

# National Transportation Safety Board

## Fiscal Year 2007 and 2006

### Performance and Accountability Report



**National  
Transportation  
Safety Board**



## NTSB AT A GLANCE

**Established, April 1, 1967**

### **Headquarters**

490 L'Enfant Plaza, SW  
Washington, DC 20594  
[www.nts.gov](http://www.nts.gov)

**FY 2007 Budget \$79.3 million**

**FTE Employees, 378**

**Regional Offices, 10**

## How to use this Report

This Performance and Accountability Report (PAR) for fiscal year (FY) 2007 provides the National Transportation Safety Board (NTSB) financial and performance information, enabling the President, Congress, and the American people to assess the Agency's performance as provided by the requirements of the:

- Government Management Reform Act of 1994
- Government Performance and Results Act (GPRA) of 1993
- Chief Financial Officers Act of 1990
- Federal Manager's Financial Integrity Act (FMFIA) of 1982
- Office of Management and Budget (OMB) Circular A-136.

The assessment of NTSB performance contained in this report compares performance results to the Agency's strategic goals and performance goals. NTSB's Strategic Plan and annual PARs are available on NTSB's Web site at [www.nts.gov/annual](http://www.nts.gov/annual) report. NTSB welcomes feedback on the form and content of this report.

This report is organized in the following major components:

### 1. Letter from the Chairman of the NTSB

The Chairman's letter includes an assessment of the reliability and completeness of the financial and performance information presented in the report and a statement of assurance of the Agency's management controls as required by the FMFIA.

### 2. Management's Discussion and Analysis (MD&A)

This section provides an overview of the financial and performance information contained in the Performance Section, Financial Section, and Appendices. The MD&A includes an overview of the NTSB organization, highlights of the Agency's performance goals and results, current status of systems and internal control weaknesses, and other pertinent information such as the progress being made by NTSB in the President's Management Agenda (PMA).

### 3. Performance Section

This section provides the annual performance information as required by OMB Circular A-11 and the GPRA. Included in this section is a detailed discussion and analysis on the Agency's performance in FY 2007. Information on key performance measures with past results can be found in the Performance Section.

#### 4. Financial Section

This section contains the detail on NTSB's finances in FY 2007. The OIG Quality Control Report, the Independent Auditor's Report, followed by NTSB CFO Responses to Auditor's Report; the agency's audited financial statements, footnotes and notes to the financial statements.

#### 5. Appendices

Summary chart of historical information.

## Mission Statement

To promote transportation safety by maintaining our congressional mandated independence and objectivity; conducting objective, precise accident investigations and safety studies; performing fair and objective airman and mariner certification appeals; advocating and promoting NTSB safety recommendations; and to assist victims of transportation accidents and their families.

## Strategic Goals

**Strategic Goal #1** – Accomplish Objective Investigations of Transportation Accidents to Identify Issues and Actions that Improve Transportation Safety

**Strategic Goal #2** – Increase our Impact on the Safety of the Transportation System

**Strategic Goal #3** – Outstanding Stewardship of Resources

**Strategic Goal #4** – Organizational Excellence





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## NTSB Vital Role in Transportation Safety

Since its inception in 1967, the National Transportation Safety Board (NTSB) has investigated more than 128,000 aviation accidents and over 10,000 surface transportation accidents. In so doing, it has become one of the world's premier accident investigation agencies. On call 24 hours a day, 365 days a year, NTSB investigators travel throughout the country and to every corner of the world to investigate significant accidents and develop factual records and safety recommendations.

The NTSB has issued more than 12,700 recommendations in all transportation modes to more than 2,200 recipients. Beginning in 1990, the Board published a "Most Wanted" list of safety improvements. Although the Board does not have authority to regulate transportation equipment, personnel or operations, or initiate enforcement action, based on its reputation for impartiality and thoroughness, the Board has achieved such success in shaping transportation safety improvements that more than 82 percent of its recommendations have been adopted by those in a position to effect change. Many safety features currently incorporated into airplanes, automobiles, trains, pipelines and marine vessels had their genesis in these recommendations.

In addition to the demands of overseeing the safety of the U.S. transportation system, the NTSB has been increasingly called upon to participate in foreign accident investigations especially where American equipment or operators are involved.

The globalization of the economy, as well as our acknowledged leadership in accident investigation, demands NTSB participation in these foreign investigations both to ensure the safety of U.S. aviation exports and to continue to demonstrate the need for one level of safety worldwide.

NTSB meets its important safety mission through several lines of business that work together to prevent future accidents. These lines of business are:

**The Office of Aviation Safety:** investigates, or causes to be investigated, all civil and some public use aviation accidents and selected incidents; prepares detailed reports; develops proposed probable cause(s) determinations; and formulates recommendations to minimize their recurrence for consideration and adoption by the Board and for use by other government agencies, the Congress, the transportation community, and the traveling public.

**The Office of Highway Safety:** investigates highway accidents involving issues with wide-ranging safety significance, such as bridge collapses, multiple fatalities on public transportation, and grade crossings. Safety recommendations may be issued to Federal, state, and local agencies, operators, manufacturers, and trade associations. This office also examines the safety programs of such agencies as the Federal Highway Administration and the National Highway Traffic Safety Administration.

**The Office of Marine Safety:** investigates marine accidents on the navigable waters or territorial seas of the United States and accidents involving U.S. merchant vessels worldwide, under regulations prescribed jointly by the Board and the Department of Transportation. The Office of Marine Safety also investigates accidents involving U.S. public vessels and non-public vessels, and accidents that involve U.S. Coast Guard safety functions. Safety recommendations may be issued to agencies such as the U.S. Coast Guard, U.S. Army Corps of Engineers, shipping firms, and maritime trade organizations.

**Office of Railroad, Pipeline and Hazardous Materials Investigations:** is a multi-modal investigative office within the NTSB. The office's Railroad Division investigates accidents and incidents involving passenger and freight railroads as well as commuter rail transit systems. These accidents typically involve collisions or derailments, some of which lead to the release of hazardous-materials.

The Pipeline Division investigates accidents occurring during the transport of natural gas or other hazardous liquids, such as gasoline or propane, through underground pipeline systems. Pipeline accident investigations focus on accidents that involve fatalities or that result in substantial property or environmental-damage.

The Hazardous Materials Division investigates accidents in which public safety is threatened by the release of hazardous substances. Hazardous materials accident investigations may include analysis of the performance and integrity of hazardous materials containers, such as rail tank cars and highway cargo tanks.

**The Office of Research and Engineering:** provides technical support to accident investigations, and conducts safety studies that examine safety issues in all modes of transportation. The Board's Flight Data Recorder, Cockpit Voice Recorder, and Materials Laboratories are located in this office. The office maintains the Board's aviation accident database, providing periodic statistical reviews of aviation accidents, and responds to public inquiries for Board reports and safety studies.

**Safety Recommendations and Advocacy:** includes the divisions of Safety Recommendations, Safety Advocacy, and Transportation Disaster Assistance. The office is responsible for coordinating strategies for implementing the safety recommendations and supporting victims of transportation disasters.

**The NTSB Training Center:** is an organizational component of the Office of Management. The Training Center is responsible for internal staff training, training plans and workforce development programs, general training and support for other training initiatives at the Board's facility in Ashburn, Virginia. The Training Center's primary mission is to train NTSB investigators and others in the transportation community in accident investigation techniques.

## A Message from the Chairman

I am pleased to present Fiscal Year (FY) 2007 Annual Performance and Accountability Report (PAR) for the National Transportation Safety Board (NTSB). This report details the Agency's accomplishments and challenges in upholding our mission to promote transportation safety. As an independent agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation (railroad, highway, marine, and pipeline, as well as those involving the transportation of hazardous materials) in order to determine the causes and to issue recommendations aimed at preventing future accidents. The NTSB investigates more than 2,100 accidents every year.

The NTSB is recognized internationally for its aviation accident investigation expertise. However, the same tenacity and dedication to excellence are applied to accident investigations in all other modes of transportation. The recent investigations of the accidents caused by the ceiling failure in the Boston's Interstate 90 Connector Tunnel and the collapse of the bridge over the Mississippi River on Interstate 35 West in Minneapolis represent two critical investigations performed in other transportation modes. In the face of these disasters, the NTSB strives to determine the cause so that actions can be taken that will eliminate similar accidents and their concurrent loss of life and property in the future.

This Performance and Accountability Report contains the Board's financial statements, as required by the Office of Management and Budget (OMB) Circular A-136, a selection of annual performance information and a report on the Board's material weaknesses, as required by the Federal Managers' Financial Integrity Act (Integrity Act).

The information provided in this report serves as a mechanism for fiscal and programmatic accountability. It is an accounting to the American people on our stewardship of the funding we received from them in FY 2007 to fulfill our mission.

For 40 years the National Transportation Safety Board has been at the forefront of transportation safety issues, the conscience, if you will, of America's vital transportation network. The NTSB is not only our nation's premier accident investigation agency, but also enjoys an excellent reputation as the most authoritative independent safety investigative body in the world. The Board dedicated staff has worked long and hard over the years to maintain its reputation as being the "best in the safety business."

The NTSB prepared financial statements for FY 2002 that marked the first time in the history of the Board that financial statements had been prepared. Building from this valuable experience and accomplishment since FY 2003 we achieved unqualified (clean) opinions on our first, second, third and fourth audited Consolidated Financial Statements for fiscal year 2003, 2004, 2005 and 2006.

Leon Snead & Company, P.C. an Independent Public Accounting firm engaged by the Department of Transportation, Office of Inspector General (DOT-IG), has audited the Board's FY 2007 consolidated financial statements included in this report and has issued an unqualified (clean) opinion indicating that our statements present fairly the financial position of the National Transportation Safety Board. This is the best possible audit result and affirms our commitment to financial reporting excellence.

Along with this opinion, I am pleased to report on the National Transportation Safety Board's (NTSB) compliance with the *Federal Manager's Financial Integrity Act*, revised OMB Circular A-123, Management's Responsibility for Internal Control for June 30, 2007. The Integrity Act requires the Board to annually evaluate its management controls and identify any material weaknesses. This requirement covers all of the Board's programs and administrative functions. As we work to serve the American people, we must administer our programs as efficiently and economically as possible. To do this, we rely on our system of management controls to provide reasonable assurance that our financial activities comply with applicable laws, our items of value are safeguarded, and our operations are accounted for properly.

As of September 30, 2007, there is one new material weakness to report and only one prior year material weakness remaining to be corrected. The new material weakness, which was reported by our independent auditors during the fiscal years 2007 - 2006 Financial Statement Audit is: *Accounting Operations – Controls and Processes deficiencies exist in the internal controls over financial reporting relating to the preparation, documentation, review and approval of journal vouchers; and the analysis, documentation, and correction of material differences identified in financial accounting relationship tests performed by the NTSB.* However, it is important to note that the auditors stated in their report that NTSB overall internal controls over financial reporting were generally appropriately designed and functioning and the Chief Financial Officer (CFO) has issued numerous formal operations bulletins on many aspects of CFO operations that details control processes based upon established risk, and address other operational process.

The one prior year material weakness, which has not yet been corrected and that was reported by Leon Snead & Company, P.C. an Independent Public Accounting (IPA) firm is: *NTSB had not completed and documented a comprehensive system security planning and life cycle management program for its major applications and general support systems. In addition, NTSB certification and accreditation (C&A) process has not been completed for its three systems.* Although NTSB continues to be in material non-compliance with FISMA, the IPA evaluation found that during fiscal year 2007 NTSB had taken the substantive corrective actions, among others to address the material IT security weaknesses identified in prior DOT-OIG FISMA reports. These substantive corrective actions included: (1) Hiring a Chief Information Officer and Deputy Chief Information Officer. Filling these key positions within NTSB is significant as it should enable NTSB to focus high-level management attention to its IT security program; ensuring that continued, timely progress is made to eliminate material weaknesses in the program; and properly allocate human and funding resources to areas of critical need; (2) purchasing, installing, and began using four commercial applications that provide NTSB with the ability to effectively address prior IT security problems dealing with patching security vulnerabilities in its applications; and controlling the review of and documentation for its vulnerability scanning and intrusion monitoring programs; (3) deploying encryption on agency laptops and issuing encrypted USB storage devices to employees who need to share files as part of their

regular duties; (4) implementing dual authentication for its remote users; and (5) addressing DOT-OIG concerns dealing with password security by requiring more complex passwords on its network.

It is important to note that the FISMA material weakness was limited to the systems resident within NTSB and did not affect the agency's core financial management systems, which are located at the service provider. Therefore, these weaknesses have reduced impact on the financial management system maintained by its service center. In addition, the service provider received an unqualified (clean) Third Party Report on Controls Placed in Operation and Test of Operating Effectiveness (SAS 70) for the Period October 1, 2006 – July 31, 2007.

The selected performance goals contained in this report summarize our success in achieving the performance goals we established for FY 2007. The Board continues to aggressively improve our performance planning practices to ensure that, in the future, our goals are results driven and oriented toward achieving desired outcomes.

Just as the NTSB is the world's premier accident investigation agency, it is our vision that the Board becomes a premier financial management agency in the Federal government. The submission of our Performance and Accountability Report is another step toward that vision.

Sincerely,

/s/

Mark V. Rosenker  
Chairman

## A Message from the Chief Financial Officer

In FY 2007, the National Transportation Safety Board (NTSB) continued its efforts toward organizational excellence, which is defined by results. Progress for much of our efforts toward excellence is captured in the NTSB FY 2007 and 2006 Performance and Accountability Report (PAR). The PAR provides the NTSB most important financial and performance information. It is also our principal publication and report to Congress and the American people on our program leadership and our stewardship and management of the public funds entrusted to us.

I am pleased to report that for the fifth consecutive year we have received an unqualified (“clean”) opinion on the NTSB consolidated financial statements for FY 2007 and 2006 from our independent auditors. This is the best possible audit result and affirms our commitment to financial reporting excellence.

With the attainment of the independent auditor’s unqualified financial statement opinion, the Office of the Chief Financial Officer is committed to moving forward vigorously during FY 2008 to continue improving our internal control processes and fulfill the financial management improvement goals of the President’s Management Agenda (PMA).

These financial statements fairly present the NTSB financial position and were prepared in accordance with generally accepted accounting principles (GAAP) in the United States of America and the Office of Management and Budget (OMB).

Steven E. Goldberg

November 1, 2007



## Management's Discussion & Analysis

### Overview

The National Transportation Safety Board (NTSB) is an independent accident investigation agency. Since its creation in 1967, the Safety Board's mission has been to determine the probable cause of transportation accidents and to formulate safety recommendations to improve transportation safety. The Safety Board's mission is to determine the probable cause of:

- All U.S. civil aviation accidents and certain public-use aircraft accidents;
- Selected highway accidents;
- Railroad accidents involving passenger trains or selected freight train accidents that result in fatalities or significant property damage;
- Major marine accidents and any marine accident involving both a public and a nonpublic vessel;
- Pipeline accidents involving fatalities, substantial property damage, or significant environmental damage;
- Selected accidents resulting in the release of hazardous materials in any mode of transportation; and
- Selected transportation accidents that involve problems of a recurring nature or are catastrophic.

The Independent Safety Board Act of 1974 authorized the Safety Board to:

- Evaluate the effectiveness of government agencies involved in transportation safety;
- Evaluate the safeguards used in the transportation of hazardous materials;
- Evaluate the effectiveness of emergency responses to hazardous material accidents;
- Conduct special studies on safety problems;
- Maintain official U.S. census of aviation accidents;
- Review appeals from airmen, mechanics, and repairmen who have been assessed civil penalties by the Federal Aviation Administration (FAA); and
- Review appeals from airmen and merchant seamen whose certificates have been revoked or suspended.

The Safety Board also leads U.S. teams on foreign airline accident investigations to assist foreign authorities under the provisions of the International Civil Aviation Organization (ICAO) agreements. In 1996, the Aviation Disaster Family Assistance Act assigned to the Safety Board the responsibility of coordinating the resources of the Federal government and other organizations in order to support

the efforts of local and state authorities and the airlines in assisting aviation disaster victims and their families following accidents in which there is a major loss of life. In addition, a Presidential memorandum directed Federal agencies to support the Safety Board when it assumes those same responsibilities for major surface transportation accidents.

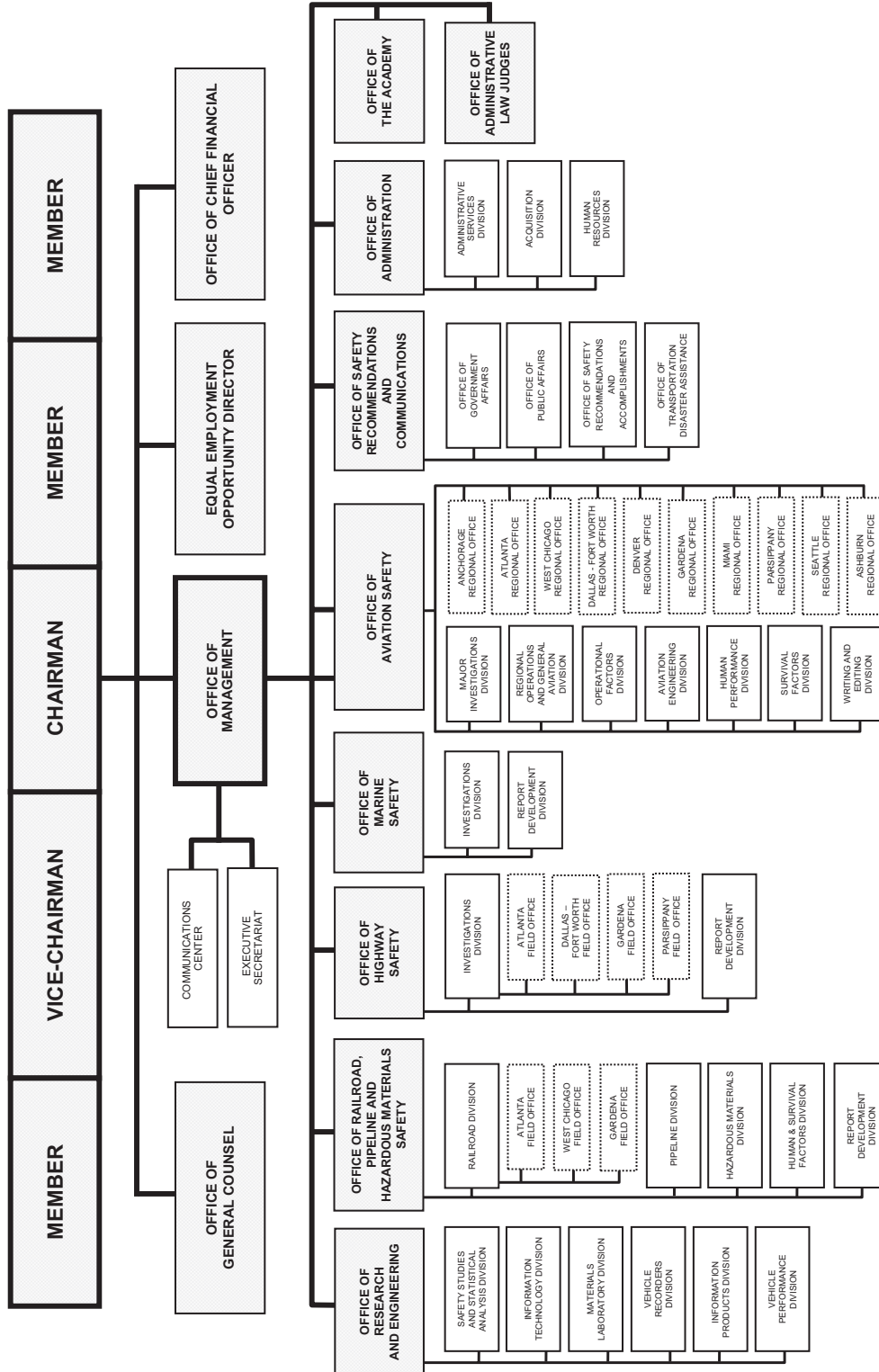
The Civil Aeronautics Board's Bureau of Safety formed the nucleus of the NTSB, which was created in 1967 as an independent agency within the newly created U.S. Department of Transportation (DOT). Congress expanded the Safety Board's authority to include accident investigation in four other modes: rail, highway, marine, and pipeline. In 1974, Congress passed the Independent Safety Board Act, which severed the Safety Board's ties to DOT. Congress gave the Safety Board authority to coordinate Federal assistance to victims and family members affected by major aviation accidents under the Aviation Disaster Family Assistance Act of 1996.

Since its inception in 1967, the Safety Board has investigated more than 128,000 aviation accidents and over 10,000 surface transportation accidents. It has become recognized as the world's leading accident investigation agency. NTSB investigators are on call 24 hours a day, 365 days a year. They have traveled throughout the country and to every corner of the world to perform investigations.

## **History and Structure of the Board**

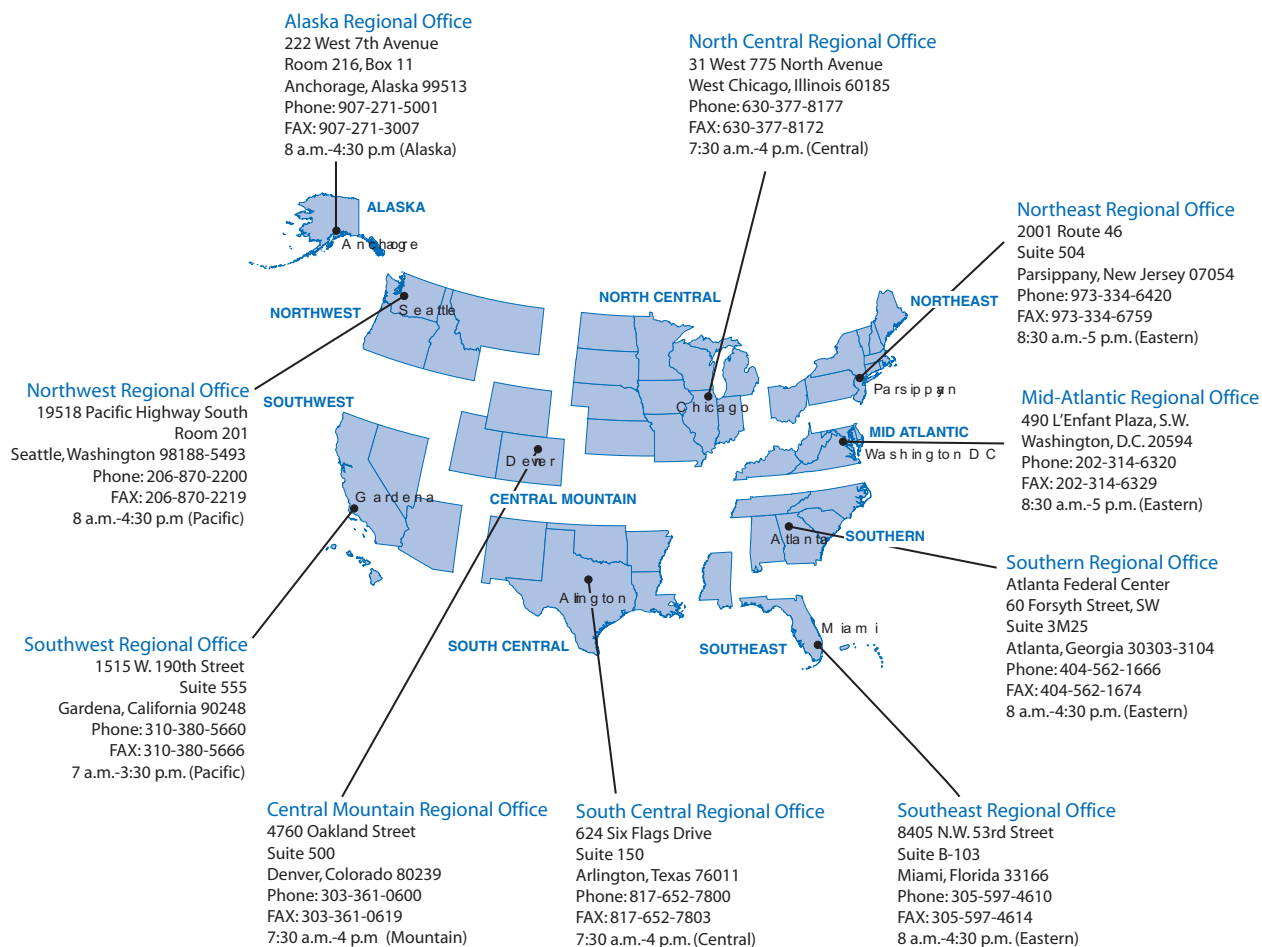
The NTSB opened its doors on April 1, 1967, initially relying on the U.S. Department of Transportation (DOT) for funding and administrative support. Although its charter is the Independent Safety Board Act of 1974, the origins of the Safety Board can be found in the Air Commerce Act of 1926, in which Congress charged the Commerce Department with investigating the causes of aircraft accidents. The rules of the Board are located in Chapter VIII, Title 49 of the Code of Federal Regulations (CFR). Since its inception, the Board has investigated more than 124,000 aviation accidents, and over 10,000 accidents in the surface transportation modes. In so doing, it has become one of the world's premier accident investigation agencies. On call 24 hours a day, 365 days a year, NTSB investigators travel throughout the country and to every corner of the world to investigate transportation accidents and to develop factual records and safety recommendations.

# National Transportation Safety Board



The Board consists of five Members appointed by the President with the advice and consent of the Senate. The President appoints the Chairman and Vice Chairman for 2-year terms. The Chairman is additionally confirmed by the Senate, and serves as the agency chief executive and administrative officer. The Board Members, in conjunction with the Chairman, establish policies on transportation safety issues; review and approve major accident reports, safety studies, and safety recommendations; and decide appeals of NTSB Administrative Law Judge initial decisions regarding Federal Aviation Administration and Coast Guard certificate actions. They also preside over accident or other transportation safety hearings, testify before Congressional committees, and participate in go-teams on major investigations.

## NTSB Regional Offices



## Mission

The basic components of the NTSB's mission are to:

- Maintain public confidence in the Nation's transportation systems by thoroughly and independently determining the probable cause(s) of transportation accidents and significant incidents and issuing timely and feasible safety recommendations to prevent future accidents, save lives, and reduce injuries and property damage.
- Ensure that survivors and families of victims of transportation accidents receive timely, compassionate assistance from the operator, other government agencies, and community service organizations.
- Provide aviators and mariners with fair, timely, independent appellate review of certificate actions taken by the FAA and the U.S. Coast Guard.
- Ensure effective stewardship of the resources provided.
- To provide comprehensive education and training for those who improve safety by conducting independent transportation accident investigations.

The Safety Board's proactive approach in preventing and/or reducing the severity of future transportation accidents is unique. It independently addresses real world tangible problems, allows full industry participation in its investigations, issues safety recommendations instead of regulations, and disseminates its reports and findings to as wide an audience as possible. It also provides oversight of the regulatory agencies in transportation and is the safety advocate for millions of Americans traveling through our nation's skies, roads, rails, and waterways each day. As a small, manageable organization, we react quickly to changes in the transportation environment to meet the public's needs. The NTSB is the model for a government agency that works better and costs less.

## Operation

Each year, the NTSB investigates about 2,000 aviation accidents and scores of accidents in the surface modes. The Board leverages its limited resources through the "party system" by which it designates government agencies, organizations, or corporations as parties to the investigation. By law, the FAA is a party to each aviation accident investigation. The NTSB has wide discretion over which other organizations it designates as parties. Only those entities that can provide expertise required for the investigation are granted party status and only those persons who can provide the Board with needed technical or specialized expertise are permitted to serve on the investigative team. Individuals representing organizations in legal or litigation positions are not assigned to the investigation. All party members report to the NTSB.

In a major investigation, the Board establishes investigative groups made up of specialists from the parties and led by a Safety Board investigator as group chairman. The groups formed vary depending on the mode of transportation and the nature of the accident, and examine areas such as company operations; aircraft structures; systems and power plants; rail and highway vehicle operations; rail track and signals; pipeline operations; vehicle, bridge, highway, and marine engineering; human factors;

survival factors; hazardous materials; radar and vehicle recorder data; meteorology; and regulatory oversight. Eventually, investigative group chairmen prepare a factual report that is verified for accuracy by each of the party representatives in the group. The factual reports are placed in the public docket, and, after the completion of a formal technical review by the team, they constitute the factual record of the investigation.

Safety recommendations may be issued at any time during an investigation, and the Board also may hold a public hearing as part of a major transportation accident investigation. The purpose of the hearing is two-fold: first, to gather sworn testimony from subpoenaed witnesses on issues identified by the Board during the course of the investigation and, second, to allow the public to observe the progress of the investigation.

Parties do not participate in the analytical or report-writing phases of NTSB investigations; however, they are invited to submit their proposed findings of probable cause and proposed safety recommendations directly to the Board. These submissions are made part of the public docket. The Board deliberates over reports during public “Sunshine Act” Board meetings in Washington, D.C. Non-Safety Board personnel, including parties and family members, may observe the proceedings, but they do not participate in these meetings.

## Performance Section

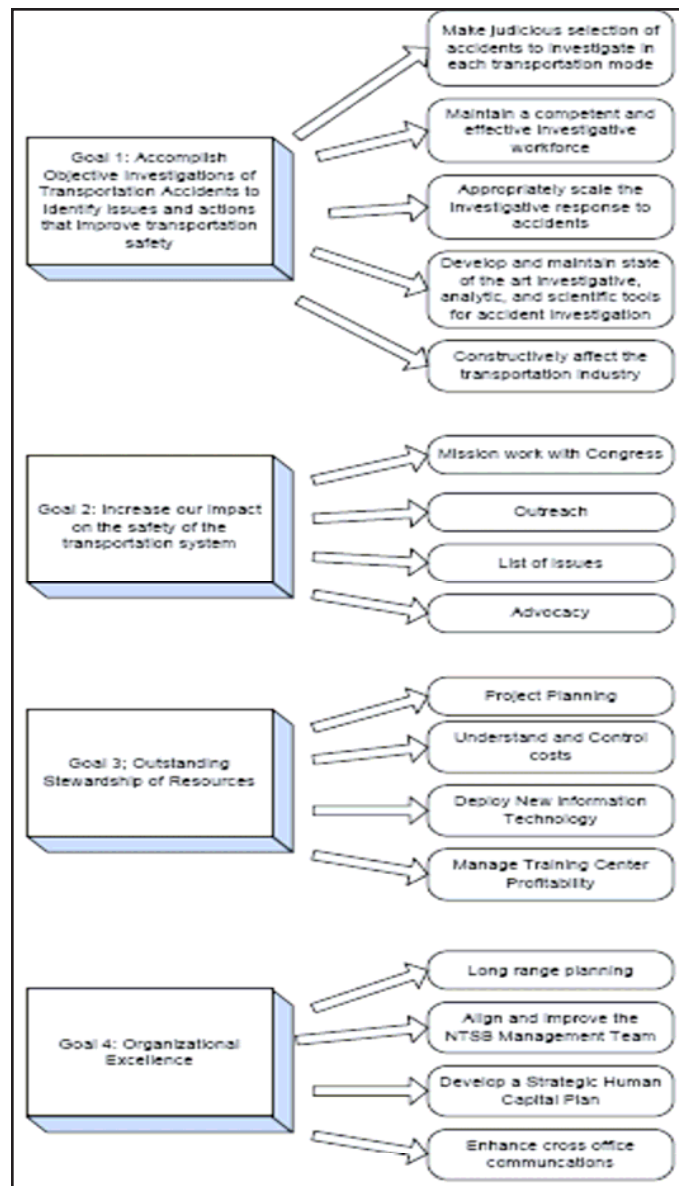
### Organization Assessment and Strategic Objectives

The National Transportation Safety Board plays an important role in supporting the Nation's transportation system, which in turn, accounts for 10 percent of the U.S. economy. The Safety Board's mission is to promote transportation safety by maintaining its congressionally mandated independence and objectivity, conducting objective accident investigations and safety studies, performing fair and objective airmen and mariners certification appeals, advocating and promoting safety recommendations, and assisting victims of transportation accidents and their families.

To support the Safety Board's mission and to adhere to requirements in the Government Performance and Results Act of 1993, the Board developed and published its strategic plan in 2006. The strategic plan supports the mission of the Board by specifying four strategic goals to which all Board activities are aligned and individual office contributions are made. The strategic goals of the Board are the following:

- Strategic Goal 1 - Accomplish objective investigations of transportation accidents to identify issues and actions that can improve transportation safety
- Strategic Goal 2 - Increase our impact on the safety of the transportation system
- Strategic Goal 3 - Outstanding stewardship of resources
- Strategic Goal 4 - Organizational excellence

Even though the strategic goals are self-explanatory, the Safety Board, as part of its strategic plan development and implementation, cascaded these goals into more specific strategic objectives that can be aligned with specific office outputs. The Board's strategic objectives—of which there are 17—have specific outcomes that investigative and non-investigative components of the Board can work toward to implement the four strategic goals. These strategic objectives, which are called “performance objectives” in the day-to-day operating environment of the Board, translate into specific strategies that are accomplished by the regular activities of the Board's staff. (Figure 1 shows the interrelationship of the goals and objectives.)



**Figure 1. Strategic Goals and Associated Objectives**

Strategic Goal 1 reflects the core mission of the Safety Board and is divided into the following strategic objectives:

- Make judicious selection of accidents to investigate in each transportation mode
- Maintain a competent and effective investigative work force
- Appropriately scaled investigative response to accidents



- Develop and maintain state-of-the-art investigative analytic and scientific tools for accident investigation
- Constructively affect the transportation industry

The objectives for Goal 1 are to influence the outcomes of effective and efficient accident investigations, develop quality recommendations to remedy safety deficiencies, and prepare the transportation industry to better address safety issues. Although all Safety Board offices' respective performance targets can influence Strategic Goal 1, there is particular emphasis on the modal investigative offices to ensure this goal and its strategic objectives are met.

Because the Safety Board's mission is to promote transportation safety, Strategic Goal 2, which impacts the safety of the entire transportation system, cascades into strategic objectives that have a strong emphasis on outreach and advocacy. Leveraging its unique position in the safety industry, the Board believes it is necessary to provide leadership to outside stakeholders to ensure that emerging safety issues are being addressed and that political leadership is aware of public policy implications. To achieve this goal, Strategic Goal 2 has the following objectives:

- Mission work with Congress
- Outreach
- List of safety issues
- Advocacy

In implementing these objectives, the Safety Board keeps Congress informed and involved in the Board's mission and promotes agreement by industry stakeholders on the most pressing safety issues in the transportation industry.

Being a small independent agency in the Executive Branch of the Federal Government, the Safety Board is acutely aware that government resources are shrinking. The Board ensures its limited dollars are used in the most efficient manner. With limited funding and fewer than 400 employees, the Board believes that its stewardship of resources needs to be outstanding. Therefore, Strategic Goal 3 cascades into the following specific areas:

- Project planning
- Understanding and controlling costs
- Deploying new information technology
- Managing training center profitability

These strategic objectives foster using project planning for all major efforts, and promoting the timely output of major work products. While moving forward, the Safety Board will increase its use of project management in all facets of its operations. In addition, the resulting increased effectiveness will increase the profitability of the NTSB Training Center.

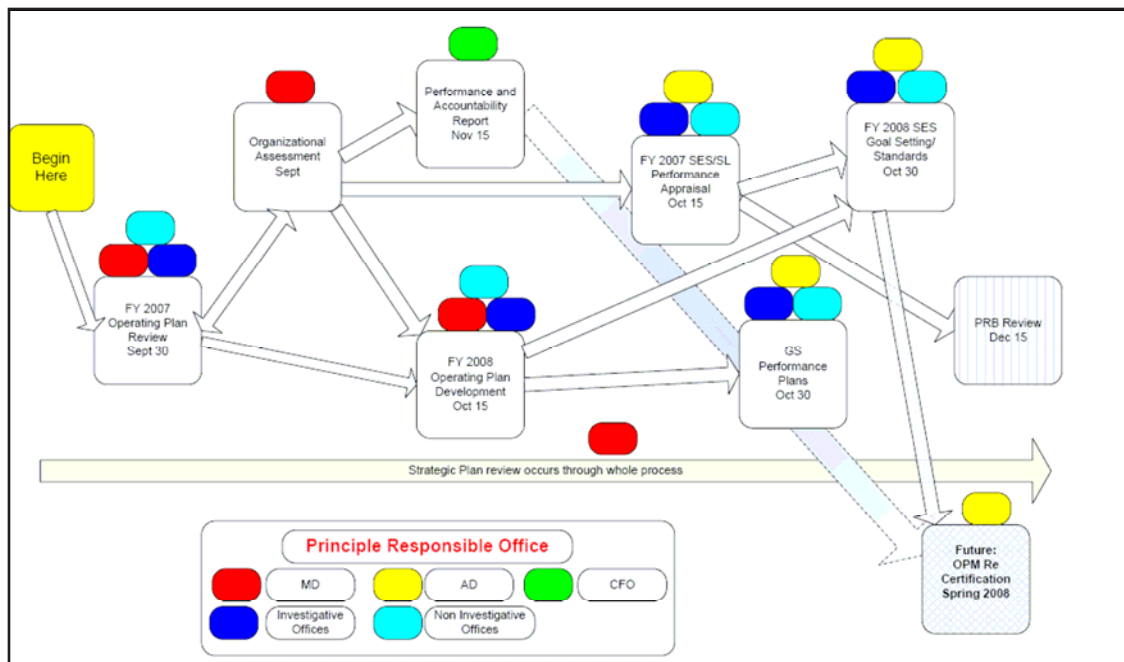
The first three Strategic Goals are encompassed in a fourth Strategic Goal, which captures the essence of the organization, namely excellence. Strategic Goal 4 can be further divided into the following objectives:

- Long range planning
- Align and improve the management team
- Develop a strategic human capital plan
- Enhance cross-office communications

Because the majority of the Safety Board's expenses are for employee salaries and benefits, human capital is the Board's number one asset. This asset requires a long-term plan to ensure its success and viability. The strategic objectives for Goal 4 promote the outcomes of maintaining an enhanced strategic plan, encouraging teamwork, and maintaining effective internal and external communications.

***Relationship of Strategic Plan, Performance and Accountability Reports, Operating Plans, and Performance Plans***

A key component of the Safety Board's strategic framework is to ensure that various planning processes relate to each other in a constructive way and contribute logically to the four strategic goals that drive the Board's mission. The strategic plan serves as the overall guiding document that all other Board planning reports and processes must follow. Consequently, other reports that cascade from the Board's Strategic Plan include the Performance and Accountability Report, the Office Operating plans, and the individual performance plans of executives, managers, and staff. The relationship among these planning processes is illustrated in Figure 2, which shows the planning relationship during fall 2007.



**Figure 2. Planning Relationship and Timeline**

As shown in Figure 2, the planning process begins with an assessment of the prior year's operating plans. This assessment uses a color-coding scheme commonly employed by other federal agencies—such as the National Aeronautics and Space Administration (NASA) and the Office of Personnel Management (OPM)—and allows the Safety Board to objectively assess its performance and adjust its goals and objectives prior to starting a new fiscal year. This color-coding scheme is the Board's "scorecard" for assessing its performance. After the assessment has been made, any adjustments feed directly into the Board's 2008 operating plan "goals", which are called performance targets, and allows the Board to continue on its pathway of continuous improvement. Coupled with financial information and other data, the assessment serves as a key component of the Performance and Accountability Report, which is due each November.

A final component of the planning process is ensuring that Safety Board's Strategic Goals and Objectives are incorporated in the goals and objectives of its key managers and staff members. This effort has been recently enhanced by the OPM's approval of the Board's Senior Executive Service (SES) certification process. The Board's performance-based management culture has made great strides during fiscal year 2007. Fiscal year 2008 is expected to be a breakthrough performance year. The Board will apply for certification for other groups during calendar year 2008. By obtaining and maintaining the certification of its managers, the Board will ensure that the effort of each manager is oriented toward achieving the Board's goals and objectives, which is the hallmark of a results-oriented culture.

## Strategic Planning Process

During fiscal year 2007, the Safety Board began its strategic planning process by developing and publishing the 2007 through 2012 National Transportation Safety Board Strategic Plan in February 2007. After publishing its strategic plan, the Board developed 12 internal operating plans. Each plan reflects the individual office strategies and performance targets. These operating plans and associated performance targets were closely monitored by the Board during the mid spring and summer of 2007 to ensure their successful completion and to monitor the contribution to the strategic goals. The number of performance targets in the operating plans varied among the offices—from about 10 to about 50. These targets were monitored to determine whether they should be included or modified for the fiscal year 2008 operating plans. In most cases, the targets seemed reasonable. Minor adjustments were made to ensure the proper linkage to one or more of the 17 strategic objectives. The 2008 performance targets were developed and included in the fiscal year 2008 operating plans during October 2007.

## Operating Plan Organization

The Board office operating plans dovetail into the Safety Board's Strategic Plan. Each office has an operating plan that describes specific strategies and means to achieve a performance objective. In each operating plan, the office articulates the specific manner in which a performance objective contributes to a strategic goal, called the "relationship to the strategic goal." The performance objective is explained in some detail; the plans specify a "performance target or targets," which is (are) the qualitative or quantitative metric(s) to be tracked. These targets, which come in a variety of forms, are intended to be

difficult but achievable. In some cases, achieving a target is a matter of completing an appropriate plan or completing an internal activity. In other cases, achieving a target may involve reaching a percentage or numerical threshold of some degree. For fiscal year 2007, over 200 targets were monitored and evaluated. During the first 6 months of assessing the operating plans, the Safety Board's Office of Management conducted regular meetings with office managers to monitor the progress on achieving the performance targets. Each target was evaluated and assigned a corresponding color.

Color Coding		Minimal Progress
Assessment		Progress Being Made
		Target Achieved
		Need for re-assessment

**Figure 3.** Color-coding legend

Clearly, the process of evaluating a target can be subjective; however, the Safety Board’s management collaborated to determine the ratings. All participants agreed on the ratings.

### Operating Plan Assessment

Through mid-September 2007, the Board rated about 200 performance targets and assigned the appropriate color code: green, yellow, or red. Of the 200 targets, most were achieved, and were indicated by the green coding; smaller percentages showed progress and were assigned yellow, and a smaller percentage had a minimal level of progress. For the Safety Board’s investigative and administrative offices, majority of the performance targets had been achieved and were designated green.

Because the Safety Board was new to monitoring performance targets, it collected considerable feedback to gauge the realism and viability of the targets and their influence on one or more of the 17 Strategic Objectives. In general, the Board’s management believes that the targets were properly constructed, although it plans some enhancements for fiscal year 2008. These enhancements will help ensure that new targets reflect the best possible linkage to broader strategic objectives for the agency. The Office of Management of the Board has helped the office directors in developing their fiscal year 2008 performance targets and in achieving a common understanding of the Strategic Plan process with templates and a new intranet site, which contains a variety of planning resources, consistent with best practices in the US Government.

Overall, each of the Safety Board’s Performance Targets in alignment with the agency strategic goals were analyzed separately by using the color-coding system. In addition, a cross-office analysis was conducted. Based on this analysis, the Board’s initial success in meeting its performance targets was clearly evident in all four strategic goal categories.

*Strategic Goal 1 - Accomplish objective investigations of transportation accidents to identify issues and actions that can improve transportation safety*

For Strategic Goal 1, a high percentage of tracked performance targets were fully achieved by September 2007. Only 5 of 12 offices with operating plans had performance targets, and these offices were primarily of an investigative nature. Because the Performance Targets for Strategic Goal 1 reflect the core mission of the agency, the Board places special emphasis to ensure the best allocation of resources to achieve results in this goal category. Over 30 separate targets were tracked and evaluated for Strategic Goal 1. Primarily, the targets pertained to the levels of investigative activity and the consistency of the report production process. With these targets in place and their respective evaluation to ensure achievement, the Board met its legislative mission to accomplish objective accident investigations that improve the safety of the transportation industry.

*Examples of Achieved Performance Targets: Goal 1*

- The Office of Aviation Safety met mandated criteria for launching investigations 100 percent of time
- The Office of Aviation Safety completed 65 percent of its investigations within the planning period
- The Office of Railroad, Pipeline and Hazardous Materials Investigations established new criteria for its accident launches
- The Office of Railroad, Pipeline and Hazardous Materials Investigations launched on more than eight accidents, which was the target for the year
- The Office of Highway Safety Office completed several major investigations during the year
- All staff members in the Office of Marine Safety completed training during the year
- The Office of Maine Safety completed most investigations within the planning period

*Strategic Goal 2 - Increase our impact on the safety of the transportation system*

For Strategic Goal 2, more than half of all tracked performance targets were fully achieved by September 2007; 8 of 12 offices had performance targets for Goal 2 on the operating plans. Of the 8, 7 had success in the green category at a high level. The targets for Strategic Goal 2 primarily pertain to the Board's participation in outreach activities to promote safety, and the identification of emerging safety issues. Board staff, with significant experience in a wide array of investigative topics, participated in industry committees and symposia on a regular basis. By combining industry outreach with the experience from ongoing investigations, the staff easily identified emerging safety issues in aviation, highway, rail, pipeline, and the marine industries. Board management tracked the volume of industry participation by staff, ensured that the emerging issues were analyzed, and that their implication on the industry was clearly understood. Currently, the Board is evaluating various means to cascade knowledge about emerging issues to industry stakeholders. Additionally, using this additional knowledge, the Board can ensure that appropriate training and additional staff resources are available for future investigations, and that the Board can continue its mandate to conduct its mission to improve safety. During fiscal year 2007, the Board made significant gains in this area.

## Examples of Achieved Performance Targets: Goal 2

### Investigative Offices

- Office of Aviation Safety identified six emerging issues in the industry to examine in more detail
- Modal offices participated in a number of industry conferences, committees, and working groups
- The Safety Board published a number of legal papers on safety issues

### Non-Investigative Offices

- Developed an advocacy plan to promote safety issues in the industry

### ***Strategic Goal 3 - Outstanding stewardship of resources***

For Strategic Goal 3, most of the tracked performance targets were fully achieved by September 2007. All 12 Safety Board offices had performance targets for Goal 3 on their operating plans. Of the 12, all offices had considerable success in achieving the targets during the fiscal year. The Board is committed to ensuring that the stewardship of resources-- including the use of best practices in project planning, controlling costs, and deploying cost effective technology—is reflected in the operating plans of all Board investigative and non-investigative offices. To that end, office managers worked within a targeted budget for FY 2007, and developed and managed project plans for major work projects. In addition, this strategic goal encompassed the objective of maintaining profitability of the training center, and the Board was pleased to finalize sub-contracting arrangements for the center that led to substantial additional revenue. Moving forward, as the Board faces continuing challenges in meeting its mission in an environment of scarce government resources, it will emphasize clear office targets in this area to ensure promoting safety in the transportation industry remains of the highest importance.

## Examples of Achieved Performance Targets: Goal 3

### Investigative Offices

- Had a plan and a post-project review for their projects

### Non-Investigative Offices

- Changed the notation process
- Launched human capital database
- Pursued new investigative technologies
- Developed financial records that auditors approved
- Submitted all financial records on time
- Submitted budget to OMB and Congress on time
- Conducted employee ethics reviews within 14 days of new hire status

### ***Strategic Goal 4 - Organizational excellence***

For Strategic Goal 4, all 12 Safety Board offices had performance targets for Goal 4 on their operating plans. Of these, almost all offices reflected full success in this goal category. The keystone objective for this strategic goal was to ensure that all offices developed a culture of planning in their structure, and with planning taking a long-term perspective. To that end, the Board determined that developing individual operating plans for each office would be a key deliverable as the fiscal year close out. Although the strategic plan only needs to be updated every three years, its connection to day-to-day operations – the operating plans – have proven to be the key planning document for Board management. These 12 plans were monitored over a number of months, and the targets in the plans were enhanced at the end of the year. This process will continue for each year moving forward, so that plans reflect the current environment in offices, while conforming to the overall goals and objectives in the strategic plan. A second objective in this goal category was to improve the management team, and a number of offices implemented initiatives to achieve that objective. For example, the office of management launched a management development program, where two future leaders of the Board were selected to participate in a high profile training program to develop leadership skills and contribute to the agency mission at a strategic level. This program received considerable positive feedback during its first 6 months of operation. The second rollout of this program is expected to occur during FY 2008. Finally, to foster the Board's commitment to improved communications, the Board implemented its first agency wide communications survey during July 2007. This survey revealed that although communications at the Board have greatly improved in recent years, there are opportunities for additional enhancement. The Board aggressively developed strategies to address any communications shortfalls, and the survey will be implemented on a yearly basis in the future to ensure that communications continue to improve as strategies are implemented.

#### Examples of Achieved Performance Targets: Goal 4

##### Investigative Offices

- Participated in communications survey
- The Office of Marine Safety office held monthly all-hands meetings
- All investigative groups utilized a variety of communications approaches

##### Non-Investigative Offices

- Strategic and Operating Plans were developed and implemented
- Established a baseline of employee communications data by implementing a communications survey across the Safety Board with 65 percent participation
- General Counsel published a regular newsletter
- Established and implemented the leadership development program



The NTSB is pleased with the level of success from the evaluation of the first year of data from the operating plans. By having offices focus on specific performance-based targets, additional management attention was directed toward a variety of activities, and this attention greatly improved agency operations. These improvements directly influenced the Board's 17 strategic objectives—which is the primary intent of the strategic plan-- which in turn cascaded up to the four strategic goals. During fiscal year 2007, a performance-based culture has become embedded in Board management and staff. This culture will continue to be enhanced during fiscal year 2008, as the office performance targets are updated and tracked for the year. The Board is optimistic that its performance-based culture will continue to evolve and promote better governance in the future, which will in turn improve transportation safety.

### **Primary Mission Activity Accomplishments**

The NTSB seeks to accomplish its mission by careful use of the resources provided by Congress to create and maintain a motivated, knowledgeable workforce that is properly trained, equipped and supported; by intelligent selection of endeavor and masterful execution of function; through careful consideration and forceful communication of recommendations for change in the regulation and operation of the instrumentalities of transportation; and by the creation of a self-critical learning culture that strives for continued improvement in the services it provides.

However, the results of its efforts include the independent investigation of thousands of accidents in all modes of transportation and in the transportation of hazardous materials. Safety improvement recommendations emanating from these investigations ultimately produce the desired outcome for the Board's mission activities: safer transportation for our citizens.

The Office of Safety Recommendations and Advocacy includes the divisions of Safety Recommendations, Safety Advocacy, and Transportation Disaster Assistance. The office is responsible for coordinating strategies for implementing the safety recommendations and supporting victims of transportation disasters.

Safety recommendations are the Board's most important product. They are vital to the Safety Board's basic accident prevention role. The safety recommendation process is the lever used to bring about change to, and improvement in, the nation's transportation system. Timeliness is an essential part of the recommendation process. As a result, the Board may issue safety recommendations as soon as a problem is identified, without waiting for an accident investigation to be completed and the probable cause determined. Although the Board's recommendations are not mandatory, to emphasize their importance, Congress requires DOT to respond to recommendations made to it and its agencies within 90 days.

The Safety Board established its "Most Wanted" Safety Recommendations program to highlight recommendations that would have the greatest impact on transportation safety at the national level and represent the actions that the Board believes should be implemented as soon as possible because they have the most potential to improve safety, reduce accidents and injuries, and save lives. Although

the Board actively advocates for the acceptance of all of its recommendations, follow-up efforts for those recommendations on the “Most Wanted” list are generally more aggressive.

### ***Safety Recommendations***

The Safety Recommendations division is responsible for:

- Coordinating with other Safety Board offices in the analysis and development of remedies for safety issues that are uncovered during accident investigations;
- Following up on the implementation of appropriate, timely, and effective safety recommendations;
- Tracking the progress of all safety recommendations issued;
- Tracking and publishing Safety Board transportation safety accomplishments;
- Maintaining the recommendations database; and
- Managing the Board’s “Most Wanted” Transportation Safety Improvements Program and tracking transportation safety accomplishments through positive resolution of safety recommendations.

### ***Safety Advocacy***

The Safety Advocacy division is responsible for:

- Developing and implementing advocacy programs to highlight Safety Board issues;
- Obtaining support for Safety Board programs and legislation at the Federal, state, and local levels consistent with Board recommendations;
- Working to improve the dissemination of safety information and increasing public awareness of the Board’s activities in transportation safety; and
- Supporting the Board’s involvement in the International Transportation Safety Association, an association of international independent accident investigation agencies.

### ***Transportation Disaster Assistance***

The Office of Transportation Disaster Assistance was established in 1996 to carry out the Board’s statutory responsibilities to coordinate Federal assistance to victims and family members affected by major aviation accidents. Following a major transportation accident, the Office of Transportation Disaster Assistance coordinates the provision of federal services to the survivors and the victims’ families, including family counseling, victim identification and forensic services, communicating with foreign governments, and translation services. The office’s staff also conducts family informational briefings at the accident scene, and provides periodic updates and answers families’ questions during the ensuing investigation.

The office responds to all major aviation accidents and some regional aviation investigations and major accidents in other modes of transportation as resources permit. In addition to assisting victims and family members, the Transportation Disaster Assistance staff provides training and education to

other government agencies; affected organizations; airline and airport personnel; and state and local governments to assist in their preparedness.

***Fiscal Year 2006 Accomplishments and Workload***

The chart below depicts statistics related to the number of recommendations issued, closed and ongoing during fiscal year 2006.

Mode	Status of Open Recommendations as of September 30, 2006	Recommendations Closed with Acceptable Implementation	Issued Recommendations	Investigator-Inspired Safety Improvements
Aviation	372	27	76	53
Highway	260	12	32	
Marine	77	19	17	
Railroad	101	11	26	1
Pipeline	32	6	11	
Intermodal	17	5		
<b>Total</b>	<b>859</b>	<b>80</b>	<b>162</b>	<b>54</b>

In addition, the members and staff of the Safety Board made more than 30 presentations and participated in more than 80 conferences, meetings and legislative hearings throughout the country to promote safety recommendations on a wide range of issues affecting all transportation modes.

***Closed Recommendations***

The following chart displays the number of recommendations closed by source.

Mode	Total	Federal	State	Industry or Association
Aviation	27	27		
Highway	12	2	3	7
Marine	19	12	2	5
Railroad	11	8		3
Pipeline	6	5		1
Intermodal	5	5		
<b>Total</b>	<b>80</b>	<b>59</b>	<b>5</b>	<b>16</b>

In fiscal year 2006, the Safety Board closed 80 safety recommendations that had been successfully implemented and were classified “Closed—Acceptable Action” and “Closed—Acceptable Alternate Action.” It often takes an average of 5 years from the time the Safety Board issues a recommendation until it is implemented to the Safety Board’s satisfaction.

Safety recommendations are made to local, state and federal government agencies, equipment manufacturers, professional and industry organizations, and corporate members of the transportation industry. Below is a partial listing of the actions taken to implement Safety Board recommendations in fiscal year 2006.

### ***Aviation***

The Federal Aviation Administration:

- Advised aircraft pilots on the hazards of using specific medications when flying or operating aircraft;
- Required manufacturers to modify cabin altimeter gauges on Airbus A300 models to ensure that they do not give flight crews misleading altitude and pressure indications;
- Updated aircraft weight and balance and center of gravity requirements to better account for increases in average individual and baggage weights;
- Revised maintenance procedures for critical flight systems in Beech 1900 airliners;
- Issued better guidance and best practices for transport-category aircraft pilots to deal with potential aircraft upsets and to correct previously inaccurate training;
- Revised air carrier practices related to training employees for accepting and handling passenger baggage and freight shipments and identifying undeclared and unauthorized hazardous materials;
- Disseminated better information to turbine-powered aircraft flight crews related to minimum airspeed maneuvering for all airplane configurations, phases and flight conditions, including icing and non-icing conditions;
- Issued improved guidance for installation, repairs and inspections of emergency evacuation systems, including aircraft slides; and
- Required improved checklists to help ensure that aircraft cargo is weighted, loaded and sequenced correctly.

### ***Highway***

- The National Highway Transportation Safety Administration (NHTSA) worked with industry safety advocates to improve reporting drivers who may be medically impaired to state licensing authorities.
- NHTSA required manufacturers to install better passenger restraint systems in 12 and 15-passenger vans, and conduct testing of systems to aid drivers in maintaining control of 15-passenger vans.
- Bus manufacturers initiated routine inspection and maintenance of passenger seat anchorages in motorcoaches and upgraded standards to avoid seats detaching from their anchorages during collisions and rollovers.

- The Federal Highway Safety Administration (FHWA) and industry developed improved traffic control guidelines for U.S. Border Patrol checkpoints located on high-speed arterial roadways.
- Several states enacted legislation to require stronger vehicle child restraint standards.
- Highway safety advocates improved training on passive grade crossing safety in highway safety education programs, and improved grade crossing inspections by railroads and public utilities.
- The U. S. Department of Transportation developed training for highway and railroad maintenance workers on the design, function and repair of interconnected highway and railroad signal systems.

### *Marine*

- Cruise ship lines installed better smoke detection and suppression systems on large cruise ships to mitigate smoke and fire spread through ship laundry ducts, and on mooring decks that carry high fire loads.
- The U.S. Coast Guard (USCG) advised mariners on the hazards of using specific medications when operating a vessel.
- The USCG required vessel pilots to provide proof of compliance with USCG medical certification requirements.
- The New York City Department of Transportation implemented a comprehensive safety management system, including medical fitness oversight and recurring evaluation of maritime navigation technology.
- The USCG issued stronger standards for mariner drug and alcohol testing, including onboard breath testing and urine collection kits, and quick post-accident testing.

### *Rail*

- The Washington Metropolitan Area Transit Authority revised directions for light rail operators in Washington, D.C. to identify and respond to train rollbacks, and procedures to halt rollbacks.
- Federal Rail Administration (FRA) improved standards for railroad event recorder crashworthiness for new and rebuilt locomotives, modifications to recorders to monitor and record throttle position directly, and implemented additional recorder testing procedures.
- Amtrak initiated better scheduling and record keeping for emergency preparedness training for their employees.
- The Association of American Railroads made progress in completing interoperability standards for positive train control systems.
- The Kansas City-Southern Railway Company improved its signal rules.

### *Pipeline and Hazardous Materials*

- The Puerto Rico Public Service Commission issued new written procedures for pipeline inspectors to assess safety compliance by pipeline operators and document violations.
- The Pipeline and Hazardous Materials Safety Administration:
  - Issued new guidance to pipeline operators for testing of new pumping stations and relief valves;
  - Issued new guidelines for pipeline operators on the potential safety risks associated with rotating pipeline controller work shifts; and
  - Improved coordination with electric and other utilities during pipeline emergencies.
- Pipeline system operators adopted guidance for the installation of precisely placed permanent markers at sites where gas and hazardous liquid pipelines cross-navigable waterways.
- The Environmental Protection Agency updated responsibilities and training for personnel assigned to manage oil discharges and hazardous substance releases under the National Contingency Plan.

### *Recommendations Issued*

The Safety Board issued 162 new recommendations during fiscal year 2006. The chart below indicates the number of recommendations by category of the recipient.

<b>Mode</b>	<b>Total</b>	<b>Federal</b>	<b>State</b>	<b>Industry or Association</b>	<b>Foreign</b>
<b>Aviation</b>	<b>76</b>	<b>74</b>		<b>1</b>	<b>1</b>
<b>Highway</b>	<b>32</b>	<b>15</b>	<b>3</b>	<b>14</b>	
<b>Marine</b>	<b>17</b>	<b>11</b>	<b>2</b>	<b>4</b>	
<b>Railroad</b>	<b>27</b>	<b>17</b>		<b>10</b>	
<b>Pipeline</b>	<b>10</b>	<b>6</b>		<b>4</b>	
<b>Total</b>	<b>162</b>	<b>123</b>	<b>5</b>	<b>33</b>	<b>1</b>

### *Investigator-Inspired Safety Improvements*

The Safety Board recognizes and tracks improvements that are implemented without the need for a formal safety recommendation. These safety accomplishments come about when an investigator or other party to an investigation recognizes an action that can be taken immediately to prevent similar accidents or incidents from occurring in the future. Action is taken by the responsible party to implement the suggestion, obviating the time and resources required by the formal recommendation process. An internal review board consisting of a representative from the Office of Safety Recommendations and Advocacy and the directors of the modal offices determines whether or not the action merits designation as a safety improvement. During fiscal year 2006, NTSB investigators generated 54 safety improvements through the Safety Proposal Review Board.

## Fiscal Year 2007 Accomplishments and Workload Through July 2, 2007

The chart below summarizes information related to the number of recommendations issued, closed and ongoing through July 2, 2007.

Mode	Status of Open Recommendations as of July 2, 2007	Recommendations Closed with Acceptable Implementation	Issued Recommendations	Investigator-Inspired Safety Improvements
Aviation	416	14	63	45
Highway	247	12	17	
Marine	64	10	3	
Railroad	110	9	19	
Pipeline	35	6	10	
Intermodal	19		5	
Total	891	51	117	45

### *Closed Recommendations*

The following chart displays the number of recommendations closed by source.

Mode	Total	Federal or Local	State	Industry or Association
Aviation	18	17		1
Highway	14	8		6
Marine	16	7	1	8
Railroad	11	3		8
Pipeline	7	1		6
Intermodal	0			
Total	66	36	1	29

### ***Recommendations Issued***

The Safety Board issued 115 new recommendations through July 2, 2007. The chart below indicates the number of recommendations by category of the recipient.

<b>Mode</b>	<b>Total</b>	<b>Federal</b>	<b>State</b>	<b>Industry or Association</b>	<b>Foreign</b>
Aviation	66	62		3	1
Highway	17	9	1	7	
Marine	3	2		1	
Railroad	19	12		7	
Pipeline	10	6		4	
Total	115	91	1	22	1

### ***Investigator-Inspired Safety Improvements***

Through July 2, 2007, NTSB investigators generated 45 safety improvements through the Safety Proposal Review Board.

### **Office of Aviation Safety**

The mission of the Office of Aviation Safety is to:

- Investigate all air carrier, commuter and air taxi accidents, in-flight collisions, fatal general aviation accidents, and certain public use aircraft accidents.
- Participate in the investigation of major airline crashes in foreign countries that involve U.S. carriers, U.S.-manufactured or -designed equipment, in order to carryout U.S. obligations under International Civil Aviation Organization (ICAO).
- Conduct investigations that go beyond a single accident to examine specific aviation safety problems from a broader perspective.

The Office of Aviation Safety conducts activities through seven major divisions and ten regional offices. Additionally international aviation coordination is staffed within the immediate office of the Director of the Office of Aviation Safety.

### ***Major Investigations***

- Provides IICs for major domestic aircraft accident investigations,
- Coordinates the preparation of the Board's comprehensive aviation accident reports, and manages aviation public hearings,



- Coordinates and supervises the efforts of accident investigation participants who are provided by industry, other government agencies, and foreign authorities (for investigations involving foreign-registered aircraft that were operating in U.S. territory or foreign-manufactured or -designed aircraft operated by U.S. carriers).
- The group chairmen are technical specialists from the Operational Factors, Aviation Engineering, Human Performance, and Survival Factors Divisions and from other NTSB organizational elements as appropriate. Each group conducts an objective and thorough technical investigation of the accident, and produces a factual report for their specialty area that is placed in the Board's public docket. The Board's technical specialists produce analytical reports that are used to develop the draft final report and proposed safety recommendations to correct deficiencies found and to prevent future accidents from similar causes.
- Provides accredited representatives and technical advisors to assist in the investigation of civil aviation accidents that occur in other countries. These representatives serve as the U.S. team leader and assist foreign governments in their accident investigations in accordance with the Chicago Convention. The accredited representative informs domestic aviation interests of the progress of an investigation, while providing needed technical expertise, as requested, to foreign government's accident investigative organization. Safety issues uncovered during such investigations that may affect U.S. aviation safety or the safety of aircraft or aircraft components manufactured in the United States are brought to the attention of the FAA and U.S. industry representatives.

### ***Regional Operations and General Aviation***

- Provides program oversight for the 10 regional offices
- Conducts report review and analysis
- Provides support for field investigations

### ***Operational Factors***

- **Air Traffic Control (ATC).** Examines ATC facilities, procedures, and flight handling, and develops flight histories from air route traffic control centers and terminal facility radar records.
- **Operations.** Examines the operations of the air carrier and the airport; the training, experience, and performance of the flight crews; and FAA surveillance of flight operations.
- **Meteorology.** Examines the meteorological/environmental conditions that may have caused or contributed to an accident and reviews the pertinent meteorological products, procedures, and services provided by government and industry.

### ***Aviation Engineering***

- **Powerplants -** Examines the airworthiness of aircraft engines and propellers.

- **Structures** - Examines the integrity of aircraft structures and flight controls, including the adequacy of design and certification.
- **Systems** - Examines the airworthiness of aircraft flight controls, and electrical, pneumatic, hydraulic, and avionics systems.
- **Maintenance Records** - Examines the service history and maintenance of aircraft systems, structures, and powerplants.
- **Helicopters** - Examines the airworthiness of helicopters, including powerplant structures and control systems.

### ***Human Performance***

The Human Performance Division examines the performance of persons whose actions may have caused or contributed to an accident, and studies their knowledge, experience, training, and physical abilities; reviews the adequacy of established procedures; examines work habit patterns and interrelationships with management; and investigates the ergonomics of equipment design and the potential effects of that design on operator performance. A study of individuals' sleep and rest cycles and drug or alcohol use may also be a part of a human performance investigation.

### ***Survival Factors***

The Survival Factors Division examines factors that affect the survival of persons involved in accidents, including the causes of injuries sustained by occupants of the aircraft or by other affected individuals. The division also examines safety procedures, search and rescue operations, crashworthiness, equipment design, emergency response and escape, crewmember emergency procedures training, and airport certification issues.

### ***Writing and Editing***

The Writing and Editing Division is responsible for drafting major aviation reports and editing the office's written products, including safety recommendation letters, special investigation reports, and general correspondence.

### ***Regional Offices***

The Office of Aviation Safety operates ten regional offices located in:

- Parsippany, New Jersey;
- Atlanta, Georgia;
- Miami, Florida;
- West Chicago, Illinois;
- Arlington, Texas;
- Denver, Colorado;
- Seattle, Washington;

- Los Angeles, California;
- Anchorage, Alaska; and
- Ashburn, Virginia

Many aviation accidents/incidents meeting the Board's accident selection criteria are investigated as field accident/incident investigations. These investigations may be much smaller in scope, but are conducted in a manner similar to major investigations. Often, a single investigator working with representatives from other parties and gathering detailed information pertinent to the accident conducts them. During each investigation, investigators consider ways to prevent similar accidents from recurring through an informal on-scene solution (a safety accomplishment), or through the Board's formal safety recommendation process. In addition, field investigators often provide support to major aviation accident investigations.

## Accomplishments and Workload

### *Completed Accident Investigation Reports – FY 2006*

#### **Corporate Airlines Flight 5966 Kirksville, Missouri October 19, 2004**

Corporate Airlines (doing business as American Connection) flight 5966, a BAE Systems BAE-J3201, N875JX, struck trees on final approach and crashed short of runway 36 at the Kirksville Regional Airport (IRK), Kirksville, Missouri. The flight was operating under the provisions of 14 Code of Federal Regulations Part 121 as a scheduled passenger flight from Lambert-St. Louis International Airport, in St. Louis, Missouri, to IRK. The captain, first officer, and 11 of the 13 passengers were fatally injured, and 2 passengers received serious injuries. The airplane was destroyed by the impact and post-crash fire. Night instrument meteorological conditions (IMC) prevailed at the time of the accident, and the flight operated on an instrument flight rules flight plan.

The Safety Board determined that the probable cause of the accident was the pilots' failure to follow established procedures and properly conduct a non-precision instrument approach at night in IMC, including their descent below the minimum descent altitude (MDA) before required visual cues were available (which continued un-moderated until the airplane struck the trees) and their failure to adhere to the established division of duties between the flying and non-flying (monitoring) pilot. Contributing to the accident was the pilots' failure to make standard callouts and the current Federal Aviation Regulations that allow pilots to descend below the MDA into a region in which safe obstacle clearance is not assured based upon seeing only the airport approach lights. The pilots' unprofessional behavior during the flight and their fatigue likely contributed to their degraded performance.

Recommendations: 5  
Report Adopted: January 24, 2006

**Beech King Air 200 (Accident Brief)****Martinsville, Virginia****October 24, 2004**

A Beech King Air 200, N501RH, operated by Hendrick Motorsports, Inc., crashed into mountainous terrain in Stuart, Virginia, during a missed approach to Martinsville/Blue Ridge Airport (MTV), Martinsville, Virginia. The flight was transporting Hendrick Motorsports employees and others to an automobile race in Martinsville, Virginia. The two flight crewmembers and eight passengers were killed, and the airplane was destroyed by the impact force and post-crash fire. The flight was operating under the provisions of 14 Code of Federal Regulations (CFR) Part 91 on an instrument flight rules flight plan. Instrument meteorological conditions prevailed at the time of the accident.

The Safety Board determined that the probable cause of this accident was the flight crew's failure to properly execute the published instrument approach procedure, including the published missed approach procedure, which resulted in controlled flight into terrain. Contributing to the cause of the accident was the flight crew's failure to use all available navigational aids to confirm and monitor the airplane's position during the approach.

Recommendations: None  
Report Adopted: February 7, 2006

**Era Aviation Sikorsky S-76****Gulf of Mexico South of Galveston, Texas****March 23, 2004**

An Era Aviation Sikorsky S-76A++ helicopter, N579EH, crashed into the Gulf of Mexico about 70 nautical miles south-southeast of Scholes International Airport (GLS), Galveston, Texas. The helicopter was transporting eight oil service personnel to the Transocean, Inc. drilling ship, *Discoverer Spirit*, which was en route to a location about 180 miles south-southeast of GLS. The captain, copilot, and eight passengers aboard the helicopter were killed, and the helicopter was destroyed by the impact of the crash. The flight was operating under the provisions of 14 CFR Part 135 on a visual flight rules flight plan. Night visual meteorological conditions prevailed at the time of the accident.

The Safety Board determined that the probable cause of this accident was the flight crew's failure to identify and arrest the helicopter's descent for undetermined reasons, which resulted in controlled flight into terrain.

Recommendations: 2  
Report Adopted: March 6, 2006

**Air Tahoma Convair 580**  
**Near Covington, Kentucky**  
**August 13, 2004**

Air Tahoma, Inc., flight 185, a Convair 580, N586P, crashed about 1 mile south of Cincinnati/Northern Kentucky International Airport (CVG), Covington, Kentucky, while on approach to runway 36R. The first officer was killed, and the captain received minor injuries. The airplane was destroyed by impact force. The flight was operating under the provisions of 14 CFR Part 121 as a cargo flight for DHL Express from Memphis International Airport, Memphis, Tennessee, to CVG. Visual meteorological conditions prevailed for the flight, which operated on an instrument flight rules flight plan.

The Safety Board determined that the probable cause of this accident was fuel starvation resulting from the captain's decision not to follow approved fuel crossfeed procedures. Contributing to the accident were the captain's inadequate preflight planning, his subsequent distraction during the flight, and his late initiation of the in-range checklist. Further contributing to the accident was the flight crew's failure to monitor the fuel gauges and to recognize that the airplane's change in handling characteristics was caused by a fuel imbalance.

Recommendations: 3  
Report Adopted: May 2, 2006

**Global Air Canadair CL-600 (Accident Brief)**  
**Montrose, Colorado**  
**November 28, 2004**

A Canadair, Ltd., CL-600-2A12, N873G, registered to Hop-a-Jet, Inc., and operated by Air Castle Corporation doing business as Global Aviation Glo-Air flight 73, collided with the ground during takeoff at Montrose Regional Airport (MTJ), Montrose, Colorado. The on-demand charter flight was operated under the provisions of 14 CFR Part 135 on an instrument flight rules flight plan. Instrument meteorological conditions prevailed, and snow was falling. Of the six occupants on board, the captain, the flight attendant, and one passenger were killed, and the first officer and two passengers were seriously injured. The airplane was destroyed by the impact force and post-crash fire. The flight was en route to South Bend Regional Airport (SBN), South Bend, Indiana.

The Safety Board determined that the probable cause of this accident was the flight crew's failure to ensure that the airplane's wings were free of ice or snow contamination that accumulated while the airplane was on the ground. When the airplane attempted takeoff with upper wing contamination, the subsequent stall resulted in collision with the ground. A factor contributing to the accident was the pilots' lack of experience flying during winter weather conditions.

Recommendations: 2  
Report Adopted: May 2, 2006

**Pavair, Inc. Learjet (Accident Brief)****Helendale, California****December 23, 2003**

A Learjet 24B, N600XJ, registered to and operated by Pavair, Inc., of Santa Monica, California, departed controlled flight and crashed near Helendale, California. The captain and the first officer were killed, and the airplane was destroyed. The flight was operating under the provisions of 14 CFR Part 91 from San Bernardino County Airport (CNO), Chino, California, to Friedman Memorial Airport, Hailey, Idaho. Visual meteorological conditions prevailed for the flight, which operated on an instrument flight rules flight plan.

The Safety Board determined that the probable cause of this accident was a loss of airplane control for undetermined reasons.

Recommendations: None  
Report Adopted: May 23, 2006

**Med Flight Air Ambulance Learjet 35A (Accident Brief)****Near San Diego, California****October 24, 2004**

A Learjet 35A, N30DK, registered to and operated by Med Flight Air Ambulance, Inc. (MFAA), crashed into mountainous terrain shortly after takeoff from Brown Field Municipal Airport (SDM), near San Diego, California. The captain, the copilot, and the three medical crewmembers were killed and the airplane was destroyed. The repositioning flight was operated under the provisions of 14 *Code of Federal Regulations* (CFR) Part 91 with an instrument flight rules flight plan filed. Night visual meteorological conditions prevailed.

The Safety Board determined that the probable causes of this accident were:

- Failure of the flight crew to maintain terrain clearance during a visual flight rules departure, which resulted in controlled flight into terrain;
- The air traffic controller's issuance of a clearance that transferred the responsibility for terrain clearance from the flight crew to the controller, who failed to provide terrain clearance instructions to the flight crew and to advise the flight crew of the MSAW alerts; and
- The pilots' fatigue, which likely contributed to their degraded decision-making.

Recommendations: None  
Report Adopted: May 23, 2006

## Completed Accident Investigation Reports – FY 2007

### **Runway Overrun and Collision; Platinum Jet Management, LLC; Bombardier Challenger CL-600-1A11, Teterboro, New Jersey February 2, 2005**

During an attempted departure from the Teterboro, New Jersey Airport, a Bombardier Challenger operated by Platinum Jet Management, LLC (PJM) of Fort Lauderdale, Florida ran off the departure end of the runway, through an airport perimeter fence, across a six-lane highway and a parking lot, before impacting a building. Both pilots were seriously injured, as were two occupants of a vehicle on the highway that was struck by the jet. A cabin aide, eight passengers, and one person in the building sustained minor injuries. The post-impact fire destroyed the airplane.

The on-demand passenger charter flight was subject to the provisions of 14 CFR Part 135 and operated by PJM under a charter management agreement with Darby Aviation (Darby) of Muscle Shoals, Alabama. Darby held the certificate for the Part 135 service.

The Safety Board determined that the probable cause of this accident was the pilots' failure to ensure that the plane was loaded within the weight-and-balance limits and their attempt to take off with center of gravity well forward of the forward takeoff limit, preventing the airplane from rotating at the required rotation speed.

Other factors contributing to the cause of the accident were:

- PJM's conduct of charter flights without proper FAA certification and compliance with 14 CFR Part 135 requirements;
- Darby Aviation's failure to maintain operational control over 14 CFR Part 135 flights being conducted under its certificate by PJM, which resulted in an environment conducive to the development of systemic patterns of flight crew performance deficiencies;
- The failure of the Birmingham, Alabama, FAA Flight Standards District Office to provide adequate surveillance and oversight of operations conducted under Darby's Part 135 Certificate; and
- The FAA's tacit approval of arrangements such as the one between Darby and PJM that allow air carriers without a certificate to use the certificate of another operator.

As a result of this investigation, the Safety Board issued four recommendations to the FAA addressing safety issues concerning the adequacy of control under arrangements similar to the one between PJM and Darby. The Safety Board further agreed to take a close look at brokers and the services that they provide in the aviation industry.

Recommendations: 4  
Report Adopted: October 31, 2006

**Crash During Approach to Landing; Business Jet Services, Ltd.;  
Gulfstream G-1159A (Accident Brief)  
Houston, Texas  
November 22, 2004**

This accident occurred during an instrument landing system (ILS) approach to William P. Hobby Airport. The airplane was destroyed and the flight crew consisting of the captain, first officer, and a flight attendant were killed. An individual in a vehicle on the ground received minor injuries. The flight crew planned to pick up former President George H.W. Bush and other passengers in Houston and transport them to Guayaquil, Ecuador.

The Safety Board determined that the probable cause of this accident was the flight crew's failure to adequately monitor and cross-check the flight instruments during the ILS approach. The flight crew's failure to select the ILS frequency in a timely manner and adhere to approved company approach procedures, including the stabilized approach criteria, also contributed to the accident.

Recommendations: None  
Report Adopted: November 2, 2006

**Controlled Flight Into Terrain, CASA C-212-CC (Accident Brief)  
Bamiyan, Afghanistan  
November 27, 2004**

This accident occurred when a Construcciones Aeronauticas Sociedad Anonima C-212-CC (CASA 212) twin-engine, turboprop airplane operated by Presidential Airways, Inc., of Melbourne, Florida was destroyed when it collided with the mountainous terrain near Bamiyan, Afghanistan. The civilian contractor crew consisted of the captain and first officer. Passengers included a civilian contractor and three active-duty U.S. Army soldiers. All aboard received fatal injuries and the airplane was destroyed. The Safety Board accepted delegation of the accident investigation at the request of the Transitional Islamic Government of Afghanistan, Ministry of Civil Aviation and Tourism. The investigation was conducted in accordance with paragraph 5.1 of Annex 13 to the Convention on International Civil Aviation. The Spanish manufactured twin-engine, turboprop airplane was registered to an American company operating with a Part 135 certificate under a Department of Defense (DoD) contract.

The Safety Board reached the following conclusions in conducting this investigation.

- The flight crew flew a nonstandard route into a box canyon and did not take action to increase altitude or turn around in a timely manner.
- The flight crew did not use supplemental oxygen as required by Federal regulations for unpressurized aircraft at the altitudes at which the flight was operating.
- The operator did not provide sufficient oversight of and guidance to its flight crews.
- The operator did not ensure that operations in Afghanistan were conducted in compliance with Part 135 regulations.



- The operator's dispatch procedures were inadequate in that they did not ensure that specific routes of flight were defined and flown.
- The operator did not adequately mitigate the limited communications capability at some remote sites.
- The operator's flight-locating procedures were inadequate in that they did not consistently track flight arrivals at each remote location in a timely manner.
- Once the airplane was identified as missing, the coordination of the search and rescue effort was flawed, and radar data of the airplane's last known position were not provided to searchers in a timely manner.
- The FAA did not provide adequate oversight of the Part 135 operation in Afghanistan.
- The DoD did not provide adequate oversight of the contract carrier's operations in Afghanistan that was consistent with the safety provisions of the contract with Presidential Airways and regulations in 32 CFR Part 861.
- One of the passengers would most likely have survived if he had received timely medical assistance followed by appropriate surgical intervention.

The Safety Board found that the probable cause of the accident was the captain's decision to fly a nonstandard route and his failure to maintain adequate terrain clearance, which resulted in the in-flight collision with the mountainous terrain. A total of six recommendations were issued.

The Safety Board recommended to the Islamic Republic of Afghanistan that they consider improving search and rescue services with particular emphasis on cooperation with other States and locally available organizations that maintain search and rescue capabilities.

The Safety Board referred four recommendations to the DoD relating to coordination with the FAA and oversight of civilian contractors providing support at remote sites within or outside of conflict zones. Similarly, the Safety Board recommended to the FAA that they coordinate with the DoD to ensure oversight, including periodic en route inspections, is provided at all contractor bases of operation for civilian contractors that provide aviation transportation to the U.S. military overseas under 14 Code of Federal Regulations Part 121 or Part 135. Although concurring with the report, one Board member cited the unique set of circumstances presented by the investigation and raised questions about the FAA's ability to provide oversight in a foreign conflict zone under military operations subject to the DoD where no FAA inspectors are assigned.

Recommendations: 7  
Report Adopted: November 8, 2006

## **Crash of Pinnacle Airlines Flight 3701, Bombardier CL-600-2B19**

### **Jefferson City, Missouri**

**October 14, 2004**

This report explains the accident involving a Bombardier CL-600-2B19, N8396A, which crashed into a residential area about 2.5 miles south of Jefferson City Memorial Airport, Jefferson City, Missouri. During the flight, both engines flamed out after a pilot-induced aerodynamic stall and could not be restarted. Safety issues discussed in this report focus on flight crew training in the areas of high altitude climbs, stall recognition and recovery, and double engine failures; flight crew professionalism; and the quality of some parameters recorded by flight data recorders on regional jet airplanes.

The Safety Board concluded that the probable causes of this accident were:

- The pilots' unprofessional behavior, deviation from standard operating procedures, and poor airmanship, which resulted in an in-flight emergency from which they were unable to recover, in part because of the pilots' inadequate training;
- The pilots' failure to prepare for an emergency landing in a timely manner, including communicating with air traffic controllers immediately after the emergency about the loss of both engines and the availability of landing sites; and
- The pilots' improper management of the double engine failure checklist, which allowed the engine cores to stop rotating and resulted in the core lock engine condition.

Other contributing factors to this accident were:

- The core lock engine condition, which prevented at least one engine from being restarted, and
- The airplane flight manuals that did not communicate to the pilots the importance of maintaining a minimum airspeed to keep the engine cores rotating.

The Safety Board issued eighteen new recommendations to the FAA. These recommendations involved improving training and guidance in the areas of high altitude flying and double engine failure restarts; setting standards and operating procedures for professional conduct and reviews to ensure compliance; and engine design review and failure testing to establish operational conditions needed for in-flight restart for turbine-powered engines similar to those on the aircraft involved in this investigation. The Safety Board also reiterated a previously issued recommendation that would require modification of certain regional jets with digital flight data recorder systems that meet sampling rate, range and accuracy requirements specified in applicable regulations.

Recommendations: 18 new and 1 reiterated

Report Adopted: January 10, 2007

### **Crash During Approach to Landing, Circuit City Stores, Inc., Cessna Citation 560 Pueblo, Colorado February 16, 2005**

On the morning of February 16, 2005, a Cessna Citation 560, N500AT, operated by Martinair, Inc., for Circuit City Stores, Inc., crashed about 4 nautical miles east of Pueblo Memorial Airport, Pueblo, Colorado, while on an instrument landing system approach. The two pilots and six passengers on board were killed, and the airplane was destroyed. The flight was operating under the provisions of 14 Code of Federal Regulations Part 91 on an instrument flight rules flight plan. Instrument meteorological conditions prevailed at the time of the accident.

The Safety Board determined that the probable cause of this accident was the flight crew's failure to effectively monitor and maintain airspeed and to comply with procedures for deice boot activation on the approach. This resulted in an aerodynamic stall from which the crew was unable to recover. The FAA's failure to establish adequate certification requirements for flight into icing conditions, which led to the inadequate stall warning margin provided by the airplane's stall warning system, was cited as a contributing cause.

The safety issues discussed in this report include inadequate training on operations in icing conditions, inadequate deice boot system operational guidance, the need for automatic deice boot systems, inadequate certification requirements for flight into icing conditions, and inadequate stall warning margins in icing conditions.

The Safety Board issued six new recommendations to the FAA concerning training and guidance related to the operation of deice boots; workload management, modifications to deice boot and stall warning systems, and review and testing of the icing certification of pneumatic deice boot-equipped airplanes following the revision of certification standards and criteria. The Safety Board also reiterated two recommendations previously issued to the FAA calling for revisions to the icing criteria published in 14 CFR Parts 23 and 25 and additional research on effects and criticality of ice accumulations.

Recommendations: 6 new and 2 reiterated  
Report Adopted: January 23, 2007

### **Weather Encounter and Subsequent Collision into Terrain Bali Hai Helicopter Tours, Inc., Bell 206B Kalaheo, Hawaii September 24, 2004**

On September 24, 2004, a Bell 206B helicopter, registered to and operated by Bali Hai Helicopter Tours, Inc., of Hanapepe, Hawaii, impacted mountainous terrain in Kalaheo, Hawaii, on the island of Kauai, 8.4 miles northeast of Port Allen Airport, in Hanapepe. The commercial pilot and the four passengers were killed, and the helicopter was destroyed by impact of the crash and the post crash fire. The nonstop sightseeing air tour flight was operated under the provisions of 14 Code of Federal Regulations Part 91 and visual flight rules with no flight plan filed. Instrument meteorological conditions prevailed near the accident site.

The Safety Board determined that the probable cause of this accident was the pilot's decision to continue flight under visual flight rules into an area of turbulent, reduced visibility weather conditions. This resulted in the pilot's spatial disorientation and loss of control of the helicopter. The Safety Board also cited the pilot's inexperience in assessing local weather conditions, inadequate FAA surveillance of Special Federal Aviation Regulation 71 operating restrictions, and the operator's pilot-scheduling practices as contributing to the cause of the accident.

The safety issues discussed in this report include the influence of pilot experience and operator scheduling on in-flight decision-making; the lack of FAA oversight of Part 91 air tour operators; the need for national air tour safety standards; and the lack of FAA surveillance of commercial air tour operators in Hawaii. Nine safety recommendations are addressed to the FAA regarding local weather-training programs for newly hired Hawaii air tour pilots; evaluation of operational practices for commercial air tour helicopter pilots; Honolulu Flight Standards District Office control of the annual safety meetings, as required under approved certificates of waiver or authorization; evaluation of the safety impact of the altitude restrictions in the State of Hawaii; national air tour safety standards; and the potential benefits of automatic dependent surveillance-broadcast technology for Hawaii air tour operators.

Recommendations: 9 new and 2 reiterated  
Report Adopted: February 13, 2007

### **Weather Encounter and Subsequent Crash into the Pacific Ocean, Heli-USA Airways, Inc., Aerospatiale AS350BA (Accident Brief)**

**Haena, Hawaii**

**September 23, 2005**

This accident occurred when the air tour helicopter encountered adverse weather conditions and crashed into the Pacific Ocean off the coast of the Hawaiian island of Kauai. The pilot and two passengers survived. Two passengers drowned as the helicopter sank in about sixty feet of water. The cause of death for the other victim was reported as cardiac arrest due to near drowning. The Safety Board concluded that the probable cause of the accident was the pilot's decision to continue flight into adverse weather conditions where he encountered a microburst and lost control of the aircraft. Contributing to the loss of life in the accident was the lack of helicopter flotation equipment.

The flight was operated under Special Federal Aviation Regulation (SFAR) 71, which sets a minimum altitude of 1500 feet above ground level for tour flights. The Safety Board also concluded that inadequate surveillance of SFAR 71 operating restrictions by the FAA contributed to this accident.

Recommendations: None  
Report Adopted: March 5, 2007

**Crash During Turn Maneuver, Cirrus SR-20 (Accident Brief)****Manhattan, New York City****October 11, 2006**

On October 11, 2006, a Cirrus Design SR-20, N929CD, operated as a personal flight, crashed into an apartment building in Manhattan, New York City, while attempting a 180-degree turn maneuver above the East River. The two pilots on board the airplane were killed, including the owner of the aircraft, Cory Lidle of the New York Yankees. The second occupant was a commercial pilot with a flight instructor certificate. Three people on the ground were injured, and the airplane was destroyed.

The Safety Board determined that the probable cause of the crash was the pilots' inadequate planning, judgment, and airmanship in the performance of a 180-degree turn maneuver inside of a limited turning space. The Safety Board reported that the pilots did not aggressively bank the airplane throughout the turn nor did they use the full available width of the river. Radar data indicated that the airplane was in the middle of the East Channel at the start of the 180-degree turn as opposed to beginning the turn from the eastern shoreline. In addition, the Safety Board determined that wind out of the east would have effectively shortened the available distance to successfully make the turn.

The Board found that the pilots should have recognized, during preflight planning or while they were considering flying up the East River after they were already in flight, that there was limited turning space in the East River exclusion area and they would need to maximize the lateral distance available for turning. As a result of its investigation, the Safety Board recommended to the FAA that they permanently prohibit visual flight rules flight operations involving fixed-wing, nonamphibious aircraft in the New York East River class B exclusion area unless those operations are authorized and being controlled by air traffic control.

Recommendation: 1  
Report Adopted: May 1, 2007

**In-flight Separation of Right Wing, Flying Boat, Inc., Doing Business as Chalk's Ocean Airways Flight 101 Grumman G-73T,****Port of Miami, Florida,****December 19, 2005**

The accident occurred at about 1439 eastern standard time, when the amphibious airplane, crashed into a shipping channel adjacent to the Port of Miami, Florida, shortly after takeoff from the Miami Seaplane Base. Flight 101 was a regularly scheduled passenger flight to Bimini, Bahamas, with two flight crewmembers and 18 passengers on board. The airplane's right wing separated during flight. All 20 people aboard the airplane were killed, and the airplane was destroyed. Visual meteorological conditions prevailed at the time of the accident.

The Safety Board determined that the probable cause of this accident was the in-flight failure and separation of the right wing during normal flight, which resulted from the failure of the Chalk's Ocean Airways maintenance program to identify and properly repair fatigue cracks in the right wing and the failure of the FAA to detect and correct deficiencies in the company's maintenance program.

As a result of the investigation, the Board issued two new safety recommendations calling on the FAA to: verify that airline maintenance programs include stringent criteria to address recurring or systemic problems, if necessary through comprehensive engineering evaluations; and, to modify procedures for oversight of maintenance programs of carriers like Chalk's to ensure the continued airworthiness of the operator's fleet. Earlier in the investigation, concerns were raised about federal regulations that exempt airplanes like the accident airplane, that were type-certificated prior to 1958, from a requirement for more rigorous damage tolerance based supplemental inspections. At that time, the Safety Board issued a recommendation urging the FAA to eliminate the exemption for these older airplanes.

As the FAA has indicated that it intends to address the identification of age-related problems for older airplanes through current operational safety programs, the Board has classified this recommendation as "Open-Unacceptable Response."

Recommendations: 3 new and 1 reclassified  
Report Adopted: May 30, 2007

## **Completed Reports Of Special Investigations – FY 2006**

### **Special Investigation Report on Emergency Medical Services Operations**

This report discusses safety issues identified during the Safety Board's special investigation of 55 emergency medical services (EMS) aircraft accidents that occurred in the United States between January 2002 and January 2005. Safety issues discussed in this report focus on less stringent requirements for EMS operations conducted without patients on board, a lack of aviation flight risk evaluation programs for EMS operations, a lack of consistent, comprehensive flight dispatch procedures for EMS operations, and no requirements to use technologies such as terrain awareness and warning systems to enhance EMS flight safety.

Report Adopted: January 25, 2006

## **Public Hearings/Forums – FY 2007**

### **Forum on Airport Runway Incursions**

The Safety Board held a one-day forum on March 27, 2007, focusing on airport runway incursions and accidents, and potential safety solutions. The Runway Safety Forum coincided with the 30<sup>th</sup> anniversary of the world's worst aviation accident – the runway collision in 1977 between two jumbo jets at Los Rodeos Airport, Tenerife, Canary Islands. The accident took the lives of 583 people on board two 747s, operated by Pan American World Airways and KLM. Eliminating runway incursions and collisions is a top priority of the Safety Board and has been on the Most Wanted List since 1990. Capt. Robert Bragg, the Pan Am co-pilot that day, recounted his experiences at the forum.

The scope of the problem, how to avoid runway incursions, educational initiatives and new technologies were highlighted in presentations made by representatives of the Federal Aviation Administration,

Department of Defense, Flight Safety Foundation, Air Line Pilots Association International, Aircraft Owners and Pilots Association, the Air Safety Foundation, the Air Transport Association, the Regional Airline Association, the National Air Traffic Controllers Association and the Transportation Safety Board of Canada.

### New Investigative Workload

Figure AS 1, Aviation Safety Accident/Incident Investigations Initiated in FY 2006, provides statistical information on domestic investigation by state. Accident categories are defined below.

State	Major Investigation	Field Investigation	Field Investigation, Public Use Aircraft	Limited Investigation	Data Collection Investigation	Incident Investigation	Limited Investigation - Public Use Aircraft	State	Major Investigation	Field Investigation	Field Investigation, Public Use Aircraft	Limited Investigation	Data Collection Investigation	Incident Investigation	Limited Investigation - Public Use Aircraft
ALABAMA		3		9	10			MONTANA		3		7	14		1
ALASKA		7	1	44	39	1	3	NEBRASKA		3		4	11	1	
ARIZONA	1	8		22	36			NEVADA		3		11	8		
ARKANSAS		1		9	15			NEW HAMPSHIRE		1		1	6		
CALIFORNIA	1	30	2	69	76	1	2	NEW JERSEY		3		10	10	2	
COLORADO		11		18	17	8		NEW MEXICO		2		9	13		1
CONNECTICUT		1		2	3		1	NEW YORK		2		9	15		
DELAWARE				2				NORTH CAROLINA		1		9	21	2	
DISTRICT OF COLUMBIA		1						NORTH DAKOTA				2	9		
FLORIDA	2	11	1	63	53	2		OHIO		2	1	6	15		
GEORGIA	1	4		13	16			OKLAHOMA		1		3	12		
HAWAII		3		7	4	1		OREGON		6		10	16	2	1
IDAHO		1	1	4	20		1	PENNSYLVANIA	1	4		14	13	2	
ILLINOIS		4	1	7	17			RHODE ISLAND		1		2			
INDIANA		3	1	7	12			SOUTH CAROLINA		2		9	7	1	
IOWA		3		1	4			SOUTH DAKOTA		2		1	3		
KANSAS	0	0	0	11	9		1	TENNESSEE		1		5	8		
KENTUCKY		3		8	5	1	1	TEXAS		8		26	70	2	1
LOUISIANA		3		4	10			UTAH		4		6	12		1
MAINE		1		3	7			VERMONT	1	1		1	1		
MARYLAND		2		4	3			VIRGINIA		6		9	10		
MASSACHUSETTS		1		6	9	2		WASHINGTON		7		18	25		1
MICHIGAN		5		13	24			WEST VIRGINIA		2		2	2		
MINNESOTA		1		15	15			WISCONSIN		7		3	13		
MISSISSIPPI		4		3	4			WYOMING		1	1	6	6	1	
MISSOURI		3		10	9			Total	7	187	9	535	739	29	15

Figure AS 1: Accident/Incident Investigations Initiated During Fiscal Year 2006

Major Investigations. A major investigation is a significant event, involving the launch of a team consisting of a senior aviation safety investigator and one or two other NTSB investigators. These accidents typically involve loss of life, multiple injuries, considerable property damage, or significant public interest.

Field Investigations. Field investigations require at least one NTSB investigator to travel to the accident site and a significant amount of follow-up investigation from the office non-travel status. Field accidents typically involve a fatality and an airplane that is FAA certified in the “normal” category.

Field Investigation/Public Use Aircraft. A field investigation/public use aircraft is a field investigation of an accident involving a public use (usually government owned) aircraft.

Limited Investigations. Limited investigations do not involve NTSB travel to the scene. A Federal Aviation Administrator (FAA) inspector collects the information and documents the accident site for the NTSB and an NTSB investigator conducts the remainder of the investigation from the office, or during a follow-up examination. These accidents can involve fatalities, but typically do not.

Data Collection Accident Investigations. Data collection accident investigations do not involve investigator travel. Information is collected and used by the investigator to determine the cause. A one-page report is completed within 30 days. These accidents must meet the following criteria:

- No fatalities or “critical” serious injuries;
- Cannot be a major airline event;
- Cannot involve a collision between two aircraft;
- Must have some statement from the pilot which documents that there were no unknown mechanical malfunctions or safety issues as per the pilot;
- Must be void of any obvious safety issues.
- Must not be of high public or industry visibility.

Incidents. Incidents are defined as occurrences involving one or more aircraft in which a hazard or potential hazard to safety is involved, but not classified as an accident due to the degree of injury and/or extent of damage. This definition covers a broad range of events and may include the following:

- Damage to an aircraft that does not occur while passengers are on board
- Runway incursion,
- Pilot Deviation, or
- Near midair collision

The Safety Board conducts a full investigation of each incident, similar to an accident investigation, and determines cause. Depending on the extent of the incident, the investigation may or may not involve travel.



Limited Investigations/Public Use Aircraft, This category is the same as limited investigations, defined above, involving public use aircraft.

### **On-Going Special Investigations**

Aviation Safety is currently conducting special investigations of air tour safety issues and technically advanced aircraft cockpit displays in general aviation aircraft.

### **Participation In Foreign Accident Investigations**

The Safety Board sends accredited representatives to participate in the investigations of foreign civil aviation accidents or incidents involving U.S. carriers or equipment with parts designed or manufactured domestically. The table below lists foreign accident or incident investigations that required Safety Board participation during fiscal years 2006 and 2007

Location	Date	Operator	Aircraft Type
Guerrero, Mexico	01/20/05	Michael L. Walsh	Piper PA-32RT-300
Kabul, Afghanistan	02/03/05	Phoenix Aviation	Boeing 737-200
Shanghai, China	02/10/05	Guangdong Ltd	McDonnell Douglas MD-902
Veradero, Cuba	03/06/05	Air Transat Inc	Airbus A310
Beijing, China	03/10/05	Shanghai Airlines	Boeing B757-200
Rome, Italy	07/06/05	Erickson Air-Crane, Inc.	Erickson Air-Crane, Inc. S-64F
Brasilito, Costa Rica	07/16/05	Greg Gund	Pilatus PC-6
Zuria Mountains, Uganda	07/30/05	Republic of Uganda	MIL Design Bureau Mi-172
Perth, Australia	08/01/05	Malasian Airline System	Boeing 777-200
Toronto, Canada	08/02/05	Air France	Airbus Industrie A-340
Palermo, Italy	08/06/05	Tuninter	ATR ATR-72-202
Tallinn, Estonia	08/10/05		Sikorsky S-76
Grammatikos, Greece	08/14/05	Helios Airways	Boeing B737-300
Machiques, Venezuela	08/16/05	West Caribbean Airways	Boeing MD-82
Medan, Indonesia	09/05/05	Mandala Airlines	Boeing B737-200
Winnipeg, Canada	10/06/05	Morningstar Air Express	Cessna 208B
Lagos, Nigeria	10/22/05	Bellview Airlines	Boeing 737-200
Moscow, Russia	11/19/05	Denton Invest & Trade Corp.	Cessna 208B
Port Harcourt, Nigeria	12/10/05	Sosoliso Airlines	McDonnell Douglas DC-9-31
Las Vegas, United States	01/29/06	Air Canada	Airbus A319
Cuenca, Ecuador	03/24/06	Atesa Aero Taxis Ecuatorianos S.A.	Cessna 208B
Banglore, India	05/04/06	Transmile Airlines	Boeing B727-200
Managua, Nicaragua	06/04/06	Arrow Air Inc	McDonnell Douglas DC10-10F
Irkutsk, Russia	07/08/06		Airbus Industrie A310-300
Tenerife, Spain	07/08/06	Helicsa	Sikorsky S61N
Azevedo, Brazil	09/29/06	Gol Air/Excelaire	Boeing 737-800/Embraer E135 Legacy
Abuja, Nigeria	10/29/06	Aviation Development Company	Boeing 737-200
Makassar, Indonesia	01/01/07	Adam Airlines	Boeing 737-400
Guadalajara, Mexico	01/09/07	Ameristar Jet Charter, Inc.	Gates Learjet 24F
Moscow, Russia	02/13/07	Nabban Investment Inc.	Bombardier, Inc. CL-600-2B19
Yogyakarta, Indonesia	03/07/07	Garuda Indonesia	Boeing B737-400
Douala, Cameroon	05/05/07	Kenya Airways	Boeing B737-800
Incheon International Airport	10/09/06	Korean Air	Boeing 747-400 Cargo
Auckland International Airport	12/30/07	Air New Zealand	Boeing B767
Farnborough (EGLF) to Tel Aviv (LLBG)	01/20/07	Executive Jet Group	Dassault Falcon 900B
London, United Kingdom (LHR)	02/26/07	United	Boeing 777
Shuangliu airport in Chengdu, China (CTU)	04/03/07	Korean Airlines	Boeing 747-400 Cargo

## Office of Highway Safety

The Office of Highway Safety (OHS) investigates those accidents that have a significant impact on the public's confidence in highway transportation safety, that generate high public interest and media attention, or highlight national safety issues. The limited OHS staff investigates accidents involving issues with wide-ranging safety significance such as collapses of highway bridge structures, fatalities on public transportation vehicles (such as buses), and collisions at grade crossings involving trains and public transportation or hazardous materials vehicles. In addition to these more catastrophic accident events, the OHS also conducts studies based on trends emerging from the accident investigations conducted by the Board and from other research and accident data in order to identify common underlying causes and make recommendations aimed at reducing such accidents in the future. The Office of Highway Safety is organized into two primary units, the Investigations Division and the Report Development Division that are overseen by the Director's Office.

### *Investigations Division*

The investigative team is usually composed of an automotive engineer, a civil engineer, a motor carrier specialist, a crashworthiness engineer, and a human factors specialist. As part of the Board's responsibilities, it also examines the safety programs of the DOT modal agencies. Investigations include all activities from launch to the preparation of the docket. Investigative division staff also review draft reports for technical content accuracy.

Major accident investigations are conducted by one of 2 teams with 6 investigators on each team (12 investigators). Each team is lead by an Investigator-in-Charge (IIC) and has one investigator with expertise in Motor Carrier operations and regulations; Survival Factors, i.e. injury mechanisms, occupant protection and rescue; Highway Engineering; Vehicle mechanics and design; and Human Performance factors. Team members are distributed among five regional offices located in Parsippany, New Jersey; Atlanta, Georgia; Arlington, Texas; Denver, Colorado and Los Angeles, California, to enhance geographic coverage and reduce response time.

### *Report Development Division*

The Report Development Division is responsible for researching and developing national highway safety issues, co-managing related safety studies, and preparing all highway accident investigation reports and presenting them to the Board. This division is also responsible for highway public hearings and forums. The division is comprised of project managers and writer-editors responsible for producing highway accident investigation reports and managing and coordinating the report development process.

## Accomplishments and Workload

### *Completed Accident Investigation Reports – FY 2006*

#### **Multiple Vehicle Collision on Interstate 95**

##### **Fairfield, Connecticut**

##### **January 17, 2003**

On Interstate 95 (I-95) near Fairfield, Connecticut, two consecutive accidents occurred within eleven minutes of each other in the early morning hours of January 17, 2003. About 4:50 a.m., a 1996 Freightliner tractor flatbed semitrailer was traveling in a work zone on I-95 north, near milepost 26.6, when it slid out of control approximately 1,150 feet south of the Exit 24 southbound off-ramp. The 1996 Freightliner was loaded with five portable compressor units. The driver estimated a speed of 50 miles per hour. The vehicle entered the median, overturned and overrode a portable concrete barrier, and then collided with a southbound 1997 Dodge Avenger sedan. A southbound 2001 Freightliner tractor/refrigerated trailer combination unit struck the Dodge sedan and then struck the 1996 Freightliner tractor. All three vehicles came to rest blocking the southbound lanes of the highway. During the accident sequence, the flatbed semitrailer separated from the 1996 Freightliner tractor. The semitrailer came to rest perpendicular to the roadway, straddling the portable concrete barrier and partially obstructing the left lane of I-95 north.

At 5:01 a.m., a 1999 Chevrolet Tahoe sport utility vehicle, occupied by nine students from Yale University and traveling north in the left lane, collided with and underrode the left side corner of the 1996 Freightliner tractor flatbed semitrailer. Following the impact, the Chevrolet disengaged from the semitrailer and entered the median, skidded along the concrete barrier, and came to rest about 450 feet northeast of the semitrailer. The driver and three passengers in the Chevrolet were fatally injured. The surviving occupants were seriously injured. Witnesses reported that at the time of the accidents, light snow was falling, the roads were wet and icy, and snow covered the roadway shoulders.

The Safety Board determined that the probable cause of the initial, 4:50 a.m. accident was the 1996 Freightliner's loss of lateral stability, probably due to the operator driving too fast for conditions, which included the presence of black ice on the roadway. Also contributing to the accident was inadequate roadway treatment provided by the Connecticut Department of Transportation in response to the inclement weather and its failure to provide a median barrier capable of preventing crossovers by heavy vehicles. The probable cause of the subsequent accident at 5:01 a.m. was the failure of the Chevrolet driver to identify and avoid the flatbed semitrailer due to fatigue, and the distraction from the median crossover accident in the southbound lanes.

The following safety issues were identified in this investigation:

- Adequacy of snow and ice treatment strategies;
- Lack of specific guidance on the use of high-performance median barriers;

- Placement of portable concrete median barriers; and
- Need for primary seat belt laws for all seating positions.

As a result of this accident investigation, the Safety Board made recommendations to the Federal Highway Administration, the Connecticut Department of Transportation, and the American Association of State Highway and Transportation Officials. The Safety Board reiterated a recommendation to the Governor and legislative leaders of Connecticut.

Recommendations: 6 new, 1 reiterated  
Report Adopted: November 16, 2005

### **Collision Between a Ford Dump Truck and Four Passenger Cars Glen Rock, Pennsylvania April 11, 2003**

About 3:36 p.m., on April 11, 2003, in the Borough of Glen Rock, Pennsylvania, A 1995 Ford dump truck owned and operated by Blossom Valley Farms, Inc., was traveling southbound on Church Street, a two-lane, two-way residential street with a steep downgrade, when the driver found that he was unable to stop the truck. The truck struck four passenger cars, which were stopped at the intersection of Church and Main Streets, and pushed them into the intersection. One of the vehicles struck three pedestrian children (a 9-year-old boy, a 7-year-old boy, and a 7-year-old girl), who were on the sidewalk on the west side of Church Street. The truck continued across the intersection, through a gas station parking lot, and over a set of railroad tracks before coming to rest about 300 feet south of the intersection. As a result of the collision, the driver and an 11-year-old child in one of the passenger cars received fatal injuries and the three pedestrian children who were struck received minor-to-serious injuries. Six other passenger car occupants and the truck driver were not injured.

The Safety Board determined that the probable cause of the accident was the lack of oversight by Blossom Valley Farms, Inc., which resulted in an untrained driver improperly operating an overloaded, air brake-equipped vehicle with inadequately maintained brakes. Contributing to the accident was the misdiagnosis of the truck's underlying brake problems by mechanics involved with the truck's maintenance. Also contributing was a lack of readily available and accurate information about automatic slack adjusters and inadequate warnings about the safety problems caused by manually adjusting them. During the investigation, the Safety Board identified the following major safety issues:

- Maintaining air brakes equipped with automatic slack adjusters;
- Knowledge and skills needed to drive air brake-equipped vehicles; and
- Motor carrier oversight.

As a result of this accident investigation, the Safety Board made recommendations to the Federal Motor Carrier Safety Administration, the 50 States and the District of Columbia, the Commercial Vehicle Safety Alliance, manufacturers and marketers of automatic slack adjusters, manufacturers of

vehicles equipped with air brakes, the National Institute for Automotive Service Excellence (ASE), and publishers of ASE certification test study guides.

Recommendations: 11  
Report Adopted: February 7, 2006

### **Passenger Vehicle Median Crossover and Head-On With Another Passenger Vehicle Linden, New Jersey May 1, 2003**

On May 1, 2003, about 2:11 a.m., eastern daylight time, a 1998 Mercedes Benz CLK320, driven by a 34-year-old off-duty police officer, was traveling southbound on U.S. Route 1 through the city of Linden in Union County, New Jersey. The vehicle was traveling in the right lane of a six-lane divided highway. The weather was clear, and the roadway was dry, except for a puddle of water adjacent to a service station on the west side of the roadway.

Near milepost 41.4, the Mercedes, traveling 48 to 62 mph, hit the curb on the west side of the road and swerved to the left. The Mercedes crossed the other two southbound lanes; mounted and crossed an 11.5-foot-wide, 6-inch-high raised concrete curb median; and entered the northbound lanes, where it collided head-on with a 1986 Ford Taurus traveling in the left northbound lane. The Mercedes rolled up and over the Ford and landed on its roof. The Mercedes slid approximately 80 feet across the northbound lanes and struck a wooden utility pole next to the east side of the roadway, where it came to rest straddling the right northbound lane and the grassy area to the east of the roadway. Following the collision, the Ford remained upright, rotated about 163 degrees counterclockwise, slid about 50 feet, and came to rest in the right northbound lane.

The Ford was occupied by a 33-year-old driver and four passengers. The drivers of both vehicles and three of the four Ford Taurus passengers died at the scene. The fourth Ford passenger died several hours later in a hospital.

The Safety Board determined that the probable cause of this accident was the Mercedes driver's loss of control of the vehicle due to alcohol impairment. Contributing to the severity of the accident was the lack of barriers separating traffic in the northbound and southbound traffic lanes, and the failure of the driver of the Mercedes to wear his seat belt.

The following major safety issues were identified in this accident investigation:

- Alcohol impairment,
- Speed enforcement, and
- Evaluative criteria for median barrier installation.

As a result of this accident, the Safety Board made safety recommendations to the Federal Highway Administration, the City of Linden, and the American Association of State Highway and Transportation Officials. The Safety Board also reiterated a recommendation to the State of New Jersey.

Recommendations: 3 new, 1 reiterated  
Report Adopted: February 7, 2006

### **Multi-Vehicle Collision on Interstate 90, Hampshire-Marengo Toll Plaza Hampshire, Illinois October 1, 2003**

On October 1, 2003, a multi-vehicle accident occurred on the approach to an Interstate 90 (I-90) toll plaza near Hampshire, Illinois. About 2:57 p.m., a 1995 Freightliner tractor-trailer chassis and cargo container combination unit traveling eastbound on I-90 approached the Hampshire–Marengo toll plaza at milepost 41.6 and struck the rear of a 1999 Goshen GC2 25-passenger specialty bus. As both vehicles moved forward, the specialty bus then struck the rear of a 2000 Chevrolet Silverado 1500 pickup truck, which was pushed into the rear of a 1998 Ford conventional tractor-box trailer. As its cargo container and chassis began to overturn, the Freightliner also struck the upper portion of the pickup truck's in-bed camper and the rear left side of the Ford trailer. The Freightliner and the specialty bus continued forward and came to rest in the median. The pickup truck was then struck by another eastbound vehicle, a 2000 Kenworth tractor with Polar tank trailer. Eight passengers in the specialty bus were fatally injured, and 12 passengers sustained minor-to-serious injuries. The bus driver, the pickup truck driver, and the Freightliner driver received minor injuries. The Ford driver and co-driver and the Kenworth driver were not injured.

The National Transportation Safety Board determined that the probable cause of the accident was the failure of the Freightliner truck driver, who was operating his vehicle too fast for traffic conditions, to slow for traffic. Contributing to the accident was the traffic backup in a 45-mph zone, created by vehicles stopping for the Hampshire-Marengo toll plaza. The structural incompatibility between the Freightliner tractor-trailer and the specialty bus contributed to the severity of the accident. The following safety issues were identified in this investigation:

- Toll plaza design and the lack of national standards for toll plaza design;
- Federal Motor Carrier Safety Administration (FMCSA) oversight of passenger motor carriers operating on revoked authority;
- Collision warning system performance standards and requirements for new commercial vehicles; and
- Vehicle incompatibility and heavy truck aggressivity.

As a result of this accident investigation, the Safety Board made recommendations to the U.S. Department of Energy; the U.S. Department of Transportation; the FMCSA; the Federal Highway Administration; the American Association of State Highway and Transportation Officials; and the International Bridge,

Tunnel and Turnpike Association. The Safety Board reiterated two recommendations to the National Highway Traffic Safety Administration.

Recommendations: 7 new; 2 reiterated  
Report Adopted: April 18, 2006

### **Passenger Vehicle Collision With a Fallen Overhead Bridge Girder**

**May 15, 2004**

#### **Golden, Colorado**

On May 15, 2004, about 10:04 a.m., mountain daylight time, a 2002 Dodge Durango sport utility vehicle (SUV) driven by a 34-year-old man eastbound on Interstate 70 (I-70) approached the Colorado State Route 470 (C-470) overpass. The driver's 37-year-old wife and their 2-year-old child were also in the SUV. The interchange of I-70 and C-470 was in a temporary traffic control zone, to accommodate a construction project to add an entry ramp and two additional lanes for the overpass.

As the SUV approached the overpass, a fabricated steel girder line composed of two joined sections rotated toward the overpass and sagged into the space over the I-70 eastbound lanes. The girders had been erected during the evening of May 11 through the early morning hours of May 12, 2004, parallel to the existing overpass, as a part of the bridge-widening project. The girder struck the SUV about half the distance between the vehicle's front end and its windshield, shearing off the vehicle's top. The lower portion of the SUV continued east for 818 feet, coming to rest in the grassy median of I-70. All three vehicle occupants were killed.

The Safety Board determined that the probable cause of the girder collapse was the failure of the girder's temporary bracing system. This was due to:

- Insufficient planning by Ridge Erection Company, Inc., Asphalt Specialties, Inc., and the Colorado Department of Transportation, which were responsible for putting the girder and its bracing in place during a highway bridge-widening project, and
- Deficiencies in the installation of the girder and the bracing, which resulted in the inadequate securing of the out-of-plumb girder to the existing bridge deck, causing the bracing to fail.

Contributing to the accident was the lack of uniform, consistent bracing standards, and the Colorado Department of Transportation's narrow definition of falsework, which did not include lateral bracing. Also contributing to the accident was the failure of the Colorado Department of Transportation to effectively oversee safety-critical contract work for the project.

Recommendations: 5  
Report Adopted: May 31, 2006



## Completed Accident Investigation Reports – FY 2007

### **Motorcoach Collision With the Alexandria Avenue Bridge Overpass George Washington Memorial Parkway, Alexandria, Virginia November 14, 2004**

This accident occurred when a 12-foot high 2000 Prevost, 58-passenger motorcoach owned by Eyre Bus Service, Inc., (Eyre) traveling in the right lane of the George Washington Memorial Parkway crashed into an overpass with a 10-foot 2-inch clearance. The bus was the second of a two-bus team. The 44-year-old bus driver picked up 27 students and their chaperone at the Baltimore/Washington International Thurgood Marshall Airport and was transporting them to Mount Vernon, Virginia.

About 10:40 a.m., the bus was traveling southbound in the right lane of the George Washington Memorial Parkway in Alexandria, Virginia, at an electronic control module–recorded speed of approximately 46 mph. Upon approaching the Alexandria Avenue bridge, the bus driver passed warning signs indicating that the bridge had a 10-foot, 2-inch clearance in the right lane and collided with the underside and side of the overpass. At the time of the accident, the 13-foot, 4-inch-high left lane was available to the bus, and the lead Eyre bus was in the left lane ahead of the accident bus.

Witnesses and the bus driver himself reported that the bus driver was talking on a hands-free cellular telephone at the time of the accident. Of the 27 student passengers, 10 received minor injuries and one sustained serious injuries. The bus driver and chaperone were uninjured. The roof of the bus was destroyed. Major safety issues identified in this accident include low bridge clearance, cellular telephone use while driving, and collection of adequate cellular telephone accident data.

The National Transportation Safety Board determined that the probable cause of this accident was the bus driver's failure to notice and respond to posted low-clearance warning signs and to the bridge, itself, due to cognitive distraction resulting from conversing on a hands-free cellular telephone while driving. Contributing to the accident was the low vertical clearance of the bridge, which does not meet current National Park Service road standards or American Association of State Highway and Transportation Officials guidelines.

As a result of this accident and investigation, the Safety Board issued three new recommendations and reiterated one previously issued recommendation.

- The Safety Board recommended that the FMCSA publish regulations prohibiting cellular telephone use by commercial driver's license holders with a passenger-carrying or school bus endorsement, while driving under the authority of that endorsement, except in emergencies.
- The Safety Board recommended that the 50 states and the District of Columbia enact legislation to prohibit cellular telephone use by commercial driver's license holders with a passenger-carrying or school bus endorsement, while driving under the authority of that endorsement, except in emergencies.

- The Safety Board recommended that the American Bus Association; the United Motorcoach Association; the Community Transportation Association of America; the American Public Transportation Association; the National Association for Pupil Transportation; the National School Transportation Association; the National Association of State Directors of Pupil Transportation Services; the International Brotherhood of Teamsters; and the Amalgamated Transit Union develop formal policies prohibiting cellular telephone use by commercial driver's license holders with a passenger-carrying or school bus endorsement, while driving under the authority of that endorsement, except in emergencies.
- The Safety Board also reiterated Safety Recommendation H-03-09 to the twenty states that do not yet have driver distraction codes, including codes for interactive wireless communication devices, to add these to their traffic accident investigation forms.

The Safety Board reclassified four recommendations resulting from the investigation of an accident that occurred in Largo, Maryland in 2003 in this report. These recommendations also dealt with the risks of distracted driving associated with the use of wireless interactive communications devices, including cellular telephones. Two recommendations were closed with acceptable action and two remain open with acceptable alternate response.

Recommendations: 3 new and 1 reiterated  
Report Adopted: November 26, 2006

### **Motorcoach Fire on Interstate 45 During Hurricane Rita Evacuation Near Wilmer, Texas September 23, 2005**

On September 23, 2005, a 1998 MCI 54-passenger motorcoach operated by Global Limousine, Inc., based in Pharr, Texas, was traveling northbound on Interstate 45 with 44 passengers and the driver as part of an emergency evacuation ordered by the Governor of Texas in anticipation of Hurricane Rita. The passengers, residents and nursing staff of the Sunrise Nursing Home in Bellaire, Texas, near Houston were being transported to Dallas.

A motorist passing by the motorcoach alerted the driver that the right-rear tire hub was glowing red. The driver and nursing staff exited the motorcoach and observed flames emanating from the right-rear wheel well. As they initiated an evacuation, with the assistance from passersby, heavy smoke and fire quickly engulfed the entire vehicle. Twenty-three of the 44 passengers were fatally injured, 2 were seriously injured and 19 received minor injuries. The driver also received minor injuries.

In the report, the Safety Board noted that the right rear tire experienced a blowout earlier on the trip. Because the flat tire occurred during the nighttime and in the middle of the hurricane evacuation traffic congestion, the driver and the mechanic who provided roadside assistance would not necessarily have been aware of the tire marks left by a locked wheel indicating a more serious mechanical problem.

Post-accident examination of the motorcoach and roadway revealed that the right-side tag axle tire locked. The Safety Board concluded that the tire contacting the pavement was being pulled, not rolling, which caused the blown tire. Once the tire flattened, the weight of the vehicle caused contact between the pavement and wheel rim, wearing a flat spot on the rim. The Safety Board consequently determined that the accident sequence of events including the tire locking began with a lack of lubrication in the right-side tag axle wheel bearing. A wheel bearing unit failed due to a lack of lubrication, which prevented the bearing rollers from rotating freely and led to friction, that generated the heat and ultimately led to the tire fire.

The Board's report revealed that Global did not retain vehicle maintenance and repair records as required by Federal Motor Carrier Safety Regulations (FMCSRs). In addition, there was no maintenance program to properly service the vehicle in place. Therefore the Board concluded in the report that the disregard for such a program led to the failure to detect vehicle defects that resulted in a catastrophic fire and loss of life. The Safety Board also concluded that FMCSA's ineffective compliance review system, which resulted in inadequate safety oversight of passenger motor carriers, contributed to the accident and that their current process does not effectively identify unsafe motor carriers and prevent them from operating.

Another contributing factor to the rapid propagation and severity of the fire and subsequent loss of life was the lack of motorcoach fire retardant construction materials adjacent to the wheel well. The Safety Board determined that the most likely point of initial entry of fire into the motorcoach was burnthrough of the combustible exterior composite materials and through the HVAC ventilation and the windows. The Safety Board concluded that as the fire intensified, it spread up the side of the motorcoach and burned through the fiberglass sidewall above the wheel wall and through the motorcoach windows, creating an entry path for the smoke and fire into the passenger compartment. The ambulatory condition of many of the passengers was determined to be a contributing factor in the severity of the accident.

As a result of its investigation, the Safety Board made new recommendations to the FMCSA, the NHTSA, the Pipeline and Hazardous Materials Safety Administration, the Motor Coach Industries, the United Motorcoach Association and American Bus Association, and the Law Enforcement and Emergency Responders Associations. This report also reiterated two previously issued recommendations to the DOT. These recommendations include:

- Revising regulations to prohibit a commercial vehicle from operating with wheel seal or other hub lubrication leaks;
- Developing a standard to provide enhanced fire protection of the fuel system in areas of the motorcoaches and buses where the system may be exposed to the effects of a fire; and provide fire hardening of exterior fire-prone materials, such as those areas around wheel walls, to limit the potential for flame spread into motorcoach or bus passenger compartment;
- Developing detection systems to monitor the temperature of wheel well compartments in motorcoaches and buses to provide early warning of malfunctions that could lead to fires;

- Continuing to gather and evaluate information on the causes, frequency and severity of bus and motorcoach fires, and conduct ongoing analysis of the fire data to measure the effectiveness of the fire prevention and mitigation techniques identified and instituted as a result of the Volpe National Transportation Systems Center fire safety analysis study; and
- Revising product maintenance manuals to emphasize the importance of wheel bearing lubrication, specifically warning that daily inspection of hub oil levels and wheel seals is vital to prevent wheel bearing failure and that bypassing this requirement is a dangerous practice that can lead to a wheel fire or other serious consequences.

Recommendations: 17 new; 2 reiterated

Report Adopted: February 21, 2007

### **Ceiling Collapse in the D Street Portal of Interstate 90 Connector Tunnel Boston, Massachusetts July 10, 2006**

A section of the tunnel's suspended concrete ceiling became detached from the tunnel roof and fell onto a passenger car traveling eastbound in the D Street portal of the Interstate 90 (I-90) connector tunnel. Concrete panels from the ceiling crushed the right side of the vehicle roof as the car came to rest against the north wall of the tunnel. The passenger was fatally injured and the driver had minor injuries. A total of about 26 tons of concrete and associated suspension hardware fell onto the vehicle and the roadway.

The Safety Board determines that the probable cause of the ceiling collapse was the use of an epoxy anchor adhesive with an epoxy formulation that was not capable of sustaining long-term loads. Over time, the epoxy deformed and fractured until several ceiling support anchors pulled free and allowed a portion of the ceiling to collapse. Epoxy is a polymer and its stiffness is time and temperature dependent. If a load is applied suddenly, the epoxy responds like a hard solid. But if the load is then held constant, the molecules within the polymer may begin to rearrange and slide past one another, causing the epoxy to gradually deform in a process called creep. The epoxy used in the tunnel had poor creep resistance.

Use of an inappropriate epoxy formulation resulted from the failure of Gannett Fleming, Inc., and Bechtel/Parsons Brinckerhoff to identify potential creep in the anchor adhesive as a critical long-term failure mode and to account for possible anchor creep in the design, specifications, and approval process for the epoxy anchors used in the tunnel. The use of an inappropriate epoxy formulation also resulted from a general lack of understanding and knowledge in the construction community about creep in adhesive anchoring systems. Powers Fasteners, Inc. failed to provide the Central Artery/Tunnel project with sufficiently complete, accurate, and detailed information about the suitability of the company's Fast Set epoxy for sustaining long-term tensile loads. Contributing to the accident was the failure of Powers Fasteners, Inc., to determine that the anchor displacement that was found in the high-occupancy vehicle tunnel in 1999 was a result of anchor creep due to the use of the company's Power-Fast Fast Set epoxy, which was known by the company to have poor long-term load characteristics.

Also contributing to the accident was the failure of Modern Continental Construction Company and Bechtel/Parsons Brinckerhoff, subsequent to the 1999 anchor displacement, to continue to monitor anchor performance in light of the uncertainty as to the cause of the failures. The Massachusetts Turnpike Authority also contributed to the accident by failing to implement a timely tunnel inspection program that would likely have revealed the ongoing anchor creep in time to correct the deficiencies before an accident occurred.

As a result of its investigation the Safety Board issued 20 recommendations to the Federal Highway Administration, American Association of State Highway and Transportation Officials, Departments of Transportation of the 50 States and the District of Columbia, International Code Council, ICC Evaluation Service, Inc., Powers Fasteners, Inc., Sika Chemical Corporation, American Concrete Institute, American Society of Civil Engineers, and Associated General Contractors of America. These include:

- Developing standards and protocols for the testing of adhesive anchors to be used in sustained tensile-load overhead highway applications that consider site-specific ultimate strength values as well as the creep characteristics of the adhesive over the expected life of the structure;
- Prohibiting the use of adhesive anchors in sustained tensile-load overhead highway applications where failure of the adhesive would result in a risk to the public until testing standards and protocols have been developed and implemented that ensure the safety of these applications;
- Developing specific design, construction, and inspection guidance for tunnel finishes and incorporating that guidance into a tunnel design manual;
- Reviewing the use of adhesive anchors in highway construction within your jurisdiction and identify those sites where failure of the adhesive under sustained load could result in a risk to the public. Once those sites have been identified, implement an inspection and repair program to ensure that such failures do not occur;
- Requiring creep testing for the qualification of all anchor adhesives;
- Disqualifying any adhesive that has not been tested for creep or that has failed such tests for use in sustained tensile loading; and
- Using building codes, forums, educational materials, and publications to inform design and construction agencies of the potential for gradual deformation (creep) in anchor adhesives and to make them aware of the possible risks associated with using adhesive anchors in concrete under sustained tensile-load applications.

Recommendations: 20  
Report Adopted: July 10, 2007

## Public Hearings and Forums – FY 2006

### Public Hearing on September 23, 2005 Motorcoach Fire Wilmer, Texas

August 8-9, 2006

As part of the continuing fact-finding phase of this investigation, the Safety Board held a public hearing to examine several issues. Topics included:

- The scope of the bus fire problem;
- The source of the Wilmer motorcoach fire;
- Fire propagation and fire detection and suppression;
- Planning for and transporting people with special needs;
- Motorcoach evacuations;
- Government oversight of motor carriers;
- Vehicle inspections; and
- Driver training.

### Motorcycle Safety Forum

September 12-13, 2006

Washington, District of Columbia

On September 12 and 13, 2006 The National Transportation Safety Board held a public forum on motorcycle safety. Recent statistics indicate that increases in fatalities among motorcycle riders far exceeded that of any other form of transportation. Last year, 4,315 motorcyclists died in crashes and the rate of motorcycle fatalities has increased more than 25 percent since 1997. At a time when highway fatalities have been decreasing, fatalities involving motorcycles have continued to increase, both in overall number and in fatality rate. Therefore, the goal of the public forum was to gather information about ongoing motorcycle safety research and initiatives, as well as safety countermeasures that may reduce the likelihood of motorcycle accidents and fatalities. Topics included:

- Trends and Safety Statistics
- Vehicle Design
- Rider Protective Equipment
- Training and Licensing
- Public Education/Awareness
- Rider Impairment, and
- Future Directions in Motorcycle Safety

## On-Going Accident Investigations

Location	Description	Fatalities
Sulphur Springs, Texas	Multi-vehicle Collisions During Road Closures	5
Sherman, Texas	Tractor-semi Trailer Median Crossover	10
Elkridge, Maryland	Tanker Truck Fell Off Overpass	5
Liberty, Missouri	School Bus Collision with Two Vehicles in an Intersection	2
Elmwood Park, Illinois	METRA Grade Crossing Accident Involving 17 Vehicles	0
Lake Butler, Florida	Tractor-semi Trailer/Sedan/School Bus Collision	7
Osseo, Wisconsin	Motorcoach Ran into Overturned Tractor-Trailer	5
Turrell, Arkansas	Motorcoach Ran Off Road, Overturned	15
Linden, Pennsylvania	Motorcycle-Minivan Collision	5
Queens, New York	15-Passenger Van Single Vehicle Collision with Tree	5
Westport, New York	Motorcoach Rollover	5
Huntsville, Alabama	School Bus Fall From Elevated Roadway	4
Arlington, Virginia	Tanker Truck Rollover	1
Davie, Florida	Tanker Truck Rollover	4
Falls Township, Pennsylvania	School Bus/Pedestrian Collision	0
Atlanta, Georgia	Motorcoach Fall From Elevated Roadway	6
Minneapolis, Minnesota	Bridge collapse on Interstate 35	5

## Office of Marine Safety

The Office of Marine Safety (OMS) investigates major marine accidents on navigable waters of the United States, those involving U.S. merchant vessels in international waters, as well as collisions involving U.S. public and nonpublic vessels. In addition, it investigates selected marine accidents that involve public transportation or those of a recurring nature. The United States Coast Guard (USCG) conducts the preliminary investigations of all marine accidents and notifies the Board if an accident is a major marine accident using the following criteria

- Six or more fatalities;
- Involves the loss of a self-propelled vessel of 100 or more gross tons;
- Property damage estimated at more than \$500,000; or
- Involves a serious threat from hazardous materials

The NTSB conducts an independent investigation, participate in a joint Safety Board/USCG investigation, or request the USCG to conduct an investigation on behalf of the Board. As a result of its investigations, the Safety Board issues safety recommendations to agencies including the Coast Guard, the U.S. Army Corps of Engineers, shipping firms, and other maritime organizations.

The OMS is responsible for the overall management of the Safety Board's international marine safety program. Under the international program, the Board's participates in accident investigations involving foreign-flagged vessels in U.S. territorial seas and U.S.-flagged vessels involved in major marine accidents anywhere in the world. Accidents involving foreign-flagged vessels have accounted for about 30 percent of the Board's marine accident investigations in the past 5 years. Every year, more than 8 million U.S. passengers are carried aboard foreign-flagged ships, which represent 95 percent of all large passenger ships operating from U.S. ports.

The international program requires the review of all U. S. position papers related to marine accident investigation and participation at International Maritime Organization (IMO) meetings covering marine accident investigations. The program also involves coordination with other NTSB offices to ensure that the Board meets its obligations under IMO conventions (most notably, participation in joint-flag-state marine accident investigations). Further, the program involves coordination with other marine accident investigation organizations worldwide, such as the Marine Accident Investigators International Forum (MAIIF), representing 34 member states in Europe, North America, South America, Asia, and Africa. Finally, the OMS tracks developments in marine accident investigation and prevention worldwide.

## Accomplishments and Workload

### *Completed Accident Investigation Reports – FY 2006*

#### **Lady D**

#### **Baltimore, Maryland**

#### **March 6, 2004**

The small passenger vessel *Lady D*, a pontoon water taxi with 2 crewmembers and 23 passengers on board, was en route from Fort McHenry to Fells Point, Maryland, when it encountered a rapidly developing storm with high winds. The pontoon vessel began to roll in the waves and eventually continued over onto its starboard side and capsized. Personnel from the Naval Reserve Center Baltimore, a Navy training installation adjacent to Fort McHenry, witnessed the capsizing, called 911 to report the accident, and then launched a vessel to the scene to render assistance. Responders were able to rescue or recover all but 3 occupants of the *Lady D* within an hour of the accident. The bodies of the remaining victims were recovered from the waterway on March 14 and 15. As a result of this accident, 5 passengers died; 4 passengers suffered serious injuries; and 12 people sustained minor injuries. Vessel damage was estimated at \$35,000.

The Safety Board's investigation of this accident identified major safety issues in the following areas:

- Passenger weight criteria for stability assessment;
- Pontoon vessel stability standards; and
- Policies and procedures pertaining to weather operations.



The Safety Board determined that the probable cause of the capsizing of the pontoon-style small passenger vessel *Lady D* was its lack of intact stability, which was insufficient to withstand the strong winds and waves that the boat encountered. Vessel overloading was determined to be the probable cause of the lack of intact stability. The following combination of conditions allowed the overloading to occur.

- The *Lady D* was erroneously granted sister status by the U.S. Coast Guard to a pontoon vessel with different design characteristics;
- The Coast Guard certificated the *Lady D* to carry too many people as a result of an inappropriate stability test on the vessel to which it was granted sister status; and
- The Coast Guard's regulatory stability test standards on which the *Lady D*'s passenger allowance was based used an out-of-date average passenger weight.

As a result of this investigation, the Safety Board made recommendations to the U.S. Coast Guard.

Recommendations: 5  
Report Adopted: March 7, 2006

### **Express Shuttle II Port Richey, Florida October 17, 2004**

On the morning of October 17, 2004, a fire broke out in the engine room of the U.S. small passenger vessel *Express Shuttle II* as it was entering the mouth of the Pithlachascotee River near Port Richey, Florida. The shuttle was returning from the Gulf of Mexico, where it had ferried 78 passengers to an offshore casino boat, and was on its way back to the marina operated by the vessel's owner, Paradise of Port Richey. Only the master and two deckhands were on board when the fire broke out.

The crewmembers did not activate the vessel's fixed carbon dioxide fire suppression system. The crew attempted to fight the fire with portable extinguishers, but when the fire burned out of control, they prepared to abandon ship. A passing recreational boat rescued all three crewmembers. The master and one of the deckhands transferred to another company boat that took them ashore. The recreational boat took the other deckhand to shore, and an ambulance transported him to a local hospital. The deckhand was treated for smoke inhalation, held overnight for observation, and then released. Firefighters from Port Richey and Pasco County fought the blaze, but the vessel, valued at \$800,000, was a total constructive loss.

The Safety Board determined that the probable cause of the fire on board the *Express Shuttle II* was a fractured, improperly installed fuel injection line on the inboard side of the starboard engine that allowed diesel fuel to spray onto the engine and ignite. Contributing to the cause of the fire was the failure of Paradise of Port Richey to have a preventive maintenance program, which could have identified the company's ongoing problem with the vessel's fuel lines before a failed line led to the fire. A faulty fire

detection system and the crew's failure to employ proper marine firefighting techniques contributed to the extent of the damage.

On the basis of its investigation, the Safety Board identified the following safety issues:

- Preventive maintenance
- Crew response to fire emergency
- Fire detection systems

As a result of its investigation of the *Express Shuttle II* fire, the Safety Board made recommendations to the U.S. Coast Guard, Paradise of Port Richey, and Caterpillar, Inc.

Recommendations: 5  
Report Adopted: April 4, 2006

**Ethan Allen**  
**Lake George, New York**  
**October 2, 2005**

The New York State-certificated public vessel Ethan Allen, with a New York State-licensed operator and 47 passengers on board departed the marina at Lake George, New York, for an afternoon cruise of the lake. The vessel proceeded northbound along the western side of the lake at an estimated speed of 8 miles per hour. As it neared Cramer Point, the operator began a turn to the right. At the same time, the Ethan Allen encountered a wave or waves generated by one or more vessels on its starboard side. Within a few seconds, the Ethan Allen rolled to port and overturned. It began to sink about 15 minutes later. Operators of recreational vessels nearby observed the accident, proceeded immediately to the site, and began rescuing survivors. Twenty passengers died, three received serious injuries, and six received minor injuries in the accident. The operator and 18 passengers survived without injury. The resulting damage to the vessel and its components was estimated at \$21,000.

The Safety Board's investigation identified the following major safety issues:

- Stability standards and procedures for passenger vessels;
- New York State's use of manufacturer's capacity plates to determine public vessel passenger loading; and
- Regulation of New York State's public vessels.

The Safety Board determined that the probable cause of the capsizing of the *Ethan Allen* was the vessel's insufficient stability to resist the combined forces of a passing wave or waves, a sharp turn, and the resulting involuntary shift of passengers to the port side of the vessel. The vessel's stability was insufficient because it carried 48 persons where post accident stability calculations demonstrated that it should have been permitted to carry only 14 persons. Contributing to the cause of the accident

was the failure to reassess the vessel's stability after it had been modified because there was no clear requirement to do so.

As a result of this investigation, the Safety Board made recommendations to the U.S. Coast Guard and to the State of New York

Recommendations: 3  
Report Adopted: July 25, 2006

**Norwegian Dawn (Accident Brief)  
Off the North Carolina Coast  
April 16, 2005**

The *Norwegian Dawn* was on a scheduled run from Florida to New York. Although the forecast weather conditions did not appear to pose a safety hazard for the ship, the master made a course adjustment to avoid the main axis of the Gulf Stream for a more comfortable ride. When the vessel encountered heavier-than-expected wind and seas, the ship's officers maintained its heading into the wind and seas to minimize rolling, and also reduced the vessel's speed.

According to statements of the chief engineer and the hotel director, the crew secured gear, closed off outer decks, and properly prepared the vessel for heavy weather, while making advisory announcements to the passengers. The prevailing wind and sea conditions caused the vessel to pitch and seas to break over the bow. The localized area of damage on the *Norwegian Dawn* was consistent with waves striking the ship's superstructure. The water exerted enough force to shear off the welds for the aluminum rail supports on the balconies of two cabins, allowing the teak balcony rails to break loose and crash into the cabin windows. The broken glass clogged the drains and compounded the water damage by allowing a large amount of water to enter the two cabins and damage the carpets in 61 other cabins. The ship operating at reduced speed when the waves hit probably limited the damage. Damage was estimated at over \$500,000 and 14 passengers suffered injuries.

The Safety Board determined that the probable cause of the damage to the *Norwegian Dawn* and the injuries suffered by its passengers were waves breaking over the bow during the ship's unavoidable encounter with severe weather and heavy seas.

Recommendations: None  
Report Adopted: November 30, 2005

### **Sydney Mae II (Accident Brief)**

#### **Winchester Bay, Oregon**

**September 19, 2005**

The *Sydney Mae II* accident is of particular interest to the Safety Board because of its similarity to the capsizing of the *Taki-Too*. The Safety Board issued its final report on the *Taki-Too* accident on June 28, 2005, just 2 1/2 months before the sinking of the *Sydney Mae II*. Tragically, both accidents resulted in the loss of life because the vessel operators failed to require passengers and crew to wear lifejackets during hazardous conditions. The capsizing of the *Sydney Mae II* resulted in four deaths and damages over \$120,000.

Two of the three safety recommendations issued to the Coast Guard in the Safety Board's final report on the *Taki-Too* accident addressed requiring passengers and crew of small passenger vessels operating in Coast Guard-designated surf stations and regulated boating areas on the West Coast to wear lifejackets during hazardous conditions. The Coast Guard is beginning to take steps to address these recommendations. However, it is the responsibility of vessel operators to familiarize themselves with Coast Guard regulations and to ensure that passengers and crew wear lifejackets during hazardous conditions.

The Safety Board determined that the probable cause of the sinking of the *Sydney Mae II* was the decision of the captain to closely approach the Umpqua River bar during hazardous conditions. Contributing to the loss of life was the failure of the captain to ensure that passengers were wearing lifejackets during hazardous conditions, as required by 46 CFR 26.03-2.

Recommendations:   None  
Report Adopted:       December 15, 2005

### **Selendang Ayu (Accident Brief)**

#### **Unalaska, Alaska**

**December 8, 2004**

On November 28, 2004, after loading 60,200 metric tons of soybeans, the Malaysian registered bulk freighter *Selendang Ayu*, operated by IMC Shipping, departed Seattle, Washington, for Xiamen, China, with a crew of 26. The *Selendang Ayu* continued without incident until Monday, December 6. At 1200, an engine problem was reported and the engine was shut down. The vessel was approximately 100 miles northwest of Dutch Harbor, Alaska. The crew was unable to restart the engine and tried to repair it.

At 0245 on December 7 the *Selendang Ayu* master began arrangements for a tow. IMC Shipping, hired the *Sidney Foss*, an ocean going tug. At 1100 the U.S. Coast Guard cutter *Alex Haley* arrived on the scene. The Coast Guard also launched two HH-60 Jayhawk helicopters from Air Station Kodiak to Cold Bay, where they would be in position to evacuate the *Selendang Ayu's* crew, if necessary. At 2020, the *Sidney Foss* began the tow.

On the morning of December 8, at 0732, the *Sidney Foss's* towline broke and sea conditions prevented another towing attempt. The *Selendang Ayu* continued to close on the Unalaska Island coast. The anchors of the *Selendang Ayu* were unable to keep the ship from drifting to the southeast at about 2.0 knots. At about 1300 the *Alex Haley* commanding officer tried unsuccessfully to attach a tow line to the bow of the *Selendang Ayu*.

About 1400, the Coast Guard began hoisting nine *Selendang Ayu* crewmembers from the deck of the freighter into the first HH-60 helicopter that had arrived from Cold Bay. The crew remaining on the *Selendang Ayu* attempted to finish the engine repairs, but the vessel ran aground at 1705, and the master decided to abandon ship. At 1816, after seven crewmembers had been hoisted on board the second helicopter, a wave larger than any yet encountered struck the bow of the freighter, sprayed up, and engulfed the HH-60. The helicopter's engines stalled, the helicopter descended, striking the side of the *Selendang Ayu*. The helicopter fell into the sea, overturned, and sank. The HH-65 Dolphin from the *Alex Haley*, hovering nearby was able to recover the crew of the crashed HH-60, but six of the *Selendang Ayu* crewmembers perished. At 1913, the freighter broke in half on the rocks. The accident resulted in a spill of approximately 336,000 gallons of fuel oil and diesel fuel that led to an environmental cleanup lasting until June 2006. Damages resulting from the accident were over \$12,000,000

The Safety Board determined that the probable cause of the grounding of the *Selendang Ayu* was the failure of the main engine, which the crew was unable to repair and restart. The inability of the responding vessels to effect a tow, or otherwise halt the freighter's drift in the extreme wind and sea conditions, were found to be contributing causes in the grounding.

Recommendations: None  
Report Adopted: September 26, 2006

### ***Completed Accident Investigation Reports – FY 2007***

#### **Massachusetts (Accident Brief) Boston Harbor, Massachusetts June 12, 2006**

The commuter ferry *Massachusetts* was en route from Rowe's Wharf in Boston Harbor to Hingham, *Massachusetts*, carrying 65 passengers and four crewmembers, when a fire broke out in the engine room. The *Massachusetts*, owned and operated by Massachusetts Bay Lines, was inspected and certificated by the U.S. Coast Guard under the small passenger vessel regulations. The vessel's certificate of inspection, valid for 5 years, was issued on November 14, 2002, and allowed a total of 350 persons on board, including 346 passengers and 4 crewmembers (a master and 3 deckhands). At the time of the fire, the *Massachusetts* was operating under a subcontract with Boston Harbor Cruises, which had a 5-year contract with the Massachusetts Bay Transit Authority to provide ferry service between Rowe's Wharf and Hingham Shipyard. The contract specified that vessels had to comply with Coast Guard requirements.

The *Massachusetts* crew was alerted to the fire about 1615, when the ferry was near the Long Island Bridge by black smoke at the stern and an engine highwater temperature alarm. The vessel did not have, and was not required to have, an engine room fire detection system. The master maneuvered the vessel into shallow water southeast of the bridge, anchored, and waited for firefighters. Before a fireboat from the Boston Fire Department's marine unit arrived, all the passengers safely transferred to the *Laura*, another commuter vessel in the vicinity. The fireboat extinguished the fire. The accident did not result in any serious injuries or fatalities. Damage, estimated at \$800,000, was confined mostly to the engine room.

The Safety Board determined that the probable cause of the fire on board the *Massachusetts* was the ignition of diesel fuel by contact with a hot engine surface, which occurred because a fuel line attached to a fuel injector was not properly connected during engine maintenance. Contributing to the extent of the damage was the absence of a fixed fire detection and suppression system, which precluded the crew from receiving timely notification of the fire and which allowed the blaze to spread throughout the engine room.

As a result of this investigation a safety recommendation was issued to the U.S. Coast Guard requiring that all small passenger vessels certificated to carry more than 49 passengers, regardless of date of build or hull material, be fitted with an approved fire detection system and a fixed fire suppression system in their engine rooms.

Recommendations: 1  
Report Adopted: March 20, 2007

### **Grounding of Hong Kong-Registered Container Ship *New Delhi Express* (Accident Brief) Kill Van Kull Waterway, New York Harbor, New York April 15, 2006**

The container ship *New Delhi Express*, with a master, 21 crewmembers, 3 guests, a Sandy Hook pilot, and a docking pilot on board, was westbound in dense fog in the Kill Van Kull waterway, New York Harbor, when it struck a submerged ledge near buoy 14, just past the Bayonne Bridge, took on water through a hull breach caused by the impact, and ran aground in the waterway. The docking pilot was navigating the ship. Damages to the *New Delhi Express* were estimated at \$1.5 million. Two of the three tugs assisting the vessel were also damaged. There were no fatalities, injuries or water pollution.

The Safety Board determined that the probable cause of the grounding of the *New Delhi Express* was the error of the docking pilot in not using all available resources to determine the vessel's position as he navigated the Kill Van Kull waterway. Contributing to the cause of the grounding was the failure of both pilots to practice good bridge resource management.

As a result of this accident, the safety Board recommended to the U.S. Coast Guard that they use the circumstances of this accident related to the improper redeployment of buoy 14 in Kill Van Kull waterway as a “lesson learned” and disseminate the information to appropriate personnel, emphasizing the need to verify all buoy positioning data during routine position checks and during buoy redeployments. The Safety Board recommended that State Commissions whose harbor pilots work with docking pilots require their harbor and docking pilots to take part in recurrent joint training exercises that emphasize the concept and procedures of bridge resource management.

Recommendations: 2  
Report Adopted: May 30, 2007

**Fire Aboard Construction Barge *Athena 106*  
West Cote Blanche Bay, Louisiana  
October 12, 2006**

The towing vessel Miss Megan was pushing two deck barges in the West Cote Blanche Bay oil field in Louisiana, en route to a pile-driving location. Barge Athena 106 was tied along the port side of barge IBR 234. The Miss Megan was secured astern of IBR 234, pushing both barges. The Miss Megan was crewed by a licensed master and a deckhand. The construction barge had six workers on board, consisting of one foreman, one crane operator, and four barge hands. While the vessels were under way, the aft spud (a five ton steel shaft used as a mooring device) on the Athena 106 released from its fully raised position. The spud dropped into the water and struck a submerged, buried high-pressure natural gas pipeline. The resulting gas release ignited and created a fireball that engulfed the towing vessel and both barges. The master of the towing vessel was killed, along with four barge workers. One barge worker was officially listed as missing.

The Safety Board determined that the probable cause of the accident was Athena Construction's failure to require its crews to pin the spuds securely in place on its barges. Contributing to the accident was the failure of Central Boat Rentals to require, and of the Miss Megan master to ensure, that the barge spuds were securely pinned before getting under way.

As a result of this accident investigation, five new recommendations aimed at improving safety management, training and oversight for barges and towing vessels were made to the Occupational Safety and Health Administration, the U. S. Coast Guard, Athena Construction and Central Boat Rentals. One previously recommendation was reiterated in this report

Recommendations: 5 new; 1 reiterated  
Report Adopted: June 14, 2007

## On-Going Accident Investigations

Location	Description	Fatalities
Miami, Florida	May 25, 2003 - SS Norway - boiler rupture	11
Atlantic Ocean - Florida	July 18, 2006 - MV Crown Princess- heeling incident	0
Port Allen, Louisiana	Feb 10, 2007 - MT Kition - allision w. I-10 bridge	0
Juneau, Alaska	May 14, 2007 - MV Empress of the North - grounding	0

## Office Railroad, Pipeline, and Hazardous Materials Safety

The Office of Railroad, Pipeline and Hazardous Materials Safety (RPH) consists of four divisions.

- Railroad Division
- Pipeline and Hazardous Materials Division
- Human and Survival Factors Division
- Report Development Division

Two investigative divisions are staffed with investigative specialists dedicated to the specific transportation modes of the division. Two other divisions, the Human and Survival Factors Division and the Report Development Division, provide support across the modal divisions. The office also investigates and evaluates the emergency response to accidents involving railroads, pipelines, and hazardous materials. On the basis of the investigations conducted by this office, the Safety Board may issue safety recommendations to Federal and State regulatory agencies, industry and safety standards organizations, carriers and pipeline operators, equipment and container manufacturers, producers and shippers of hazardous materials, and emergency response organizations.

### *Railroad Division*

The Railroad Division includes staff located at NTSB headquarters in Washington, D.C., and in regional offices located in Chicago, Illinois; Atlanta, Georgia; and Los Angeles, California. Since 1967, Congress has assigned the primary responsibility for railroad accident investigation to the NTSB. As in the other surface modes, the Board performs in-depth analyses of selected rail accidents, determines the probable causes, and issues recommendations to make changes to prevent similar accidents.

The office's Railroad Division investigates accidents and incidents involving passenger and freight railroads as well as commuter rail transit systems. These accidents typically involve collisions or derailments, some of which lead to the release of hazardous materials.

The small staff with limited resources of the Railroad Division does not investigate every rail accident reported to the Federal Railroad Administration (FRA). In order to use the Safety Board's resources most efficiently, the Board has established accident criteria to help highlight accidents that have



significant safety issues for investigation. The Safety Board also conducts studies of significant railroad safety issues, often based on a set of accident investigations specifically undertaken as the basis for the study. In other cases, the studies may be based on analyses of regulations, railroad safety programs and procedures, audit reviews of management and operations practices, or other research. In addition, the Board investigates selected accidents involving specific life-saving issues.

### ***Pipeline and Hazardous Materials Division***

The Pipeline and Hazardous Materials Division investigates accidents occurring during the transport of natural gas or other hazardous liquids, such as gasoline or propane, through underground pipeline systems and accidents in which public safety is threatened by the release of hazardous substances. Pipeline accident investigations focus on accidents that involve fatalities or that result in substantial property or environmental damage. The Safety Board is responsible for investigating all pipeline accidents in which there is a fatality, substantial property damage or significant environmental impact. The Board may also investigate additional selected accidents that highlight safety issues of national importance or that involve a selected accident prevention issue. Hazardous materials accident investigations may include analysis of the performance of hazardous materials containers, such as rail tank cars and highway cargo tanks.

## **Accomplishments and Workload**

### **Completed Accident Investigation Reports – FY 2006**

#### ***Railroad Accident Investigations***

#### **Derailment of Northeast Illinois Regional Commuter Railroad Train 519**

##### **Chicago, Illinois**

##### **October 12, 2003**

A westbound Northeast Illinois Regional Commuter Railroad (Metra) train 519 derailed its two locomotives and five passenger cars as it traversed a crossover from track 1 to track 2 near Control Point 48th Street in Chicago, Illinois. The train derailed at a recorded speed of about 68 mph. The maximum authorized speed through the crossover was 10 mph. There were about 375 passengers and a crew of 3 onboard. As a result of the accident, 47 passengers were transported to eight local hospitals. Of these, 44 were treated and released, and 3 were admitted for observation. Damages from the accident exceeded \$5 million.

The Safety Board determined that the probable cause of the derailment of Northeast Illinois Regional Commuter Railroad (Metra) train 519 was the locomotive engineer's loss of situational awareness minutes before the derailment because of his preoccupation with certain aspects of train operations that led to his failure to observe and comply with signal indications. Contributing to the accident was the lack of a positive train control system at the accident location.

The safety issues discussed in this report were the adequacy of the locomotive engineer's performance, training, and qualifications, and the lack of a safety redundant system to address train crew performance deficiencies.

As a result of its investigation, the Safety Board issued safety recommendations to the Federal Railroad Administration and the Northeast Illinois Regional Commuter Railroad (Metra). The Safety Board also reiterated a previously issued safety recommendation to the Federal Railroad Administration.

Recommendations: 5 new; 1 reiterated  
Report Adopted: November 16, 2005

**Collision of Norfolk Southern Freight Train 192 With Standing Norfolk Southern Local Train P22 With Subsequent Hazardous Materials Release  
Graniteville, South Carolina  
January 6, 2005**

A northbound Norfolk Southern Railway Company (NS) freight train 192, while traveling through Graniteville, South Carolina, encountered an improperly lined switch that diverted the train from the main line onto an industry track, where it struck an unoccupied, parked train (NS train P22). The collision derailed two locomotives and 16 of the 42 freight cars of train 192, as well as the locomotive and 1 of the 2 cars of train P22. Among the derailed cars from train 192 were three tank cars containing chlorine, one of which was breached, releasing chlorine gas. The train engineer and eight other people died as a result of chlorine gas inhalation. About 554 people complaining of respiratory difficulties were taken to local hospitals. Of these, 75 were admitted for treatment. Because of the chlorine release, about 5,400 people within a 1-mile radius of the derailment site were evacuated for several days. Total damages exceeded \$6.9 million.

The Safety Board determined that the probable cause of the collision and derailment of Norfolk Southern train 192 was the failure of the crew of Norfolk Southern train P22 to return a main line switch to the normal position after the crew completed work at an industry track. Contributing to the failure was the absence of any feature or mechanism that would have reminded crewmembers of the switch position and thus would have prompted them to complete this final critical task before departing the work site. Contributing to the severity of the accident was the puncture of the tank car containing chlorine, resulting in the release of poisonous chlorine gas.

The safety issues identified in this investigation were improperly lined switches and the vulnerability, under current operating practices, of railroad tank cars carrying hazardous materials.

The Safety Board made recommendations to the Federal Railroad Administration to require railroads to:

- Install automatically activated devices, independent of the switch banner, that will, visually or electronically, compellingly capture the attention of employees involved with switch operations and clearly convey the status of the switch in daylight and in darkness;

- Operate trains in non-signaled territory at speeds that will allow them to be safely stopped in advance of misaligned switches; and
- Implement operating measures, such as positioning tank cars toward the rear of trains and reducing speeds through populated areas, to minimize impact forces from accidents and reduce the vulnerability of tank cars transporting chlorine, anhydrous ammonia, and other liquefied gases designated as poisonous by inhalation.

The Safety Board also recommended that the Federal Railroad Administration determine the most effective methods of providing emergency escape breathing apparatus for all crewmembers on freight trains carrying hazardous materials that would pose an inhalation hazard in the event of unintentional release, and then require railroads to provide these breathing apparatus to their crewmembers along with appropriate training.

Recommendations: 4  
Report Adopted: November 29, 2005

### **Collision Between Two Washington Metropolitan Area Transit Authority Trains at the Woodley Park-Zoo/Adams Morgan Station Washington, D.C. November 3, 2004**

A Washington Metropolitan Area Transit Authority Metrorail train 703 collided with train 105 at the Woodley Park-Zoo/ Adams Morgan station in Washington, D.C at 12:49pm on November 3, 2004. Train 703 was traveling outbound on the Red-Line segment of the Metrorail system and ascending the grade between the Woodley Park-Zoo/Adams Morgan and the Cleveland Park underground stations, when it rolled backwards about 2,246 feet and struck train 105 at a speed of about 36 mph. Train 703 was not carrying passengers. Train 105, was in the process of discharging and loading passengers at the Woodley Park-Zoo/Adams Morgan station. There were about 70 passengers on board train 105. Some passengers had exited the train just before or during the collision. The District of Columbia Fire and Emergency Medical Service transported about 20 persons to local hospitals. Estimated property damages were \$3,463,183.

The Safety Board determined that the probable cause of this collision was the failure of the operator of train 703 to apply the brakes to stop the train, likely due to his reduced alertness. Contributing to the accident was the lack of a rollback protection feature to stop the train when operated in the manual mode.

In addition to the lack of a rollback protection feature, and operator performance, other safety issues were the lack of passenger emergency exit standards in the transit industry and the crashworthiness of Metrorail 1000-series railcars. As a result of its investigation, the Safety Board made safety recommendations to the Washington Metropolitan Area Transit Authority and the Federal Transit Administration. On November 22, 2004, the Safety Board issued Urgent Safety Recommendation

R-04-9 to the Washington Metropolitan Area Transit Authority, reclassifying a recommendation to issue revised procedures on rollback response to train operators from open, acceptable response to open, unacceptable response.

Recommendations: 6 new; 1 reclassified  
Report Adopted: March 23, 2006

### **Collision of Two Union Pacific Railroad (UP) Trains Shepherd, Texas September 15, 2005**

This accident occurred when a train (MPBSR 13) entered a track siding, instead of proceeding on the main track, because a manual switch was erroneously left in position to direct traffic to the siding. Once on the siding, train MPBSR 13 struck a standing train (LEF52 14). The engineer of the standing train was killed. The lead locomotive of the striking train rolled onto its side, and the engineer and conductor sustained minor injuries.

The estimated property damage was about \$1,514,000. Train movements were authorized by track warrants issued by the train dispatcher in Omaha, Nebraska. The maximum authorized speed was 49 mph. There were no wayside signals to govern the train movements or protect the train from an interruption in the continuity of the track, such as an open switch. Consequently, strict compliance with the operating rules was necessary to protect one train from another.

The Safety Board determined that the probable cause of the September 15, 2005, collision of Union Pacific Railroad trains MPBSR 13 and LEF52 14 in Shepherd, Texas, was the failure of the previous crew for train LEF52 14 to return a main track switch to the normal position after they had secured the train on the siding and departed the area.

The safety issues are similar to those defined in the report titled *Collision of Norfolk Southern Freight Train 192 With Standing Norfolk Southern Local Train P22 With Subsequent Hazardous Materials Release at Graniteville, South Carolina, January 6, 2005* which was adopted November 29, 2005. In that report, recommendations issued by the Safety Board to the Federal Railroad Administration called for requiring railroads to install automatically activated devices that would convey the switch position during all lighting conditions to all employees involved with switch operations, and to operate trains in non-signaled territory at speeds that will allow them to be safely stopped in advance of misaligned switches. The Safety Board did not issue any new safety recommendations as a result of this investigation.

Recommendations: None  
Report Adopted: May 22, 2006

## **Railroad Switching Foreman Struck by Locomotives**

### **San Antonio, Texas**

**December 7, 2003**

A Union Pacific Railroad (UP) switching foreman was struck and killed by two locomotives at the UP's East Yard. The two locomotives were operated as a single unit under the foreman's control. He was operating the locomotives from the ground using a remote control transmitter. He usually had a helper, but this time he was working alone. His assignment was to switch railroad cars using the locomotives. When the accident occurred, the locomotives were traveling about 11 mph and were moving back over the track they had just traversed rather than over the tracks leading to the destination.

The National Transportation Safety Board determined that the probable cause of the December 7, 2003, yard accident in San Antonio, Texas, was the foreman's inattentiveness to the location of the locomotives and the switch position and the lack of adequate oversight by the Union Pacific Railroad of power-assisted switch installation, maintenance, and operations at its East Yard.

Safety issues involved implementation and maintenance procedures for power-assisted switch machines and employee guidance concerning the maintenance and operation of these switches.

Recommendations: 3  
Report Adopted: May 23, 2006

## **Collision Between Two BNSF Freight Trains**

### **Near Gunter, Texas**

**May 19, 2004**

About 5:46 p.m., central daylight time, two BNSF Railway Company freight trains collided head on near Gunter, Texas. The southbound train, BNSF 6789 South, was traveling about 37 mph, and the northbound train, BNSF 6351 North, was traveling about 40 mph when the collision occurred. The trains were being operated under track warrant control rules on non-signaled single track. The collision resulted in the derailment of 5 locomotives and 28 cars. About 3,000 gallons of diesel fuel were released from the locomotives and caught fire. The southbound train engineer was killed, and the southbound train conductor was airlifted to a hospital in Dallas with serious burns. The crewmembers on the northbound train were transported to a local hospital, where they were admitted. Estimated property damages exceeded \$2 million.

The issuance of track warrant authority that contains an after-arrival stipulation and the informal communication of proposed meeting locations for trains in non-signaled territory were the safety issues discussed in this report.

Safety recommendations were made to the Federal Railroad Administration, the BNSF Railway Company, the Association of American Railroads, and the American Short Line and Regional Railroad Association.

Recommendations: 4 new; 1 reclassified  
Report Adopted: June 13, 2006

### **Collision of Union Pacific Railroad (UP) Train MHOTU-23 with BNSF Railway Company Train MEAP-TUL-126-D with Subsequent Derailment and Materials Release**

**Macdona, Texas**

**June 28, 2004**

About 5:03 a.m., a westbound UP freight train traveling on the same main line track as an eastbound BNSF freight train struck the midpoint of the 123-car BNSF train as the eastbound train was leaving the main line to enter a parallel siding. The accident occurred at the west end of a rail siding on the UP's San Antonio Service Unit. The collision derailed the 4 locomotive units and the first 19 cars of the UP train, as well as 17 cars of the BNSF train. As a result of the derailment and pileup of railcars, the 16th car of the UP train, a pressure tank car loaded with liquefied chlorine, was punctured. Chlorine escaping from the punctured car immediately vaporized into a cloud of chlorine gas that engulfed the accident area to a radius of at least 700 feet before drifting away from the site. Three people, including the conductor of the UP train and two local residents, died as a result of chlorine gas inhalation. The UP train engineer, 23 civilians, and 6 emergency responders were treated for respiratory distress or other injuries. The damage to rolling stock, track, and signal equipment was estimated at \$5.7 million, and the environmental cleanup cost was estimated at \$150,000.

Train crew fatigue and the vulnerability of railroad tank cars carrying hazardous materials under current operating practices were the safety issues discussed in this report.

Safety recommendations were made to the Federal Railroad Administration, the Union Pacific Railroad, the Brotherhood of Locomotive Engineers and Trainmen, and the United Transportation Union. In addition, the Safety Board reiterated six safety recommendations previously issued to the Federal Railroad Administration.

Recommendations: 4 new; 6 reiterated; 4 reclassified  
Report Adopted: July 6, 2006

## ***Pipeline Accident Investigations***

### **Natural Gas Pipeline Explosion, Leak, and Fire**

#### **Dubois, Pennsylvania**

**August 21, 2004**

A natural gas explosion destroyed a residence in DuBois, Pennsylvania. Two residents were killed in this accident and property damage was approximately \$800,000. National Fuel Gas Distribution Corporation (National Fuel) was the owner/operator of the natural gas pipeline. Uponor Aldyl Company (Uponor) manufactured the pipes used in the pipeline at the point of failure. Since the accident, the PWPoly Corporation has acquired Uponor. The combined businesses operate under the name USPoly Company (USPoly). USPoly no longer manufactures the type of pipe involved in this accident.

The Safety Board determined that the probable cause of the leak, explosion, and fire was the fracture of a defective butt-fusion joint and the failure of the National Fuel Gas Distribution Corporation to have an adequate program to inspect butt-fusion joints and replace those joints not meeting its inspection criteria. The butt joint involving two coiled pipes was found to be visibly angled, or mitered. Mitering can cause stresses on the line, but this issue was not addressed in either the Uponor or the National Fuel written operating procedures for fusions. However, two foremen and two trainers who were current or former National Fuel employees stated in interviews that verbal instructions in effect in 1996 advised fusers not to allow a visual miter.

Recommendations were made to the Pennsylvania Public Utility Commission, National Fuel Distribution Corporation, USPoly Company, and the Plastics Pipe Institute.

Recommendations: 5  
Report Adopted: May 31, 2006

## **Completed Accident Investigation Reports – FY 2007**

### ***Railroad Accident Investigations***

#### **Collision Between Two Union Pacific Railroad Trains (Accident Brief)**

##### **Texarkana, Arkansas**

**October 15, 2005**

A westbound Union Pacific Railroad (UP) train ZYCLD 132 collided with the rear of standing UP train MPBHG 15 in the UP rail yard in Texarkana, Arkansas. The collision resulted in the puncture of a railroad tank car containing propylene, a compressed flammable gas. The propylene was heavier than air and flowed near the ground into a nearby neighborhood. The flowing gas reached a house where

an unknown ignition source ignited the gas, and the house exploded. The single occupant was killed. The fire moved quickly along the flowing gas back to the punctured tank car. A second, unoccupied, home was destroyed in the fire, and a wooden railroad trestle burned completely. Approximately 3,000 residents within a one mile radius of the punctured tank car were advised to evacuate the area. The two crews and the employees working at the Texarkana yard were not injured, and they evacuated the area safely. Total damage was \$2.4 million, including \$325,975 in equipment damage and \$2,053,198 in track damage.

The Safety Board determined that the probable cause of this accident was the failure of the crew of train ZYCLD 13 to remain attentive and alert and thereby able to stop short of an observable standing train. Contributing to the severity of the accident was the puncture of a tank car during the collision, which resulted in the release of propylene and a fire.

As a result of its investigation of the Texarkana, Arkansas, railroad accident, the Safety Board made the following safety recommendations.

- To the city of Texarkana: Coordinate with all regional and local transporters of hazardous materials, such as railroads and trucking companies, to establish effective communications and response plans and conduct periodic joint emergency response drills and exercises.
- To the Union Pacific Railroad: Implement measures to ensure that all of your field personnel understand and comply with your procedures for responding to hazardous materials incidents, with particular emphasis on timely notifications and appropriate coordination with local emergency responders.
- To the International Association of Fire Chiefs: Notify your members about the circumstances of the accident in Texarkana, Arkansas, on October 15, 2005, and urge them to coordinate with all regional and local transporters of hazardous materials, such as railroads and trucking companies, to establish effective communications and coordination through joint emergency response drills and exercises.
- To the Association of American Railroads and the American Short Line and Regional Railroad Association: Notify your members about the circumstances of the accident in Texarkana, Arkansas, on October 15, 2005, and urge them to coordinate with all communities adjacent to their railroad yards and along their hazardous materials routes to establish effective communications and coordination through joint emergency response drills and exercises.

Recommendations: 4

Report Adopted: October 17, 2006



## **Amtrak Passenger Train Derailment BNSF Railway Company (Accident Brief) Near Home Valley, Washington**

**April 3, 2005**

The four-car passenger train derailed while en route from Pasco, Washington to Portland Oregon. The train was traveling 60 mph through a cut section on the north side of the Columbia River Gorge. The train remained upright, but came to rest at a 35-degree angle against the embankment on the north side of the Columbia River. There were 106 passengers and 9 Amtrak employees on board. Eight employees and 22 passengers sustained minor injuries.

During the 12 days prior to the accident, four separate “rough riding” reports were made regarding the area where the train later derailed. Followup inspections resulted from the last three of these reports. The track inspector performing the last of these inspections identified some concrete crosstie abrasion in an area about 211 feet east of the derailment. He reported the condition to the BNSF roadmaster. However, no remedial action was taken. Specific inspections that measure track anomalies occurred twice in the derailment area in the year prior to the derailment. Both inspections cited non-critical maintenance that needed to be performed as time allowed. The regular inspector and the substitute inspector reported having received little, if any, training on concrete crosstie inspection.

The Safety Board determined that the probable cause of the derailment of Amtrak passenger train No. 27 near Home Valley, Washington, was the BNSF Railway Company’s inadequate response to multiple reports of rough track conditions that were subsequently attributed to excessive concrete crosstie abrasion, which allowed the outer rail to rotate outward and create a wide gage track condition. Contributing to the accident was the Federal Railroad Administration’s failure to provide adequate track safety standards for concrete crossties.

The Safety Board issued four recommendations as a result of this investigation.

- To the Federal Railroad Administration: Extend to all classes of track safety standards for concrete crossties that address at a minimum the following: limits for rail seat abrasion, concrete crosstie pad wear limits, missing or broken rail fasteners, loss of appropriate toeload pressure, improper fastener configurations, and excessive lateral rail movement.
- To the BNSF Railway Company: As part of your track inspector audit program, determine whether inspectors are provided adequate track time to perform their duties, and take corrective action if necessary.
- To the Association of American Railroads and the American Short Line and Regional Railroad Association: Using the circumstances of the April 3, 2005, accident near Home Valley, Washington, emphasize to your members through your publications, web site, and conferences, as appropriate, the need to establish inspection guidelines for track inspectors that address the problems and characteristics unique to concrete crossties for all classes of track. As your members develop these guidelines, encourage them to consider the elements in 49 Code of Federal Regulations Part 213, “Track Safety Standards,” for concrete crossties for Classes of Track 6 and higher.

- To the American Railway Engineering and Maintenance of Way Association: Using the circumstances of the April 3, 2005, accident near Home Valley, Washington, emphasize to your railroad members through your publications, web site, and conferences, as appropriate, the need to establish inspection guidelines for track inspectors that address the problems and characteristics unique to concrete crossties for all classes of track. As your railroad members develop these guidelines, encourage them to consider the elements in 49 Code of Federal Regulations Part 213, "Track Safety Standards," for concrete crossties for Classes of Track 6 and higher.

Recommendations: 4

Report Adopted: October 18, 2006

### **Collision Between Two Union Pacific Railroad Trains (Accident Brief)**

#### **Carrizozo, New Mexico**

**February 21, 2004**

This collision occurred about 7:54 a.m. A Union Pacific Railroad (UP) eastbound freight train AMLKS-18, consisting of 2 locomotives and 78 empty multi-level cars, struck a westbound UP freight train, GLPNEP-16, consisting of 4 locomotives and 93 loaded covered hopper cars. The eastbound train struck the westbound train, after traveling past a mainline advanced approach signal, an approach signal, and a stop signal.

The westbound train was struck about 25 hopper cars behind its locomotives, resulting in 11 derailed cars (the 26th through the 35th). The striking train had two locomotives, and its first 11 cars derailed as a result of the collision. Both crewmembers of the striking train were killed. The crewmembers of the westbound train were unharmed. Diesel fuel released from the ruptured tanks of the striking train's locomotives caught fire, which was extinguished by the local fire department. There was no evacuation of the area. The estimated damage was \$1,964,543.

The Safety Board determined that the probable cause of the accident was the failure of the engineer of AMLKS-18 to stop as directed by wayside signal because he was asleep, which was induced by his lack of sleep prior to the accident and his marijuana use. Contributing to the cause of the accident was the failure of the AMLKS-18 conductor to oversee the safe operation of the train because he was also asleep.

Recommendations: None

Report Adopted: October 31, 2006

## **Derailment of Virginia Railway Express Train (Accident Brief) near Quantico, Virginia**

**January 5, 2006**

On January 5, 2006, about 6:44 a.m., a northbound Virginia Railway Express commuter train, operating on CSX Transportation's (CSX's) Richmond, Fredericksburg and Potomac Subdivision derailed three passenger cars and a locomotive at Possum Point near Quantico, Virginia. Seven passengers and two crewmembers required medical attention.

The scheduled commuter train originated in Fredericksburg, Virginia, and was destined for Washington, D.C, with one locomotive and six passenger cars, and a crew consisting of an engineer, a conductor, and an assistant conductor. About 520 passengers were aboard. Before the accident, the train had stopped at several stations, including Quantico, the last station before the accident. The train was in "push-pull" operation. The engineer was operating the train from the cab control car, in the lead of the train. The locomotive was at the rear of the train.

After departing Quantico, the engineer increased the train's speed while traversing the turnouts at Quantico and traveling single track over a bridge. During the approach to Possum Point, the train's movement was governed by the signals at Quantico and at Possum Point. At Possum Point the train took a diverging route over a power-operated switch onto No. 2 main. The crewmembers said that the trip had been "uneventful" up to Possum Point. The engineer and conductor stated that they had not seen any track anomalies or felt anything unusual as they left the single main track and traversed the turnout. As the train was moving over the turnout, the fourth car derailed in the switch point area. Because of the resulting damage to the turnout and the misalignment at the area of the device permitting the wheels to cross the junction, the fifth and sixth cars and the locomotive derailed when they reached it. The lead car stopped about 800 feet north of the switch point. The derailed equipment remained upright when it came to rest.

According to the engineering personnel and to the track inspection records, between February and October 2005, the turnout had been put under a slow order on four different occasions, each time because the switch point needed welding. The track inspector further explained that on two more recent occasions (December 19, 2005, and January 2, 2006), he had imposed a slow order because the reverse switch point was worn and chipped. On December 19, both the track inspector and the welder had told the roadmaster that several portions of the point were chipped, that extensive welding was necessary, and that the switch point and stockrail would have to be replaced. The roadmaster called the vendor and ordered a replacement switch point and stock rail. In the meantime, the welder repaired the switch point, and the slow order was removed.

On January 2, the track inspector placed a 10-mph slow order on the turnout because a piece of metal had broken out of the left point. After the point was repaired, he lifted the order. The replacement switch point arrived on January 5, the day of the accident, but after the train had derailed.

The turnouts at Possum Point and Quantico are similar. At both places, the trains are routed in a similar fashion from a single track to multiple tracks. Both places are subjected to about the same amount of wear and tear. In spring 2005, the lead switch at Quantico had maintenance issues similar to those at Possum Point. The area was covered by a slow order until the turnout had been permanently repaired with a new switch point and stock rail. Throughout 2005, maintenance personnel had had several indications that the Possum Point switch point was seriously worn. While the turnout problems at Quantico were adequately handled, the Possum Point turnout problems were not. The switch point at Possum Point was neither replaced nor protected adequately by a speed restriction.

Immediately after the accident, CSX verbally instructed its engineering personnel that all mainline switch point welding was prohibited. CSX also verbally instructed its roadmasters that any deficient switch point should be kept out of service until its replacement could be installed. The company began stocking switch points at various key locations on its divisions so that deficient switch points could be replaced more quickly. On February 15, 2006, CSX formally updated its welding manual to prohibit welding repairs on main track switch points and to require that when an emergency situation necessitates a repair to a switch point, a 10 mph speed restriction must be placed on the turnout until the point is replaced.

The Safety Board determined that the probable cause of the derailment was an excessively worn and chipped switch point, which caused the lead truck of the fourth passenger car to derail. Contributing to the accident was CSX's delay in replacing a switch point that had been repeatedly identified as deteriorating.

Recommendations: None  
Report Adopted: November 20, 2006

## **Northeast Illinois Regional Commuter Railroad Corporation (Metra)**

### **Derailment (Accident Brief)**

#### **Chicago, Illinois**

#### **September 17, 2005**

The Metra commuter train derailed one locomotive and five cars as it traversed a crossover at milepost 4.7 near West 47th and South Federal Street in Chicago, Illinois. The prescribed maximum operating speed through the crossover was 10 miles per hour. However, the train was traveling 69 miles per hour as it entered the crossover. The second through the fifth cars from the lead end of the train struck a steel girder that was part of a bridge that carried the tracks over 47<sup>th</sup> Street. Both turnouts of the crossover and one power switch machine were destroyed. Metra reported that 185 passengers and 4 crewmembers were on the train at the time of the accident. All four crewmembers, 109 passengers, and four others were injured. Two passengers were killed.

The Safety Board determined that the probable cause of the derailment of the train was the engineer's inattentiveness to signal indications and his failure to operate the train in accordance with the signal indications and the speed restriction for the crossover at Control Point 48th Street. Contributing to the accident was lack of recognition by Metra of the risk posed by the significant difference between track speed and crossover speed at the accident location and its inaction to reduce that risk through additional operational safety procedures or other means. Also contributing to the accident was the lack of a positive train control system.

Two months after this accident, as a result of an investigation of a similar 2003 Metra accident, the Safety Board recommended that Metra install a positive train control system on all of its commuter routes. A month later, the Safety Board recommended that Metra install an automatic train control system with cab signals and train control enforcement over the entire Joliet Sub District, until a positive train control system is installed. Metra responded that such an interim measure would cost nearly \$125 million and take at least nine years to accomplish and proposed an alternative that would control the train if an engineer failed to properly respond to a restricting signal.

With its report of this accident, the Safety Board issued four recommendations to the FRA related to rail passenger car seats and crashworthiness standards for rail passenger car body floor structure systems. Another recommendation was issued to Metra related to crossovers that may pose additional risk due to speed differentials between the maximum allowable track speed before the crossover and maximum allowable speed through the crossover.

Recommendations: 6  
Report Adopted: December 21, 2006

### **Amtrak Passenger Injuries During Braking on CN Railroad Main Line Track (Accident Brief) near Arcola, Louisiana June 26, 2006**

A National Railroad Passenger Corporation (Amtrak) train was en route from New Orleans, Louisiana, to Chicago, Illinois, and operating over CN railroad main line track, when the engineer said he saw that the track ahead was misaligned by about 2 feet to the east. He made an immediate full service (non-emergency) brake application. Although the train negotiated the area without derailling, the misaligned track caused passengers to be jostled about in the cars. Nine of the train's 104 passengers reported injuries at the scene, and four were transported to a local hospital where they were treated and released. None of the ten Amtrak employees aboard the train were injured.

The Safety Board determined that the probable cause of the June 26, 2006, accident was a heat-induced track misalignment that resulted because CN railroad's continuous welded rail procedures failed to ensure that rail was adequately de-stressed during or after the installation of a turnout. During the investigation, the CN regional chief engineer reviewed the CN's procedures for de-stressing continuous

welded rail. As a result of that review, the CN modified its procedures to require that specific actions be taken to de-stress rail for a distance of 200 feet on either side of a newly installed or rebuilt turnout or grade crossing.

Recommendations: None

Report Adopted: December 21, 2006

### **Collision of Two CN Freight Trains**

#### **Anding, Mississippi**

**July 10, 2005**

Two CN freight trains collided head on in Anding, Mississippi. The collision occurred on the CN Yazoo. Signal data indicated that the northbound train, IC 1013 North, continued past a stop (red) signal at North Anding and collided with the southbound train, IC 1023 South, approximately one quarter mile beyond the signal. The collision resulted in the derailment of six locomotives and 17 cars. About 15,000 gallons of diesel fuel were released from the locomotives and resulted in a fire that burned for about 15 hours. Two crewmembers were on each train and all four were killed in the collision. As a precaution, about 100 Anding residents were evacuated. However, none reported any injuries. Property damages exceeded \$9.5 million and clearing and environmental cleanup costs totaled about \$616,800.

The Safety Board determined that the probable cause of this accident, was the failure by the crew of the northbound train to comply with wayside signals requiring them to stop at North Anding. The crew's attention to the signals was most likely reduced by fatigue. However, due to the lack of a locomotive cab voice recorder or the availability of other supporting evidence, other factors cannot be ruled out. Contributing to the accident was the absence of a positive train control system that would have stopped the northbound train before it exceeded its authorized limits. Also contributing to the accident was the lack of an alerter on the lead locomotive that may have prompted the crew to be more attentive to their operation of the train.

As a result of its investigation of this accident, the Safety Board identified the

following safety issues:

- The lack of a positive train control system that would stop trains when authorized limits are exceeded,
- The lack of accurate and timely train consist information for emergency responders,
- The lack of procedures ensuring railroads, States, and communities conduct joint emergency response planning for hazardous material releases, and
- The need for locomotive cab voice recorders.

As a result of the investigation of this accident, the Safety Board issued a total of eight recommendations to the FRA, the Pipeline and Hazardous Materials Safety Administration (PHMSA), the Occupational Safety and Health Administration (OSHA), the CN, and all Class I railroads. Although all Safety Board members adopted this report, one member dissented on a recommendation to PHMSA requiring that communities receiving Hazardous Materials and Emergency Preparedness grants conduct training exercises and drills with railroad and other hazardous materials transporters. Two Board members dissented in the recommendation to OSHA. One Board member also recommended that the probable cause should have included crew scheduling practices and the reiteration of a previous recommendation to the FRA (R-06-14) to regulate the railroads' train crewmembers' work schedules.

Recommendations: 8  
Report Adopted: March 20, 2007

**Union Pacific Railroad Maintenance-of-Way Employee Struck by Approaching Train  
(Accident Brief)  
near Laramie, Wyoming  
October 5, 2006**

A westbound Union Pacific Railroad (UP) train struck and killed a maintenance-of-way employee who was working on an adjacent track. He had been walking on the track with his back to the approaching train. He had been preparing to move a tamper machine. The train was cleared through the work limits at 40 mph. Throughout the day, the UP employee-in-charge notified several designated safety coordinators of approaching trains. In turn, the coordinators notified the workers for whom they were responsible. However, earlier in the year, the tamper operators made an agreement with their safety coordinator that they did not need to be notified directly about approaching trains. They believed that their equipment would not normally enter an area that could be struck by a train passing on an adjacent track and they monitored the radio in the cab of the tampers in order to be aware of approaching trains when the coordinator notified other members of the work crew. On the day of the accident, the tamper operator who was struck by the train did not hear the notification, because he was not inside the cab of the tamper when the crews were notified of the approaching train. He was walking along the adjacent track with his back to the striking train.

Regulations require that train approach warnings be communicated in a manner that does not require a warned employee to be looking in any particular direction at the time of the warning, and the warned employee, regardless of noise or distraction of work, can detect the communication. Federal regulations and the UP operating rules require that employees stay clear of tracks unless their duties necessitate that they work on or near them. However, an employee entering a track area near a passing train must obtain a level of on-track safety that includes positive protection from approaching trains. When employees are trained in roadway worker protection, they receive safety-related instructions. UP records indicated that the employees involved in this accident had been trained in roadway worker protection.

Since the accident, UP has reinforced its requirements for employee notification before trains are allowed to pass a worker's location. Specifically, all employees must be notified of an approaching train on an adjacent track. A UP safety meeting was held with track maintenance workers regarding the circumstances of this accident and the necessary steps to prevent its reoccurrence. UP has also stressed to its supervisors the importance of determining employees' compliance with the communication rules, especially those rules that relate to approaching trains.

The Safety Board determined that the probable cause of the accident was the agreement among the employees that they did not need to be notified of approaching trains as required by rule and regulation. Contributing to the accident was the employee's failure to stay a safe distance from a track cleared for passing trains.

Recommendations: None  
Report Adopted: April 23, 2007

### **CSX Eagle Tunnel No. 3 Collapse and Freight Train Derailment (Accident Brief) near Glencoe, Kentucky January 5, 2005**

southbound CSX Transportation freight train derailed its lead locomotive and six cars at CSX's Eagle Tunnel No. 3 near Glencoe, Kentucky. The train was routed through Cincinnati, Ohio, and consisted of two locomotives and 41 freight cars. The train crew consisted of an engineer and a conductor. The train was operating about 7 mph on a single main track when it struck debris from the collapsed section of the tunnel. The engineer placed the train into emergency braking about 6 seconds before the impact. The lead locomotive remained upright with only its lead truck derailed, while the third through the eighth cars, which were loaded with automobiles, derailed in an upright accordion manner. The train's remaining 35 cars were undamaged. Both the engineer and the conductor sustained minor injuries during the derailment. The property damage was about \$185,000.

Following the accident, CSX eliminated the entire tunnel by excavating the land above it. CSX reported that it has changed its records retention policy, effective January 2007, to include "ACTIVE plus six years" of records related to the testing and inspection, design, construction, and maintenance of bridges, tunnels, culverts, piers, and related structures. CSX also has created an electronic database of inspection records of its active tunnels. Prior to the accident, CSX had retained tunnel inspection and maintenance records for one year.

The Safety Board determined that the probable cause of the train derailment was the collapse of Eagle Tunnel No. 3 due to CSX Transportation's failure to repair the previously identified deteriorating section of the tunnel.

Recommendations: None  
Report Adopted: May 7, 2007



## *Pipeline Accident Investigations*

### **Natural Gas Pipeline Break, Explosion, and Fire**

#### **Bergenfield, New Jersey**

**December 13, 2005**

On December 13, 2005, at 9:26 a.m., an apartment building exploded in Bergenfield, New Jersey, after natural gas migrated into the building from a damaged pipeline. Investigators found a break in an underground 1 1/4-inch steel natural gas distribution service line that was operating at 11 1/2 pounds per square inch, gauge. The break occurred at an underground threaded tee connection downstream from where excavators were removing an oil tank that was buried under the asphalt parking lot adjacent to the building. The break occurred, under the parking lot, about 7 feet 4 inches from the building's wall. Three residents of the apartment building were killed. Four residents and a tank removal worker were injured and transported to hospitals. The apartment building, which had assessed value for tax purposes of \$863,300, was a complete loss.

The American Tank Service Company had been hired to remove and replace the buried oil tank. The contract indicated that the tank capacity was 2000 gallons. However, when the top of the tank became exposed during the excavation, the crew realized that it was a 5000-gallon tank. Because the larger tank was wider, longer, and heavier than expected, and thus closer to the natural gas service line, the excavation crew had concerns about its safe removal. The crew became concerned that moving the tank could undermine the gas line. American Tank arranged for a second markout of the utilities that resulted in a slight change to the original marking where the gas line entered the building.

The Safety Board determined that the probable cause of the natural gas explosion and fire was the failure of the American Tank Service Company to adequately protect the natural gas service line from shifting soil during excavation, which resulted in damage to the service line and the release and migration of natural gas into the apartment building. Contributing to the accident was the failure of the Public Service Electric and Gas Company to conduct effective oversight of the excavation activities adjacent to the gas service line and to be prepared to promptly shut off the flow of natural gas after the service line was damaged. Contributing to the casualties in the accident was the failure of the Bergenfield Fire Department to evacuate the apartment building despite the strong evidence of a natural gas leak and the potential for gas to migrate into the building.

As a result of its investigation of the Bergenfield, New Jersey, pipeline accident, the Safety Board made the safety recommendations listed below.

- To the Pipeline and Hazardous Materials Safety Administration: Provide a summary of the lessons learned from the Bergenfield, New Jersey, accident to recipients of emergency planning and response grants.
- To the New Jersey Department of Community Affairs: Establish a requirement that all career and volunteer firefighters receive recurrent training on natural gas safety and incident response.

- To the Borough of Bergenfield: Establish and implement written operating procedures for responding to natural gas incidents and emergencies.
- To the American Tank Service Company: Establish and implement written procedures for safe excavation near pipelines, and provide initial and recurrent training on these procedures to employees.
- To the Public Service Electric and Gas Company: Modify your excavation damage prevention program and emergency plan to require site-specific risk assessments of excavators' plans, and implement procedures to effectively manage the risk, such as increased surveillance of excavator actions to protect the pipeline and ensuring that gas shut-off valves are tested so that they can be closed promptly if the pipeline is damaged.
- To the International Association of Fire Chiefs: Notify your members of the circumstances surrounding the December 13, 2005, accident in Bergenfield, New Jersey, and urge them to establish and implement procedures for emergency responders to rapidly assess situations involving natural gas leaks and to determine whether prompt evacuations are warranted.

Recommendations: 6

Report Adopted: May 1, 2007

### **Anhydrous Ammonia Pipeline Rupture Near Kingman, Kansas (Accident Brief) October 27, 2004**

An 8-inch-diameter pipeline owned by Magellan Midstream Partners, L.P., (Magellan) and operated by Enterprise Products Operating L.P. (Enterprise) ruptured near Kingman, Kansas, and released approximately 4,858 barrels (204,000 gallons) of anhydrous ammonia. Although no fatalities or injuries occurred as a result of the release, the anhydrous ammonia leaked into a creek and killed more than 25,000 fish including some from threatened species. The cost of the accident cleanup was \$680,715, including \$459,415 for environmental remediation.

When the pipeline controller returned to his console after getting his lunch, he noticed two rate-of-change alarms that had been displayed on the alarm screen for the ammonia pipeline less than a minute earlier. The supervisory control and data acquisition (SCADA) event log indicated negative rate-of-change alarms for suction pressure at stations upstream and downstream from the leak at 11:15:43 a.m. and 11:16:27 a.m. respectively. In the next eight minutes, 12 more alarms displayed, including an uncommanded pump shutdown. The controller initially believed that the pipeline was delivering more product at the destination than it was accepting at the point of origin, the Koch Enid production facility at Enid Station. Therefore, the controller increased the flow rate set point on the flow control valve at 11:27:50 a.m., from approximately 450 barrels per hour to 550 barrels per hour. This action was followed by a second low-low suction pressure alarm.

The controller knew that maintenance personnel were working in the area of the one of the downstream stations (Conway) sending alarms. In a telephone call to Conway Station at 11:28 a.m., he asked why the pump had shut down. By 11:30 a.m., Conway Station personnel had told the controller that they had not caused the pump to shut down. At 11:34:05 a.m., the SCADA system displayed alarms at the next station downstream from Conway.

About 11:18 a.m., an off-duty volunteer firefighter traveling on Highway 54 called 911 to report a huge vapor cloud on the north side of the highway that he believed was a pipeline release. The 911 center in Kingman County, Kansas, is in the county sheriff's office. The Kingman County Fire Department was dispatched to the rupture site about 11:20 a.m. Because the rupture site was in an agricultural area that is home to several threatened and endangered species of fish and wildlife, it was designated by Enterprise as a high-consequence area. The vapor cloud moved northwest from the rupture and affected vegetation in an area approximately 1/2 mile wide and 1 1/2 miles long. The release entered an unnamed tributary stream close to the pipeline failure and then entered Smoots Creek approximately 1 1/2 miles downstream of the rupture. On the basis of the 911 call, the Kingman County sheriff's office responded to the site and started telephoning residents in 35 houses. Four families were evacuated. The sheriff's office and the fire department also blocked roads that could be affected by the vapor cloud.

About 11:48 a.m., the dispatcher called Enterprise's control room to report the release that had been reported to 911. Another controller, who was sitting at the console adjacent to the ammonia pipeline controller's console, answered the phone and handled the call. The ammonia pipeline controller told investigators that when he heard the telephone ring he immediately realized that there was a leak on the ammonia pipeline and started to shut down the pipeline immediately by remotely stopping the pumps at the affected stations. The last pump was shut down at 11:52:57 a.m. From his console, he remotely closed the block valves that isolated a 50.85-mile-long segment of pipeline in which the rupture had occurred. At 12:08 p.m., he dispatched Enterprise personnel to close manual block valves to further isolate the leaking pipeline segment. By 1:09 p.m., those valves were closed, reducing the isolated segment of pipeline in which the rupture had occurred to 11 miles.

The Safety Board determined that the probable cause of the pipeline rupture was a pipe gouge created by heavy equipment damage to the pipeline during construction in 1973 or subsequent excavation activity at an unknown time that initiated metal fatigue cracking and eventually led to the rupture of the pipeline. Contributing to the severity of the accident was the pipeline controller's failure to accurately evaluate available operating data and initiate a timely shutdown of the pipeline.

As a result of its investigation of the pipeline rupture and anhydrous ammonia release near Kingman Kansas, the Safety Board made three safety recommendations to the Pipeline and Hazardous Materials Safety Administration. Two recommendations related to improving the quality of telephonic reporting to the National Response Center under 49 CFR 195.52 and to one recommendation related to improving

pipeline operator risk assessment plans. One recommendation was issued to Enterprise Products Operating L.P., relating to training for controllers.

Recommendations: 4

Report Adopted: June 14, 2007

### ***Completed Safety Studies – FY 2006***

#### **Supervisory Control and Data Acquisition (SCADA) in Liquid Pipelines**

In a joint effort with the Safety Studies and Statistical Analysis Division of the Office of Research and Engineering, the Pipeline and Hazardous Materials Division conducted a study of SCADA systems. SCADA systems are a type of industrial control system used to collect data and exercise control from a remote location. In the pipeline industry, SCADA systems are used to collect data from pipeline sensors on a real time basis and send it to controllers for monitoring at remote sites. Controllers, in turn, can use the SCADA system to enter commands for remote operation of pipeline control equipment, such as valves and pumps. SCADA systems are widely in use in oil, gas, electricity, and municipal water systems.

For this study, the Safety Board examined the role of SCADA systems in the 13 hazardous liquid line accidents that the Board investigated from April 1992 to October 2004. In 10 of these accidents, some aspect of the SCADA system contributed to the severity of the accident. The principal issue in the SCADA-related accidents was the delay between a controller's recognition of a leak and actions taken to reduce its effect. SCADA factors identified in these accidents included:

- Alarms,
- Display formats,
- The accuracy of SCADA screens,
- The controller's ability to accurately evaluate SCADA data during abnormal operating conditions,
- The appropriateness of controller actions,
- The ability of the controllers and supervisors to make appropriate decisions, and
- The effectiveness of training in preparing controllers to interpret the SCADA system and react to abnormal conditions.

This study was undertaken because of the number of hazardous liquid pipeline accidents investigated by the Safety Board in which leaks went undetected after indications of a leak appeared on the SCADA interface. The study examined how pipeline companies use SCADA systems to monitor and record operating data and evaluated the role of SCADA systems in leak detection. The study looked at SCADA systems being used at pipeline companies that transport hazardous liquids and examined the extent to

which the SCADA system design helps or hinders controllers in detecting leaks and in acting to limit the amount of product released.

The Safety Board, with input from industry, developed a survey to obtain data about the liquid pipeline industry's use of SCADA systems. The survey covered basic information about the pipeline company and its SCADA system. In total, 87 percent of the control centers targeted by the survey responded. The Safety Board also visited 12 pipeline companies operating SCADA systems and interviewed personnel who developed and used SCADA systems. Sixty-nine people were interviewed, including controllers, supervisors, and SCADA systems managers. In addition, the Safety Board examined the SCADA system and reviewed its design and development with a company representative who was responsible for the system's operation and maintenance. The Safety Board also reviewed SCADA-related job aids that controllers used during the course of their work. Based on information from previous accident investigations, survey results, and site visits, the Safety Board targeted five areas for potential improvement and recommendations to the Pipeline and Hazardous Materials Administration. These were:

- Display graphics,
- Alarm management,
- Controller training,
- Controller fatigue, and
- Leak detection systems.

Recommendations: 5 new  
 Report Adopted: November 29, 2005

***On-Going Accident Investigations***

Location	Description	Fatalities
Lincoln, Alabama	Collision of Two Norfolk Southern Freight Trains; Fire	0
Washington, D.C.	WMATA Train Struck Automatic Train Control Employee	1
Alexandria, Virginia	WMATA Train Struck Track Inspectors	2
Washington, D.C.	WMATA Train Derailment	0
Chicago, Illinois	Chicago Transit Authority (CTA) Train Derailment; Smoke in Tunnel	0
Queens, New York	Long Island Railroad (LIRR); Passenger Fell Between Train & Platform	1
New Brighton, Pennsylvania	Norfolk Southern Train Derailment; Fire	0
Baxter, California	Rail Grinder Derailment on Union Pacific Railroad Track	2
Philadelphia, Pennsylvania	United Parcel Service Cargo Fire ( <i>HazMat Div. supporting Aviation</i> )	0

Abington, Pennsylvania	Collision of Two Southeastern Pennsylvania Transportation Authority (SEPTA) trains	0
Pajaro, California	Union Pacific Railroad brakeman struck by train; remote-control switching operations	1
Woburn, Massachusetts	Mass. Bay Commuter Railroad (MBCR) train struck maintenance-of-way vehicle	2
Shepherdsville, Kentucky	CSX train derailment of 12 hazardous materials tank cars; fire	0
Chicago, Illinois	Northeast Illinois Regional Commuter Railroad (Metra) commuter train struck by train	0
Oneida, New York	CSX train derailment of hazardous materials; fire	0

### ***Office of Research and Engineering***

The Office of Research and Engineering provides technical support to accident investigations and conducts safety studies that examine safety issues in all modes of transportation. The Board's Flight Data Recorder, Cockpit Voice Recorder, and Materials Laboratories are located in this office. The office also provides periodic statistical reviews of aviation accidents. Four divisions carry out the work of this office. Additionally, two functions, medical and toxicology support and fire and explosion analysis, are staffed in the immediate office of the director.

### ***Fiscal Year 2006 Accomplishments and Workload***

The Vehicle Performance Division completed 32 studies and animations for aviation, surface, railroad, and marine accident investigations, including the following major accidents:

- A Cessna 208 aircraft that crashed in icing conditions on approach to Moscow Airport (11/19/05),
- A charter Gulfstream III aircraft that crashed on approach to Houston Hobby Airport (11/22/04),
- An ATR-72 aircraft that crashed while landing at San Juan airport in Puerto Rico (5/09/04),
- A Bombardier RJ-200 that crashed after takeoff in Bautoa, China (11/21/04),
- A Bombardier CL-600 corporate jet that crashed off the departure end of the runway during takeoff from Montrose Regional Airport, Montrose, Colorado (11/28/04), and
- A multi-vehicle collision on Interstate 90 at the Hampshire-Marengo Toll Plaza, near Hampshire, Illinois (11/01/03).

The Vehicle Recorder Division processed 55 cockpit voice recorders, 48 flight data recorders, 2 voyage data recorders, and an audio recording from a pipeline investigation; recovered data from 4 damaged global positioning system units and 23 video recorders and digital cameras; and completed 6 animations. Other accomplishments for 2006 include the following:

- Evaluation of the FAA's Cockpit Image Recorder proof-of-concept flight test to obtain more information about the feasibility of outfitting smaller turbine aircraft with low-cost cockpit video recorders in accordance with the existing minimum specifications for image recording systems;
- Completion of the Cockpit Voice Recorder Transcription and Timing Tool, a 12-month effort totally funded by the Department of Defense Technical Support Working Group (TSWG Task T-1925), which will generate an automatic word recognition, speaker identification, and transcript for recorded audio information; and
- Issuance of two safety recommendations to the FAA concerning flight recorders on transport-category helicopters to ensure the availability of recorded accident data during helicopter investigations.

The Materials Laboratory received 170 requests for assistance in evaluating parts and wreckage from accidents in all transportation modes. The following list details the major activities of the division during 2006.

- Multiple hydraulic actuator components from a Sikorsky S-76C+ helicopter accident in Estonia (8/10/2005) were examined to determine why the copper coating had fractured.
- Structure from the Chalks Grumman G73T Mallard seaplane that suffered an in-flight structural breakup off the coast of Miami, Florida (12/19/05) was examined to explain the sequence of fatigue cracking.
- Medical oxygen bottles and structural items from the Wilmer, Texas, motorcoach fire (9/23/2005) were evaluated to determine if the rupture of the bottles contributed to the deaths of the elderly evacuees. Brake components from the damaged wheel were also examined.
- A large fatigue crack in the lower spar cap of a Piper PA-46 airplane was examined, and the number of fatigue striations found were compared to the flight cycles, the hours of operation, and the type of operations, to determine when the cracking began to assess whether additional inspections or other actions are needed.
- A combination of stress corrosion cracking and fatigue was discovered on a fractured main landing gear cylinder from a McDonnell Douglas MD-10-10F that was involved in a main landing gear collapse in Memphis, Tennessee (7/28/2006).
- Light bulbs from a variety of airplanes and highway vehicles were examined to determine if the bulbs were on or off at the time of impact.
- The fractured steel pipe from the Bergenfield, New Jersey natural gas service line break accident (12/13/2005) was examined for fracture mode, and a finite element analysis of the fractured and deformed pipe was conducted to better understand the fracture dynamics.
- Staff participated in evaluating the main landing gear truck beam from a Boeing 767 accident in Moscow, Russia (3/9/2006), to determine why it fractured.

The Safety Studies and Statistical Analysis Division accomplishments for 2006 are listed below.

- In a joint effort with the Pipeline and Hazardous Materials Division, the Safety Studies and Statistical Analysis Division staff coordinated and led a safety study on Supervisory Control and Data Acquisition (SCADA) in Liquid Pipelines (adopted 11/29/05).
- The staff completed a safety report, Treatment of Safety-Critical Systems in Transport Airplanes (adopted 4/25/06), which included three recommendations to the FAA.
- The staff developed a total of four safety recommendations for recreational boaters' use of personal flotation devices (adopted 2/27/06), which were issued to the U.S. Coast Guard, the National Association of State Boating Law Administrators, the National Marine Manufacturers Association, and the Marine Retailers Association of America.
- The staff completed four annual reviews of aviation accidents: Annual Review of Aircraft Accident Data: U.S. Air Carrier Operations, Calendar Year 2001; Annual Review of Aircraft Accident Data: U.S. General Aviation, Calendar Year 2001; Annual Review of Aircraft Accident Data: U.S. Air Carrier Operations, Calendar Year 2002; and Annual Review of Aircraft Accident Data: U.S. General Aviation, Calendar Year 2002.
- The staff worked with the Office of Highway Safety and the Office of Safety Recommendations and Advocacy to hold a public forum on motorcycle safety on September 12 and 13, 2006. The forum comprised more than 30 presentations, addressing topics that included accident statistics, vehicle design, rider protective equipment, training, and rider impairment.

The Research and Engineering medical staff activities during fiscal year 2006 include the following accomplishments.

- Evaluation of survival issues in a fatal aviation accident and a fatal passenger-fishing vessel capsizing;
- Evaluation of a number of causal issues including severe obstructive sleep apnea, illicit drug use, alcohol use, psychiatric conditions and medication, and obesity-hypoventilation syndrome;
- Coordination with American Medical Association on articles on medical oversight of non-commercial drivers for the Federation of State Boards of Medicine;
- Development and presentation of a full day of training to U.S. Air Force Flight Surgeons' course on accident investigation.
- Developed comments for FAA Notice of Proposed Rule Making on pilot oxygen mask use in part 121 flights and FMCSA Advanced Notice of Proposed Rule Making on certification of insulin-using commercial drivers.
- Participated as invited observer for joint meeting of National Sleep Foundation, American College of Occupational and Environmental Medicine, and American College of Chest Physicians for the development of a joint statement regarding obstructive sleep apnea and commercial drivers.



Fire and explosion staff assisted the Office of Marine Safety with the investigation of the engine room fire on board the casino shuttle Express Shuttle II. The report was adopted April 4, 2006.

The Advanced Technology staff transitioned train dynamics simulation code that was modified under a joint program with the University of Illinois at Chicago to the Vehicle Performance Division so that it could be put into production supporting investigations and studies. The Advanced Technology staff also provided support for the study of tank car rupture in the Minot rail investigation conducted by the Materials Division and developed the background material essential to the conclusions and recommendations concerned with structural level performance standards.

## Other Mission and Support Activity Accomplishments

### *Office of Administration*

The Office of Administration coordinates and manages the infrastructure and support activities for the agency. This office provides human resource management, labor relations, facilities management and support, and acquisitions management. Physical inventory, shipping and receiving, telecommunications, and management of the Board's hearing room and conference center are major functions managed by this office. Work is carried out in three divisions: Facilities Services, Acquisitions and Human Resources.

### Fiscal Year 2007 Accomplishments and Workload

*Goal: Increase Conference and Training Centers Revenue by maximizing space efficiency and bring in revenue 10% over FY06.*

- The Office of Administration far exceeded its FY07 revenue goal for the Conference Center by achieving double its goal, which also was a two-fold increase over last year's goal. In addition, AD re-assessed and adjusted its Training Center business plan and training course income goal. This resulted in the successful negotiation of a ten-year lease arrangement with the Federal Air Marshal Service to sublease space at the Ashburn Training Center, resulting in significant savings to NTSB, as well as the sale of Training Center furniture, resulting in revenue that far exceeded the goal of 10% over FY06.

*Goal: Maximize HQ space efficiency and revenue via HQ Space Consolidation and develop effective strategies to support office needs and deliver high quality products and services.*

- The Office of Administration maximized the use of the NTSB HQ space by means of a Space Consolidation plan, resulting in a new revenue opportunity to sublease the vacated 4th floor space. This space was successfully sublet to the Federal Aviation Administration, which signed a three-year sublease for the vacated space, resulting in substantial revenue through FY 2010. This reduced space by 10%.

- The Office of Administration, in accordance with its Furniture Replacement Plan, was able to provide 19 sets of furniture in order to meet OSHA requirements. Through AD's initiative, new and cost-effective approaches were identified for the Furniture Replacement Plan by obtaining no-cost excess refurbished furniture from other agencies to meet the NTSB's furniture needs. NTSB's overall cost savings are valued at over \$220,000. In addition, the use of no-cost excess refurbished furniture enabled NTSB to offset a majority of its annual furniture requirements by 47% in FY07.

*Goal: Improve Strategic Management of Human Capital*

- NTSB sought and obtained SES recertification from OPM and OMB and also received OPM approval of a new SL/ST performance management system, which, like the SES performance system, focuses on achievement of results. NTSB also continued to achieve hiring results in less time than the OPM 45-day hiring/staffing model.

*Goal: Acquire best value of goods and services and ensure fair and equitable treatment for all doing business with NTSB.*

- The Office of Administration entered into a partnership with the Small Business Administration to streamline contract awards to companies in SBA's 8(a) program, resulting in a streamlined procurement process of 5 working days from a previous 4-6 week timeframe, a significant average time savings of 20-25 days.

*Goal: Ensure contract compliance with federal regulation through Acquisition Workforce Development.*

- The Office achieved 100% compliance, exceeding the Strategic Plan goal of greater than 50% compliance with the Acquisition Career development mandate. All Acquisition employees either achieved their next level of certification or completed courses to maintain their current certification level.

*Goal: Procurement savings – efficient use of budget.*

- The Office of Administration awarded over 400 requirements and negotiated procurement savings. The FY07 funds were used to offset operating costs and enabled the Agency to purchase additional equipment and services (i.e., furniture, software development, etc.).

## Chief Financial Officer

**Fiscal Year End CFO Metrics** - The CFO Metrics or standards of measurement is recommended by the US CFO Council and is intended to assist in improving Federal financial operations by tracking on agency performance using a series of key financial management indicators. The CFO used the stop light (red-yellow-green) measuring system. Overall, the CFO has achieved green in all of the metrics for FY 2007.

### FY 2007 CFO METRICS

DESCRIPTION	FY 2007
FUND BALANCE WITH TREASURY	●
SUSPENSE > 60 DAYS	●
A/R > 180 DAYS	●
EFT PYMT	●
INTEREST	●
ON TIME INVOICES	●
TRAVEL CARD DELINQUENCY	●
PURCHASE CARD DELINQUENCY	●

#### Description of CFO Metrics

Fund Balance with Treasury - Smaller reconciliation differences translate to greater integrity of financial reports and budget results. Green = >98% accuracy

Suspense Account Clearing > 60 Days - Less suspense clearing translates to greater integrity of budgetary balances. Green = <10% suspense account items are > 60 days

Delinquent Accounts Receivable > 180 Days - It shows how well the agency actively collects debt. Green = <10% debt older than 180 days

EFT Payments - A high use of electronic funds transfer saves money, reduces paperwork, and improves cash management. Green = > 96% if payments are by EFT

Interest Payments Paid - Low rates of interest paid shows that an agency is paying its bills in a timely manner. Green = <.02% was paid in interest.

Non-Credit Card Invoices Paid On Time Monthly - Timely payment reduces interest charges and reflects a high degree of accountability and integrity. Green = >95% of invoices paid on time.

Travel Card Delinquency Rate – Reducing outstanding travel card balances helps reduces interest payments on centrally billed accounts. Green = <2% of the travel card accounts are delinquent.

Purchase Card Delinquency Rate – Reducing outstanding purchase card balances helps reduces interest payments on centrally billed accounts. Green = 0%

## NTSB Training Center

The NTSB Training Center is an organizational component of the Office of Management. The Training Center is responsible for internal staff training, training plans and workforce development programs, general training and support for other training initiatives at the Board's facility in Ashburn, Virginia. The Training Center's primary mission is to train NTSB investigators and others in the transportation community in accident investigation techniques.

### *FY 2006 Activities*

Course Title	Participants
Cognitive Interviewing for Accident Investigators	71
Investigating Human Fatigue Factors	80
Aviation Industry Training for Airline Professionals	57
Transportation Disaster Response-Family Assistance	70
Managing Communications During an Aircraft Disaster	68
Transportation Disaster Response-Airports	51
Managing and Directing Safety Investigations	33
Accident Investigation Orientation for Aviation Professionals	56
Cognitive Interviewing for Accident Investigators	43
Investigating Human Fatigue Factors	46
Photodocumentation Series	26
Technical Photography	2
Advanced Accident Site Photography	4
Photodocumentation of Traumatic Injuries	2
Digital Image Processing	5
Survival Factors in Aviation Accidents	27
Transportation Disaster Response-Family Assistance	70
Accident/Incident Report Writing for NTSB Staff	30
Conducting Effective Technical Presentation for NTSB	36
Media Training for NTSB Investigators	27
Federal Family and Victim Assistance Operations	25
Aviation Accident Investigation	70
Total	899

*FY 2007 Activities (through July 11)*

<b>Course Title</b>	<b>Participants</b>
Passenger Vessel Safety on Sole State Waters	58
Meeting the Challenges in a New Era of Disaster Response	93
Cognitive Interviewing for Accident Investigators	38
Investigating Human Fatigue Factors	37
Technical Photography	20
Advanced Accident Site Photography	20
Digital Image Processing	22
Accident Investigation Orientation for Aviation Professionals	56
Conducting Effective Meetings	30
Transportation Disaster Response-Family Assistance	59
Accident Investigation Orientation for Rail Professionals	58
Accident/Incident Report Writing	11
Technical Photography	12
Advanced Accident Site Photography	14
Digital Image Processing	12
Transportation Disaster Response-Family Assistance	39
Accident Investigation Orientation	54
Biomechanics of High-Impact Injuries	79
Aircraft Accident Investigation	51
Adobe InCopy	22
Adobe InDesign	5
Planning for Retirement Seminar	47
Conducting Effective Technical Presentations	8
Media Training for NTSB Investigators	5
Motorcoach, Bus and 15-Passenger Vans	24
<b>Total</b>	<b>874</b>

**Office of Administrative Law Judges**

The Safety Board serves as the “court of appeal” for airmen, mechanics or mariners whenever the FAA or the USCG takes a certificate action. The Board’s administrative law judges hear, consider, and issue initial decisions on appeals filed with the Board. Included are appeals of:

- Orders issued by the FAA’s Administrator amending, modifying, suspending or revoking, in whole or in part, certificates of airmen, air agencies and air carriers, for alleged violations of the Federal Aviation Regulations or for lack of qualification;
- FAA actions denying applications for the issuance or renewal of airmen certificates; and
- Appeals of certain FAA civil penalty orders issued by the FAA against pilots, flight engineers, mechanics or repairmen where the amount in dispute is less than \$50,000.

The judges also adjudicate claims for fees and expenses stemming from FAA certificate and civil penalty actions under the Equal Access to Justice Act.

The Board currently has four judges. Two are based in Washington, D.C., and hold hearings primarily in the eastern half of the United States. The other two are based in Arlington, Texas and Denver, Colorado and hear cases primarily in the western half of the country. Either the certificate holder or the FAA may appeal the judges' decisions in these cases to the five-member Board. The Board's review on appeal of its administrative law judges' decisions is based on the record of the proceeding, which includes hearing testimony (transcript), exhibits, the judge's decision, and appeal briefs submitted by the parties.

The FAA has the right to appeal the Board's decisions to the U.S. Court of Appeals when that agency determines that the Board's decision "will have a significant adverse impact" with respect to aviation safety duties and powers designated to be carried out by the FAA. Airmen and mechanics have the right to appeal all adverse Board decisions to the Court of Appeals. Upon review of the Board's decision, the Court of Appeals has the power to affirm, modify or set aside the decision in whole or in part --or, if the need is determined, to order further proceedings by the Board. The decision of the Court of Appeals is subject to review by the U.S. Supreme Court on writ of certiorari. Section 716 of Aviation Investment and Reform Act for the 21st Century (Public Law 106-181) expanded the Board's jurisdiction to include review of FAA designations of safety enforcement actions as emergencies, which require the order to be effective immediately, upon petition by the affected certificate holder. The Board has delegated this review authority to its administrative law judges. However, in the event of an appeal to the Board from a law judge's decision on the merits of the emergency or other immediately effective order, the Board may, at its discretion, note in its order disposing of the appeal, its views on the law judge's ruling on the petition, and such views shall serve as binding precedent in all future cases. There is no administrative review of the administrative law judges' decisions in these cases.

Marine certificate actions are heard first by the Coast Guard's administrative law judges, and may be appealed to the Commandant of the Coast Guard. The ruling of the Commandant may then be appealed to the Safety Board. The same appellate process is followed for marine certificate actions.

### ***Fiscal Year 2006 and 2007 year to date Accomplishments and Workload***

During fiscal year 2006, the Office of Administrative Law Judges:

- Met its goal to provide the notice of hearing at least 30 days prior to the hearing. A total of 366 notices were provided to appellants.
- Met its goal of conducting hearings and rendering decisions in emergency cases within 30 days of the filing of an appeal. The office rendered decisions on 110 emergency appeals and held 27 emergency hearings.
- Made rulings on 34 petitions challenging the Administrator's Determination that an Emergency Exists in Air Safety within the 5-day statutory timeframe.

- Issued a total of 411 decisions.
- Processed 62 new appeals of decisions made by Safety Board administrative law judges.

The Safety Board issued 66 final decisions (Opinions and Orders) during fiscal year 2006, sustaining 62 and reversing four earlier decisions made by the Safety Board's administrative law judges.

Through July 11, 2007, the Office of Administrative Law Judges:

- Met its goal to provide the notice of hearing at least 30 days prior to the hearing. A total of 245 notices were provided to appellants.
- Met its goal of conducting hearings and rendering decisions in emergency cases within 30 days of the filing of an appeal. The office rendered decisions on 116 emergency appeals and held 21 emergency hearings.
- Made rulings on 25 petitions challenging the Administrator's Determination that an Emergency Exists in Air Safety within the 5-day statutory timeframe.
- Issued a total of 320 decisions.
- Processed 50 new appeals of decisions made by Safety Board administrative law judges.

The Safety Board issued 34 final decisions (Opinions and Orders) during fiscal year 2007, sustaining 22; remanding one to ALJ for further proceedings and reversing one earlier decision made by the Safety Board's administrative law judges.

## **Office of the Chief Information Officer**

The Office of Chief Information Officer provides strategic direction and operational support for the Board's information systems, and develops and distributes programs and products for use by the Board and the public. The Office is comprised of three divisions, as described below.

### ***Computer Services Division***

This division provides computer and network services for headquarters and ten regional offices, including internet access, Web services (http and ftp), email, backup, and disaster recovery. The Help Desk staff performs a wide range of tasks that include desktop/laptop setup, repair and replacement, printer support, network connectivity, and software installation and upgrades.

### ***Systems Support Division***

This division develops, distributes, and maintains agency-specific applications, and provides database administration services in support of program offices. Applications include accident data collection, storage, analysis, and dissemination for all modes (e.g., Aviation Data Management System), and management of systems for accident records (Docket Management System), safety recommendations, correspondence, FOIA requests, and general administration. It provides coordination of interagency systems such as the financial management system and defines electronic document standards and

handling procedures for the agency's information products. Systems Support manages the final production and printing of accident reports and other publications adopted by the Board Members or issued by agency staff and develops and produces graphics for agency publications, websites, and presentations. Resources from this division assist agency engineering specialists in developing complex animations. This division produces specially-issued CD-ROMs for Board meetings, public hearings, public forums, public symposiums, and annual compilations of Board reports.

### ***Records Management Division***

This division maintains the archives of accident investigation files, Safety Board reports, and other agency records. Fulfills public requests for information, including FOIA requests. Provides training for Docket Management System and guidance on redaction policies and techniques. Monitors privacy and confidentiality of data and information, and provides general records management oversight.



## Future Performance Challenges

Despite the significant improvement that has been made in the safety of our national transportation system, much work remains to be done. Our objective is to identify actions to improve the safety of the system and thereby reduce the transportation fatality rate. With this objective in mind, NTSB developed a revised Strategic Plan that replaces the four strategic goals in our December 2005 plan with four goals that represent our primary areas of strategic focus for Fiscal Years 2007 through 2012. Below are the strategic goals and the challenges with face:

### **Strategic Goal #1 – Accomplish Objective Investigations of Transportation Accidents to Identify Issues and Actions that Improve Transportation Safety**

#### *The Challenge*

The cost of transportation accidents to society is unacceptable, and growth in transportation activity in the United States will exacerbate the problem. Accompanying this growth are enormous increases in the system's complexity, which must be countered with techniques and methods of accident investigation that are equally sophisticated.

A key challenge for the NTSB is to identify those accidents in each transportation mode that represent the most important targets of investigative opportunity and to determine the appropriate scope and scale of such investigations. This selection process must balance the significance of the safety issues involved in these accidents against the limited investigative resources available to the Board and the depth of the investigation required to develop the safety issues.

### **Strategic Goal # 2 – Increase our Impact on the Safety of the Transportation System**

#### *The Challenge*

The Nation's level of transportation activity, which has a high correlation to its level of economic activity, continues to increase. As our skies, highways, waterways, and rails become more congested, the potential for transportation accidents increases. Some accidents will be due to causes that are well known to us, and others will be due to new issues that have yet to be identified. Where appropriate, the NTSB makes recommendations to Federal Government regulators and industry regarding changes in manufacture, training, and procedure that will reduce the likelihood of future accidents due to known hazards.

Working with the Congress, other government agencies, and industry groups, the NTSB takes an active role in bringing about a safer transportation system. The challenge for the agency is to identify possible areas of future risk before such risks lead to a series of accidents.

### **Strategic Goal #3 – Outstanding Stewardship of Resources**

Every agency of the U.S. Government has a duty to ensure that the resources appropriated to it by Congress are expended in an efficient, responsible, and results-oriented manner. At the NTSB, the scope of our responsibility is broad and our team of dedicated employees is relatively small.

We have been using resources efficiently –doing more with less-and we are taking steps to ensure that we continue to make the most of our staff, budget, information technology, and other resources.

### **Strategic Goal #4 – Organizational Excellence**

#### ***The Challenge***

The NTSB has earned a reputation for thorough and independent investigation of transportation accidents. To maintain that reputation, we commit to the continuing development of our managerial, leadership, and workforce skills to levels that equal the quality of the accident investigations for which we are well known. This initiative includes the entire NTSB organization-investigative offices, business operations, and technical services.

The nature of our mission demands that we be excellent tacticians. Our agency has developed strong capabilities in evaluating transportation accidents, responding to high-priority accident scenes, and launching an investigative process that will result in robust, fact-based recommendations.

The challenge for our agency is to devote time and resources to thinking strategically and to developing our staff. To reach higher levels of achievement, we must do all of these things while maintaining our primary commitment to investigating transportation accidents.



**U.S. Department of  
Transportation**  
Office of the Secretary  
of Transportation

Office of Inspector General  
Washington, DC 20590

November 9, 2007

The Honorable Mark V. Rosenker  
Chairman  
National Transportation Safety Board  
490 L'Enfant Plaza SW  
Washington, DC 20594

Dear Chairman Rosenker:

The audit of the National Transportation Safety Board's (NTSB) Financial Statements, as of and for the years ended September 30, 2007, and September 30, 2006, was completed by Leon Snead & Company, P.C., of Rockville, Maryland (see Enclosure). We performed a quality control review of the audit work to ensure that it complied with applicable standards. These standards include the Chief Financial Officers Act; the Accountability of Tax Dollars Act of 2002; Generally Accepted Government Auditing Standards; and Office of Management and Budget Bulletin 07-04, "Audit Requirements for Federal Financial Statements."

Snead & Company concluded that the financial statements presented fairly, in all material respects, the financial position, net cost, changes in net position, and budgetary resources of the NTSB as of and for the years ended September 30, 2007, and September 30, 2006, in conformity with accounting principles generally accepted in the United States.

The Snead & Company report presented two material internal control weaknesses, one significant deficiency, and one instance of noncompliance with laws and regulations.

***Material Weaknesses***

1. NTSB IT Security Program Not in Compliance with FISMA
2. Accounting Operations - Selected Controls and Processes Need Strengthening

Report Number QC-2008-009

***Significant Deficiency***

1. Cost Accounting

***Noncompliance with Laws and Regulations***

1. Antideficiency Act Violation

Snead & Company made four recommendations for corrective action; we agree with them and, therefore, are making no additional recommendations. NTSB concurred with the material weaknesses, significant deficiency, and noncompliance; agreed with the recommendations; and committed to implementing corrective actions by June 30, 2008.

In our opinion, the audit work performed by Snead & Company complied with applicable standards.

We appreciate the cooperation and assistance of NTSB and Snead & Company representatives. If we can answer questions or be of any further assistance, please call me at (202) 366-1496 or Earl C. Hedges, Program Director, at (410) 962-1729.

Sincerely,



Rebecca C. Leng  
Assistant Inspector General for Financial and  
Information Technology Audits

Enclosure

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*Certified Public Accountants  
& Management Consultants*

Inspector General, Department of Transportation  
Chairman, National Transportation Safety Board

### **Independent Auditor's Report**

We have audited the balance sheets of the National Transportation Safety Board (NTSB) as of September 30, 2007 and 2006, and the related statements of net cost, changes in net position, and budgetary resources (the financial statements) for the years then ended. The objective of our audits was to express an opinion on the fair presentation of those financial statements. In connection with our audit, we also considered the NTSB's internal control over financial reporting, and tested the NTSB's compliance with certain provisions of applicable laws and regulations that could have a direct and material effect on its financial statements.

#### **SUMMARY**

As stated in our opinion on the financial statements, we found that the NTSB's financial statements as of and for the years ended September 30, 2007 and 2006, are presented fairly, in all material respects, in conformity with accounting principles generally accepted in the United States of America. As reported in our audit opinion and discussed in note 12 to the financial statements, the NTSB restated its 2006 financial statements to correct the reporting of Unexpended Appropriations and Cumulative Results of Operations due to an entry to Unexpended Appropriations that was made in error. NTSB officials in a response, dated November 5, 2007, to the draft report concurred with the audit recommendations and provided actions it plans to take to correct the conditions reported.

Our consideration of internal control would not necessarily disclose all deficiencies in internal control over financial reporting that might be material weaknesses under standards issued by the American Institute of Certified Public Accountants. Our testing of internal controls identified material weaknesses relating to NTSB's Information Technology (IT) security program, and accounting operations; and one significant deficiency relating to managerial cost accounting.

The results of our tests of compliance with certain provisions of laws and regulations disclosed one instance of noncompliance that is required to be reported herein under *Government Auditing Standards*, issued by the Comptroller General of the United States and Office of Management and Budget (OMB) Bulletin No. 07-04, *Audit Requirements for Federal Financial Statements*.

The following sections discuss in more detail our opinion on the NTSB's financial statements, our consideration of the NTSB's internal control over financial reporting, our tests of the NTSB's compliance with certain provisions of applicable laws and regulations, and management's, and our responsibilities.

### **OPINION ON THE FINANCIAL STATEMENTS**

We have audited the accompanying balance sheets of the NTSB as of September 30, 2007 and 2006, and the related statements of net cost, changes in net position, and budgetary resources.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position, net cost, changes in net position, and budgetary resources of the NTSB, as of and for the years ended September 30, 2007 and 2006, in conformity with accounting principles generally accepted in the United States of America.

As discussed in Note 12 to the financial statements, the NTSB restated its fiscal year 2006 financial statements. This restatement was necessary because of errors that NTSB made when it processed journal vouchers that resulted in misstatements to Net Position. These accounting errors resulted in NTSB materially misstating its Cumulative Results of Operations and Unexpended Appropriations on the Balance Sheet, and Statement of Changes in Net Position for 2006. The previously-issued auditor's report, dated October 23, 2006, is withdrawn and replaced by the auditor's report on the restated financial statements. A discussion of the material internal control weakness that contributed to the misstatements and the actions taken by NTSB officials to address the deficiency is discussed later in this report.

The information in the Management's Discussion and Analysis section is not a required part of the basic financial statements but is supplementary information required by accounting principles generally accepted in the United States of America or OMB Circular A-136, *Financial Reporting Requirements*. We have applied certain limited procedures, which consisted principally of inquiries of NTSB management regarding the methods of measurement and presentation of the supplementary information and analysis of the information for consistency with the financial statements. However, we did not audit the information and express no opinion on it.

## INTERNAL CONTROL OVER FINANCIAL REPORTING

In planning and performing our audit of the financial statements of the NTSB as of and for the years ended September 30, 2007 and 2006, in accordance with auditing standards generally accepted in the United States of America, we considered the NTSB's internal control over financial reporting (internal control) as a basis for designing our auditing procedures for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the NTSB's internal control. Accordingly, we do not express an opinion on the effectiveness of the NTSB's internal control.

Because of inherent limitations in internal controls, including the possibility of management override of controls, misstatements, losses, or noncompliance may nevertheless occur and not be detected. A control deficiency exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect misstatements on a timely basis. A significant deficiency is a control deficiency, or combination of control deficiencies, that adversely affects the entity's ability to initiate, authorize, record, process, or report financial data reliably in accordance with generally accepted accounting principles such that there is a more than remote likelihood that a misstatement of the entity's financial statements that is more than inconsequential will not be prevented or detected by the entity's internal control. A material weakness is a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the financial statements will not be prevented or detected by the entity's internal control.

Our consideration of internal control was for the limited purpose described in the first paragraph in this section of the report, and would not necessarily identify all deficiencies in internal control that might be significant deficiencies or material weaknesses. However, as discussed below, we identified three significant deficiencies in internal control, and issues one and two are considered to be material weaknesses.

### **1. NTSB IT Security Program Not in Compliance with FISMA**

The NTSB continues to be in material non-compliance with the *Federal Information Security Management Act* (FISMA). An independent evaluation found that during fiscal year (FY) 2007 NTSB had taken corrective actions to address material IT security weaknesses identified in prior FISMA reports. However, NTSB had not completed and documented a comprehensive system security planning and life cycle management program for its major applications and general support systems.

The evaluation also found that NTSB needed to implement its controls relating to the periodic review and monitoring of users' access to agency systems. While NTSB required that a user account recertification be performed at least annually, the agency did not have a process to perform this review for its general support system (GSS) users, and most other system owners did not perform the review.

NTSB has issued written policies addressing many of OMB's Privacy Act requirements, and has effectively implemented these policies within the agency. However, the evaluation found areas where NTSB needs to establish procedures and take actions to address requirements in OMB Circular A-130, or OMB Memorandum M-03-22, *OMB Guidance for Implementing the Privacy Provisions of the E-Government Act of 2002*.

NTSB did not have a process that ensures IT security is integrated into the agency's capital planning practices, as required by FISMA and OMB Circulars A-11, *Preparation, Submission, and Execution of the Budget*, and A-130.

The Chairman, in his September 19, 2007, response to the FISMA evaluation report, stated that NTSB has made great strides in information security and data privacy during the past year. The Chairman also stated that the NTSB recognizes that additional work remains, and noted that NTSB concurs with the recommendations set forth in the report and will work to continue to strengthen access controls, enhance our data privacy posture, improve IT strategic and capital planning, and meet outstanding milestones.

Since recommendations have been made to address the problems identified in NTSB's IT security program, we are making no additional recommendations in this report.

## **2. Accounting Operations – Selected Controls and Processes Need Strengthening**

Internal controls established by the CFO over financial reporting were, generally, appropriately designed and functioning. However, we found: (1) control deficiencies continued to exist relating to the preparation, documentation, review and approval of journal vouchers; and (2) controls established relating to financial accounting relationship tests performed by the NTSB were not effectively implemented. As a result of these control weaknesses, material misstatements were detected in NTSB's 2007 and 2006 financial statements.

The NTSB CFO has issued formal operation bulletins on many aspects of CFO operations. These documents provide procedures that detail control processes based upon identified risks, and address other operational processes. We found that NTSB had established an operation bulletin relating to the level of approval required for journal vouchers processed to the general ledger. However, we did not identify any operation bulletins that document control processes in areas such as documentation and analysis requirements for journal vouchers, or document the control processes relating to the various accounting reconciliations and account relationships tests that are used by NTSB as part of its financial management operations.

In our fiscal year 2006 audit report, we reported a material internal control weakness over financial reporting relating to the preparation, review and approval of journal



vouchers processed to the general ledger. As part of our audit of the 2007 financial statements, we tested journal vouchers processed during fiscal year 2007, and expanded our tests of other accounting controls that impacted the presentation of the agency's financial statements.

Our tests found the following problems that either individually, or in aggregate, represent material weaknesses in NTSB's internal control procedures and processes.

**a. Controls over Journal Vouchers Need Further Strengthening**

Our review of a sample of 25 of the approximately 78 journal vouchers processed by NTSB during fiscal year 2007 continued to find errors in the journal vouchers processed to the general ledger. We found, in our opinion, insufficient documentation that would support a meaningful analysis of the need for, appropriateness of the proposed general ledger entries, and the amounts of the proposed adjustments in six journal vouchers tested.

For example, we found accounting entries processed on four journal vouchers that did not contain sufficient analysis and supporting documentation to justify the need for, or appropriateness of the entries proposed. As a result, entries were processed to the general ledger that resulted in an \$895,486.17 error in the accounts making up NTSB's Net Position, thereby, materially misstating these two financial statement line items.

In addition, during our analysis of journal vouchers prepared to cancel expired appropriations, we found errors in a journal voucher that misclassified \$171,520.81 in Cumulative Results of Operations, as of June 30, 2007. We expanded our tests of other fiscal years, and found similar errors had occurred in Cumulative Results of Operations reported for prior years also contained material misstatements because of incorrect accounting entries processed through journal vouchers.

**b. Accounting Reconciliations Need Strengthening**

NTSB performs numerous accounting reconciliations and other tests of account relationships to ensure that its financial statements and reports are not misstated. These control processes are applied to such areas as Fund Balance with Treasury, payroll, and financial statement reconciliations and tests, including various account relationship tests. Our audit found that the control processes for many of the areas were operating effectively. However, the controls established by NTSB relating to the account relationship testing it performed as part of its financial statement processes need to be strengthened. In addition, the control procedures established for all NTSB accounting reconciliations and tests need to be documented and issued as CFO operation bulletins.

We found that NTSB's account relationship tests showed material out-of-balance conditions that impacted NTSB's accounts, and related financial statement line items. NTSB did not take sufficient actions to research these differences, and showed these material out-of-balance conditions as appropriate reconciling items because of reimbursable agreements. However, our detailed analysis of these out-of-balance conditions determined that they represented material errors caused by various accounting or posting errors. For example, during NTSB's relationship testing of proprietary to budgetary unexpended appropriations, NTSB identified an out-of-balance condition totaling \$5,478,532.09 for one fund, as of September 30, 2007. NTSB erroneously showed this amount as a valid reconciling item which did not require any corrective action. However, our audit tests identified that \$3,077,788.67 was due to an accounting error and needed correction. (Note: Similar problems with offsetting amounts for other funds reduced the overall misstatement to \$1,905,633 as discussed in Note 12 to the financial statements.) We brought these problems to the attention of NTSB officials who concurred that errors were material to the financial statements and processed corrections to restate the 2006 financial statements, and adjusted the 2007 financial statements.

**c. Research of Abnormal Account Balances**

As part of our audit tests, we identified 16 accounts that contained abnormal balances, as of September 30, 2007. Our tests found that, for nine of these accounts, the abnormal balances were due to incorrect general ledger postings. We determined that NTSB does not routinely review, research and correct accounts with abnormal balances. As a result, potential errors that could impact financial reports are not timely corrected.

To illustrate the problem, our review found abnormal balances totaling \$67,000 in general ledger accounts 2320 and 5900 for one Treasury fund. These accounts are used by NTSB to record unearned revenue. We determined the abnormal balances in these accounts were due to: (1) the entries used by NTSB did not follow Standard General Ledger (SGL) posting models; and (2) errors made in posting the original accounting event.

**Recommendations**

1. Issue operation bulletins to document the processes and controls over: (a) the preparation, review, and documentation requirements for journal vouchers; (b) the accounting reconciliations, and account relationship tests performed by NTSB relating to its financial statement and financial reporting operations, and (c) research and correction of abnormal account balances.
2. Ensure the procedures strengthen controls so that errors identified in NTSB journal vouchers are prevented in the future, and that any difference identified in

an accounting test is properly researched and corrected, and maintain detailed supporting documentation for any reconciling item that is not corrected.

3. Ensure that revenue amounts, both earned and unearned for Federal and non-Federal clients, are posted in accordance with the SGL.
4. Perform a quarterly analysis of general ledger accounts, by fund, to identify, research, and correct, as appropriate, abnormal account balances. Document and retain the results of the analysis and any actions taken to correct the abnormal balance.

#### Agency Response

NTSB concurred with the audit recommendations. NTSB advised that it will issue operations bulletins to document the control procedures and review requirements for journal vouchers. These procedures will also address the requirements for accounting reconciliations and relationship tests, and research and correcting abnormal balances. NTSB also advised that it will ensure that revenue is posted in accordance with SGL requirements and quarterly reviews are performed of abnormal balances.

#### Auditor's Comments

The actions taken by NTSB address the audit recommendations.

### **3. Cost Accounting**

NTSB had not fully implemented a managerial cost accounting system. While the agency is able to prepare its Statement of Net Cost, and related footnote disclosures, the costs associated with these statements and disclosures are allocated to its responsibilities segments based upon estimates of "direct" salaries for various units within the agency which account for about one-half of the costs, and an allocation of remaining NTSB "common" costs. Furthermore, the documentation to support allocation of costs methodology employed by NTSB needs to be strengthened to meet the requirements contained in SFFAS No. 4, *Managerial Cost Accounting Standards and Concepts*.

NTSB implemented the first stages of a cost accounting system by upgrading a software system in November 2005 that tracks employee annual leave and sick leave. However, the system is not currently utilized to fully track the number of hours staff charged on various cost categories. In a report released by the General Accountability Office (GAO), GAO-07-118, dated November 2006, GAO concluded that as a result of this problem, "NTSB managers have little information they can use to plan the utilization of staff resources or manage staff workloads properly." GAO noted in this report that the NTSB lack of a cost accounting system impacted NTSB's ability to accurately track training center costs.

In May 2006, GAO recommended that NTSB develop a full cost-accounting system. NTSB agreed with the recommendation and told GAO that it will attempt to allocate funds in fiscal year 2007 to address this capability.

Management of NTSB reported the above material weaknesses in its *Federal Managers' Financial Integrity Act* (FMFIA) report.

A summary of the status of prior year findings is included as Attachment 1.

## **COMPLIANCE WITH LAWS AND REGULATIONS**

The results of our tests of compliance with certain provisions of laws and regulations, as described in the Responsibilities section of this report, disclosed one instance of noncompliance with laws and regulations, discussed in the following paragraphs that are required to be reported under *Government Auditing Standards* and OMB Bulletin 07-04.

### **Antideficiency Act Violation**

NTSB management officials undertook an in-house review of expenditures that were made during the period of 1998 through 2005 to determine whether NTSB properly used its appropriated funds to purchase accidental death and dismemberment insurance for its employees traveling on official business and, if not, whether such payments constituted violations of the Antideficiency Act, 31 U.S.C. § 1341. The NTSB Chief Financial Officer, in a letter to the GAO, dated June 19, 2007, requested the GAO to review the information compiled by the NTSB in the case and make a determination on whether a violation had occurred. The cost of this program over these years was less than \$75,000, and not material to the financial statements.

The GAO issued its decision on September 25, 2007, and advised the NTSB that it improperly used its appropriated funds to purchase accident insurance for its employees on official travel. NTSB does not have an appropriation specifically available for such a purpose, and the expenditures cannot be justified as a necessary expense. Because NTSB has no appropriation available to purchase accident insurance, the payments NTSB made constitute violations of the Antideficiency Act. NTSB must report the violations to the President and Congress, with a copy of the report to the Comptroller General. NTSB has issued the letters as required by the Anti-deficiency Act on September 26, 2007, and has resolved the reporting requirements under this Act.

## **RESPONSIBILITIES**

### **Management Responsibilities**

Management of the NTSB is responsible for: (1) preparing the financial statements in conformity with generally accepted accounting principles; (2) establishing, maintaining, and assessing internal control to provide reasonable assurance that the broad control objectives of the FMFIA are met; and (3) complying with applicable laws and

regulations. In fulfilling this responsibility, estimates and judgments by management are required to assess the expected benefits and related costs of internal control policies.

### Auditor Responsibilities

Our responsibility is to express an opinion on the financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and OMB Bulletin 07-04, *Audit Requirements for Federal Financial Statements*. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit includes: (1) examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; (2) assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In planning and performing our audit, we considered the NTSB's internal control over financial reporting by obtaining an understanding of the agency's internal control, determining whether internal controls had been placed in operation, assessing control risk, and performing tests of controls in order to determine our auditing procedures for the purpose of expressing our opinion on the financial statements.

We limited our internal control testing to those controls necessary to achieve the objectives described in OMB Bulletin 07-04 and *Government Auditing Standards*. We did not test all internal controls relevant to operating objectives as broadly defined by FMFIA. Our procedures were not designed to provide an opinion on internal control over financial reporting. Consequently, we do not express an opinion thereon.

As required by OMB Bulletin 07-04, with respect to internal control related to performance measures determined to be key and reported in Management's Discussion and Analysis, we obtained an understanding of the design of significant internal controls relating to the existence and completeness assertions and determined whether they had been placed in operation. Our procedures were not designed to provide assurance on internal control over reported performance measures, and, accordingly, we do not provide an opinion thereon.

As part of obtaining reasonable assurance about whether the agency's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, and significant provisions of contracts, noncompliance with which could have a direct and material effect on the determination of financial statement amounts, and certain other laws and regulations specified in OMB Bulletin 07-04. We limited our tests of compliance to these provisions and we did not test compliance with all laws and regulations applicable to the NTSB. Providing an

opinion on compliance with certain provisions of laws, regulations, and significant contract provisions was not an objective of our audit and, accordingly, we do not express such an opinion.

#### **AGENCY COMMENTS AND AUDITOR EVALUATION**

The CFO in a memorandum dated November 5, 2007, concurred with the findings and recommendations in the report and indicated in the response the corrective actions that will be taken to implement the recommendations. The CFO's response is included as an attachment to the report.

#### **DISTRIBUTION**

This report is intended solely for the information and use of the management, those individuals charged with governance, the Office of Inspector General, OMB, and Congress, and is not intended to be and should not be used by anyone other than these specified parties.

*Leon Snead & COMPANY, P.C.*  
Leon Snead & Company, P.C.  
November 5, 2007

## Attachment 1

**Status of Prior Year Reportable Conditions, and  
Non-compliance with Significant Laws and Regulations**

Prior Year Condition	As Reported At September 30, 2006	Status As Of September 30, 2007
NTSB IT Security Program Not in Compliance with FISMA	<b>Material Weakness:</b> The DOT-OIG 2006 FISMA report concluded that continued management attention is needed in several areas and the NTSB's information security program remains a material internal control weakness.	<b>Material Weakness:</b> NTSB's IT security program, despite continued progress in correcting identified weaknesses, remained non-compliant with FISMA.
Controls over Journal Vouchers Needs Additional Oversight	<b>Material Weakness:</b> NTSB's internal controls over financial reporting need to be strengthened over the preparation, review and approval of journal vouchers processed to the general ledger, and adjustments made for compilation of the financial statements. We attributed this problem to a control process that was not effectively implemented. As a result, we identified an accounting error on a journal voucher that reclassified approximately \$925,000 from an asset to an operating expense at the end of fiscal year 2005, and resulted in the 2005 financial statements being materially misstated.	NTSB issued procedures to address this specific control weakness.

## Attachment 2

**National Transportation  
Safety Board****Memorandum**

Office of the Chief Financial Officer

November 5, 2007

TO: Leon Snead  
Partner

FROM: Steven E. Goldberg  
Chief Financial Officer

SUBJECT: DRAFT AUDIT REPORT  
Fiscal Year 2007 Financial Statement Audit Report

The National Transportation Safety Board (NTSB) has reviewed the draft fiscal years 2007 and 2006 Financial Statement Audit Report and we concur with your Findings and Recommendations on *Accounting Operations – Selected Controls and Processes Need Strengthening*. We will perform the following steps to address this material weakness: (1) issue an operations bulletin or expand our current operations bulletin to document the processes and controls over the preparation, review, and documentation requirements for journal vouchers as well as the accounting reconciliations and account relationship tests performed relating to financial statement reporting and financial operations and the research and correction of abnormal balances; (2) strengthen the procedures to ensure that errors are prevented and abnormalities and errors identified during analytic procedures are examined and resolved with appropriate documentation; (3) ensure that revenue is posted in accordance with the SGL; and (4) expand our analytic procedures to include quarterly review of abnormal balances by fund with appropriate documentation of results and follow up.

In addition, we will share the final audit report with senior officials, other interested program managers and staff. We will also monitor the one corrective action plan (Federal Information Security Management compliance) that was established to ensure correction of the reported deficiency noted in our fiscal year 2007 and 2006 Federal Manager's Financial Integrity Act and fiscal year 2007 Financial Statement Audit Report.

Please convey my appreciation to everyone on your staff who worked diligently on our financial statement audit. If you have any questions or comments, please contact me or Edward Benthall at (202) 314-6210.

Sincerely,

/s/

Steven E. Goldberg  
Chief Financial Officer

cc: George Banks, Program Director,  
Financial Audits, DOT OIG



## Limitations of the Financial Statements

Responsibility for the integrity and objectivity of the financial information presented in the financial statements lies with NTSB management. The accompanying financial statements are prepared to report the financial policies and results of the operations of NTSB, pursuant to the requirements of Chapter 31, of the United States Code section 3515(b). While these statements have been prepared from the books and records of NTSB, these financial statements are in addition to the financial reports used to monitor and control budgetary resources which are prepared from the same books and records. The financial statements should be read with the realization that NTSB is an agency of the Executive Branch of the United States Government, a sovereign entity. Accordingly, unfunded liabilities reported in the statements cannot be liquidated without the enactment of an appropriation, and ongoing operations are subjected to enactment of appropriations.

### Management Integrity: Controls, Compliance and Challenges

NTSB conducts an annual review of the adequacy of the Board's management accountability and controls program in accordance with the *Federal Manager's Financial Integrity Act*, revised OMB Circular A-123, Management's Responsibility for Internal Control.

The results of this review are included in the Chairman's Statement of Assurance sent to the President on June 30, 2007. The Chairman's assurance is based on NTSB Office Director Management Control Assurance Memorandums and NTSB responses to *Office Directors, Division Chiefs, and other Program Managers Risk Assessments for An Accountability Unit* conducted in accordance with the Office of Management and Budget's guidance in Circular A-123, *Management Accountability and Control*.

NTSB also relies on the findings and results of audits and studies conducted by the Department of Transportation, Office of Inspector General (DOT-OIG), Government Accountability Office and the results of our financial statement audit conducted under the Chief Financial Officers Act of 1990, the Accountability of Tax Dollars Act of 2002, and the Office of Management and Budget Circular A-136.

As of September 30, 2007, there is one new material weakness to report and only one prior year material weakness remaining to be corrected. The new material weakness, which was reported by Leon Snead & Company, P.C. an Independent Public Accounting firm engaged by the DOT-OIG during the fiscal years 2007 - 2006 Financial Statement Audit is: *Accounting Operations – Controls and Processes deficiencies exist in the internal controls over financial reporting relating to the preparation, documentation, review and approval of journal vouchers; and the analysis, documentation, and correction of material differences identified in financial accounting relationship tests performed by the NTSB*. However, it's important to note that the auditors stated in their report that NTSB overall internal controls over financial reporting were generally appropriately designed and functioning and the Chief Financial Officer (CFO) has issued numerous formal operations bulletins

on many aspects of CFO operations that details control processes based upon established risk, and address other operational process.

The one prior year material weakness, which has not yet been corrected and that was reported by Leon Snead & Company, P.C. an Independent Public Accounting (IPA) firm engaged consent of the Government Accountability Office is: *NTSB had not completed and documented a comprehensive system security planning and life cycle management program for its major applications and general support systems. In addition, NTSB certification and accreditation (C&A) process has not been completed for its three systems.* Although NTSB continues to be in material non-compliance with FISMA, the IPA evaluation found that during fiscal year 2007 NTSB had taken the substantive corrective actions, among others to address the material IT security weaknesses identified in prior Department of Transportation, Office of Inspector General FISMA reports. These substantive corrective actions included: (1) Hiring a Chief Information Officer and Deputy Chief Information Officer. Filling these key positions within NTSB is significant as it should enable NTSB to focus high-level management attention to its IT security program; ensuring that continued, timely progress is made to eliminate material weaknesses in the program; and properly allocate human and funding resources to areas of critical need; (2) purchasing, installing, and began to using four commercial applications that provide NTSB with the ability to effectively address prior IT security problems dealing with patching security vulnerabilities in its applications; and controlling the review of and documentation for its vulnerability scanning and intrusion monitoring programs; (3) deploying encryption on agency laptops and issuing encrypted USB storage devices to employees who need to share files as part of their regular duties; (4) implementing dual authentication for its remote users; and (5) addressing DOT-OIG concerns dealing with password security by requiring more complex passwords on its network.

It's important to note that the FISMA material weakness was limited to the systems resident within NTSB and did not affect the agency's core financial management systems, which are located at the service provider. Therefore, these weaknesses have reduced impact on the financial management system maintained by its service center. In addition, the service provider received an unqualified (clean) Third Party Report on Controls Placed in Operation and Test of Operating Effectiveness (SAS 70) for the Period October 1, 2006 – July 31, 2007.

### ***Discussion and Analysis of Financial Statements***

NTSB's FY 2007 and 2006 financial statements report the Agency's financial position and results of operations on an accrual basis. These annual financial statements are comprised of a Balance Sheet, Statement of Net Cost, Statement of Changes in Net Position, Statement of Budgetary Resources, and related notes that provide a clear description of the Agency and its mission as well as the significant accounting policies used to develop the statements.

### ***Consolidated Balance Sheet***

The major components of the Consolidated Balance Sheet are assets, liabilities, and net position.

**Assets.** Assets represent Agency resources that have future economic benefits.

NTSB's assets totaled \$45.4 million in FY 2007. Fund balances with Treasury—mostly undisbursed cash balances from appropriated funds—comprised about 53% percent of the total assets.

NTSB does not maintain any cash balances outside of the U.S. Treasury and does not have any revolving or trust funds. About 7% percent of NTSB's assets were comprised of accounts receivable, which reflects funds owed to NTSB by other Federal agencies and the public, and the value of equipment less accumulated depreciation.

**Liabilities.** Liabilities are recognized when they are incurred regardless of whether or not they are carried by budgetary resources. In FY 2007, NTSB had total liabilities of \$36.6 million. The largest components of NTSB's liabilities were a capital lease liability at \$20.6 million. Accounts payable reflect funds owed primarily for contracts and other services.

**Net Position.** NTSB's net position, which reflects the difference between assets and liabilities and represents the Agency's financial condition, totals \$8.7 million. This amount is broken into two categories: unexpended appropriations (amounts related to undelivered orders and unobligated balances) at \$16.8 million and cumulative results of operations (net results of operations since inception plus the cumulative amount of prior period adjustments) at \$8 million.

The downward amount in net position was primarily the result of the liabilities not covered by budgetary resources and other liabilities.

### ***Consolidated Statement of Net Cost***

The Consolidated Statement of Net Cost represents the net cost to operate the Agency. Net costs are comprised of gross costs less earned revenues, and are reported by the NTSB's major programs. NTSB's FY 2006 net cost of operations was \$76.9 million: \$76 million in gross costs less \$.9 million in earned revenues.

### ***Consolidated Statement of Changes in Net Position***

The Consolidated Statement of Changes in Net Position reports the changes in net position during the reporting period. NTSB ended FY 2007 with a net position total of \$8.7 million. The negative change in net position was primarily the result of the liabilities not covered by budgetary resources and other liabilities.

### ***Combined Statement of Budgetary Resources***

The Combined Statement of Budgetary Resources focuses on how budgetary resources (appropriations and reimbursables) were made available, the status of those resources (obligated or unobligated) at the end of the reporting period, and the relationship between the budgetary resources and outlays (collections and disbursements). NTSB's FY 2007 budgetary resources totaled \$90.2 million and were primarily made up of budget authority funds \$79.3 million and unobligated balance \$-11.5 million.

### **Accrual Basis of Accounting**

Method of accounting that recognizes revenue when earned rather than when collected, and recognizes expenses when incurred rather than when paid.

**When:** The order is placed.

**Then:** The obligation is recorded as an undelivered order.

**When:** The materials are received and accepted.

**Then:** The obligational authority is expended and an accounts payable is recorded.

**When:** The payment is made.

**Then:** An outlay occurs and the account payable is cleared.

## National Transportation Safety Board

### Balance Sheet

As of September 30, 2007 and 2006

<b>Assets</b>	<b>FY 2007</b>	<b>FY 2006 Restated</b>
Intragovernmental:		
Fund balance with Treasury (Note 2)	\$ 24,346,294	\$ 25,268,427
Total Intragovernmental Assets	\$ 24,346,294	\$ 25,268,427
Accounts receivable (Note 3)	5,162	\$ 8,486
Property and equipment, net (Note 4)	21,087,500	21,878,773
	\$ 21,092,662	\$ 21,887,259
<b>Total Assets</b>	<b>\$ 45,438,956</b>	<b>\$ 47,155,686</b>
<b>Liabilities</b>		
Intragovernmental:		
Other liabilities	1,779,120	1,784,908
Total Intragovernmental	\$ 1,779,120	\$ 1,784,908
Accounts payable	\$ 385,402	\$ 1,534,621
Capital lease liability (Note 8)	20,634,374	21,441,786
Other Liabilities	13,877,809	12,594,387
<b>Total Liabilities</b>	\$ 36,676,705	\$ 37,355,702
<b>Net Position</b>		
Unexpended appropriations	\$ 18,748,951	\$ 19,735,152
Cumulative results of operations	(9,986,700)	(9,935,168)
<b>Total Net Position</b>	\$ 8,762,251	\$ 9,799,984
<b>Total Liabilities and Net Position</b>	<b>\$ 45,438,956</b>	<b>\$ 47,155,686</b>

*The accompanying notes are an integral part of these statements.*

## National Transportation Safety Board

### Statement of Net Cost

For the Period Ending September 30, 2007 and 2006

	<b>FY 2007</b>		<b>FY 2006</b>
	<b>Aviation Safety</b>		<b>Aviation Safety</b>
Gross costs	41,366,086	\$	36,461,655
Less: Earned Revenue	(612,099)		(476,383)
Net Costs	\$ 40,753,987	\$	35,985,272
	<b>Surface Transportation Safety</b>		<b>Surface Transportation Safety</b>
Gross costs	\$ 27,316,861	\$	25,770,986
Less: Earned Revenue	(398,071)		(219,475)
Net Costs	\$ 26,918,790	\$	25,551,511
	<b>Research &amp; Engineering</b>		<b>Research &amp; Engineering</b>
Gross costs	\$ 13,334,712	\$	15,586,507
Less: Earned Revenue	(227,441)		(195,598)
Net Costs	\$ 13,107,271	\$	15,390,909
<b>Net Cost of Operations (Note 9)</b>	<b>\$ 80,780,048</b>	<b>\$</b>	<b>76,927,692</b>

*The accompanying notes are an integral part of these statements.*

## National Transportation Safety Board

### Statement of Changes in Net Position

As of September 30, 2007 and 2006

	<b>Cumulative Results of Operations 2007</b>	<b>Cumulative Results of Operations 2006 Restated</b>
<b>Beginning Balances</b>	\$ (9,935,168)	\$ (7,959,358)
Prior period adjustments	-	(1,905,633)
Beginning balances, as adjusted	<u>\$ (9,935,168)</u>	<u>\$ (9,864,991)</u>
<b>Budgetary Financing Sources:</b>		
Appropriations used	\$ 77,545,500	\$ 73,864,526
<b>Other Financing Sources:</b>		
Imputed financing from costs absorbed by others	3,183,016	2,992,989
<b>Total Financing Sources</b>	<u>\$ 80,728,516</u>	<u>\$ 76,857,515</u>
<b>Net Cost of Operations, per accompanying statement</b>	<u>\$ (80,780,048)</u>	<u>\$ (76,927,692)</u>
<b>Net Change</b>	<u>\$ (51,532)</u>	<u>\$ (70,177)</u>
<b>Cumulative Results of Operations</b>	<u><u>\$ (9,986,700)</u></u>	<u><u>\$ (9,935,168)</u></u>
	<b>Unexpended Appropriations 2007</b>	<b>Unexpended Appropriations 2006 Restated</b>
<b>Beginning Balances</b>	\$ 19,735,152	\$ 18,013,916
Prior period adjustments		1,905,633
Beginning balances, as adjusted	<u>\$ 19,735,152</u>	<u>\$ 19,919,549</u>
<b>Budgetary Financing Sources:</b>		
Appropriations received	\$ 79,338,308	\$ 76,700,000
Other adjustments (rescissions, etc)	(2,779,009)	(3,019,871)
Appropriations used	<u>(77,545,500)</u>	<u>(73,864,526)</u>
<b>Total Budgetary Financing Sources</b>	<u>\$ (986,201)</u>	<u>\$ (184,397)</u>
<b>Total Unexpended Appropriations</b>	<u><u>\$ 18,748,951</u></u>	<u><u>\$ 19,735,152</u></u>
<b>Net Position</b>	<u><u>\$ 8,762,251</u></u>	<u><u>\$ 9,799,984</u></u>

*The accompanying notes are an integral part of these statements.*

**National Transportation Safety Board**  
**Statement of Budgetary Resources**  
**As of September 30, 2007 and 2006**

<b><u>Budgetary Resources:</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2006</u></b>
Unobligated balance:		
Unobligated Balance, Brought Forward, October 1	\$ 10,146,714	\$ (11,517,573)
Recoveries of prior year obligations	2,040,267	1,739,197
Budget authority:		
Appropriation	79,338,308	76,700,000
Spending from Offsetting Collections		
Earned		
Collected	1,462,944	1,288,741
Change in Receivables from Federal sources	(2,401)	2,401
Change in Unfilled Orders		
Advance Received		
Without Advance from Federal sources		
Anticipated for rest of year, without advances	-	
Permanently not available	(2,801,224)	(3,019,892)
<b>Total Budgetary Resources</b>	<b>\$ 90,184,608</b>	<b>\$ 65,192,874</b>
<b><u>Status of Budgetary Resources:</u></b>		
Obligations Incurred:		
Direct		
Category A	\$ 76,448,843	54,531,501
Reimbursable: Category B	446,754	514,659
	<u>\$ 76,895,597</u>	<u>55,046,160</u>
Unobligated Balance		
Apportioned	\$ 7,969,759	5,180,588
Unobligated balance not available	5,319,252	4,966,126
Total Unobligated Balances	<u>\$ 13,289,011</u>	<u>10,146,714</u>
<b>Total Status of Budgetary Resources</b>	<b>\$ 90,184,608</b>	<b>65,192,874</b>
<b><u>Change in Obligated Balance:</u></b>		
Obligated Balance, net:		
Unpaid Obligations, Brought Forward, October 1	\$ 15,115,373	\$ 35,987,478
Uncollected customer payments from Federal sources, brought forward, October 1	(2,401)	-
Obligations Incurred	76,895,597	55,046,160
Less: Gross Outlays	(78,913,420)	(74,179,068)
Obligated Balance transfers, net		
Less: Recoveries of prior year unpaid obligations, actual	(2,040,267)	(1,739,197)
Change in uncollected customer payments from Federal sources	2,401	(2,401)
Obligated Balance, net, end of period:		
Unpaid obligations	11,057,283	15,115,373
Uncollected customer payments from Federal sources	-	(2,401)
Total, unpaid obligated balance, net, end of period	<u>11,057,283</u>	<u>15,112,972</u>
Net Outlays:		
Gross Outlays	78,913,420	74,179,068
Less: Offsetting Collections	(1,462,944)	(1,288,741)
<b>Net Outlays:</b>	<b>77,450,476</b>	<b>72,890,327</b>

*The accompanying notes are an integral part of these statements.*



## Note 1

# Summary of Significant Accounting Policies

## Reporting Entity

The accompanying financial statements present the financial position, net cost of operations, changes in net position and budgetary resources of the National Transportation Safety Board (NTSB). The NTSB is an independent agency charged with determining the probable cause(s) of transportation accidents and promoting transportation safety. The financial activity presented relates primarily to the execution of the NTSB's congressionally approved budget. The NTSB began operations in 1967 and, although independent, it relied on the U.S. Department of Transportation (DOT) for funding and administrative support. In 1975, under the Independent Safety Board Act, all organizational ties to DOT were severed. The NTSB is not part of DOT, or affiliated with any of its modal agencies. The laws specific to the Board are located in Chapter VIII, Title 49 of the Code of Federal Regulations.

## Basis of Accounting and Presentation

These financial statements reflect both accrual and budgetary accounting transactions. Under the accrual method of accounting, revenues are recognized when earned and expenses are recognized as incurred, without regard to receipt or payment of cash. Budgetary accounting is designed to recognize the obligation of funds according to legal requirements. Budgetary accounting is essential for compliance with legal constraints and controls over the use of Federal funds.

These financial statements have been prepared from the books and reports of NTSB in accordance with U.S. generally accepted accounting principles (GAAP) for the Federal government and the Office of Management and Budget (OMB) Circular A-136.

## Assets

Intragovernmental assets are those assets that arise from transactions with other Federal entities. Entity assets are available for use by the entity in its operations while nonentity assets are assets held by the entity but not available for use by the entity in its operations.

## Fund Balance with U.S. Treasury

The NTSB does not maintain cash in commercial bank accounts. The U.S. Treasury processes cash receipts and disbursements. Funds with the U.S. Treasury consist of appropriated and deposited funds that are available to pay current liabilities and finance authorized purchase commitments.

## Accounts Receivable

NTSB's accounts receivable represent amounts due from overpayments to current and non-current employees and from vendors. NTSB maintains an allowance for doubtful accounts for public receivables based on past collection experience. The allowance for doubtful accounts is reviewed and adjusted quarterly.

## Property and Equipment

### *General Property and Equipment*

The Office of the Chief Financial Officer has established a capitalization policy for general property and equipment (P&E). General P&E is reported at acquisition cost. The capitalization threshold is established at \$25,000. General P&E consists of items that are used by NTSB to support its mission. Depreciation on these assets is calculated using the straight-line method.

The land and buildings in which the NTSB operates are primarily leased from commercial entities. The General Services Administration (GSA) provides some of the facilities occupied by the NTSB. GSA charges the NTSB a Standard Level Users Charge (SLUC) that approximates the commercial rental rates for similar properties.

### *Leasehold Improvements*

The NTSB capitalization policy for leasehold improvements has established a capitalization threshold of \$100,000. A leasehold improvement is an improvement of a leased asset that increases the asset's value. Depreciation on these assets is calculated using the straight-line method with ten years as the estimated useful life of the improvements or the remaining term of the lease, whichever is less.

### *Capital Lease Assets*

Any Lease-to-Ownership Plans (LTOP) leases are classified as capital leases. The NTSB has one capital lease, for space rental on the building that houses the NTSB Training Center. This is a twenty-year lease. Depreciation on the capital lease is calculated using the straight-line method with twenty years, the term of the lease, as the estimated useful life of the capital lease.

### *Internal Use Software*

The capitalization threshold of internal use software is established at \$250,000. Only the costs associated with the software development phase including labor are subject to capitalization. Software development phase activities generally include the design of chosen path, including software configuration and software interfaces, coding, installation to hardware and testing, including the parallel processing phase. Internal use software includes software to operate NTSB programs and software used to produce NTSB goods and services. Depreciation on these assets is calculated using the straight-line method with three years as the estimated useful life of the asset.

## Liabilities

Liabilities represent amounts that are likely to be paid by the NTSB as the result of transactions or events that have already occurred; however, no liabilities are paid by the NTSB without an appropriation. Intragovernmental liabilities arise from transactions with other Federal entities.

### Accounts Payable

Accounts payable consist of amounts owed for goods, services and other expenses received but not yet paid.

### Accrued Payroll and Benefits

Accrued Payroll and Benefits represents salaries, wages and benefits earned by employees, but not disbursed as of September 30, 2007. Accrued payroll and benefits are payable to employees and are therefore not classified as intragovernmental.

### Annual, Sick, and Other Leave

Annual leave is recognized as an expense and as a liability as it is earned; the liability is reduced as leave is taken. Each year, the balance in the accrued annual, restored, and compensatory leave account is adjusted to reflect current leave balances and pay rates. Sick leave and other types of non-vested leave are expensed as taken.

### Employee Retirement Plans

#### *Civil Service Retirement System (CSRS) and Federal Employees Retirement System (FERS)*

NTSB employees participate in one of two retirement programs, either the CSRS or the FERS, which became effective on January 1, 1987. Most NTSB employees hired after December 31, 1983, are automatically covered by FERS and Social Security.

For CSRS covered employees, the NTSB withheld 7.0% of gross earnings. The NTSB matches the withholding, and the sum of the withholding and the matching funds is transferred to the Civil Service Retirement System.

For each fiscal year the Office of Personnel Management (OPM) calculates the U.S. Government's service costs for covered employees, which is an estimate of the amount of funds that, if accumulated annually and invested over an employee's career, would be enough to pay that employee's future benefits. Since the U.S. Government's estimated FY 2007 service cost exceeds contributions made by employer agencies and covered employees, this plan is not fully funded by the NTSB and its employees. As of September 30, 2007, NTSB recognized \$3.2 million as an imputed cost and as an imputed financing

source for the difference between the estimated service cost and the contributions made by NTSB and its employees.

FERS contributions made by employer agencies and covered employees exceed the U.S. Government's estimated FY 2007 service cost. For FERS covered employees the NTSB made contributions of 10.7% of basic pay. Employees contributed .80% of gross earnings. Employees participating in FERS are covered under the Federal Insurance Contribution Act (FICA) for which the NTSB contributes a matching amount to the Social Security Administration.

### ***Thrift Savings Plan (TSP)***

Employees covered by CSRS and FERS are eligible to contribute to the U.S. Government's TSP, administered by the Federal Retirement Thrift Investment Board. The NTSB makes a mandatory contribution of 1% of basic pay for FERS-covered employees. In addition, NTSB makes matching contributions, of up to 5% of basic pay, for employees who contribute to the Thrift Savings Plan. Contributions are matched dollar for dollar for the first 3 percent of pay contributed each pay period and 50 cents on the dollar for the next 2 percent of pay. There are no percentage limits on contributions for FERS participants. There are no percentage limits for CSRS participants, but there is no governmental matching contribution. The maximum amounts that either FERS or CSRS employees may contribute to the plan in calendar year 2007 is \$15,500.

The NTSB financial statements do not report CSRS or FERS assets, accumulated plan benefits, or unfunded liabilities, if any, which may be applicable to NTSB employees and funded by NTSB. Such reporting is the responsibility of OPM.

## **Contingencies**

A contingency is an existing condition, situation, or set of circumstances involving uncertainty as to possible gain or loss. The uncertainty will ultimately be resolved when one or more future events occur or fail to occur. A contingent liability is recognized when a past event or exchange transaction has occurred, and a future outflow or other sacrifice of resources is measurable and probable. A contingency is not disclosed in the Notes to the Financial Statements when any of the conditions for liability recognition are met but the chance of the future event or events occurring is remote. A contingency is disclosed in the Notes to the Financial Statements when any of the conditions for liability recognition are not met and the chance of the future confirming event or events occurring is more than remote but less than probable.

The NTSB is not a party to any legal actions that are likely to result in a material liability. Accordingly, no provision for loss is included in the financial statements.

## Revenues and Other Financing Sources

### *Appropriations*

Most of NTSB's operating funds are provided by congressional appropriations of budget authority. The NTSB receives appropriations on annual, multi-year and no-year bases. NTSB receives financial resources from the following appropriations:

### *Annual Salaries and Expenses Appropriation*

Annual one-year appropriations are provided by Congress and are available for obligation in the fiscal year for which it was provided to fund the overall operation of the NTSB.

### *Supplemental Salaries and Expenses Appropriation*

Supplemental appropriations provided by Congress to fund extraordinary investigations.

### *No Year Emergency Fund Appropriation*

A no-year Emergency Fund appropriation was provided by the Congress to fund extraordinary accident investigation costs. Emergency Fund disbursements are made at the discretion of the NTSB, but must be reported to the Congress. A no-year appropriation is available for obligation without fiscal year limitation. The NTSB's Emergency Fund currently is appropriated at \$2,000,000.

## Imputed Financing Sources

In accordance with OMB Bulletin No. A-136, all expenses should be reported by agencies whether or not these expenses would be paid by the agency that incurs the expense. The amounts for certain expenses of the NTSB, which will be paid by other Federal agencies, are recorded in the "Statement of Net Cost." A corresponding amount is recognized in the "Statement of Changes in Net Position" as an "Imputed Financing Source." These imputed financing sources primarily represent unfunded pension costs of NTSB employees.

## Statement of Net Cost

### *Sub-Organization Program Costs*

The NTSB Statement of Net Cost is presented by Responsibility Segment. These Responsibility Segments are based on the NTSB's mission and funding sources. The major programs that comprise the Responsibility Segments are: Aviation Safety, Surface Transportation Safety, and Research and Engineering.

### *Earned Revenue*

Earned revenues collected by NTSB include amounts collected for training center programs, rental of conference room space, subleasing of office space, and for investigative related services.

## Net Position

Net position is the residual difference between assets and liabilities and comprises Unexpended Appropriations and Cumulative Results of Operations.

Unexpended appropriations include appropriations not yet obligated or expended, represented by the unobligated balances and undelivered orders of NTSB's appropriated funds. Multi-year appropriations remain available to NTSB for obligation in future periods. Unobligated balances associated with appropriations that expire at the end of the fiscal year remain available for obligation adjustments, but not for new obligations, until that account is closed, five years after the appropriations expire. Cumulative Results of Operations is the Net Result of NTSB's operations since inception.

## Use of Estimates

The preparation of financial statements in accordance with the accounting principles described above requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying footnotes. Actual results could differ from those estimates.

## Note 2

## Fund Balances with the U.S. Treasury

U.S. Treasury processes NTSB cash receipts and disbursements. Non-Federal receipts are deposited in commercial banks, which transfer the receipts to the U.S. Treasury. Funds with the U.S. Treasury represent appropriated funds and funds received in exchange for providing services. These funds are available to finance expenditures.

### Fund Balance with the U.S. Treasury

Funds	Entity FY 2007	Non- Entity FY 2007	Total FY 2007	Entity FY 2006	Non- Entity FY 2006	Total FY 2006
Intragovernmental:						
Appropriated Funds	\$24,346,294	\$-	\$24,346,294	\$25,268,427	\$-	\$25,268,427
Unavailable Receipt	\$-	\$-	\$-	\$-	\$-	\$-
<b>Total</b>	\$24,346,294	\$-	\$24,346,294	\$25,268,427	\$-	\$25,268,427

Status of Fund Balance with Treasury	FY 2007	FY 2006
Unobligated Balance		
Available	\$7,969,759	\$5,180,588
Unavailable	5,319,252	4,966,126
Obligated Balance Not Yet Disbursed	11,057,283	15,115,374
Non-Budgetary FBWT	-	6,339
<b>Total</b>	\$24,346,294	\$25,268,427

### Note 3

## Accounts Receivable

NTSB's accounts receivable represent amounts due from overpayments to current and non-current employees and from vendors. NTSB maintains an allowance for doubtful accounts for public receivables based on past collection experience. During FY 2007 NTSB revised its method for estimating the allowance for doubtful accounts. NTSB estimates the allowance for doubtful accounts based on the following agency schedule.

Days Outstanding	Percentage
0-120	0%
Over 120 Days	100%

In FY 2006, NTSB estimated its allowance for doubtful accounts based on the following criteria.

Days outstanding	Percentage
61-90 Days	0%
91-180 Days	15%
181-360 Days	35%
Over 360 Days	100%

The allowance for doubtful accounts is reviewed and adjusted quarterly.

	Interagency FY 2007	Public FY 2007	Total FY 2007	Interagency FY 2006	Public FY 2006	Total FY 2006
Gross Receivables	\$-	110,778	\$110,778	\$-	117,524	\$117,524
Allowance for Loss	-	105,616	\$105,616	-	109,038	\$109,038
Net Receivables	\$-	5,162	\$5,162	\$-	8,486	\$8,486



## Note 4

**Property and Equipment, Net**

Property and equipment consisted of the following as of September 30, 2007 and 2006:

**Property and Equipment**

Classes of Fixed Assets	Service Life (Years)	Acquisition Value FY 2007	Accumulated Depreciation FY 2007	Net Book Value FY 2007	Acquisition Value FY 2006	Accumulated Depreciation FY 2006	Net Book Value FY 2006
Desktop and laptop computers and peripherals	3	\$862,733	862,733	\$-	\$862,734	\$855,161	\$7,573
Other ADP and Tele-comm equipment (servers, routers)	5	\$800,834	425,703	\$375,131	\$366,286	296,817	69,469
Furniture	5	\$731,128	656,460	\$74,668	\$731,128	576,433	154,695
Investigative equipment	5	\$415,651	212,595	\$203,056	\$359,127	148,080	211,047
Office Equipment	5	\$88,721	57,883	\$30,838	\$88,721	44,730	43,991
Internal Use Software	3	\$2,130,093	877,202	\$1,252,891	\$1,283,305	318,557	964,748
Leasehold Improvements	10	\$628,163	365,338	\$262,825	\$628,163	275,601	352,562
Capital lease	20	\$23,731,941	4,843,850	\$18,888,091	\$23,731,941	\$3,657,253	\$20,074,688
<b>Totals</b>		<b>\$29,389,264</b>	<b>8,301,764</b>	<b>21,087,500</b>	<b>\$28,051,405</b>	<b>\$6,172,632</b>	<b>\$21,878,773</b>

## Note 5

### Accrued FECA Liability

The Federal Employees' Compensation Act (FECA) provides income and medical cost protection to covered Federal civilian employees injured on the job, employees who have incurred a work-related occupational disease, and beneficiaries of employees whose death is attributable to a job-related injury or occupational disease. Claims incurred for benefits for NTSB employees under FECA are administered by the Department of Labor (DOL) and are ultimately paid by the NTSB.

FECA liability includes two components: (1) the accrued liability which represents money owed for claims paid by the DOL through the current fiscal year, for which billing to and payment by the NTSB will occur in a subsequent fiscal year, and (2) the liability for future costs which represents the expected liability for approved compensation cases beyond the current fiscal year. Estimated future costs have been actuarially determined, and are regarded as a liability to the public because neither the costs nor reimbursement have been recognized by DOL. FECA liability is included in Liabilities Not Covered by Budgetary Resources, as described in Note 7.

The NTSB accrues liabilities based on estimates of funds owed to other Federal government entities for services provided, but not yet billed. The accruals for Workers Compensation and Unemployment Compensation represent the estimated liability for the current fiscal year; for money owed, but not billed; and for claims, which were paid by the Department of Labor, but not yet billed to the NTSB.

**Note 6****Accrued Annual Leave**

Accrued annual leave consists of employees' unpaid leave balances at September 30, 2007 and reflects wage rates in effect at quarter end. Accrued annual leave is included in Liabilities Not Covered by Budgetary Resources, as covered in Note 7.

**Note 7****Liabilities Covered and not Covered by Budgetary Resources**

Liabilities Not Covered by Budgetary Resources result from the receipt of goods and services, or the occurrence of events, for which appropriations, revenues, or other financing sources necessary to pay the liabilities have not yet been made available through Congressional appropriation. These include FECA and annual leave liability. Liabilities Covered by Budgetary Resources are those for which budgetary resources are available in the current fiscal year. NTSB's liabilities covered and not covered by budgetary resources are as follows:

**Liabilities Covered and Not Covered by Budgetary Resources**

<b>Liabilities Covered by Budgetary Resources</b>	<b>FY 2007</b>	<b>FY 2006</b>
Employer Contribution and Payroll Taxes Payable	\$376,126	\$360,710
Other Liabilities	-	8,760
Accounts Payable	385,402	1,534,621
Accrued Payroll	2,444,117	2,054,154
	<b>\$3,205,645</b>	<b>\$3,958,245</b>
<b>Liabilities Not Covered by Budgetary Resources</b>		
Capital Lease Liability	20,634,374	21,441,786
Accrued Unfunded Annual Leave	4,243,288	4,052,331
Actuarial FECA Liability	6,909,037	6,399,401
Accrued Unfunded FECA Liability	1,402,994	1,415,439
Unearned Revenue	281,368	88,500
<b>Total Liabilities Covered and Not Covered by Budgetary Resources</b>	<b>\$36,676,706</b>	<b>\$37,355,702</b>

**Liabilities Covered and Not Covered by Budgetary Resources  
Intragovernmental and Governmental**

Intragovernmental	FY 2007	FY 2006
Employer Contribution and Payroll Taxes Payable	\$376,126	\$360,710
Accrued Unfunded FECA Liability	1,402,994	1,415,439
Other Liabilities	-	8,760
<b>Total Intragovernmental</b>	<b>\$1,779,120</b>	<b>\$1,784,909</b>
Accounts Payable	385,402	1,534,621
Accrued Payroll	2,444,117	2,054,154
Capital Lease Liability	20,634,374	21,441,786
Accrued Unfunded Annual Leave	4,243,288	4,052,331
Actuarial FECA Liability	6,909,037	6,399,401
Unearned Revenue	281,368	88,500
<b>Total Liabilities Covered and Not Covered by Budgetary Resources</b>	<b>\$36,676,706</b>	<b>\$37,355,702</b>

## Note 8

### Leases

The NTSB has commitments under cancelable leases for office space. These leases have terms that extend up to 10 years. The majority of buildings in which the NTSB operates are leased from commercial companies. Under their lease agreement with the General Services Administration (GSA), the NTSB is charged rent that is intended to approximate commercial rental rates.

The NTSB has a 20-year capital lease for training center space which was entered into in 2001. The total future payments disclosed for the training center include estimates for services and utilities.

### Future Capital Lease Payments

Fiscal Year	Space Rental FY 2007	Space Rental FY 2006
2007	\$-	\$2,521,440
2008	2,521,440	2,521,440
2009	2,521,440	2,521,440
2010	2,521,440	2,521,440
2011	2,521,440	2,521,440
2012	2,521,440	2,521,440
2013 and beyond	27,315,600	27,315,600
<b>Total Future Lease Payments</b>	<b>\$39,922,800</b>	<b>\$42,444,240</b>
Less: Imputed Interest	(10,008,281)	(11,135,808)
Less: Executory Costs (Maintenance)	(9,280,145)	(9,866,646)
<b>Net Capital Lease Liability</b>	<b>\$20,634,374</b>	<b>\$21,441,786</b>

In 2003 NTSB determined that this lease should be recorded as a capital lease. Capitalizing the full net present value of the Training Center lease created a deficiency in 2001 funds. This deficiency was reported to OMB and Congress. OMB has provided guidance on future funding and reporting of this liability. With the cancellation of the FY 2001 appropriation at September 30, 2006, the budgetary accounts no longer reflect a deficiency situation. The related asset, liability, and amortization will remain on the general ledger until the lease is fully liquidated. Emergency supplemental appropriations bill H.R. 2206 Sec. 5902 provided funds to make lease payments due in fiscal year 2007 only.

The lease liability not covered by budgetary resources at September 30, 2007 is \$20,634,374.

The NTSB has operating leases for copiers, postage meters and vehicles. Copiers and postage meters are leased on an annual basis. These leases are cancelable or renewable on an annual basis at the option

of NTSB. They do not impose binding commitments on NTSB for future rental payments on leases with terms longer than one year.

Future operating payments due are as follows:

### Future Operating Lease Payments

Fiscal Year	Space Rental- Headquarters and Regional Offices FY 2007	Copiers FY 2007	Totals FY 2007	Space Rental- Headquarters and Regional Offices FY 2006	Copiers FY 2006	Totals FY 2006
2007	\$-	-	\$-	\$7,322,145	1,014	\$7,323,159
2008	2,149,071	676	2,149,747	7,113,446	676	7,114,122
2009	6,483,426	-	6,483,426	7,059,254		7,059,254
2010	6,485,539	-	6,485,539	6,917,410		6,917,410
2011	293,504	-	293,504	293,504		293,504
2012	218,784	-	218,784	218,784		218,784
2013 and beyond	-	-	-	-		-
<b>Total Future Lease payments</b>	<b>\$15,630,324</b>	<b>\$676</b>	<b>\$15,631,000</b>	<b>\$28,924,543</b>	<b>\$1,690</b>	<b>\$28,926,233</b>

GSA vehicle leases are cancelable at any time without penalty and are not included in Future Operating Lease Payments information.

### Future Lease Receipts

In August 2007, NTSB signed two sub-lease agreements to provide certain office space beginning in September 2007.

The first is with the Federal Aviation Administration (FAA) for the period of twelve months with the possibility of extension. This agreement will result in the receipt of \$446,875 over the twelve-month lease term, paid quarterly. This agreement commenced on September 1, 2007 and will expire on October 22, 2010. The Sub-Lessee rental rate will be annually adjusted by a reconciliation of Operating costs and taxes corresponding with increases to the Consumer Price Index (CPI) Cost of Living index.

The second is with the Transportation Security Administration (TSA) for a period of ten years. The Sub-Lessee may cancel this agreement after the first twelve months with 120 days notice without penalty. This agreement will result in the receipt of \$478,748 over the twelve-month lease term, paid quarterly. The Sub-Lessee rental rate will be annually adjusted by a reconciliation of Operating costs and taxes corresponding with increases to the Consumer Price Index (CPI) Cost of Living index.

### Future Lease Receipts

Fiscal Year	FAA	TSA
2008	\$446,875	\$478,748
2009	446,875	478,748
2010	446,875	478,748
2011	27,930	478,748
2012	-	478,748
2013 and beyond	-	2,373,796
<b>Total Future Lease Receipts</b>	<b>\$1,368,555</b>	<b>\$4,767,536</b>

#### Note 9

### Statement of Net Cost

#### Intragovernmental and Public Costs

Fiscal Year 2007	Aviation Safety	Surface Safety	Research & Engineering	Consolidated Totals
Intragovernmental Gross Costs	\$7,434,239	\$4,693,426	\$2,400,840	\$14,528,505
Less: Intragovernmental Earned Revenue	(283,424)	(178,933)	(121,530)	(583,887)
Intragovernmental Net Costs	<b>\$7,150,815</b>	<b>\$4,514,493</b>	<b>\$2,279,310</b>	<b>\$13,944,618</b>
Gross Costs with the Public	\$33,931,847	\$22,623,435	\$10,933,872	\$67,489,154
Less: Earned Revenues from the Public	(328,675)	(219,138)	(105,911)	(653,724)
Net Costs with the Public	<b>\$33,603,172</b>	<b>\$22,404,297</b>	<b>\$10,827,961</b>	<b>\$66,835,430</b>
<b>Net Cost of Operations</b>	<b>\$40,753,987</b>	<b>\$26,918,790</b>	<b>\$13,107,271</b>	<b>\$80,780,048</b>

Fiscal Year 2006	Aviation Safety	Surface Safety	Research & Engineering	Consolidated Totals
Intragovernmental Gross Costs	\$6,963,784	\$4,768,294	\$2,756,876	\$14,488,954
Less: Intragovernmental Earned Revenue	(237,049)	(58,542)	(49,198)	(344,789)
Intragovernmental Net Costs	<b>\$6,726,735</b>	<b>\$4,709,752</b>	<b>\$2,707,678</b>	<b>\$14,144,165</b>
Gross Costs with the Public	\$29,497,871	\$21,002,692	\$12,829,631	\$63,330,194
Less: Earned Revenues from the Public	(239,334)	(160,933)	(146,400)	(546,667)
Net Costs with the Public	<b>\$29,258,537</b>	<b>\$20,841,759</b>	<b>\$12,683,231</b>	<b>\$62,783,527</b>
<b>Net Cost of Operations</b>	<b>\$35,985,272</b>	<b>\$25,551,511</b>	<b>\$15,390,909</b>	<b>\$76,927,692</b>

#### Note 10

### Statement of Budgetary Resources

The Statement of Budgetary Resources compares budgetary resources with the status of those resources. For September 30, 2007, and September 30, 2006, respectively, budgetary resources were \$ 90.2 million and \$ 65.2 million; net outlays for the year were \$ 77.5 million and \$ 72.9 million; direct obligations incurred against amounts apportioned under Category A were \$76.4 million and \$54.5 million; and the amount of direct obligations incurred against amounts apportioned under Category B were \$.5 million and \$.5 million.

	FY 2007	FY 2006
Budgetary Resources	\$90,184,608	\$65,192,874
Net Outlays	77,450,476	72,890,327
Category A Apportionments	76,448,843	54,531,501
Reimbursable Category B	446,754	514,659

The total of undelivered orders at September 30, 2007 and 2006 were \$7.8 million and \$15.1 million.



## Note 11

## Net Cost of Operations vs. Budget

	FY 2007	FY 2006
<b>Resources Used to Finance Activities</b>		
Obligations Incurred	\$76,895,597	\$55,046,160
Less: spending authority from offsetting collections and recoveries	(3,500,810)	(3,030,339)
Net obligations	\$73,394,787	\$52,015,821
Imputed financing from costs absorbed by others	3,183,016	2,992,989
Total resources used to finance activities	<b>\$76,577,803</b>	<b>\$55,008,810</b>
<b>Resources Used to Finance Items not Part of the Net cost of operations</b>		
Change in budgetary resources obligated for goods, services and benefits ordered but not yet provided	3,314,320	(1,551,556)
Resources that fund expenses recognized in prior periods	(797,642)	21,441,793
Budgetary offsetting collections and receipts that do not affect net cost of operations	190,388	145,563
Resources that finance the acquisition of assets	(1,083,664)	(357,539)
Total resources used to finance items not part of the net cost of operations	<b>1,623,402</b>	<b>19,678,261</b>
Total resources used to finance the net cost of operations	<b>\$78,201,205</b>	<b>\$74,687,071</b>
<b>Components of the Net Cost of Operations that will not require or generate Resources in the Current Period</b>		
Components Requiring or Generating Resources in Future Periods		
Other	703,906	238,101
Total Components Not Requiring or Generating Resources in Future Periods	\$703,906	\$238,101
Depreciation and Amortization	2,129,132	1,989,979
Other	(254,195)	12,541
Total components of Net Cost of Operations that will not require or generate resources in the current period	<b>\$2,578,843</b>	<b>\$2,240,621</b>
<b>Net Cost of Operations</b>	<b>\$80,780,048</b>	<b>\$76,927,692</b>

## Note 12

### Restatements

NTSB's FY 2006 Balance Sheet and Statement of Changes in Net Position have been restated to correct the reporting of Unexpended appropriations and Cumulative results of operations due to an entry to Unexpended appropriations that was made in error. This entry caused a decrease to Unexpended appropriations in a reimbursable fund. Reimbursable funds do not have appropriated authority and therefore do not use Unexpended appropriations. At the end of FY 2006, \$1,905,633 was included in the financial statements as Unexpended appropriations rather than Cumulative results of operations. As a result, Unexpended appropriations and Cumulative results of operations were misstated. Controls have been strengthened by additional analytical procedures that will be applied to Unexpended appropriations.

The effect of the restatement on the FY 2006 financial statements is summarized below.

Financial Statement/Line Item	FY 2006 Reported	Effect of Restatement	FY 2006 Restated
Balance Sheet			
Unexpended appropriations	\$17,829,519	\$1,905,633	\$19,735,152
Cumulative results of operations	(8,029,535)	(1,905,633)	(9,935,168)
Statement of Changes in Net Position			
Unexpended appropriations	17,829,519	\$1,905,633	\$19,735,152
Cumulative results of operations	(8,029,535)	(1,905,633)	(9,935,168)

## Note 13

## Explanation of Differences Between the Statement of Budgetary Resources and the Budget of the United States Government

FY 2005 Dollars in millions	Budgetary Resources	Obligations Incurred	Offsetting Receipts	Net Outlays
Statement of Budgetary Resources	\$65	\$76	\$0	\$75
Unobligated Balance Brought Forward	6	-	-	-
Permanently not available	9	-	-	-
Budget of the U.S. Government	80	76	-	75
Differences	\$-	\$-	\$-	\$-

FY 2005 is the latest year for which figures are available.

For Additional Information Contact:

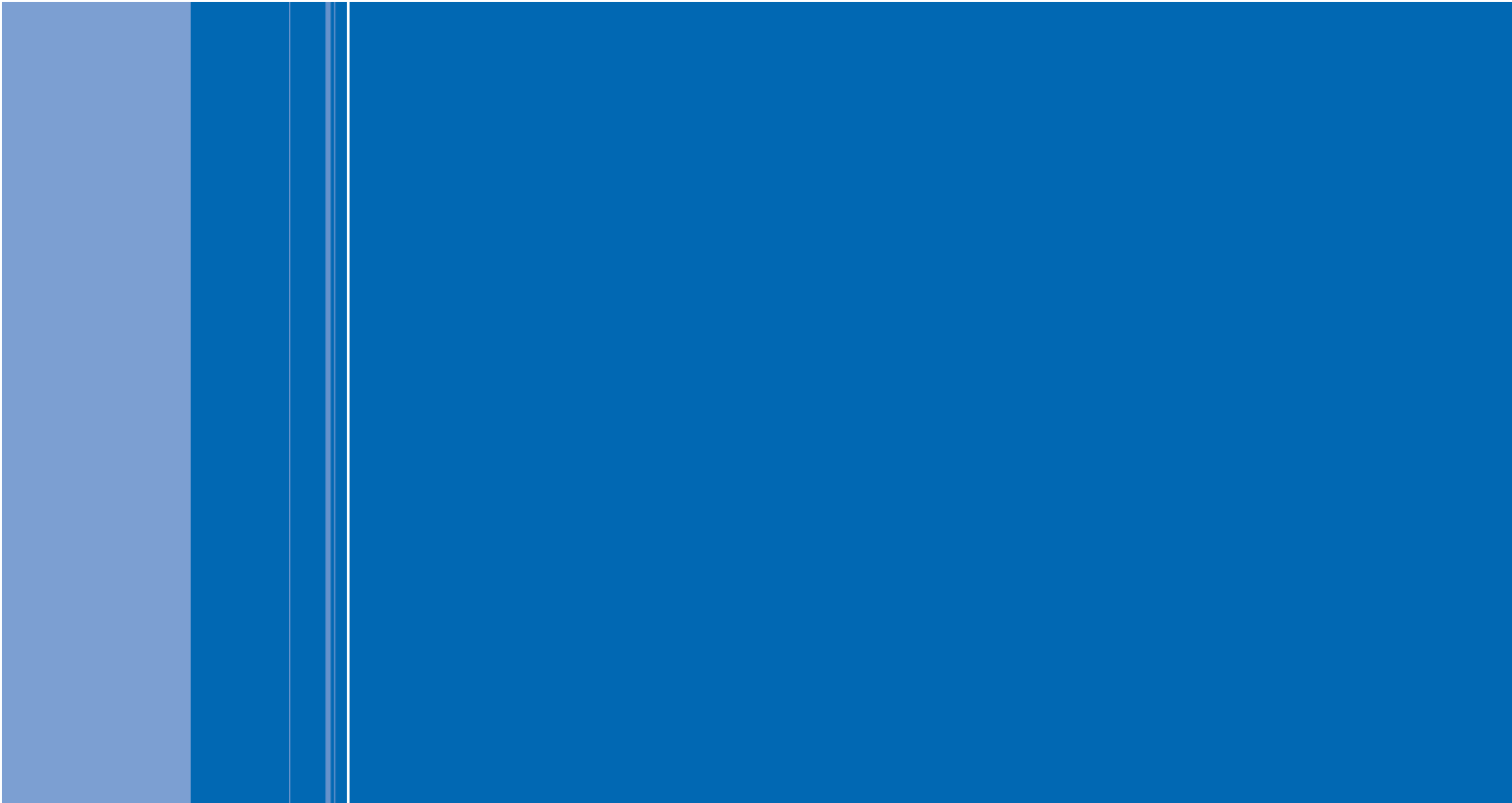
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