidentiality of EWR Data

We are concerned with the report's characterization of the agency's regulation relating to the disclosure of EWR data. The agency sought and reviewed public comments and carefully construed the significant legal issues involved. Disclosure decisions should be made not with regard to the volume of information disclosed, but rather with regard to the character of the data and applicable law.

The agency's regulation presents a balanced and carefully tailored approach. As the report notes, however, there is serious disagreement on these points, including not only on how best to apply Exemption 4 of the Freedom of Information Act, but also on the propriety of the agency's interpretation of the TREAD Act's "disclosure" provision. These issues will be decided through pending lawsuits filed by both consumer advocacy groups and business interests.

It is important to note that the purpose of the EWR program is not to provide a database for public consumption. Instead it is to provide NHTSA with a comprehensive compendium of information from which it can identify issues to review. As noted above, we intend to use the EWR data to help identify issues that warrant further inquiry and, when appropriate, the opening of defect investigations. We do not believe the public could meaningfully use the EWR data independently to determine that potential safety related problems exist in any particular vehicle.

D. TREAD Act Rulemakings

Finally, although the draft report's discussion of the status of the TREAD Act rulemakings (at page 3 and pages 8-10) was correct when originally written, we issued the final rule on the Disposition of Recalled Tires (implementing section 7 of the TREAD Act) on August 13, 2004 at 69 FR 50077. Thus, there are no pending "Outstanding Requirements."

We appreciate having had the opportunity to review and comment on the report.

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The following pages contain textual versions of the graphs and charts found in the preceding document. These pages were not in the original document but have been added here to accommodate screenreaders and other assistive technology.

Follow-up Audit
Of
NHTSA's Office of Defects Investigation
(Report #MH-2004-088, dated September 23, 2004)

Alternatives for Section 508 Compliance

Figure, Exhibit D. ARTEMIS Information Flow.

Legacy Information, such as consumer complaints, technical service bulletins, recalls, and effects investigations information, is entered into ARTEMIS. New Information, such as manufacturers' Early Warning Reporting information is also entered into ARTEMIS.

The Office if Defects Investigation (ODI) conducts analyses on the ARTEMIS information, with two possible results: (1) Purse Defect Investigation or (2) No action required.

In addition, selected information stored in ARTEMIS is subject to public disclosure.

Source: OIG analysis of ODI documentation.

Figure, Exhibit G. ODI Defect Screening and Investigation Process.

Defect Identification and Analysis. Defect analysts collect and analyze defect information to identify safety defects. If no safety defect is found, the process ends. If sufficient defect Information is compiled, the process continues to the **Initial Evaluation Resumé.**

Initial Evaluation Resumé. Defect analysts prepare Initial Evaluation (IE) Resumé to describe safety defect information such as consumer complaints and industry reports. IE resumé is forwarded through Defect Analysis Division Chief for final review and submitted to the **Review Panel.**

Review Panel. IE resumés (investigation proposals) presented to Review Panel for consideration and evaluation. Panel collectively decides whether to proceed with an investigation. If no investigation is warranted , the process ends. If additional information is requested, process goes back to Initial Evaluation Resume. If a decision is to open an Investigation, the Initial Evaluation becomes a **Preliminary Evaluation**.

Preliminary Evaluation. Investigator prepares Preliminary Evaluation (PE) Resumé to explain reasons for the defect investigation. An investigation is opened. Information Request Letter sent to manufacturer for specific defect information. Proceeds to **Investigation Analysis.**

Investigation Analysis. Investigator reviews and analyzes manufacturer defect information to determine extent to which safety defect affects driving public. ODI Director and Division Chief can decide to close PE investigation and the process ends. Otherwise, the PE can be upgraded to **Engineering Analysis**. Additional information is requested from the manufacturer.

Engineering Analysis. Investigator reviews additional manufacturer information and performs vehicle tests to answer detailed technical questions and determines cause of safety defect. ODI Director and Division Chief can decide to close engineering analysis and the process ends. Otherwise, ODI requests manufacturer to issue a **Manufacturer Recall.**

Source: ODI Office Procedures for Conducting Defect Investigations (1997), ODI Office Procedures for Screening Complaints (1998), and ODI Initial Evaluation Review Panel Procedures (2003).

Errata: Department of Transportation, Office of Inspector General
Report Number MH-2004-088, Follow-up Audit on NHTSA's Office of Defects Investigation, dated September 23, 2004

Date of Errata: March 11, 2005

Page 16, Footnote 27 reads “over 400 deaths” but should read “over 200 deaths”.

This errata has been determined not to materially effect the Results and Recommendations of this Report.