



National Transportation Safety Board

ANNUAL REPORT *to Congress*



2010 ANNUAL REPORT

NTSB/SPC-11/01



**National
Transportation
Safety Board**

A Message from the Chairman of the NTSB



Deborah A.P. Hersman
Chairman

I am pleased to present the 2010 Annual Report to Congress for the National Transportation Safety Board (NTSB). Recognized internationally for our accident investigation expertise, the NTSB has been in the forefront of transportation safety for over 40 years. During that time, we have investigated more than 140,000 aviation accidents and thousands of surface transportation accidents, and have issued more than 13,000 safety recommendations. The 2010 Annual Report presents the agency's work over the last year, providing details of completed and ongoing investigations, safety recommendations, family disaster assistance activities, and emerging issues.

2010 was a very productive year for the NTSB, during which we worked as a team to advance our transportation safety mission with accountability, integrity, and transparency. We completed several major accident reports within approximately one year of the accident date (Colgan Air, Inc., and the Washington Metropolitan Area Transit Authority [WMATA] accidents). In addition to responding to accidents and issuing safety recommendations, we undertook activities to impart lessons learned from our investigations and to raise awareness of emerging safety issues, holding public forums on professionalism in aviation, aviation code-sharing arrangements, fishing vessel safety, aging drivers, and child passenger safety in the air and in automobiles.

In addition to our domestic work, the agency continued our safety role abroad, providing technical expertise to our international partners and participating in several foreign accident investigations. These activities help drive further safety improvements in U.S. products and services and encourage reciprocal support from our foreign partners when foreign equipment or foreign carriers are involved in accidents in the United States.

We hope you find the 2010 Annual Report to Congress to be an informative presentation of the agency's accomplishments during 2010.

Sincerely,


A handwritten signature in black ink, appearing to read 'D. Hersman', with a long horizontal flourish extending to the right.

Deborah A.P. Hersman

June 10, 2011



Foreword



The National Transportation Safety Board (NTSB) is an independent agency charged with determining the probable cause of transportation accidents and promoting transportation safety. The NTSB investigates accidents, conducts safety studies, evaluates the effectiveness of other government agencies' programs for preventing transportation accidents, and reviews the appeals of enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and the U.S. Coast Guard (USCG), as well as the appeals of civil penalty actions taken by the FAA.

To help prevent accidents, the NTSB develops safety recommendations, based on its investigations and studies, which are then issued to Federal, state, and local government agencies, industry, and other organizations in a position to improve transportation safety. Our recommendations are the focal point of the NTSB's efforts to improve the safety of the nation's transportation system. The NTSB's origins can be found in the Air Commerce Act of 1926, in which the U.S. Congress charged the U.S. Department of Commerce with investigating the causes of aircraft accidents. Later, that responsibility was given to the Civil Aeronautics Board's Bureau of Aviation Safety.

In 1967, Congress consolidated all transportation agencies into a new U.S. Department of Transportation (U.S. DOT) and established the NTSB as an independent agency placed within the U.S. DOT for administrative purposes. In creating the NTSB, Congress envisioned that a single organization with a clearly defined mission could more effectively promote a higher level of safety in the transportation system than the individual modal agencies working separately. Since then, the NTSB has investigated accidents in the aviation, highway, marine, pipeline, and railroad modes, as well as accidents related to the transportation of hazardous materials.

In 1974, Congress separated the NTSB from the U.S. DOT, reasoning that "...No Federal agency can properly perform such (investigatory) functions unless it is totally separate and independent from any other...agency of the United States." Because the U.S. DOT has broad operational and regulatory responsibilities that affect the safety, adequacy, and efficiency of the transportation system, and transportation accidents may suggest deficiencies in that system, the NTSB's complete independence was deemed necessary for proper oversight. The NTSB, which has no authority to regulate, fund, or be directly involved in the operation of any mode of transportation, conducts investigations and makes recommendations from an objective viewpoint.

In 1996, the NTSB was charged with the additional responsibility of coordinating Federal assistance to families affected by a major aviation accident. This action was followed by the passage of the Foreign Air Carrier Family Support Act in 1997 and the Rail Passenger Disaster Family Assistance Act in 2008. While the agency's Transportation Disaster Assistance program was originally authorized to provide assistance following major aviation accidents, it has been expanded on a limited basis to provide assistance in all modes of transportation.

In 2000, the agency embarked on a major initiative to increase employee technical skills and make its investigative expertise more widely available to the transportation community by establishing the NTSB Academy. The Virginia campus of the George Washington University was selected as the Academy's home, and we took occupancy of our new facility in August 2003. On October 1, 2006, the name of the NTSB Academy was changed to the NTSB Training Center to better reflect the internal training aspects of the facility.

Since its inception, the NTSB has investigated more than 140,000 aviation accidents and thousands of surface transportation accidents. 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 with one aim—to ensure that such accidents never happen again.

To date, the NTSB has issued over 13,000 safety recommendations involving aviation and surface transportation to more than 2,500 recipients in the Federal and state sectors. Because the NTSB has no authority to regulate the transportation industry, its effectiveness depends on its reputation for conducting thorough, accurate, and independent investigations and for producing timely, well-considered recommendations to enhance transportation safety.

In 2010, the NTSB continued to push for safety improvements as 132 recommendations were officially closed following implementation. These included 53 aviation, 41 highway, 8 marine, 18 railroad, 11 pipeline and 1 intermodal safety advances that, over the past 12 months, were recognized by the Board as complying with our recommendations. They were officially closed with the classifications “acceptable action,” “acceptable alternate action,” or “exceeds recommended action.” The average acceptance rate for safety recommendations remained at just over 80 percent. Another 227 recommendations were issued in 2010: 170 aviation, 18 highway, 25 railroad, 7 marine, and 7 pipeline.

NTSB Mission

The NTSB's mission is to promote transportation safety by

- Maintaining our congressionally mandated independence and objectivity;
- Conducting objective, precise accident investigations and safety studies;
- Performing fair and objective airman and mariner certification appeals; and
- Advocating and promoting safety recommendations.

And to assist victims of transportation accidents and their families.



NTSB 2010 at a Glance

Accident Launches

Major Accident Launches	6
Regional/Field Accident Launches	197
International Accident Launches	9

Major Reports and Products Adopted by the Board

Major Reports	10
Summary Report	1
Special Investigation Report	1
Accident Briefs	17
Regional/Field Accident Reports	1292

Recommendations

Recommendations Issued	227
Recommendations Closed / Acceptable Status	132 ¹
Recommendations Closed / Unacceptable Status	32

Aviation Certificate Appeals

Total Cases Received	334
Total Cases Closed	369
Emergency Cases Closed	150

¹ This number includes one intermodal recommendation closed in acceptable status; the remaining four intermodal recommendations were closed in an unacceptable status.

2010 Annual Report

National Transportation Safety Board

Contents

A Message from the Chairman of the NTSB	i
Foreword	ii
NTSB 2010 at a Glance	iv
Safety Recommendations and Quality Assurance.....	2
Office of Aviation Safety.....	5
Office of Highway Safety	16
Office of Marine Safety	22
Office of Railroad, Pipeline and Hazardous Materials Investigations	28
Office of Research and Engineering	35
Office of Communications	41
Office of Administrative Law Judges	45
NTSB Training Center	47
Member Profiles.....	50
APPENDIX A:	
Accidents Required to be Investigated Under Section 1131 but Not Investigated	57
APPENDIX B:	
Accidents Exceeding the Expected Time Allotted for Completion by Board Order	85
APPENDIX C:	
National Transportation Safety Board Assessment of Progress Toward Implementation of GAO Recommendations, December 2010	86
APPENDIX D:	
Performance Assessment	91



Safety Recommendations and Quality Assurance Division

Safety Recommendations and Quality Assurance 2010 at a Glance	
Recommendations	
Recommendations Issued	227
Recommendations Closed in an Acceptable Status	132
Recommendations Closed in an Unacceptable Status	32

The Office of the Managing Director’s mission is to provide the strategic direction of the organization and to guide and support NTSB programs to ensure the independence, competency, efficiency, and effectiveness of safety recommendations. The Safety Recommendations and Quality Assurance Division, under the Office of

the Managing Director, is responsible for designing and coordinating strategies to encourage those in a position to effect changes to implement the NTSB’s recommendations. The division is also responsible for tracking the implementation of those safety recommendations after they are issued to recipients and maintaining statistics of recommendation adoption and acceptance rates, as well as managing the NTSB’s notation and correspondence processes and coordinating agency products that go to the Board. The division ensures that the highest quality of the NTSB’s products is consistently maintained.

Safety recommendations are issued by the NTSB following the investigation of transportation accidents and other safety problems. Recommendations usually address a specific issue uncovered during an investigation or study and specify corrective action that will prevent recurrences. Letters containing the recommendations are sent to the organization best able to act on the problem; recipients of NTSB safety recommendations include the U.S. DOT and its modal administrations,² the USCG, other Federal and state agencies, manufacturers, industry and trade organizations, and others.

² Department of Transportation modal agencies include the following: the Federal Aviation Administration (FAA), the Federal Highway Administration (FHWA), the Federal Motor Carrier Safety Administration (FMCSA), the Federal Railroad Administration (FRA), the Federal Transit Administration (FTA), the National Highway Traffic Safety Administration (NHTSA), and the Pipeline and Hazardous Material Safety Administration (PHMSA).



Significant Achievement and Most Wanted Successes

TABLE OF CONTENTS

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

The division encourages the Federal U.S. DOT modal administrations, the USCG, and other recipients to implement the NTSB's recommendations; compiles monthly statistics regarding recommendation acceptance rates; and coordinates products for Board review via the NTSB notation process. In 2010, the NTSB issued 227 recommendations, including 170 aviation, 18 highway, 25 railroad, 7 marine and 7 pipeline

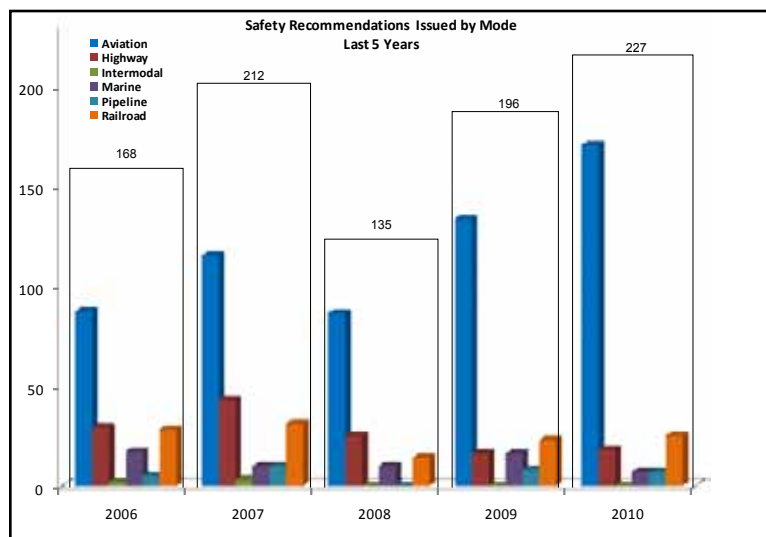


Figure 1: Total number of safety recommendations issued within last 5 years, shown by mode.

recommendations. Over the last 5 years, the NTSB has issued 938 safety recommendations across all modes of transportation, as shown in Figure 1. During 2010, a total of 189 recommendations were closed, 132 with an acceptable status; all of the acceptable closures represented a positive impact on transportation safety. In addition, safety recommendation acceptance rates for all modes of transportation remain consistent, with more than 80 percent of our recommendations being implemented.

Significant Achievements and Most Wanted Successes

- The NTSB implemented its Correspondence, Notation, and Safety Recommendations (CNS) electronic database, which allows concurrent review of documentation by the agency. The implementation of CNS completes two of the Government Accountability Office (GAO) recommendations found in GAO report [GAO-08-652T](#) (p. 6), which recommended that the NTSB develop computerized related documentation to allow the use of concurrent reviews and report development. The implementation of this database has simplified our process for closing out recommendations and has also reduced our response time to recipients regarding recommendation status.
- Advocacy efforts by NTSB staff and the Federal Highway Administration's (FHWA) staff to resolve issues regarding recommendations issued to the FHWA led to the closure of 50 percent of recommendations issued to that agency.
- The NTSB issued seven urgent safety recommendations to the Pipeline and Hazardous Materials Safety Administration (PHMSA), the California Public Utilities Commission, and the Pacific Gas and Electric Company (PG&E) regarding the natural gas pipeline rupture and explosion that killed eight people in San Bruno, California, on September 9, 2010. These



Significant Achievement and Most Wanted Successes

TABLE OF CONTENTS

Office of Aviation Safety
Office of Highway Safety
Office of Marine Safety
Office of Railroad, Pipeline HazMat Investigations
Office of Research and Engineering
Office of Communications
Office of Administrative Law Judges
Training Center



SAFETY RECOMMENDATIONS

Significant Achievement and Most Wanted Successes

TABLE OF CONTENTS

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

urgent recommendations are for PHSMA to immediately inform the pipeline industry of the circumstances and consequences of this accident and for the California Public Utilities Commission to develop an implementation plan for PG&E to inform pipeline operators how they can implement appropriate corrective measures for their pipeline systems.

- In response to NTSB recommendations, the FAA issued a number of very important notices of proposed rulemakings (NPRM) on the following issues, several of which are included on the NTSB’s Most Wanted List of Transportation Safety Improvements (MWL):
 - An Advanced NPRM on pilot training and qualifications.
 - An NPRM on certification of aircraft for flight in icing conditions to now include supercooled large droplet conditions (MWL).
 - An NPRM on helicopter emergency medical service (HEMS) flight crew fatigue (MWL).
 - An NPRM regarding equipment and operations of HEMS operators (MWL).
 - An NPRM on safety management systems (MWL).
- In response to NTSB recommendations, the Federal Railroad Administration (FRA) issued a number of very important final rules, an NPRM and a safety advisory, as follows:
 - A final rule amending its accident/incident reporting requirements to include in its reporting guide a train accident cause code [T224] for derailments caused by rail cracks originating from bond wire attachments.
 - A final rule amending its railroad communications regulations by restricting the use of mobile telephones and other distracting electronic devices by railroad operating employees. This rule codifies most of the requirements of FRA Emergency Order No. 26, which was supplanted by this final rule on the date it became effective, March 28, 2011.
 - A safety advisory to address railroad and highway signal recording devices at highway-rail grade crossings equipped with active warning systems that are interconnected with highway traffic signal systems. Both related recommendations issued to the U.S. DOT were classified “Closed—Acceptable Alternate Action” on January 10, 2011.

Office of Aviation Safety

The Office of Aviation Safety has the responsibility for investigating aviation accidents and incidents (about 1,600 annually) and for proposing the probable cause of accidents for the Board's approval. In collaboration with other offices within the NTSB, the Office of Aviation Safety also works to formulate recommendations to prevent the recurrence of similar accidents and incidents and to otherwise improve aviation safety. NTSB investigations routinely examine all factors surrounding an accident or series of accidents or serious incidents, thereby ensuring that regulatory agencies and the industry are given a thorough and objective analysis of actual, as well as potential, deficiencies in the transportation system. Solutions can then be proposed to correct deficiencies that may have caused an accident. Given the international nature of air transportation and the leading role of the U.S. in the development of aviation technologies, the NTSB's investigations of domestic accidents and its participation in foreign investigations are essential to the enhancement of aviation safety worldwide. The agency's major aviation accident reports, safety recommendations, and accident statistics are disseminated worldwide and have a direct influence on safety policies domestically and abroad, helping to ensure the safe transportation by air of U.S. citizens and other travelers around the world.

The NTSB fulfills U.S. obligations to foreign accident investigations, established by treaty under the auspices of the International Civil Aviation Organization (ICAO), by sending accredited representatives and technical advisors from airframe and engine manufacturers to participate in investigations that involve U.S. interests. The office also maintains liaison and coordination with other government agencies through the U.S. Interagency Group on International Aviation and ICAO.

The headquarters for the Office of Aviation Safety is in Washington, DC. Four regions operate out of nine office sites around the country. The headquarters office comprises five divisions that reflect the organization of the NTSB's investigative process: Major Investigations, Operational Factors, Aviation Engineering, Human Performance and Survival Factors, and Writing and Editing.

Office of Aviation Safety 2010 at a Glance	
Recommendations	
Recommendations Issued	170
Recommendations Closed in Acceptable Status	53
Recommendations Closed in Unacceptable Status	12
Major Reports and Products Adopted by the Board	
Major Reports	5
Summary Reports	1
Accident Briefs	10
Regional Accident Reports	1,292
Accident Launches	
Major Accident Launches	1
Regional Accident Launches	183
International Accident Launches	9

AVIATION SAFETY

Completed Major Aviation Investigations

Ongoing Major Aviation Investigations

International Aviation Accident Investigations

Public Hearings, Forums, and Symposiums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Highway Safety

Office Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center



Completed Major Aviation Investigations

Loss of Control on Approach, Colgan Air, Inc., in Clarence Center, New York (50 fatalities)



On February 12, 2009, a Colgan Air, Inc., Bombardier DHC-8-400, N200WQ, operating as Continental Connection flight 3407, was on an instrument approach to Buffalo-Niagara International Airport, Buffalo, New York, when it crashed into a residence in Clarence Center, New York, about 5 nautical miles northeast

of the airport. The 2 pilots, 2 flight attendants, and 45 passengers aboard the airplane were killed, one person on the ground was killed, and the airplane was destroyed by impact forces and a postcrash fire. The flight was operating under the provisions of 14 *Code of Federal Regulations* (CFR) Part 121. Night visual meteorological conditions prevailed at the time of the accident.

The NTSB determined that the probable cause of this accident was the captain's inappropriate response to the activation of the stick shaker, which led to an aerodynamic stall from which the airplane did not recover. Contributing to the accident were (1) the flight crew's failure to monitor airspeed in relation to the rising position of the low speed cue, (2) the flight crew's failure to adhere to sterile cockpit procedures, (3) the captain's failure to effectively manage the flight, and (4) Colgan Air's inadequate procedures for airspeed selection and management during approaches in icing conditions.

The safety issues discussed in this report focus on strategies to prevent flight crew monitoring failures, pilot professionalism, fatigue, remedial training, pilot training records, airspeed selection procedures, stall training, FAA oversight, flight operational quality assurance programs, use of personal portable electronic devices on the flight deck, the FAA's use of safety alerts for operators to transmit safety-critical information, and weather information provided to pilots. Safety recommendations concerning these issues are addressed to the FAA.

Safety Recommendations Issued: As a result of its investigation, the NTSB issued 25 new recommendations and reiterated 3 recommendations to the FAA. The NTSB also reclassified five recommendations to the FAA.

Completed Major Aviation Investigations

Ongoing Major Aviation Investigations

International Aviation Accident Investigations

Public Hearings, Forums, and Symposiums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Runway Overrun during Rejected Takeoff in Columbia, South Carolina (4 fatalities, 2 injured)

On September 19, 2008, a Bombardier Learjet Model 60, N999LJ, owned by Inter Travel and Services, Inc., and operated by Global Exec Aviation, overran runway 11 during a rejected takeoff at Columbia Metropolitan Airport, Columbia, South Carolina. The captain, the first officer, and two passengers were killed; two other passengers were seriously injured. The nonscheduled domestic passenger flight to Van Nuys, California was operated under 14 CFR Part 135. Visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed.



The NTSB determined that the probable cause of this accident was the operator's inadequate maintenance of the airplane's tires, which resulted in multiple tire failures during takeoff roll from severe tire underinflation, and the captain's execution of a rejected takeoff after V1, which was inconsistent with her training and standard operating procedures.

Safety Recommendations Issued: As a result of its investigation, the NTSB issued 20 new recommendations to the FAA. Six of the 20 recommendations were previously issued and classified in this report.

Loss of Thrust in Both Engines, US Airways Flight 1549 Airbus in Weehawken, New Jersey (5 injured)

On January 15, 2009, US Airways flight 1549, an Airbus Industrie A320-214, N106US, experienced an almost complete loss of thrust in both engines after encountering a flock of birds and was subsequently ditched on the Hudson River about 8.5 miles from LaGuardia Airport (LGA), New York City, New York.



AVIATION SAFETY

Completed Major Aviation Investigations

Ongoing Major Aviation Investigations

International Aviation Accident Investigations

Public Hearings, Forums, and Symposia

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Highway Safety

Office Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center



The flight, which was en route to Charlotte Douglas International Airport, Charlotte, North Carolina, had departed LGA about 2 minutes before the in-flight event occurred. The 150 passengers, including a lap-held child, and 5 crewmembers evacuated the airplane via the forward and overwing exits. One flight attendant and four passengers were seriously injured, and the airplane was substantially damaged. The scheduled, domestic passenger flight was operating under the provisions of 14 CFR Part 121 on an instrument flight rules flight plan. Visual meteorological conditions prevailed at the time of the accident.

The National Transportation Safety Board determined that the probable cause of this accident was the ingestion of large birds into each engine, which resulted in an almost total loss of thrust in both engines and the subsequent ditching on the Hudson River. Contributing to the fuselage damage and resulting unavailability of the aft slide/rafts were (1) the FAA's approval of ditching certification without determining whether pilots could attain the ditching parameters without engine thrust, (2) the lack of industry flight crew training and guidance on ditching techniques, and (3) the captain's resulting difficulty maintaining his intended airspeed on final approach due to the task saturation that resulted from the emergency situation.

Contributing to the survivability of the accident was (1) the decision-making of the flight crewmembers and their crew resource management during the accident sequence; (2) the fortuitous use of an airplane that was equipped for an extended overwater flight, including the availability of the forward slide/rafts, even though it was not required to be so equipped; (3) the performance of the cabin crewmembers while expediting the evacuation of the airplane; and (4) the proximity of the emergency responders to the accident site and their immediate and appropriate response to the accident.

The safety issues discussed in this report relate to the following: in-flight engine diagnostics, engine bird-ingestion certification testing, emergency and abnormal checklist design, dual-engine failure and ditching training, training on the effects of flight envelope limitations on airplane response to pilot inputs, validation of operational procedures and requirements for airplane ditching certification, and wildlife hazard mitigation. The report also discusses survival-related issues, including passenger brace positions; slide/raft stowage; passenger immersion protection; life line usage; life vest stowage, retrieval, and donning; preflight safety briefings; and passenger education.

Safety Recommendations Issued: As a result of its investigation, the NTSB issued 26 new safety recommendations to the FAA (one issued before the report), 1 to the U.S. Department of Agriculture, and 8 to the European Aviation Safety Agency.

Completed Major Aviation Investigations

Ongoing Major Aviation Investigations

International Aviation Accident Investigations

Public Hearings, Forums, and Symposiums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Runway Side Excursion During Attempted Takeoff in Denver, Colorado (47 injured)

On December 20, 2008, Continental Airlines flight 1404, a Boeing 737-500, N18611, departed the left side of runway 34R during takeoff from Denver International Airport (DEN), Denver, Colorado. A postcrash fire ensued. The captain and 5 of the 110 passengers were seriously injured; the first



officer, 2 cabin crewmembers, and 38 passengers received minor injuries; and 1 cabin crewmember and 67 passengers (3 of whom were lap-held children) were uninjured. The airplane was substantially damaged. The scheduled, domestic passenger flight, operated under the provisions of 14 CFR Part 121, was departing DEN and was destined for George Bush Intercontinental Airport, Houston, Texas. At the time of the accident, visual meteorological conditions prevailed, with strong and gusty winds out of the west. The flight operated on an instrument flight rules flight plan.

The NTSB determined that the probable cause of this accident was the captain's cessation of rudder input, which was needed to maintain directional control of the airplane, about 4 seconds before the excursion, when the airplane encountered a strong and gusty crosswind that exceeded the captain's training and experience.

Contributing to the accident were the following factors: (1) an air traffic control system that did not require or facilitate the dissemination of key, available wind information to the air traffic controllers and pilots, and (2) inadequate crosswind training in the airline industry due to deficient simulator wind gust modeling.

The safety issues discussed in this report include the pilots' actions, training, and experience; air traffic controllers' obtaining and disseminating wind information; runway selection and use; crosswind training; simulator modeling; crosswind guidelines and limitations; certification and inspection of crew seats; and galley latches.

Safety Recommendations Issued: As a result of its investigation, the NTSB issued 14 new safety recommendations to the FAA.

AVIATION SAFETY

Completed Major Aviation Investigations

Ongoing Major Aviation Investigations

International Aviation Accident Investigations

Public Hearings, Forums, and Symposiums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Highway Safety

Office Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center



Midair Collision over Hudson River near Hoboken, New Jersey (9 fatalities)



On August 8, 2009, a Piper PA-32R-300 airplane, N71MC, and a Eurocopter AS350BA helicopter, N401LH, operated by Liberty Helicopters, collided over the Hudson River near Hoboken, New Jersey. The pilot and two passengers aboard the airplane and the pilot and five passengers aboard the helicopter

were killed, and both aircraft received substantial damage from the impact. The airplane flight was operating under the provisions of 14 CFR Part 91, and the helicopter flight was operating under the provisions of 14 CFR Parts 135 and 136. No flight plans were filed or were required for either flight, and visual meteorological conditions prevailed at the time of the accident.

The NTSB determined that the probable cause of this accident was (1) the inherent limitations of the see-and-avoid concept, which made it difficult for the airplane pilot to see the helicopter until the final seconds before the collision, and (2) the Teterboro Airport local controller's nonpertinent telephone conversation, which distracted him from his air traffic control (ATC) duties, including correcting the airplane pilot's readback of the Newark Liberty International Airport (EWR) tower frequency and the timely transfer of communications for the accident airplane to the EWR tower. Contributing to this accident were (1) both pilots' ineffective use of available electronic traffic information to maintain awareness of nearby aircraft, (2) inadequate FAA procedures for transfer of communications among ATC facilities near the Hudson River Class B exclusion area, and (3) FAA regulations that did not provide adequate vertical separation for aircraft operating in the Hudson River Class B exclusion area.

Previous safety recommendations issued to the FAA addressed standard operating procedures for the Hudson River Class B exclusion area, ATC performance deficiencies, the designation of a special flight rules area (SFRA) for the Hudson River Class B exclusion area and surrounding areas, and standard operating procedures within, and training for, SFRAs. The safety issues discussed in this report address changes within the recently designated SFRA surrounding the Hudson River corridor, vertical separation among aircraft operating in the Hudson River SFRA, the see-and-avoid concept, and helicopter electronic traffic advisory systems.

Safety Recommendations Issued: As a result of its investigation, the NTSB issued 10 new safety recommendations to the FAA (5 of the 10 were issued before the report). The NTSB also reclassified four previously issued recommendations to the FAA.

Completed Major Aviation Investigations

Ongoing Major Aviation Investigations

International Aviation Accident Investigations

Public Hearings, Forums, and Symposiums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Crash during takeoff of Firefighting Helicopter in Weaverville, California (9 fatalities, 4 injured)

On August 5, 2008, a Sikorsky S-61N helicopter, N612AZ, impacted trees and terrain during the initial climb after takeoff from Helispot 44 (H-44), located at an elevation of about 6,000 feet in mountainous terrain near Weaverville, California.

The pilot-in-command, the safety crewmember, and seven firefighters were fatally injured; the

copilot and three firefighters were seriously injured. Impact forces and a postcrash fire destroyed the helicopter, which was being operated by the U.S. Forest Service (USFS) as a public flight to transport firefighters from H-44 to another helispot. The USFS had contracted with Carson Helicopters, Inc. (CHI), of Grants Pass, Oregon, for the services of the helicopter, which was registered to CHI and leased to Carson Helicopter Services, Inc., of Grants Pass. Visual meteorological conditions prevailed at the time of the accident, and a company visual flight rules flight plan had been filed.



The NTSB determined that the probable causes of this accident were the following actions by Carson Helicopters: (1) the intentional understatement of the helicopter's empty weight, (2) the alteration of the power available chart to exaggerate the helicopter's lift capability, and (3) the practice of using unapproved above-minimum specification torque in performance calculations that, collectively, resulted in the pilots' relying on performance calculations that significantly overestimated the helicopter's load-carrying capacity and did not provide an adequate performance margin for a successful takeoff, and (4) insufficient oversight by the USFS and the FAA.

Contributing to the accident was the failure of the flight crewmembers to address the fact that the helicopter had approached its maximum performance capability on their two prior departures from the accident site because they were accustomed to operating at the limit of the helicopter's performance.

Contributing to the fatalities were the immediate, intense fire that resulted from the spillage of fuel upon impact from the fuel tanks that were not crash resistant, the separation from the floor of the cabin seats that were not crash resistant, and the use of an inappropriate release mechanism on the cabin seat restraints.

The safety issues discussed in this report involve the accuracy of hover performance charts, USFS and FAA oversight, flight crew performance, accident survivability, weather

AVIATION SAFETY

Completed Major Aviation Investigations

Ongoing Major Aviation Investigations

International Aviation Accident Investigations

Public Hearings, Forums, and Symposiums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Highway Safety

Office Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center



observations at helispots, fuel contamination, flight recorder requirements, and certification of seat supplemental type certificates.

Safety Recommendations Issued: As a result of its investigation, the NTSB issued 11 new recommendations to the FAA and 10 to the U.S. Forest Service. The NTSB also reiterated one recommendation to the FAA.

Ongoing Major Aviation Investigations

Hawker Beechcraft BAE 125-800A landing accident in Owatonna, Minnesota, July 31, 2008

Empire Airlines Aerospatale ATR-42 accident in Lubbock, Texas, January 27, 2009

Pilatus PC-12 accident in Butte, Montana, March 22, 2009

New Mexico State Police crash, near Santa Fe, New Mexico, June 9, 2009

International Aviation Accident Investigations

The NTSB participates in the investigation of aviation accidents and serious incidents outside the U.S. in accordance with the Chicago Convention of ICAO and the Standards and Recommended Practices (SARPS) provided in Annex 13 to the Convention.

If an accident or serious incident occurs in a foreign state involving a civil aircraft of U.S. registry, a U.S. operator, or an aircraft of U.S. design or U.S. manufacture, and the foreign state is a signatory to the ICAO Convention, that state is responsible for the investigation. In accord with the ICAO Annex 13 SARPS, upon receipt of ICAO notification of the accident or serious incident, the NTSB designates a U.S. accredited representative and appoints advisors to carry out the obligations, receive the entitlements, provide consultation, and receive safety recommendations from the state of occurrence.

If an accident or serious incident occurs in a foreign state not bound by the provisions of Annex 13 to the ICAO Convention, if a foreign state delegates all or part of an investigation by mutual consent to the NTSB, or if the accident or serious incident involves a public aircraft, the conduct of the investigation shall be in consonance with any agreement entered into between the United States and the foreign state.

The following are ongoing international investigations:

Crash of an Ethiopian Airlines B-737-800 off the coast of Lebanon, January 25, 2010

The NTSB assisted the government of Lebanon in its investigation of the accident involving an Ethiopian Airlines B-737-800 that crashed into the Mediterranean Sea shortly after takeoff.

Completed Major Aviation Investigations

Ongoing Major Aviation Investigations

International Aviation Accident Investigations

Public Hearings Forums, and Symposiums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Crash of Africa Airways Airbus A330- 200, Tripoli, Libya, May 12, 2010

The NTSB assisted the government of Libya in its investigation of an accident involving an Africa Airways Airbus A330- 200 that crashed on approach to Tripoli airport in Tripoli, Libya.

Runway Overrun at Mangalore International Airport, Mangalore, India, May 21, 2010

The NTSB assisted the government of India with its investigation involving an Air India Express B-737-800 that overran the runway during landing at Mangalore International Airport.

Crash of Cessna 208B at Quintana Roo, Mexico, June 13, 2010

The NTSB assisted the Government of Mexico with its investigation of an accident involving a Cessna 208B that crashed during climb out from the Felipe Carrillo Puerto airstrip, Quintana Roo, Mexico.

Runway Overrun while landing at Ottawa International Airport, Ottawa, Canada, June 16, 2010

The NTSB assisted the Transportation Safety Board of Canada with its investigation involving a Trans States Airlines Embraer-145 regional jet operated as United Express flight that overran runway 25 while landing at Ottawa International Airport.

Crash of Hawker Beechcraft Corporation King Air B-100, Quebec city, Quebec, Canada, June 23, 2010

The NTSB assisted the government of Canada in its investigation involving a Hawker Beechcraft Corporation King Air B-100 that crashed near Quebec City, Quebec, Canada, shortly after takeoff.

Crash of cargo airplane at King Khalid International Airport, Riyadh, Saudi Arabia, July 27, 2010

The NTSB assisted the government of Saudi Arabia with its investigation involving a Lufthansa MD-11 freighter that crashed while landing at the King Khalid International Airport in Riyadh.

Crash of Aires Airlines B-737-700 at the San Andreas Island airport, Columbia, August 16, 2010

The NTSB assisted the government of Colombia with its investigation involving an Aires B-737-700 that crashed on approach to the San Andres Island Airport on San Andres Island, Columbia.



AVIATION SAFETY

Completed Major Aviation Investigations

Ongoing Major Aviation Investigations

International Aviation Accident Investigations

Public Hearings, Forums, and Symposiums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Highway Safety

Office Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center



Crash of United Parcel Service (UPS)–operated plane near International Airport in the emirate of Dubai, September 3, 2010

The NTSB assisted the government of United Arab Emirates in its investigation of the crash of a United Parcel Service–operated cargo plane, a Boeing 747-400.

Public Hearings, Forums, and Symposiums

Public Forum on Professionalism in Aviation: Ensuring Excellence in Pilot and Air Traffic Controller Performance

On May 18-20, 2010, the NTSB held an en-banc forum to discuss professionalism in Aviation. This safety forum addressed methods for ensuring excellence in pilot and air traffic controller performance. The event was held to raise awareness by promoting an open discussion between the NTSB and invited panelists drawn from industry, labor, academia, and government on the importance of developing and reinforcing professionalism for aviation safety and the identification of best practices in this subject area. The forum also gathered information on the screening, selection, and training of pilots and controllers and on methods to reinforce professionalism and excellence.

Symposium held on Airline Code-Sharing Arrangements and Their Role in Aviation Safety

On October 26-27, 2010, the NTSB held a symposium on the role that airline code-sharing arrangements play in aviation safety. Code-sharing is a marketing arrangement in which one airline places its designator code on a flight operated by another airline, then sells and issues tickets for that flight.

The symposium was organized to elicit information on the following three issue areas: (1) structures, practices, and oversight of domestic and international code-sharing arrangements, (2) best practices regarding the sharing of safety information between airlines and their code-sharing partners, and (3) the role that a major airline would have in the family disaster assistance response for an accident involving a code-sharing partner. Presentations from major and regional airlines, industry organizations, and representatives of the traveling public were given at the symposium.

Significant Achievements

- The Office of Aviation Safety completed the Colgan Airlines accident investigation in less than 1 year, the first time in over 15 years that a major investigation with a public hearing has been completed in such a short time.
- The office held two significant events, a Public Forum on Professionalism in Aviation and a Symposium on Airline Code-Sharing Arrangements. Both events addressed issues identified in the Colgan Airlines accident investigation.

Completed Major Aviation Investigations

Ongoing Major Aviation Investigations

International Aviation Accident Investigations

Public Hearings, Forums, and Symposiums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

- The office completed its investigation of the nine-fatal midair collision between a sightseeing helicopter and a private airplane over the Hudson River in New York City in 13 months.
- Following the investigation of several General Electric Company CF6 turbofan engine failures, the NTSB issued urgent safety recommendations that the FAA require a redesign of the low pressure turbine stage 3 disks so that they will not fail when exposed to high pressure rotor unbalance forces.
- Within 5 months of the accident that had occurred in Aleknagik, Alaska, in which five people were fatally injured (including former U.S. Senator Ted Stevens), the NTSB issued a series of recommendations to require a detailed inspection of all emergency locator transmitters installed in general aviation aircraft.


 AVIATION SAFETY

Completed Major
Aviation Investigations

Ongoing Major Aviation
Investigations

International Aviation
Accident Investigations

Public Hearings
Forums, and Symposiums

Significant Achievements

 TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Highway Safety

Office Marine Safety

Office of Railroad, Pipeline
HazMat Investigations

Office of Research
and Engineering

Office of Communications

Office of Administrative
Law Judges

Training Center

Office of Highway Safety

Office of Highway Safety 2010 at a Glance	
Recommendations	
Recommendations Issued	18
Recommendations Closed in Acceptable Status	41
Recommendations Closed in Unacceptable Status	10
Major Reports and Products Adopted by the Board	
Major Reports	2
Special Investigation Reports	1
Accident Briefs	3
Accident Launches	
Major Accident Launches	3
Field Investigation Accident Launches	2

The Office of Highway Safety conducts thorough, comprehensive, independent, and objective investigations of highway accidents to identify root causes and proposes recommendations for the Board's approval to prevent future accidents.

The NTSB is required to investigate highway accidents, including railroad grade crossing accidents that the Board selects in cooperation with a state. With 7 million highway accidents occurring per year in the United States (19,000 per day), the Office of Highway Safety must be highly selective in choosing for

investigation those accidents that will identify nationwide highway safety issues.

In cooperation with other offices, the office works to formulate recommendations to prevent the recurrence of similar accidents to otherwise improve highway safety. Because of the unique nature and thoroughness of the NTSB's accident investigation process, the staff continues to discover emerging safety issues each year. In 2010, the office addressed and made safety recommendations concerning the need for such new technologies as lane departure warning systems and electronic stability control systems on commercial vehicles, electronic data recorders and video event recorders to improve driver behavior, and fatigue management programs for motor carriers, among other issues. By raising these concerns, the Board has successfully changed the agenda of regulatory agencies and the transportation industry to focus their attention on them.

In addition, this office and the Office of Research and Engineering may conduct safety studies or special investigations regarding specific highway safety issues. These safety studies or investigations can result in recommendations to Federal and state agencies and to the highway industry.

The Office of Highway Safety is organized into the Investigations Division and the Report Development Division. Office staff are located in five regional offices to facilitate rapid response to accidents.



Completed Major Highway Investigations

Ongoing Major Highway Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Completed Major Highway Investigations

Medium-Sized Bus Loss of Control on Straight Highway and Rollover near Dolan Springs, Arizona (7 fatalities, 10 injured)

On Friday, January 30, 2009, about 4:06 p.m., a 2007 Chevrolet/Starcraft 29-passenger medium-sized bus, operated by DW Tour and Charter and occupied by the driver and 16 passengers, was traveling northbound in the right lane of U.S. Highway 93, a four-lane divided highway, near Dolan Springs, Arizona.



The bus was on a return trip from Grand Canyon West to Las Vegas, Nevada, after a day-long tour. As the bus approached milepost 28 at an estimated speed of 70 mph, it moved to the left and out of its lane of travel. The driver steered sharply back to the right, crossing both northbound lanes and entering the right shoulder. The driver subsequently overcorrected to the left, causing the bus to yaw and cross both northbound lanes. The bus then entered the depressed earthen median and overturned 1.25 times before coming to rest on its right side across both southbound lanes. During the rollover sequence, 15 of the 17 occupants (including the driver) were fully or partially ejected. Seven passengers were killed, and nine passengers and the driver received injuries ranging from minor to serious. At the time of the accident, the roadway was dry and the weather was clear.

The NTSB determined that the probable cause of this accident was the bus driver's inadvertent drift from the driving lane due to distraction caused by his manipulation of the driver's side door and subsequent abrupt steering maneuver, which led to his losing directional control of the vehicle. Contributing to the severity of the accident was the lack of both occupant protection and advanced window glazing standards for medium-sized buses.

The safety issues identified in this investigation include (1) the failure of the bus driver to attend to the road ahead and maintain control of his vehicle, (2) the need for regulatory definitions and classifications for bus body types, (3) limitations of medium-sized buses in retaining and protecting passengers during rollovers, (4) the need for electronic stability control technology to assist commercial drivers in maintaining control of their vehicles, and (5) the need for event data recording in commercial vehicles to aid in accident reconstruction and safety research.

Safety Recommendations Issued: As a result of its investigation, the NTSB issued seven new recommendations to NHTSA. Five previously issued recommendations were classified in this report, including two to the U.S. DOT and three to NHTSA.



Completed Major Highway Investigations

Ongoing Major Highway Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Truck-Tractor Semitrailer Rear-End Collision into Stopped Passenger Vehicles near Miami, Oklahoma (10 fatalities, 6 injured)



On June 26, 2009, a multivehicle accident occurred on Interstate 44 near Miami, Oklahoma, shortly after a minor accident in the same vicinity had occurred. The minor incident took place about 1:13 p.m., when a 2001 Ford Focus traveling eastbound drifted out of its lane, sideswiped a truck-tractor semitrailer parked

on the right shoulder, then crossed over the roadway, struck the center median barrier, and came to rest in the roadway, blocking the left eastbound lane. This crash caused a blockage in the left eastbound lane and created a traffic queue that extended back from the initial accident site approximately 1,500 feet. At approximately 1:19 p.m., a Volvo truck-tractor combination unit was traveling in the right lane at about 69 mph (the posted limit was 75 mph). The driver did not react to the traffic queue and collided with the rear of a sport utility vehicle (SUV). The Volvo truck continued forward, struck, overrode three additional vehicles, and pushed the third vehicle into the rear of a livestock trailer being towed by the fourth vehicle, a pickup truck, which was pushed forward and which struck a fifth vehicle. The Volvo truck came to rest approximately 270 feet past the point where it had struck the initial SUV. As a result, 10 passenger vehicle occupants died, 5 received minor-to-serious injuries, and the driver of the Volvo combination unit was seriously injured.

The NTSB determined that the probable cause of this accident was the Volvo truck driver's fatigue, caused by the combined effects of acute sleep loss, circadian disruption associated with his shift work schedule, and mild sleep apnea, which resulted in the driver's failure to react to slowing and stopped traffic ahead by applying the brakes or performing any evasive maneuver to avoid colliding with the traffic queue. Contributing to the severity of the accident were the Volvo truck-tractor combination unit's high impact speed and its structural incompatibility with the passenger vehicles.

The safety issues identified in this report include (1) the accident truck driver's fatigue, (2) the need for updated and comprehensive fatigue education materials and fatigue management programs, (3) the significance of heavy vehicle aggressivity in collisions between vehicles of dissimilar height and weight, (4) the lack of Federal requirements for heavy commercial vehicle event data recorders and video event recorders, and (5) the lack of Federal requirements for forward collision warning systems.

Safety Recommendations Issued: As a result of its investigation, the NTSB issued four new recommendations to the Federal Motor Carrier Safety Administration (FMCSA), four



Completed Major Highway Investigations

Ongoing Major Highway Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

to NHTSA, and one to Associated Wholesale Grocers, Inc. The NTSB also reiterated and reclassified one recommendation to the U.S. Department of Energy and two to NHTSA, reiterated two recommendations to FMCSA and one to NHTSA, and reclassified one recommendation to NHTSA.

Ongoing Major Highway Investigations

Tanker rollover while negotiating a curve in the roadway in Indianapolis, Indiana, October 22, 2009

Tractor semi-trailer median crossover and head-on collision with a 15-passenger van in Munfordville, Kentucky, March 26, 2010

Truck tractor struck from behind by a pickup truck and two school buses in Gray Summit, Missouri, August 5, 2010

Public Hearings and Forums

Public Hearing on Rollover and Fire of a Truck-Tractor in Combination with a Cargo Tank Semitrailer Carrying Propane in Indianapolis, Indiana

On August 3-4, 2010, the NTSB held a forum on the rollover and fire of a cargo tank vehicle that occurred on Interstate 69 Southbound, Indianapolis, Indiana, on Thursday, October 22, 2009. Testimony was given on (1) the vehicle design changes that may be implemented to reduce the likelihood of rollover accidents,



(2) evaluation of the capability and limitations of electronic stability control systems for preventing rollover accidents, (3) the role of driver training and testing for preventing rollover accidents, (4) roadway factors that could contribute to vehicle instability and signage that could be implemented for preventing rollover accidents, (5) initiatives that could be taken to protect highway bridge piers from vehicle impacts, and (6) crashworthiness standards for cargo tanks transporting high-risk hazardous materials.

Public Forum on Safety, Mobility, and Aging Drivers

On November 9-10, 2010, the NTSB held a forum on safety issues related to the aging driver population. Although a number of organizations have focused on the safety and



Completed Major Highway Investigations

Ongoing Major Highway Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

mobility of aging drivers in recent years, this forum marked the first time that the NTSB has analyzed the issue.

The forum identified safety issues related to aging drivers by identifying data needs, potential technologies, and possible strategies to prevent accidents and to reduce the number of injuries and fatalities within this growing segment of the nation's drivers. The panel topics included the safety risks of aging drivers, occupant protection for aging drivers and passengers, highway and vehicle design improvements, assessing driver performance, refresher training, driver rehabilitation, and state programs and practices.



Significant Achievements

- In February 2010, the NTSB was able to close one of its longstanding Most Wanted List recommendations on school bus safety as a result of action taken by NHTSA. That 1999 recommendation asked NHTSA to develop performance standards for school bus occupant protection systems that account for frontal impact collisions, side impact collisions, rear impact collisions, and rollovers. Even though NHTSA's response only applied to frontal impact and rear impact collisions and failed to require such protection in all newly manufactured buses, the final rule constituted an alternate action that will provide some additional safety improvement for school buses. The NTSB will continue to monitor school bus accidents and evaluate whether future recommendations are warranted.
- In response to NTSB recommendations, the FHWA, FMCSA, and NHTSA have issued a number of very important NPRM's:
 - FHWA – Proposed establishing National Tunnel Inspection Standards that would serve as the basis for minimum inspection standards for all highway tunnels involving Federal funds. An action that resulted from recommendations out of the Boston “Big Dig” tunnel ceiling collapse.
 - FMCSA—Proposed prohibiting commercial drivers from using hand-held cell phones while driving. A Most Wanted List item that the Board would like to see apply to both hand-held and hands-free devices because of the cognitive distraction associated with their use.
 - NHTSA—Proposed requiring lap/shoulder belts on new motorcoaches to improve motorcoach occupant crash protection. A Most Wanted item that has been a high priority issue for the Board since 2000. The NTSB's comments on the NPRM encouraged NHTSA to propose standards for motorcoach roof crush performance standards to maintain adequate survivable space for occupants in rollover crashes.

Completed Major Highway Investigations

Ongoing Major Highway Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

- The NTSB held two significant events, a public hearing on the rollover and fire of a truck-tractor in Indianapolis, Indiana and a public forum on Safety, Mobility, and Aging Drivers. The forum was the first time the NTSB analyzed this issue.
- Because of the unique nature and thoroughness of the NTSB's accident investigation process, the staff continues to discover new safety issues year after year. For example, this year the staff successfully identified five new issues, listed below, that were either unrecognized by others or underappreciated for their safety benefit. By raising these issues, the Board has successfully changed the agenda of regulatory agencies and the transportation industry to focus on them:
 - Lane Departure Warning Systems - NHTSA - Dolan Springs, Arizona
 - Electronic Stability Control Systems - NHTSA - Dolan Springs, Arizona
 - Electronic Data Recorders - NHTSA - Dolan Springs, Arizona
 - Fatigue Management Programs - FMCSA - Miami, Oklahoma
 - Video Event Recorders for all Motor Carriers - FMCSA - Miami, Oklahoma



Completed Major Highway Investigations

Ongoing Major Highway Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Office of Marine Safety

Office of Marine Safety 2010 at a Glance	
Recommendations	
Recommendations Issued	7
Recommendations Closed in Acceptable Status	8
Recommendations Closed in Unacceptable Status	0
Major Reports and Products Adopted by the Board	
Major Reports	1
Accident Briefs	2
Accident Launches	
Major Accident Launches	2
Field Investigation Accident Launches	2

Under regulations prescribed jointly by the NTSB and the USCG, the Office of Marine Safety investigates major marine casualties (except casualties involving only public vessels) occurring on or under the navigable waters, internal waters, or the territorial sea of the U.S., or involving a vessel of the U.S. worldwide. A major marine casualty involves the loss of six or more lives; the loss of a self-propelled vessel of over 100 gross registered tons; property damage over \$500,000;

or a serious threat to life, property, or the environment from hazardous materials. The Office of Marine Safety also investigates certain accidents involving public and nonpublic vessels; accidents that involve significant issues related to USCG marine safety functions; accidents that are catastrophic; and accidents that indicate recurring safety issues in areas where the states have primary jurisdiction, such as accidents involving recreational boats or commercial vessels that operate solely in state waters.

In a Memorandum of Understanding (MOU) signed December 18, 2008, the NTSB and the USCG agreed that when both agencies investigate a marine casualty, one agency will serve as the lead Federal agency for the investigation. The NTSB chairman and the USCG commandant, or their designees, will determine which agency will lead the investigation. The NTSB may lead the investigation of “significant marine casualties” defined in the 2008 MOU (loss of 3 or more lives on a commercial passenger vessel; loss of life or serious injury to 12 or more persons on any commercial vessel; loss of a mechanically propelled commercial vessel of 1,600 or more gross tons; a marine casualty with loss of life involving a highway, bridge, railroad, or other shoreside structure; serious threat, as determined by the NTSB chairman and the USCG commandant, or their designees, to life, property, or the environment by hazardous materials; and significant safety issues, as determined by the NTSB chairman and the USCG commandant, or their designees, relating to USCG marine safety functions).

A staff of professional investigators at the NTSB’s Washington, DC, headquarters includes USCG–licensed master mariners and marine engineers, and marine inspectors, naval architects, and human factors and survival factors specialists. The Office of Marine Safety and the Office of Research and Engineering may also conduct safety studies of specific marine safety issues. These safety studies generally result in recommendations to Federal and state agencies and to the maritime industry.



MARINE SAFETY

Completed Marine Investigations

Ongoing Major Marine Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Given the international nature of the marine transportation system and the number of foreign-registered cruise and cargo ships operating from U.S. ports, the NTSB's investigation of accidents involving both domestic and foreign-registered vessels promotes marine safety worldwide. The NTSB investigates marine accidents involving foreign-registered vessels operating in U.S. waters and has investigated marine accidents involving U.S.-registered ships as far away as the Persian Gulf and the South China Sea. In 2010, the NTSB did not investigate any overseas accidents but did assist, at the request of the USCG, in the investigation of an engineroom fire and subsequent loss of power on the Panama-registered cruise ship *Carnival Splendor* in international waters off Mexico. The NTSB also cooperates with foreign marine accident investigation authorities under standards established by the International Maritime Organization (IMO) and participates in the U.S. delegations to several IMO committees. As international standards are developed, NTSB staff informs the IMO of important safety-related issues arising from NTSB investigations and provides expertise to assist the U.S. delegations. Participation in IMO committees enhances the NTSB's marine safety investigation capabilities by (1) contributing to the development of safety standards based on lessons learned from accident investigations; (2) keeping staff abreast of international marine developments; and (3) building good working relationships with technical experts from the USCG, the U.S. maritime industry and associations, and foreign governments involved in marine safety and marine accident investigations.

The Office of Marine Safety conducts activities through three investigation divisions: Marine Investigations A, Marine Investigations B, and Investigative Quality Management.

Completed Marine Investigations

Allision of Recreational Boat with Push Boat Little Man II, Intracoastal Waterway near Ponte Vedra Beach, Florida (5 fatalities, 9 injured)

On Sunday, April 12, 2009, a 22.5-foot-long recreational boat (FL 8258 MN) carrying 14 persons allided with the *Little Man II*, a 25.9-foot-long push boat (a type of towboat) moored near Ponte Vedra Beach in St. Johns County, Florida. An hour earlier, the recreational boat had departed



a marina/restaurant in St. Augustine, Florida, and was northbound in the Intracoastal Waterway to a marina in Jacksonville Beach, Florida, a distance of about 30 miles, when it impacted the push boat. Five persons on the boat died at the accident scene. The remaining nine persons were injured, seven seriously.



MARINE SAFETY

Completed Marine Investigations

Ongoing Major Marine Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center



MARINE SAFETY

Completed Marine Investigations

Ongoing Major Marine Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

The NTSB determined that the probable cause of the allision of the recreational boat with the push boat *Little Man II* was the inattention of the boat operators, most likely the result of alcohol impairment on the part of the regular operator and inexperience on the part of the designated operator.

Safety Recommendations Issued: None

Fire On Board U.S. Small Passenger Vessel Fire Island Belle, Fair Harbor, New York (No fatalities or injuries)



On September 20, 2009, the 85-foot-long passenger ferry *Fire Island Belle*, which had been in service for 3 months at the time, experienced an engineroom fire in the Great South Bay between Long Island and Fire Island, New York. One hundred passengers, the vessel master, and two deckhands were on board. The ferry had

departed Ocean Beach, Fire Island, 10 minutes earlier, and was about 300 yards from the dock at Fair Harbor, Fire Island, when the fire broke out. No passengers or crewmembers were injured, and no pollution resulted from the accident. The cost of repairing the vessel was \$490,000. The USCG was the lead investigative agency in the accident. The NTSB provided assistance with fire investigation and metallurgical analysis.

The NTSB determined that the probable cause of the engine-room fire on the *Fire Island Belle* was the ignition of fuel that had leaked from a fatigue-fractured fitting on the center engine's secondary fuel filter, had sprayed onto the lagging around the port engine exhaust duct, and had seeped through a gap in the lagging onto the hot duct, where it caught fire.

Safety Recommendations Issued: None

Collision Between U.S. Passenger Ferry M/V Block Island and U.S. Coast Guard Cutter Morro Bay, Block Island Sound, Rhode Island (2 injuries)

On Wednesday, July 2, 2008, the 187-foot-long passenger and car ferry M/V *Block Island* collided with the 140-foot-long Coast Guard cutter *Morro Bay* in reduced visibility on Block Island Sound, about 4 nautical miles south of Point Judith, Rhode Island. The ferry, carrying 294 passengers, 8 crewmembers, 2 concession-stand employees, and 1 off-duty employee, had departed Point Judith about 25 minutes earlier and was traveling south, headed for Old Harbor on the eastern side of Block Island, Rhode Island. The cutter, carrying 21 personnel, had departed Naval Station Newport, Rhode Island, about 10:15 and was traveling west, headed for Coast Guard Station New London, Connecticut. As the vessels approached the

accident site, the visibility decreased due to fog; at the time of the collision, the crew on the *Morro Bay* estimated the visibility at about 500 yards. As a result of the accident, the *Block Island* ferry sustained about \$45,000 in damage and the *Morro Bay* about \$15,000. Two ferry passengers were treated for minor injuries and released the same day.

The NTSB determined that the probable cause of the collision between the ferry *Block Island* and the Coast Guard cutter *Morro Bay* was the failure of the bridge watch officers on both vessels to monitor their radars, sufficiently assess traffic, and compensate for limited visibility. Contributing to the accident was the failure of the bridge watch officers on both vessels to maintain a proper lookout and to sound appropriate fog signals.



Safety Recommendations Issued: As a result of its investigation, the NTSB issued three new recommendations to the USCG and one to the Interstate Navigation Company. The NTSB also reiterated one recommendation to the USCG.

Ongoing Major Marine Investigations

Sinking of Fishing Vessel *Katmai*, Bering Sea, West of Adak, Alaska, October 22, 2008

Sinking of Fishing Vessel *Lady Mary*, 65 Miles Southeast of Cape May, New Jersey, March 24, 2009

Collision between USCG Patrol Boat CG 25689 and Small Passenger Vessel *Thriller 09*, Charleston Harbor, South Carolina, December 5, 2009.

Collision between USCG Patrol Boat *CG 33118* and Sea Ray Recreational Vessel *CF 2607 PZ*, San Diego Harbor, California, December 20, 2009. (Although this and the previous investigation are ongoing, two safety recommendations were issued to the USCG in 2010. The NTSB was concerned about the potential for USCG crewmembers to be distracted by the use of cellular telephones and other wireless devices while engaged in vessel operations; the first of the two recommendations addressed this concern. The second recommendation was to alert the maritime industry and boating public of the increased risk to safety from distractions from the use of cellular telephones and other wireless devices while engaged in vessel operations. The NTSB believes that such activities present a safety risk that should be addressed by the USCG.)

MARINE SAFETY

Completed Marine Investigations

Ongoing Major Marine Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center



MARINE SAFETY

Completed Marine Investigations

Ongoing Major Marine Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Allision of Tankship *Eagle Otome* with Cargo Vessel *Gull Arrow* and Subsequent Collision with Barge *Kirby 30406*, pushed by Towboat *Dixie Vengeance*, Sabine-Neches Canal, Port Arthur, Texas, January 23, 2010.

Allision of Staten Island Ferry *Andrew J. Barberi* with St. George Ferry Terminal, Staten Island, New York, April 8, 2010.

Allision of Amphibious Passenger Vessel *DUWK 34* with Towing Vessel *Caribbean Sea* and Barge *The Resource*, Delaware River, Philadelphia, Pennsylvania, July 7, 2010.

Public Hearings and Forums

Public Forum on Fishing Vessel Safety

On October 13–14, 2010, the NTSB held a forum on fishing vessel safety, identifying safety issues in the commercial fishing industry from both industry and government perspectives and identifying strategies for preventing accidents and reducing the industry’s high rate of injuries and fatalities. The panel topics included problem identification and progress made in fishing vessel safety, vessel-related issues impacting safety, fisheries management practices and impacts on safety, lifesaving equipment, training of crewmembers, and perspectives of fishermen on safety.

Significant Achievements

- The NTSB issued four new recommendations and reiterated one recommendation to the USCG that the USCG require the carriage of voyage data recorders on new ferry vessels and simplified voyage data recorders on existing ferry vessels. This will enhance safety and casualty investigations activities and can also be used by vessel operators to monitor safety performance. The NTSB also recommended to the ferry operator to establish a safety management system for the fleet; this will improve safety and reliability on this fleet of ferry vessels.
- The NTSB issued an early recommendation to the Federal Communications Commission to require that 406-megahertz emergency position indicating radio beacons (EPIRB), which commercial vessels are required to carry, broadcast vessel global positioning system position data when activated. This recommendation was issued as a result of the NTSB’s participation in the USCG’s Marine Board of Investigation of the *Lady Mary* sinking. This EPIRB enhancement would enable immediate location of distressed vessels and, in many cases, would reduce the time for search-and-rescue assets to arrive on scene.
- The NTSB issued two safety recommendations to the USCG as a result of two ongoing investigations of accidents involving USCG patrol boats colliding with nonpublic vessels. In light of these two recent maritime accidents, the NTSB was concerned about the potential for crewmembers to be distracted by

the use of cellular telephones and other wireless devices while engaged in vessel operations. The NTSB believes that such distractions present a safety risk that should be addressed by the USCG.

- The NTSB held a forum on fishing vessel safety that identified (1) safety issues in the commercial fishing industry from both industry and government perspectives, (2) strategies for preventing accidents, and (3) strategies for reducing the industry's high rate of injuries and fatalities.
- The office provided technical assistance to the USCG in such areas as extracting data from voyage data recorders, metallurgical laboratory support, and analysis of towing harness equipment related to parasailing accidents. These activities helped determine failure mechanisms, material condition of equipment, and root causes of accidents, which can improve safety.



Completed Marine Investigations

Ongoing Major Marine Investigations

Public Hearings and Forums

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Office of Railroad, Pipeline, and Hazardous Materials Investigations

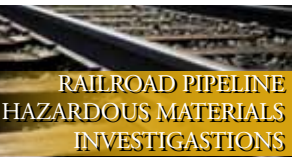
Office of Railroad, Pipeline, and Hazardous Materials Investigations 2010 at a Glance

Recommendations	
Recommendations Issued	
Railroad	25
Pipeline	7
Recommendations Closed in Acceptable Status	
Railroad	18
Pipeline	11
Recommendations Closed in Unacceptable Status	
Railroad	6
Major Reports and Products Adopted by the Board	
Major Railroad Reports	2
Hazardous Materials Accident Briefs	1
Pipeline Accident Briefs	1
Accident Launches	
Field Investigation Accident Launches	
Railroad	4
Pipeline	4
Hazardous Materials	2

The Office of Railroad, Pipeline, and Hazardous Materials Investigations investigates many railroad accidents, including freight train collisions and derailments, placing special emphasis on train accidents that involve the traveling public, such as passenger train and rapid rail transit accidents. The NTSB's criteria for investigating a railroad accident include fatalities or substantial damage. On the basis of the investigations conducted by this office, the NTSB issues 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.

The office is also required to investigate all pipeline accidents involving a fatality or substantial property damage and may investigate accidents of a recurring nature. Once notified of an accident, the NTSB dispatches to the site an investigator who takes charge of a team composed of investigative personnel from agencies such as the state public utility commission, local fire and police units, pipeline companies, and the U.S. DOT.

In addition, the office investigates selected accidents involving the release of hazardous materials in all modes of transportation, including fatal accidents or those causing major disruptions to a community. NTSB investigations focus especially on the effects of materials released in public areas, the emergency response by local authorities, and the adequacy of Federal standards for the transportation of hazardous materials. When the accident is the result of the transport of a hazardous material, the investigation focuses on the performance of the containers, the preparation for and handling of the material during transport, the health and safety hazards of the material, the markings and hazard communications for the shipments, and the effectiveness of the emergency response. The office also supports the investigation of accidents in other modes of transportation when the release of hazardous materials is involved.



Completed Major Railroad Pipeline, and Hazardous Materials Investigations

Ongoing Major Railroad, Pipeline, and Hazardous Materials Investigations

Public Hearings

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

The Office of Railroad, Pipeline, and Hazardous Materials Investigations has four divisions: Railroad Division, Pipeline and Hazardous Materials Division, Human Performance and Survival Factors Division, and Report Development Division.

Completed Major Railroad, Pipeline, and Hazardous Materials Investigations

Railroad Investigations

Collision of Metrolink Train 111 with Union Pacific Train in Chatsworth, California (25 fatalities, 102 injured)

On September 12, 2008, westbound Southern California Regional Rail Authority Metrolink train 111, consisting of one locomotive and three passenger cars, collided head on with eastbound Union Pacific Railroad freight train LOF65-12 near Chatsworth, California. The Metrolink train derailed its locomotive and lead



passenger car; the UP train derailed its 2 locomotives and 10 of its 17 cars. The force of the collision caused the locomotive of train 111 to telescope into the lead passenger coach by about 52 feet. The accident resulted in 25 fatalities, including the engineer of train 111. Emergency response agencies reported transporting 102 injured passengers to local hospitals. Damages were estimated to be in excess of \$12 million.

The NTSB determined that the probable cause was the failure of the Metrolink engineer to observe and appropriately respond to the red signal aspect at Control Point Topanga because he was engaged in prohibited use of a wireless device, specifically text messaging, which distracted him from his duties. Contributing to the accident was the lack of a positive train control system that would have stopped the Metrolink train short of the red signal and thus prevented the collision.

The safety issues identified during this accident investigation included (1) inadequate capability, because of the privacy offered by a locomotive operating compartment, for management to monitor crewmember adherence to operating rules such as those regarding the use of wireless devices or the presence of unauthorized persons in the operating compartment and (2) lack of a positive train control system on the Metrolink rail system.

RAILROAD PIPELINE HAZARDOUS MATERIALS INVESTIGATIONS

Completed Major
Railroad Pipeline, and
Hazardous Materials
Investigations

Ongoing Major Railroad,
Pipeline, and Hazardous
Materials Investigations

Public Hearings

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Research
and Engineering

Office of Communications

Office of Administrative
Law Judges

Training Center

**RAILROAD PIPELINE
HAZARDOUS MATERIALS
INVESTIGATIONS**

Completed Major
Railroad Pipeline, and
Hazardous Materials
Investigations

Ongoing Major Railroad,
Pipeline, and Hazardous
Materials Investigations

Public Hearings

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Research
and Engineering

Office of Communications

Office of Administrative
Law Judges

Training Center

Safety Recommendations Issued: As a result of its investigation, the NTSB issued two new recommendations and reclassified one previously issued recommendation to the Federal Railroad Administration (FRA).

Collision of Two Washington Metropolitan Area Transit Authority Metrorail Trains near Fort Totten Station, Washington, DC (9 fatalities, 52 injuries)



On June 22, 2009, inbound Washington Metropolitan Area Transit Authority (WMATA) Metrorail train 112 struck the rear of stopped inbound Metrorail train 214. The accident occurred on aboveground track on the Metrorail Red Line near the Fort Totten station in Washington, DC. The lead car of train 112

struck the rear car of train 214, causing the rear car of train 214 to telescope into the lead car of train 112, which resulted in a loss of occupant survival space in the lead car of about 63 feet (about 84 percent of its total length). Nine people aboard train 112, including the train operator, were killed. Emergency response agencies reported transporting 52 people to local hospitals. Damage to train equipment was estimated to be \$12 million.

The NTSB determined that the probable cause of the accident was (1) a failure of the track circuit modules, built by GRS/Alstom Signaling, Inc., which caused the automatic train control system to lose detection of train 214 (the struck train) and thus transmit speed commands to train 112 (the striking train) up to the point of impact and (2) WMATA's failure to ensure that the enhanced track circuit verification test (developed following the 2005 Rosslyn near-collisions) was institutionalized and used systemwide, which would have identified the faulty track circuit before the accident.

Contributing to the accident were (1) WMATA's lack of a safety culture, (2) WMATA's failure to effectively maintain and monitor the performance of its automatic train control system, (3) GRS/Alstom Signaling, Inc.'s failure to provide a maintenance plan to detect spurious signals that could cause its track circuit modules to malfunction, (4) ineffective safety oversight by the WMATA Board of Directors, (5) the Tri-State Oversight Committee's ineffective oversight and lack of safety oversight authority, and (6) the Federal Transit Administration's lack of statutory authority to provide Federal safety oversight.

Contributing to the severity of passenger injuries and the number of fatalities was WMATA's failure to replace or retrofit the 1000-series railcars after these cars were shown in a previous accident to exhibit poor crashworthiness.

Safety Recommendations Issued: As a result of its investigation, the NTSB issued one new recommendation to the U.S. DOT, two to the Federal Transit Administration (FTA), one to the Tri-State Oversight Committee, one to the Board of Directors of WMATA, fifteen to WMATA, two to Alstom Signaling, Inc., one to the six transit systems that use GRS track circuit modules (the Massachusetts Bay Transportation Authority, the Southeastern Pennsylvania Transportation Authority, the Greater Cleveland Regional Transit Authority, the Metropolitan Atlanta Regional Transportation Authority, the Los Angeles County Metropolitan Transportation Authority, and the Chicago Transit Authority). The NTSB also reiterated four previously issued recommendations to the FTA, three to the FRA, and two to WMATA. The NTSB reclassified one previously issued recommendation to WMATA and one to Alstom Signaling, Inc.

Pipeline and Hazardous Materials Investigations

Explosion, Release, and Ignition of Natural Gas, Rancho Cordova, California, December 24, 2008 (1 fatality, 5 injured)

On December 24, 2008, an explosion and fire caused by a natural gas leak destroyed a house at 10708 Paiute Way in Rancho Cordova, California. One person suffered fatal injuries, and five other people, including one utility employee and one firefighter, were hospitalized as a result of the explosion. Two adjacent homes, one on either side, suffered severe damage, and several homes suffered minor damage. According to the Pacific Gas and Electric Company (PG&E), the property damage totaled \$267,000.



The NTSB determined that the probable cause of the accident was the use of a section of unmarked and out-of-specification polyethylene pipe with inadequate wall thickness that allowed gas to leak from the mechanical coupling that had been installed on September 21, 2006. Contributing to the accident was the 2-hour 47-minute delay in the arrival at the job site of a PG&E Company crew that was properly trained and equipped to identify and classify outdoor leaks and to begin response activities to ensure the safety of the residents and public.

Safety Recommendations Issued: None.

RAILROAD PIPELINE HAZARDOUS MATERIALS INVESTIGATIONS

Completed Major
Railroad Pipeline, and
Hazardous Materials
Investigations

Ongoing Major Railroad,
Pipeline, and Hazardous
Materials Investigations

Public Hearings

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Research
and Engineering

Office of Communications

Office of Administrative
Law Judges

Training Center

Ongoing Major Railroad, Pipeline, and Hazardous Materials Investigations

Railroad

CSX Freight Train Derailment of Hazardous Materials/Fire near Shepherdsville, Kentucky, January 16, 2007

Yard Foreman Struck by CSX Freight Car in Walbridge, Ohio, April 1, 2008

Derailment of Chicago Transit Authority Passenger Cars on Elevated Track in Chicago, Illinois, May 28, 2008

Southern California Regional Rail Authority (Metrolink) Passenger Train in Raking Collision with BNSF Railway Company Freight Train near Rialto, California, November 20, 2008

Automated People Mover Strikes Wall at Miami International Airport, November 28, 2008

Collision of Two Massachusetts Bay Transportation Authority Trains in Boston, Massachusetts, May 8, 2009

Employee Fatality While Switching Cars at CSX Selkirk Yard in Albany, New York, May 10, 2009

Freight Train Derailment and Fire in Cherry Valley, Illinois, June 19, 2009

Disney Monorail System in Lake Buena Vista, Florida, July 5, 2009

Dakota, Minnesota & Eastern Freight Train Collides with Standing Cars in Bettendorf, Iowa, July 14, 2009

San Francisco Municipal Railway (MUNI) Rear-end Collision at West Portal Station in San Francisco, California, July 18, 2009

WMATA Rear-end Collision with Standing Train in Falls Church, Virginia, November 29, 2009

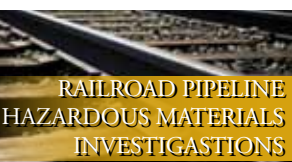
Switchman Struck While Performing Remote Control Switching Operations on a BNSF train near Minneapolis, Minnesota, December 29, 2009

WMATA Hi-Rail Vehicle Struck and Fatally Injured Two Wayside Workers in Rockville, Maryland, January 26, 2010

WMATA Derailment near Farragut North Station in Washington, DC, February 12, 2010

Collision of Two Miami Metromovers in Miami, Florida, July 20, 2010

Collision of Two CN Freight Trains in Two Harbors, Minnesota, September 30, 2010



Completed Major Railroad Pipeline, and Hazardous Materials Investigations

Ongoing Major Railroad, Pipeline, and Hazardous Materials Investigations

Public Hearings

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Pipeline

Rupture of Florida Gas Transmission Company Natural Gas Transmission, Pipeline, Palm City, Florida, May 4, 2009

Excavation Damage–Caused Rupture of Natural Gas Transmission Pipeline, Cleburne, Texas, June 7, 2010

Rupture of Hazardous Liquid Pipeline and Release of Crude Oil, Marshall, Michigan, July 25, 2010

Rupture of Hazardous Liquid Pipeline and Release of Crude Oil, Romeoville, Illinois, September 9, 2010

Rupture of Natural Gas Transmission Pipeline and Ignition of Natural Gas, San Bruno, California, September 9, 2010

Hazardous Materials

Rupture of Tank-Truck Cargo-Transfer Hose and Release of Anhydrous Ammonia in Swansea, South Carolina, July 15, 2009

Hazardous Materials Support of Ongoing Investigations in Other Modes

CN Freight Train Derailment of Hazardous Materials and Fire in Cherry Valley, Illinois, June 19, 2009

Overturn of Cargo Tank Truck and Release and Ignition of Propane Gas in Indianapolis, Indiana, October 22, 2009

Collision of T/V Eagle Otome and T/B Dixie Vengeance, Port Arthur, Texas, January 23, 2010

Rupture of Hazardous Liquid Pipeline and Release of Crude Oil, Marshall, Michigan, July 25, 2010

In-flight Fire and Crash of UPS Flight 6, B-747 Cargo Freighter, Dubai, United Arab Emirates, September 3, 2010

Public Hearings

Public Hearing on the Collision of Two Washington Metropolitan Area Transit Authority Trains near Fort Totten Station, Washington, DC

The NTSB held a public hearing February 23-24, 2010, as part of its investigation into the collision of two WMATA Metrorail Red Line trains on June 22, 2009, that occurred between the Fort Totten and Takoma Park stations in Washington, DC. The goal of the

RAILROAD PIPELINE HAZARDOUS MATERIALS INVESTIGATIONS

Completed Major
Railroad Pipeline, and
Hazardous Materials
Investigations

Ongoing Major Railroad,
Pipeline, and Hazardous
Materials Investigations

Public Hearings

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Research
and Engineering

Office of Communications

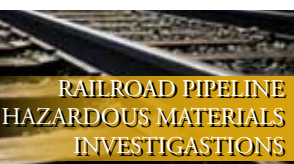
Office of Administrative
Law Judges

Training Center

hearing was for the NTSB to learn more about the issues identified in the Washington, DC, metrorail accident.

Significant Achievements

- The Office of Railroad, Pipeline, and Hazardous Materials Investigations completed the investigation of the June 2009 WMATA accident and presented the report to the NTSB Board within 13 months. In addition, Board Members met with the WMATA Board of Directors after the NTSB investigation was completed to discuss some of the concerns that were revealed by our investigation. Also, NTSB staff has conducted much follow-up activity since the issuance of these recommendations, including holding meetings with WMATA and standards organizations, such as the American Public Transportation Association, to help facilitate adoption of recommendations.
- Positive Train Control (PTC) was removed from the NTSB's Most Wanted List following the enactment of the Rail Safety Improvement Act, which mandates that PTC be implemented on Class I railroad carriers and on intercity and commuter rail lines by 2015. The NTSB participated in the FRA Railroad Safety Advisory Committee regarding PTC rulemaking activities and submitted comments to the FRA on its final rule on PTC.
- The office participated as a technical advisor in the Rail Integrity Task Force meetings to change the FRA regulation governing rail inspections. The proposed new regulation would require operators of a railroad's rail defect detection equipment to demonstrate proficiency in the rail flaw detection process on each type of assigned equipment.
- The office assisted the FTA with developing national safety standards for rail transit by participating in the FTA's Transit Rail Advisory Committee for Safety, a newly formed advisory committee.
- The office advocated the NTSB's open transit safety recommendations and the ongoing transit accident investigations by presenting at the FTA's 2010 State Safety Oversight program meeting in Memphis, Tennessee.



Completed Major Railroad Pipeline, and Hazardous Materials Investigations

Ongoing Major Railroad, Pipeline, and Hazardous Materials Investigations

Public Hearings

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges

Training Center

Office of Research and Engineering

The Office of Research and Engineering provides technical and analytical support to each of the NTSB investigative offices. As accident investigations become more complex, investigators rely upon the office's technological capabilities to assist them in determining the cause of accidents. Office staff in five divisions—Medical Factors Division, Vehicle Recorder Division, Vehicle Performance Division, Materials Laboratory Division, and Safety Research and Statistical Analysis Division—analyze accident, recorder, and radar data; assess vehicle performance; reconstruct accidents; perform visibility calculations; create animations and vehicle motion simulations; conduct medical and toxicology analyses; examine materials and structural failures; and probe fires and explosions. In addition, the office works closely with the modal investigative offices in issuing safety recommendations and is often the principal developer for recommendations on technical matters.

Office of Research and Engineering 2010 at a Glance

Major Reports Adopted by the Board	
Major Reports	1
Accident Launch Support	
Major Accident Launch Support	10
Field Investigation Accident Launch Support	1
Other Information	
Vehicle Recorder Readouts	290
Materials Laboratory Exam Reports	126
Vehicle Performance Reports	27

In 2010, the office continued to pursue a number of efforts to expand the NTSB's technological capabilities by developing close working relationships with outside transportation agencies, both in the U.S. and abroad. For example, office staff members continue to collaborate with the FAA to develop and enhance methods to effectively gather meaningful information from the vast amount of data being collected during aviation accident investigations. Staff members in the office's Safety Research and Statistical Analysis Division also continue to work closely with international aviation safety organizations to facilitate the standardization of aviation safety data to improve its availability and use.

The Office of Research and Engineering continued its work to address railroad safety and provide technical support to rail accident investigations. For example, recorded information from the train control system and onboard recorder from the lead metro train involved in the WMATA Metrorail accident at the Fort Totten Station in Washington, DC, was used to determine the position of the lead metro train leading up to the accident. A simulation was constructed for the following metro train (which did not have a recorder), and this information was used to produce an animation of the event.

In marine safety, vehicle performance staff is currently engaged in a visibility study to support the Office of Marine Safety's investigation into the high-profile accident involving an amphibious passenger vessel that occurred near Philadelphia, Pennsylvania.

RESEARCH AND ENGINEERING

Safety Research
and Statistical
Analysis Division

Safety Studies

Materials Laboratory
Division

Vehicle Performance
Division

Vehicle Recorder Division

Medical Factors Division

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline
and Hazardous Materials
Investigations

Office of Communications

Office of Administrative
Law Judges

Training Center



**RESEARCH AND
ENGINEERING**

Safety Research
and Statistical
Analysis Division

Safety Studies

Materials Laboratory
Division

Vehicle Performance
Division

Vehicle Recorder Division

Medical Factors Division

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline
and Hazardous Materials
Investigations

Office of Communications

Office of Administrative
Law Judges

Training Center

Office of Research and Engineering staff assisted with the developed of NTSB’s response to the NHTSA NPRM on motorcoach occupant protection and stressed the need for passengers to use a lap belt/shoulder harness combination. In addition, NTSB’s comments to the NPRM supported a lap belt/shoulder harness combination for the driver’s position for both large school buses and motorcoaches. NTSB also encouraged NHTSA to propose motorcoach roof crush performance standards.

The office helped to advance the NTSB’s use of public forums to focus attention on specific safety issues during 2010. Staff were instrumental in the Child Passenger Safety in the Air and in Automobiles forum, co-hosting the event and assembling exhibitors and panels of renowned experts. Staff also provided valuable support for the Safety, Mobility, and Aging Drivers forum.

The office underwent a significant organizational change in 2010 with the appointment of a new deputy director. In addition, a new senior transportation analyst with experience in highway safety research joined the Safety Research and Statistical Analysis Division. Finally, the office benefited from the contributions of student interns in four of its divisions, as well as the efforts of an intern from the FAA in the Vehicle Recorder Division.

Safety Research and Statistical Analysis Division

The Safety Research and Statistical Analysis Division staff includes transportation research and aviation data analysts, who provide statistical support to other NTSB offices, respond to requests for statistical data from the public, including Congress, and develop safety studies and other safety research products to further the NTSB safety mission. In 2010, staff supported numerous accident investigations and engaged in a broad variety of research and support activities for Board Members and other offices. These activities included completing one safety study, continuing research for two other safety studies, producing two annual aviation accident data reports, undertaking multiple research assessments and data reports to support investigations, and participating in numerous presentations and training for internal and external organizations. Key components of a few of these activities include the following:

Safety Studies

Completed

Introduction of Glass Cockpit Avionics into Light Aircraft

On March 9, 2010, the office presented to the NTSB Board the safety study Introduction of Glass Cockpit into Light Aircraft. The NTSB initiated this study to determine whether the transition to glass cockpits in light aircraft has improved the safety record of those aircraft.

The review of accidents involving light aircraft equipped with glass cockpits found that pilots’ experiences and training in conventional cockpits do not prepare them to safely

operate the complex and varied glass cockpit systems being installed in light aircraft today. Further, the lack of information provided to pilots about glass cockpit systems may lead them to misunderstand or misinterpret system failures. As a result, there is a need for new training procedures and tools to ensure that pilots are adequately prepared to safely operate aircraft equipped with glass cockpit avionics.

The results of this study suggest that the introduction of glass cockpits has not resulted in a measurable improvement in safety when compared to similar aircraft equipped with conventional instruments. The analyses conducted during the study identified safety issues in two areas: (1) the need for pilots to have sufficient equipment-specific knowledge and proficiency to safely operate aircraft equipped with glass cockpit avionics; and (2) the need to capture maintenance and operational information in order to assess the reliability of glass cockpit avionics in light aircraft.

Safety Recommendations Issued: As a result of this safety study, the NTSB issued six new recommendations to the FAA.

On-going

NTSB Human Fatigue Investigation Methodology in Aviation Accidents Safety Study

The NTSB has long recognized the safety risks associated with human fatigue in transportation safety and has issued over 100 fatigue-related safety recommendations in all modes of transportation. As a means to improve and standardize the methods for investigating fatigue in transportation accidents, staff members have developed a methodology for determining whether human fatigue has contributed to a transportation accident. The human fatigue investigation methodology (HFIM) was designed to provide guidance to investigators in the collection and evaluation of evidence pertaining to fatigue. This ongoing safety study will provide data about sleep and fatigue issues, will provide a training opportunity for field investigators to learn more about the issue of human fatigue, and will enable the refinement of HFIM so that it can be a more useful tool for investigators.

Safety Study Assessments

In 2010, staff assessed one aviation and three highway issues for safety study topics. Such assessments constitute the initial phase of a safety study. Through the use of an established and carefully planned assessment process, staff determines the suitability of a study by evaluating matters such as the study's potential to improve safety and the data available to conduct the research. This process enables the Office of Research and Engineering to take a responsible approach to research, ensuring that resources are allocated wisely to produce the most effective and timely studies. The office continues to identify new topics for assessment to enhance the NTSB's use of safety studies to improve transportation safety.

Accident Data and Public Records

Data specialists continue to respond to requests for aviation accident information; they completed 484 data analysis requests and 48 requests for statistical analysis in 2010. Some requests concerned the accident frequency of a particular aircraft model or air carrier, while

RESEARCH AND ENGINEERING

Safety Research and Statistical Analysis Division

Safety Studies

Materials Laboratory Division

Vehicle Performance Division

Vehicle Recorder Division

Medical Factors Division

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline and Hazardous Materials Investigations

Office of Communications

Office of Administrative Law Judges

Training Center



RESEARCH AND
ENGINEERING

Safety Research
and Statistical
Analysis Division

Safety Studies

Materials Laboratory
Division

Vehicle Performance
Division

Vehicle Recorder Division

Medical Factors Division

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline
and Hazardous Materials
Investigations

Office of Communications

Office of Administrative
Law Judges

Training Center

others addressed particular types of accident events. The addition of historical accident data from 1962 to 1983 to the NTSB website, combined with complete download and text search capabilities, now allows many researchers to complete their own queries, especially queries for simple, straightforward analyses. However, more complex requests for aviation accident data continue to be handled by the office data specialists, who also publish monthly and annual U.S. civil aviation statistical information on the NTSB website.

Materials Laboratory Division



The Materials Laboratory Division is composed of metallurgists, materials scientists, mechanical engineers, and fire and explosion specialists. Staff members examine, analyze, and test parts and wreckage from over 100 accidents in a typical year in support of investigations from all transportation modes. In

addition to fracture surface evaluation (fractography) and other traditional failure analysis testing, the Materials Laboratory Division generates finite element models of structures to evaluate stress and deformation patterns.

The Materials Laboratory Division underwent equipment upgrades in 2010 to allow enhanced capability in metal and composite fractography and microanalysis, composite and organic chemical analysis, digital metrology, and metal compositional analysis.

In 2010, division staff completed 126 reports and launched to 8 accident sites, including 2 international accidents in support of other investigative modes. Two launches were to major pipeline accidents in Marshall, Michigan, and San Bruno, California, and one was to a major fire accident in Dubai, United Arab Emirates.

Vehicle Performance Division

The Vehicle Performance Division develops computer simulations of vehicle and occupant motion, develops video animations of accident scenarios, and participates in and directs research into fluid sciences and other special projects. Computational and engineering graphics technology are used to provide an accurate time-motion history of the sequence of events leading to an accident and to show vehicle and occupant motion, as well as the underlying causes for that motion. In 2010, division staff produced 3 animations for major accident investigations, wrote 27 technical reports, and participated in the development of numerous safety recommendations with the investigative offices.

In 2010, staff engineers identified and developed new technology to enhance capabilities in vehicle simulation, vehicle modeling, mathematical analysis, animations, and geographic information systems. For example, a comprehensive radar and cockpit visibility study was produced for a midair collision that occurred over New York's Hudson River between a Piper airplane and a Eurocopter helicopter in 2009. The study included an animation of the Traffic Information Service (TIS) displays that would have been provided to the pilots of each aircraft, based on TIS messages recorded by the JFK airport surveillance radar system. The study also integrated off-the-shelf simulation software imagery, Google Earth imagery, and panoramic cockpit photographs to re-create the visual scene from one of the aircraft. The results of the study and the detailed simulations were presented at the Midair Collision over Hudson River near Hoboken, New Jersey, Board Meeting on September 14, 2010.

Vehicle Recorder Division

The Vehicle Recorder Division received 391 devices and completed 290 readouts, transcripts, and studies in support of aviation, rail, marine, and highway investigations in 2010. The division's high volume of workload continued, because of (1) the expanded use of advanced technology such as global positioning system units and avionics displays, which can record data on aircraft not otherwise equipped with flight recorders, (2) a proliferation of video recordings and still images from sources such as installed cameras, handheld cameras, and security cameras, and (3) an unprecedented level of support requested for international aviation investigations (74 foreign recorders received).

To keep pace with these increasing demands, the division has undertaken, in addition to its regular investigative responsibilities, significant efforts to incorporate new technology and improved capabilities for the readout of vehicle recorders, including the continued development of the next-generation data analysis software and hardware and software tools for recovering and analyzing data from chip-level recovered files, images, and voyage data recorders. Also, the division purchased necessary hardware and software for reading out damaged flight recorders, as well as additional hardware to improve the laboratory's ability to perform chip-level recovery efforts on the numerous recording devices that are not designed to survive accidents and are, therefore, more likely to sustain significant damage.

Medical Factors Division

Staff provided medical consultation to accident investigators in all modes on more than 75 accidents in 2010. Some of the medical issues addressed in 2010 accident investigations included flight attendant incapacitation, night vision, hypoxia, visual field deficits, substance dependence, traumatic brain injury, stroke, obstructive sleep apnea, and the use of psychoactive prescription and over-the-counter medications.

Staff participated in numerous advocacy activities regarding NTSB recommendations to screen, diagnose, treat, and certify transportation operators with obstructive sleep apnea, including presentations on the topic at a National Sleep Foundation annual conference,

RESEARCH AND ENGINEERING

Safety Research and Statistical Analysis Division

Safety Studies

Materials Laboratory Division

Vehicle Performance Division

Vehicle Recorder Division

Medical Factors Division

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline and Hazardous Materials Investigations

Office of Communications

Office of Administrative Law Judges

Training Center

the Transportation Research Board annual meeting, the Aerospace Medical Association annual meeting, and an invited keynote speech at the Association for Advancement of Automotive Medicine annual meeting.

Staff also coordinated with medical personnel at other agencies regarding activities responsive to NTSB recommendations to include coordination with FRA staff regarding medical conditions and medications for rail operators and with FAA and USCG staff regarding management of obstructive sleep apnea. Staff regularly coordinates with investigators on the scene of major accident investigations. In 2010, staff provided support for highway investigators on accident scenes in Kentucky, Maryland, and Missouri; for marine investigators on scene in California; and for aviation investigators on scene in Washington, DC, and in Alaska.



RESEARCH AND
ENGINEERING

Safety Research
and Statistical
Analysis Division

Safety Studies

Materials Laboratory
Division

Vehicle Performance
Division

Vehicle Recorder Division

Medical Factors Division

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline
and Hazardous Materials
Investigations

Office of Communications

Office of Administrative
Law Judges

Training Center

Significant Achievements

- The office produced a high-definition animation showing that, in the June 2009 WMATA Metrorail train collision, even with the emergency braking activated, there was not enough time for the train to stop and avoid a collision with an oncoming train. The office also completed extensive data, control center, and phone record analysis related to the accident. In addition, the office started developing software modules to process chip-level recovered files and to provide an automated method for recovering data from images.
- The office provided substantial support for the investigation, report development, probable cause determination, and drafting of recommendations for the Miami, Oklahoma, multiple fatal tractor-trailer accident.
- Office staff coordinated with aviation investigators on the investigation of five incidents of flight attendant incapacitation in light of the lack of medical standards for flight attendants, particularly given the increased frequency of single flight attendant operations.
- The office assisted with the development of a safety recommendation to the FAA that recommended requiring helicopter manufacturers to improve their applicable hover performance charts, particularly in light and variable wind conditions.

Office of Communications

The Office of Communications was formed in February 2010 by combining the functions of the Safety Advocacy Division of the previous Office of Safety Recommendations and Advocacy, the Office of Public Affairs, the Office of Government Affairs, and the Office of Transportation Disaster Assistance. The new office was established to better position the NTSB to communicate effectively with such stakeholders as Congress, the news media, the transportation industry, those directly involved in transportation accidents and their families, and the general public.

Office of Communications 2010 at a Glance	
Accident Launch Support	
Major Accident Launch Support	
Aviation	6
Highway	2
Marine	2
Railroad/Pipeline/Hazardous Material	3
Testimony	
Testimony to Congressional Committees	10

The office's primary functions include ensuring that Congressional, state, and local government stakeholders are accurately and effectively informed of the NTSB's mission, including providing testimony to committees several times during the year. Complete copies of NTSB testimony are available on the agency's website at <http://www.nts.gov/speeches/speeches.htm>. This site is vital in disseminating information to the public and is the agency's point of contact for members of the public and the news media. Other primary office functions include (1) encouraging implementation of the agency's state-related safety recommendations and tracking agency-wide advocacy efforts through the development of the agency's flagship communications product, the *Most Wanted List of Transportation Safety Improvements*, and the advocacy of the issues included on this list; (2) advocating to improve safety through the issuance of *Safety Alerts* to inform the traveling public and Federal, state, and local officials about safety hazards and practical remedies identified through NTSB accident investigations, safety studies, and recommendations; and (3) assisting the victims of aviation disasters and their families through our Transportation Disaster Assistance office.

Transportation Disaster Assistance

In 1996, Congress passed the Aviation Disaster Family Assistance Act, which gave the NTSB the responsibility for assisting the victims of aviation disasters and their families. The agency's primary responsibility involves coordination among Federal agencies, commercial airlines, state and local authorities, and the families of victims. In 1997, Congress enacted the Foreign Air Carrier Family Support Act to require that foreign air carriers operating flights to and from the United States meet the same standards of victim assistance as their U.S. counterparts. In 2008, the Rail Passenger Disaster Family Assistance Act gave similar responsibilities to the NTSB following rail passenger accidents involving Amtrak and interstate/intercity high speed passenger rail.

Primary responsibilities of the team upon arrival at an accident site include coordinating resources of local, state, and Federal agencies; establishing a Joint Family Support Operations Center; and ensuring that the airline or railroad establishes a Family Assistance Center. In addition, the team maintains contact with family members following the on-scene phase of



Accident Launch Support

Additional Launch Support

Public Hearings and Forums

Significant Achievements and Most Wanted List Successes

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

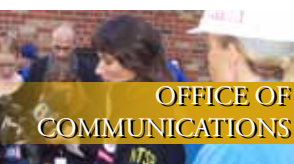
Office of Marine Safety

Office of Railroad, Pipeline and Hazardous Materials Investigations

Office of Research and Engineering

Office of Administrative Law Judges

Training Center



OFFICE OF
COMMUNICATIONS

Accident Launch
Support

Additional Launch
Support

Public Hearings
and Forums

Significant Achievements
and Most Wanted
List Successes

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline
and Hazardous Materials
Investigations

Office of Research
and Engineering

Office of Administrative
Law Judges

Training Center

an accident investigation to provide updates about the investigation, notify them of public hearings and/or Board meetings, and respond to various other questions and concerns.

When staff responds to an accident, a team of specialists with expertise in victim services, emergency operations, and victim recovery and identification is launched to the accident site. The division is responsible for responding to all major aviation accidents and major rail passenger disasters but has also assisted in accidents in all other modes of transportation, including general aviation accidents and pipeline accidents. Staff also manages ongoing requests for information from family members via phone and e-mail.

Transportation Disaster Assistance Partnerships

The NTSB has a memorandum of understanding with the American Red Cross, the U.S. Department of Homeland Security, the U.S. Department of Defense, the U.S. Department of State, and the U.S. Department of Justice. Together, these agencies collaborate to support both the investigative and family assistance efforts at major accidents.

In May 2010, the NTSB held a meeting bringing together family assistance personnel from major air carriers to examine recent responses, to discuss lessons learned, and to address concerns.

Throughout 2010, the NTSB also presented information to numerous groups, including the American Red Cross, U.S. Army Family Readiness personnel, Los Angeles County Office of Emergency Management, Virginia Railway Express, Van Nuys Airport, Miami-Dade County Office of Emergency Management, NYC Office of Chief Medical Examiner, Metropolitan Washington Airport Authority, Massport, Star Alliance, New York State Emergency Management Agency, San Diego Airport Authority, and Chicago Airport Authorities.

In addition, the division held seminars and meetings focusing on family assistance, first responder responsibilities, and management of transportation disasters for the FBI's Victim Assistance Rapid Deployment Team, the Mine Safety Health Administration, New Jersey Emergency Preparedness Conference, New Jersey State Police Workshop, Nebraska Forensic Dental Identification Team training, Idaho Mass Fatality Summit, Northeast Regional Mass Fatality Management Training, Pennsylvania Coroner's Association, New Jersey State Emergency Managers Conference, and the General Aviation Air Safety Investigation workshop.

Accident Launch Support

Aviation Accident, Farmingdale, New Jersey, February 15, 2010

Staff assisted investigators from the Office of Aviation Safety by reaching out to family members, providing updates regarding the NTSB's accident investigation, and coordinating support from the Polish Consulate and the local American Red Cross Chapter.

Highway Accident, Munfordville, Kentucky, March 26, 2010

Staff assisted the Office of Highway Safety in an accident involving a passenger van and

semitrailer that occurred in Munfordville, Kentucky. In addition to assisting family members, staff also coordinated with the county coroner and the Kentucky Office of Emergency Management.

Marine Accident, Philadelphia, Pennsylvania, July 7, 2010

Staff assisted the Office of Marine Safety following a collision between a Duck boat and barge on the Delaware River and worked closely with the local American Red Cross Chapter, the Philadelphia Office of Emergency Management, and the Office of the Mayor of Philadelphia to coordinate assistance to surviving passengers and to family members of those who died in the accident. In coordination with the American Red Cross and the NTSB survival factors investigator, an update regarding the NTSB accident investigation was provided to a group of Hungarian students involved in the accident.

Aviation Accident, Aleknagik, Alaska, August 9, 2010.

Staff assisted the Alaska Regional Office of Aviation Safety by coordinating with local authorities to address medicolegal concerns. In addition, staff met with several family members and survivors, participated in several interviews with survivors and crew family members, and coordinated a meeting of the NTSB Chairman, survivors, and family members.

Pipeline Accident, San Bruno, California, September 9, 2010

Staff assisted the Office of Railroad, Pipeline, and Hazardous Materials Investigation in their launch by coordinating with the local coroner to address medicolegal concerns, particularly victim search and recovery efforts. Staff also met with several family members and survivors and coordinated collection of patient transport information.

Additional Launch Support

Aviation accident involving a private plane flown into the IRS building, Austin, Texas, February 18, 2010.

Helicopter Emergency Medical Services accident, Brownsville, Tennessee, March 25, 2010.

Marine accident involving the Staten Island Ferry, Staten Island, New York, May 8, 2010.

Aviation accident, Ruidoso, New Mexico, June 17, 2010.

Highway accident involving two school buses, a bobtail, and a pickup truck, Gray Summit, Missouri, August 5, 2010.

Public Hearings and Forums

Public Forum held on Child Passenger Safety in the Air and in Automobiles

On December 9, 2010, the NTSB held a forum on child passenger safety on airplanes and in automobiles. The primary purpose of the forum was to improve child safety in airplanes



OFFICE OF
COMMUNICATIONS

Accident Launch
Support

Additional Launch
Support

Public Hearings
and Forums

Significant Achievements
and Most Wanted
List Successes

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline
and Hazardous Materials
Investigations

Office of Research
and Engineering

Office of Administrative
Law Judges

Training Center

and in automobiles through education and advocacy that is aimed toward the caregivers of children and the transportation industry. Another purpose was to identify effective strategies to increase the rates of child seat use and of seat belt use. The Office of Communications played a major role in organizing the forum and in producing a video that would support both the forum and continued advocating for child passenger safety throughout the year.

Significant Achievements and *Most Wanted List* Successes

- The Office of Communications increased the NTSB’s outreach to stakeholders by deloying government affairs staff to accident sites and by tasking the Public Affairs Office to initiate a social media policy for the agency.
- The office completed and submitted to the U.S. DOT the Rail Passenger Disaster Family Assistance task force report, which provided recommendations on improving family assistance in the rail passenger industry and included a model plan for rail passenger disaster family assistance operations.
- In response to NTSB recommendations, the following issue areas were removed from the Most Wanted List in 2010:
 - “Enhance Protection for School Bus Passengers,” as a result of rulemaking action by NHTSA.
 - “Reduce Accidents and Incidents Caused by Human Fatigue in the Pipeline Industry,” as a result of rulemaking action by PHMSA.
 - “Enhance Recreational Boating Safety,” in recognition of the significant progress that has been achieved.
- In response to NTSB recommendations, states have enacted a number of laws that address Most Wanted List issues:
 - Improve Child Occupant Protection (one state)
 - Enact Primary Enforcement Seat Belt Laws (three states)
 - Eliminate Distractions for Young Drivers (eight states)
 - Eliminate Hard Core Drinking Driving (three states) implemented at least one element of the NTSB’s hard core drinking driver recommendation.
- During 2010, the office began major changes to the NTSB’s website, NTSB.gov, including evaluating its content to better organize information and identify overlaps and gaps. A team began the process of modernizing the website with a new internal newsletter, *Across the Board*, which served as a proof-of-concept for the larger website project. The revised website is scheduled to be launched in June 2011.
- The office expanded the NTSB’s online communications portfolio by creating official [Twitter](#) and [YouTube](#) channels, which the agency will use to increase its reach and more effectively connect with the public and other stakeholders.



Accident Launch Support

Additional Launch Support

Public Hearings and Forums

Significant Achievements and Most Wanted List Successes

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline and Hazardous Materials Investigations

Office of Research and Engineering

Office of Administrative Law Judges

Training Center

Office of Administrative Law Judges

Since 1967, the NTSB has served as the “court of appeal” for certificate holders such as airmen, mechanics, or mariners whenever the FAA or the takes a certificate action.

The NTSB’s administrative law judges hear, consider, and issue initial decisions on appeals filed with the Board. Included are appeals from orders issued by the FAA’s Administrator that amend, modify, suspend or revoke, 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; appeals about FAA actions denying applications for the issuance or renewal of airman 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 certificate and civil penalty actions under the Equal Access to Justice Act (EAJA).

The NTSB currently has four administrative law judges. Two are based in Washington, DC, and hold hearings primarily in the eastern half of the U.S. 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 to the NTSB’s 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, and the judge’s decision, as well as appeal briefs submitted by both sides. A certificate holder can appeal the Board’s decision to the U.S. Court of Appeals. The FAA also has the right to appeal the Board’s decisions to the U.S. Court of Appeals when it (the FAA) determines that the Board’s decision “will have a significant adverse impact” on the FAA’s aviation safety duties and powers. 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 need is found, 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. In April 2000, the U.S. Congress enacted Section 716 of the Aviation Investment and Reform Act for the 21st Century (Public Law 106-181). This Act expanded the NTSB’s jurisdiction to include review of FAA designations of safety enforcement actions as emergencies, which require an order to be effective immediately, upon petition by the affected certificate holder. The Board has delegated

Office of Administrative Law Judges 2010 at a Glance

Aviation Certificate Appeals	
Total Cases Received	334
Total Cases Closed	369
Emergency Cases Closed	150
Challenges to Emergency Determinations	39
Hearings Held	58
Board Opinions and Orders	47
Board O&O appealed to U.S. Court of Appeals	11

ADMINISTRATIVE LAW JUDGES

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline and Hazardous Materials Investigations

Office of Research and Engineering

Office of Communications

Training Center

its review authority to its administrative law judges. There is no administrative review of the administrative law judges' decisions in these cases. Marine certificate actions are heard first by the USCG's administrative law judges and may be appealed to the USCG Commandant. The ruling of the Commandant may then be appealed to the NTSB. The Board then follows the same appellate process as it does in considering the initial decisions of its law judges in aviation cases. In 2010, the Board received no marine appeals and issued no rulings on marine cases.

Significant Achievements

- The Office of Administrative Law Judges disposed of 80 percent of its caseload in fiscal year 2010.
- Three hundred thirty-four aviation certificate appeals were filed with the NTSB's Administrative Law Judges in 2010. The Board's judges held 58 hearings and closed 369 cases in 2010.

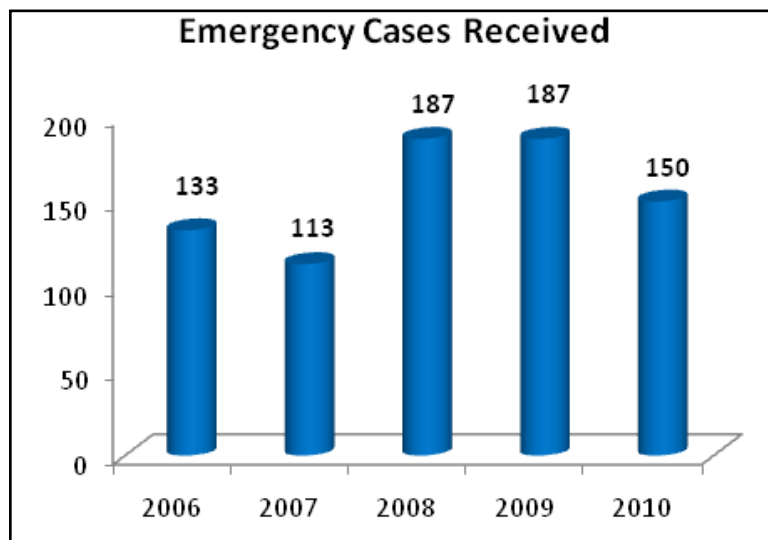


Figure 2: Total Number of Emergency Cases Received during the past 5 years.

The Office of Administrative Law Judges received 150 emergency cases in 2010, which, by statute, require expedited handling and hearing as shown in Figure 2. The NTSB has no control over the number of emergency cases received because these cases are issued by the FAA.

- Fifty-one of the judges' decisions were appealed to the NTSB Board. The Board decided 47 appeals, reversing the judge's decision in 2 cases and remanding 8 cases to the judges for further proceedings. Eleven of the Board's decisions were appealed to the U.S. Court of Appeals, which rendered nine decisions in 2010. The Court affirmed the Board in seven cases, remanded two cases to the Board for further proceedings.
- Five EAJA applications were filed with the NTSB's administrative law judges in 2010, and the judges decided six EAJA cases, granting fees in two. In 2010, one of the judges' EAJA decisions was appealed to the NTSB Board. The Board issued rulings in five EAJA cases, granting fees in four cases and denying fees in one.

ADMINISTRATIVE LAW JUDGES

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline and Hazardous Materials Investigations

Office of Research and Engineering

Office of Communications

Training Center

NTSB Training Center

Located in Ashburn, Virginia, the NTSB Training Center provides training opportunities for all NTSB employees and others from the transportation community through a variety of course offerings in the various modes of transportation. The core of the program continues to be key investigative courses that focus on competencies important to safety investigations for NTSB staff and outside participants. The Workforce Development curriculum is open specifically to NTSB staff and offers employees access to additional courses focused on career development and on the improvement of management, leadership, and critical thinking skills. Vacant seats are open to employees of other Federal agencies as a way to maximize training opportunities and knowledge management for the Federal workforce and for the best stewardship of taxpayers' training dollars. In particular, investigators from the NTSB and from other organizations in the transportation community use the Training Center as a means of improving their accident investigation techniques.

Training Center 2010 at a Glance	
Courses	
Courses, Programs, Seminars Offered	125
Workforce Development Courses	108
Student (Individual) Attendance	1447
External Participants	603
Foreign Participants	75
Training Center Participants	769
Partnerships	
Federal	4

NTSB Employees and Federal Workforce Community

During 2010, the NTSB continued to refine the programs offered at the Training Center while ensuring that the agency's critical investigative responsibilities were not negatively affected. These improvements support the NTSB's accident investigation mission and help promote transportation safety. In addition, the NTSB continued its focus on improving training programs for NTSB employees. The Workforce Development Program was launched in 2007 for NTSB employees as the signature effort to improve leadership and management training. Since the program's inception, the NTSB Training Center has offered 231 courses,



NTSB Employees and Federal Workforce Community

Transportation Community and Partnerships

Continuing Education Units

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline HazMat Investigations

Office of Research and Engineering

Office of Communications

Office of Administrative Law Judges



programs, and seminars in the Workforce Development curriculum. In 2010, the first project management cohort completed all courses for project management certification. This accomplishment signifies a notable step in supporting the project management strategic objective.

In order to make maximum use of training funds and to act as responsible custodians of public monies, Workforce Development courses were opened up to other government agencies as seats became available. This maximized attendance at the courses and created a collegial atmosphere with other agencies, particularly those in the small agency council, where limited training resources are shared between agencies.

Transportation Community and Partnerships

The Training Center attracts not only members of the U.S., but also of the worldwide, transportation community from many governmental agencies and transportation entities. Participants have come to rely on the training received at the Training Center and either return for additional training or encourage colleagues to attend courses offered in accident investigation, transportation disaster response, media response, human factors, accident photography, and skills in conducting presentations.

Furthering its commitment to meeting the training needs of those in other areas of the government and the transportation safety and security and emergency response communities, the NTSB Training Center continues to build upon its alliances with private organizations and Federal agencies. For example, the Training Center worked with the Army Air National Guard (ANG) Safety Center at Fort Rucker to develop and present a 2-week Aviation Accident Investigation School exclusively tailored for ANG. It was presented for the second time in 2010, and ANG has requested that it be offered annually. The Training Center also developed and presented the NTSB Rotocraft Accident Investigation course for the first time in 2010. It, too, will be offered yearly.

Continuing Education Units

The NTSB Training Center is authorized by the International Association for Continuing Education and Training (IACET) to award continuing education units (CEUs) for many of its courses. The IACET, whose members include 650 businesses, government agencies, higher education institutions, nonprofit corporations, and individuals, authorizes select organizations to issue CEUs only when they can demonstrate a consistent adherence to strict educational training guidelines and protocols. Many organizations and agencies use these credits for staff development, and individuals use them to maintain professional certifications.

NTSB Employees
and Federal Workforce
Community

Transportation
Community
and Partnerships

Continuing
Education Units

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline
HazMat Investigations

Office of Research
and Engineering

Office of Communications

Office of Administrative
Law Judges

Significant Achievements

- The NTSB Training Center introduced the first of a series of Investigative Skills courses for NTSB investigative staff to educate new investigators on NTSB policies, procedures, and techniques and to provide a venue for experienced investigators to share best practices that they have learned and used over the years.
- The Training Center completed the first round of Project Management curriculum for NTSB employees who require certification as Project Management Professionals.
- Completed an Inter-Agency Agreement Pilot Program with the Civil Air Patrol to provide ground and flight training in Technologically Advanced Aircraft (Glass Panel) to NTSB investigators, which provided investigators valuable, hands-on experience.
- Increased deployment of electronic training resources, including online courses, audio books program, and books on a 24-hour/7-day-per-week basis, to serve NTSB technical and support personnel in diverse locations throughout the United States.
- Training Center held its first course for Rotorcraft Accident Investigation for NTSB staff and external partners, providing participants with a comprehensive overview of the procedures and methods used and the skills required for all aspects of rotorcraft accident investigation. Examples from recent investigations were used to demonstrate particular aspects of the investigative process. This class helped participants define the major aspects of rotorcraft investigations at an accident scene, distinguish the difference between structural failures that may have caused the accident and structural damage that occurred as a result of the accident, and confidently interact with the media both at the accident site and throughout the investigation.



NTSB Employees
and Federal Workforce
Community

Transportation
Community
and Partnerships

Continuing
Education Units

Significant Achievements

TABLE OF CONTENTS

Safety Recommendations and
Quality Assurance

Office of Aviation Safety

Office of Highway Safety

Office of Marine Safety

Office of Railroad, Pipeline
HazMat Investigations

Office of Research
and Engineering

Office of Communications

Office of Administrative
Law Judges

Member Profiles



DEBORAH A.P. HERSMAN
Chairman

Deborah A. P. Hersman was sworn in as the 12th Chairman of the National Transportation Safety Board on July 28, 2009, following her nomination to the post by President Barack Obama and confirmation by the United States Senate. Her two-year term as Chairman runs until July 2011. She is also serving a second 5-year term as a Board Member, which expires on December 31, 2013.

Chairman Hersman has been a Member of the NTSB since June 21, 2004. Since then, she has chaired a number of public events hosted by the Board:

- November 2010 – Public forum on aging drivers
- May 2010 – Public forum on professionalism in aviation
- September 2009 – Public hearing on cargo airplane crash in Lubbock, Texas
- October 2008 – Public hearing on a motorcoach accident in Victoria, Texas
- September 2006 – Public forum on motorcycle safety
- July 2006 – Public hearing on an in flight fire aboard a cargo airplane in Philadelphia, Pennsylvania
- June 2005 – Public hearing on a regional jet crash in Jefferson City, Missouri

During her tenure at the Board, she has been the Member on scene at 19 major transportation accidents:

- August 2010 – crash of a chartered floatplane in Aleknagik, Alaska
- March 2010 – crash of an EMS helicopter in Brownsville, Tennessee
- August 2009 – mid-air collision involving a sightseeing helicopter and a single engine plane over the Hudson River, near Hoboken, New Jersey
- June 2009 – collision between two transit trains, Washington, DC
- May 2009 – collision of two light rail passenger trains in Boston, Massachusetts
- April 2009 – collision of a recreational vessel with a barge in the intracoastal waterway near Palm Valley, Florida
- September 2008 – crash of a EMS helicopter in Forestville, Maryland
- September 2008 – crash of a business jet in Columbia, South Carolina
- August 2008 – crash of a chartered motorcoach in Sherman, Texas
- November 2007 – collision of a container ship with the San Francisco Bay Bridge resulting in the release of 58,000 gallons of fuel; San Francisco, California

- August 2007 – crash of a chartered floatplane in Ketchikan, Alaska
- November 2006 – school bus crash in Huntsville, Alabama
- October 2006 – crash of a private aircraft into an apartment building, New York, New York
- August 2006 – crash of a commercial aircraft in Lexington, Kentucky
- July 2005 – head-on collision of two freight trains at Anding, Mississippi
- April 2005 – collision of a school bus with a trash truck in Arlington, Virginia
- February 2005 – crash of a chartered aircraft into an airport warehouse at Teterboro, New Jersey
- January, 2005 – freight train collision and hazardous material release in Graniteville, South Carolina
- November, 2004 – collision of two transit trains in Washington, DC

Chairman Hersman holds a commercial drivers license with passenger, school bus, and air brake endorsements. She successfully completed a motorcycle basic rider course and also holds a motorcycle endorsement. She is a certified Child Passenger Safety Technician and has completed the 40- hour HAZWOPER (Hazardous Waste Operations and Emergency Response Standard) training course.

Before joining the Board, Chairman Hersman was a Senior Professional Staff Member of the U.S. Senate Committee on Commerce, Science, and Transportation from 1999 to 2004, where she was responsible for a number of transportation issues, and earlier served as Staff Director and Senior Legislative Aide to Congressman Bob Wise of West Virginia.

During her time at the Senate, she was a key staff member involved in the passage of the Motor Carrier Safety Improvement Act of 1999, which created a new truck and bus safety administration within the Department of Transportation. She also worked extensively to negotiate the passage of the Pipeline Safety Improvement Act of 2002; the Transportation Equity Act of the 21st Century; the Amtrak Reform and Accountability Act, and numerous other transportation safety and security measures.

Chairman Hersman earned Bachelor of Arts degrees in Political Science and International Studies from Virginia Tech University in Blacksburg, Virginia, and a Master of Science degree in Conflict Analysis and Resolution from George Mason University in Fairfax, Virginia. She is married and is the mother of three sons.



Member Profiles



CHRISTOPHER A. HART
Vice Chairman

Christopher A. Hart was sworn in as a Member of the National Transportation Safety Board on August 12, 2009, and designated by the President for a 2-year term as Vice Chairman of the Board on August 18, 2009.

Vice Chairman Hart joined the Board after a long career in transportation safety, including a previous term as a Member of the NTSB. Immediately before returning to the Board, Vice Chairman Hart served as Deputy Director for Air Traffic Safety Oversight at the Federal Aviation Administration (FAA). He was previously the FAA Assistant Administrator for the Office of System Safety.

He served as a Member of the NTSB from 1990 to 1993, and next, as Deputy Administrator of the National Highway Traffic Safety Administration, before moving to the FAA in 1995.

From 1973 until joining the Board in 1990, Vice Chairman Hart held a series of legal positions, mostly in the private sector. He holds a law degree from Harvard University and master's and bachelor's degrees in Aerospace Engineering from Princeton University. He is a member of the District of Columbia Bar and the Lawyer-Pilots Bar Association.

Vice Chairman Hart is a licensed pilot with commercial, multi-engine, and instrument ratings.

Vice Chairman Hart's family has a tradition of accomplishment in the field of transportation. His great uncle, James Herman Banning, was the first African-American to receive a pilot's license issued by the U.S. Government, in 1926.

His term expires December 31, 2012.

Member Profiles



ROBERT L. SUMWALT
Member

Robert L. Sumwalt was sworn in as the 37th Member of the NTSB on August 21, 2006, whereupon President Bush designated him as Vice Chairman of the Board for a 2-year term, which ended August 2008. His term of office as a Board Member will run until December 31, 2011.

Before coming to the Board, Member Sumwalt was Manager of Aviation for the SCANA Corporation, a Fortune 500 energy-based company.

Member Sumwalt was a pilot for 32 years, including 24 years as an airline pilot with Piedmont Airlines and then 8 years with US Airways. He logged over 14,000 flight hours and earned type ratings in five aircraft before retiring from the airline in 2005. He has extensive experience as an airline captain, airline check airman, instructor pilot, and air safety representative.

Member Sumwalt also worked on special assignment to the US Airways Flight Safety Department from 1997 to 2004, where he was involved in the development of numerous airline safety programs; in addition, he served on the US Airways Flight Operational Quality Assurance (FOQA) Monitoring Team.

Member Sumwalt served as a member of the Air Line Pilots Association's (ALPA) Accident Investigation Board, and he chaired ALPA's Human Factors and Training Group. He was a co-founder of that organization's Critical Incident Response Program, which provides guidance to airline personnel involved in traumatic events such as accidents.

From 1991 to 1999, Member Sumwalt conducted aviation safety research as a consultant to NASA's Aviation Safety Reporting System, studying various issues including flight crew performance, improving flight crew monitoring skills, and air carrier de-icing and anti-icing problems.

Member Sumwalt co-authored a book on aircraft accidents and has written extensively on aviation safety matters, having published over 85 articles and papers in aviation trade publications. He has broad experience in writing aircraft operations manuals and airline and corporate aviation policy and procedure guidelines. Before joining the Board, he was a regular contributor to *Professional Pilot* magazine.

In 2003, Member Sumwalt joined the faculty of the University of Southern California's Aviation Safety and Security Program, where he was the primary human factors instructor.



In recognition of his contributions to the aviation industry, Member Sumwalt received the Flight Safety Foundation's Laura Taber Barbour Award in 2003 and ALPA's Air Safety Award in 2005. He is a 2009 inductee into the South Carolina Aviation Hall of Fame.

Since joining the Board, Member Sumwalt has served as the Chairman of the Board of Inquiry for the following NTSB public hearings and forums:

- October 2010 – Fishing Vessel Safety Forum
- February 2010 – collision of two Washington Metropolitan Area Transit Authority trains near Fort Totten Station, Washington, DC, on June 22, 2009
- June 2009 – landing of US Airways flight 1549, Airbus A320, N106US, in the Hudson River, near Weehawken, New Jersey, on January 15, 2009
- February 2009 – safety of HEMS operations

He has served as the Member on scene for the following NTSB accident investigations:

- September 2010 – crash of a Freightliner Mid-Size tour bus on Interstate 270 in Bethesda, Maryland
- July 2010 – collision involving a barge and an amphibious passenger vessel in the Delaware River, near Philadelphia, Pennsylvania
- May 2010 – collision between the Staten Island Ferry Andrew Barberi and the St. George terminal pier in Staten Island, New York
- September 2009 – crash of an emergency medical services helicopter that claimed three lives in Georgetown, South Carolina
- June 2009 – derailment of a CN train which resulted in the explosion and burning of several ethanol tank cars at a grade crossing in Rockford, Illinois
- December 2008 – Continental Airlines flight 1404, a Boeing 737-500 that departed a runway during takeoff roll at the Denver International Airport, and caught fire
- November 2007 – collision between an Amtrak passenger train and a standing Norfolk Southern freight train in Chicago, Illinois
- November 2007 – rupture and explosion of a liquid propane pipeline in Carmichael, Mississippi
- July 2007 – crash of a twin-engine Cessna 310R airplane that impacted homes in a residential area in Sanford, Florida
- October 2006 – derailment of a Norfolk Southern train in New Brighton, Pennsylvania

He also accompanied the NTSB Go-Team to Lexington, Kentucky, for the on-site investigation of the August 27, 2006, crash of Comair flight 5191.

Member Sumwalt is a graduate of the University of South Carolina.



Member Profiles



MARK R. ROSEKIND
Member

Mark R. Rosekind, Ph.D. was sworn in as a Member of the National Transportation Safety Board on June 30, 2010. He was nominated by President Obama and confirmed by the United States Senate for a term that expires on December 31, 2014.

Prior to joining the Board, Member Rosekind was the President and Chief Scientist of Alertness Solutions, a scientific consulting firm that specializes in fatigue management. Before founding Alertness Solutions, Member Rosekind directed the Fatigue Countermeasures Program and was Chief of the Aviation Operations Branch in the Flight Management and Human Factors Division at the NASA Ames Research Center. Prior to his work at NASA, Member Rosekind was the Director of the Center for Human Sleep Research at the Stanford University Sleep Disorders and Research Center.

Member Rosekind is an internationally recognized fatigue expert who has conducted research and implemented programs in diverse settings, including all modes of transportation. He has published 150 scientific, technical, and industry papers and provided hundreds of presentations to operational, general, and scientific audiences. His contributions have been acknowledged through numerous honors and awards, including the NASA Exceptional Service Medal, six other NASA Group/Team Awards, two Flight Safety Foundation honors (Presidential Citation for Outstanding Safety Leadership, Business Aviation Meritorious Award), and as a Fellow of the World Economic Forum in Davos, Switzerland.

Member Rosekind earned his B.A. with Honors at Stanford University, his M.S., M.Phil., and Ph.D. at Yale University, and completed a postdoctoral fellowship at the Brown University Medical School.

Member Rosekind is married and has two children.



Member Profiles



EARL F. WEENER
Member

Earl F. Weener, Ph.D., took the oath of office as a Member of the National Transportation Safety Board on June 30, 2010.

Member Weener is a licensed pilot who has dedicated his entire career to the field of aviation safety. He most recently has been a consultant and fellow for the Flight Safety Foundation, where he worked to reduce accidents through coordinated industry programs.

From 1975 to 1999, Member Weener held a series of positions with The Boeing Company, including three Chief Engineer positions in Airworthiness, Reliability and Maintainability, and Safety; in System Engineering; and in Safety Technology Development. He also served 4 years as Boeing's Manager of Government Affairs.

He has served as a general aviation flight instructor and as a Part 135 pilot.

Member Weener earned all three of his academic degrees—bachelor's, master's, and doctorate—in Aerospace Engineering at the University of Michigan.

Among his awards are a 1994 Laurel Award from *Aviation Week and Space Technology* magazine and, in 2005, the Honeywell Bendix Trophy for Aviation Safety.

Dr. Weener's term as a Member of the NTSB expires December 31, 2015.

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	ACCIDENT DATE	ACCIDENT LOCATION	ACCIDENT CIRCUMSTANCES	REASON NOT INVESTIGATED
<i>Aviation</i>			None to report	
<i>Highway</i>			None to report	
<i>Marine</i>			None to report	
Railroad				
Accidents involving Transit Trains				
<i>RR-- Transit</i>	1/7/2010	Southeastern Pennsylvania	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	1/15/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	1/18/2010	Maryland Transit Administration	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	1/22/2010	Memphis Area Transit Authority	Trolley derailed	Limited Board resources
<i>RR-- Transit</i>	1/25/2010	San Diego Metropolitan Transit System	Train derailed at switch	Limited Board resources
<i>RR-- Transit</i>	1/27/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	1/27/2010	Metro Transit	Train struck pedestrian	Limited Board resources
<i>RR-- Transit</i>	1/29/2010	Los Angeles County Metropolitan	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	1/30/2010	Metropolitan Transit Authority of Harris	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	2/2/2010	Metropolitan Transit Authority of Harris	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	2/3/2010	San Diego Metropolitan Transit System	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	2/3/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	2/4/2010	MTA New York City Transit	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	2/5/2010	San Francisco Municipal Railway	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	2/6/2010	Chicago Transit Authority	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	2/7/2010	Bi-State Development Agency	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	2/8/2010	Metropolitan Transit Authority of Harris	Train struck motor vehicle, derailed train	Limited Board resources
<i>RR-- Transit</i>	2/8/2010	Metropolitan Transit Authority of Harris	Train struck pedestrian	Limited Board resources
<i>RR-- Transit</i>	2/12/2010	New Orleans Regional Transit Authority	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	2/13/2010	MTA New York City Transit	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	2/17/2010	Tri-County Metropolitan Transportation District of	Train struck pedestrian walking on tracks	Limited Board resources
<i>RR-- Transit</i>	2/18/2010	San Francisco Municipal Railway	Train struck rear of historic streetcar	Limited Board resources
<i>RR-- Transit</i>	2/18/2010	MTA New York City Transit	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	2/19/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	2/19/2010	Los Angeles County Metropolitan	Train struck pedestrian	Limited Board resources
<i>RR-- Transit</i>	2/20/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	2/25/2010	New Orleans Regional Transit Authority	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	2/26/2010	Tri-County Metropolitan Transportation District of	Pedestrian walked in front of train.	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
<i>RR-- Transit</i>	2/26/2010	Metropolitan Transit Authority of Harris	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	2/26/2010	MTA New York City Transit	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	2/28/2010	MTA New York City Transit	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	3/4/2010	Sacramento Regional Transit District	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/6/2010	Metropolitan Transit Authority of Harris	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/8/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	3/8/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	3/8/2010	MTA New York City Transit	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	3/9/2010	New Orleans Regional Transit Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/10/2010	Maryland Transit Administration	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/10/2010	Washington Metropolitan Area Transit Authority	Train derailed in yard causing damage to track	Limited Board resources
<i>RR-- Transit</i>	3/10/2010	Central Puget Sound Regional Transit	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/11/2010	MTA New York City Transit	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	3/11/2010	Utah Transit Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/12/2010	MTA New York City Transit	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	3/13/2010	Southeastern Pennsylvania	Train struck tree	Limited Board resources
<i>RR-- Transit</i>	3/14/2010	Santa Clara Valley Transportation Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/15/2010	Metropolitan Transit Authority of Harris	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/16/2010	Miami-Dade Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	3/16/2010	Sacramento Regional Transit District	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/23/2010	Maryland Transit Administration	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/24/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	3/27/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	3/27/2010	Hillsborough Area Regional Transit	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/28/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	3/29/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	3/30/2010	Charlotte Area Transit System	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	3/31/2010	San Francisco Municipal Railway	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	4/2/2010	Central Puget Sound Regional Transit	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	4/6/2010	San Diego Metropolitan Transit System	Train derailed	Limited Board resources
<i>RR-- Transit</i>	4/7/2010	Southeastern Pennsylvania	Train struck trespasser	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
<i>RR-- Transit</i>	4/8/2010	Maryland Transit Administration	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	4/8/2010	Chicago Transit Authority	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	4/9/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	4/9/2010	Sacramento Regional Transit District	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	4/20/2010	Hillsborough Area Regional Transit	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	4/22/2010	San Francisco Municipal Railway	Train struck rear of another train	Limited Board resources
<i>RR-- Transit</i>	4/23/2010	Central Puget Sound Regional Transit	Train struck pedestrian	Limited Board resources
<i>RR-- Transit</i>	4/23/2010	Washington Metropolitan Area Transit Authority	Train derailed in yard causing damage to track	Limited Board resources
<i>RR-- Transit</i>	4/23/2010	Tri-County Metropolitan Transportation District of	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	4/24/2010	MTA New York City Transit	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	4/24/2010	Massachusetts Bay Transportation Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	4/25/2010	Southeastern Pennsylvania	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	4/26/2010	MTA New York City Transit	Employee electrocuted when contacted exposed	Limited Board resources
<i>RR-- Transit</i>	4/30/2010	New Jersey Transit Corporation	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	5/1/2010	San Francisco Municipal Railway	Train derailed in curve	Limited Board resources
<i>RR-- Transit</i>	5/3/2010	Chicago Transit Authority	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	5/4/2010	Santa Clara Valley Transportation Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	5/6/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	5/7/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	5/7/2010	Utah Transit Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	5/13/2010	New Jersey Transit Corporation	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	5/14/2010	MTA New York City Transit	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	5/19/2010	Maryland Transit Administration	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	5/19/2010	Maryland Transit Administration	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	5/20/2010	San Francisco Municipal Railway	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	5/22/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	5/24/2010	San Francisco Municipal Railway	Train derailed at switch	Limited Board resources
<i>RR-- Transit</i>	5/26/2010	Maryland Transit Administration	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	5/27/2010	Valley Metro Rail, Inc.	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	5/27/2010	Maryland Transit Administration	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	5/30/2010	Santa Clara Valley Transportation Authority	Automobile struck train	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
<i>RR-- Transit</i>	6/3/2010	Santa Clara Valley Transportation Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	6/3/2010	Southeastern Pennsylvania	Train collided into rear of another train	Limited Board resources
<i>RR-- Transit</i>	6/4/2010	Valley Metro Rail, Inc.	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	6/10/2010	Massachusetts Bay Transportation Authority	Trolley derailed at switch	Limited Board resources
<i>RR-- Transit</i>	6/12/2010	Tri-County Metropolitan Transportation District of	Train struck pedestrian	Limited Board resources
<i>RR-- Transit</i>	6/14/2010	Chicago Transit Authority	Train derailed at switch	Limited Board resources
<i>RR-- Transit</i>	6/15/2010	Tri-County Metropolitan Transportation District of	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	6/19/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	6/19/2010	Valley Metro Rail, Inc.	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	6/21/2010	San Diego Metropolitan Transit System	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	6/30/2010	San Francisco Bay Area Rapid Transit District	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	6/30/2010	New Jersey Transit Corporation	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	7/2/2010	Memphis Area Transit Authority	Trolley derailed	Limited Board resources
<i>RR-- Transit</i>	7/5/2010	Utah Transit Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	7/6/2010	Massachusetts Bay Transportation Authority	Two train collision in yard.	Limited Board resources
<i>RR-- Transit</i>	7/7/2010	Los Angeles County Metropolitan	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	7/9/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	7/14/2010	Washington Metropolitan Area Transit Authority	Train was offloaded due to heavy smoke in the tunnel	Limited Board resources
<i>RR-- Transit</i>	7/14/2010	Santa Clara Valley Transportation Authority	Train struck pedestrian	Limited Board resources
<i>RR-- Transit</i>	7/15/2010	Chicago Transit Authority	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	7/17/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	7/17/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	7/20/2010	New Jersey Transit Corporation	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	7/20/2010	Chicago Transit Authority	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	7/22/2010	The Greater Cleveland Regional Transit	Train derailed one car	Limited Board resources
<i>RR-- Transit</i>	7/26/2010	San Francisco Municipal Railway	Train derailed at switch	Limited Board resources
<i>RR-- Transit</i>	7/30/2010	Los Angeles County Metropolitan	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	7/31/2010	Southeastern Pennsylvania	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	8/3/2010	Central Puget Sound Regional Transit	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	8/6/2010	The Greater Cleveland Regional Transit	Smoke on train resulted in passengers panicking and	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
<i>RR-- Transit</i>	8/9/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	8/9/2010	Chicago Transit Authority	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	8/11/2010	Metropolitan Transit Authority of Harris	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	8/11/2010	Maryland Transit Administration	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	8/14/2010	Central Puget Sound Regional Transit	Train struck passenger	Limited Board resources
<i>RR-- Transit</i>	8/15/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	8/16/2010	Chicago Transit Authority	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	8/19/2010	Niagara Frontier Transportation Authority	Train derailed at switch	Limited Board resources
<i>RR-- Transit</i>	8/19/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	8/19/2010	Sacramento Regional Transit District	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	8/23/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	8/23/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	8/24/2010	Metropolitan Transit Authority of Harris	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	8/29/2010	MTA New York City Transit	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	8/29/2010	Massachusetts Bay Transportation Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	8/30/2010	Chicago Transit Authority	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	9/4/2010	Massachusetts Bay Transportation Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	9/5/2010	Massachusetts Bay Transportation Authority	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	9/9/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	9/9/2010	Central Puget Sound Regional Transit	Train struck automobile	Limited Board resources
<i>RR-- Transit</i>	9/11/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	9/14/2010	Port Authority of Allegheny County	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	9/19/2010	North County Transit District	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	9/19/2010	New Orleans Regional Transit Authority	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	9/20/2010	Southeastern Pennsylvania	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	9/25/2010	Central Puget Sound Regional Transit	Train struck pedestrian	Limited Board resources
<i>RR-- Transit</i>	9/28/2010	Sacramento Regional Transit District	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	9/30/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	10/1/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	10/6/2010	Chicago Transit Authority	Train struck person at station	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
<i>RR-- Transit</i>	10/6/2010	MTA New York City Transit	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	10/10/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	10/10/2010	New Orleans Regional Transit Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	10/10/2010	The Greater Cleveland Regional Transit	Train derailed	Limited Board resources
<i>RR-- Transit</i>	10/13/2010	Washington Metropolitan Area Transit Authority	Train struck bumping post	Limited Board resources
<i>RR-- Transit</i>	10/17/2010	Memphis Area Transit Authority	Trolley derailed	Limited Board resources
<i>RR-- Transit</i>	10/19/2010	Chicago Transit Authority	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	10/20/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	10/22/2010	New Jersey Transit Corporation	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	10/22/2010	New Jersey Transit Corporation	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	10/23/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	10/24/2010	Massachusetts Bay Transportation Authority	Train struck trespasser	Limited Board resources
<i>RR-- Transit</i>	10/24/2010	Dallas Area Rapid Transit	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	10/30/2010	San Francisco Bay Area Rapid Transit District	Train struck person at station	Limited Board resources
<i>RR-- Transit</i>	10/30/2010	Metropolitan Transit Authority of Harris	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	10/31/2010	Memphis Area Transit Authority	Trolley derailed	Limited Board resources
<i>RR-- Transit</i>	11/1/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	11/5/2010	Massachusetts Bay Transportation Authority	Train derailed while proceeding over switch.	Limited Board resources
<i>RR-- Transit</i>	11/6/2010	Valley Metro Rail, Inc.	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	11/10/2010	New Jersey Transit Corporation	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	11/10/2010	Los Angeles County Metropolitan	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	11/11/2010	Sacramento Regional Transit District	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	11/12/2010	New Jersey Transit Corporation	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	11/17/2010	San Francisco Municipal Railway	Train derailed at switch	Limited Board resources
<i>RR-- Transit</i>	11/17/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	11/18/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
<i>RR-- Transit</i>	11/28/2010	Chicago Transit Authority	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	11/28/2010	Sacramento Regional Transit District	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	12/2/2010	San Francisco Municipal Railway	Train struck motor vehicle	Limited Board resources
<i>RR-- Transit</i>	12/3/2010	Los Angeles County Metropolitan	Train struck pedestrian	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
RR-- Transit	12/3/2010	Los Angeles County Metropolitan	Train struck pedestrian	Limited Board resources
RR-- Transit	12/5/2010	New Orleans Regional Transit Authority	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/5/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
RR-- Transit	12/6/2010	Niagara Frontier Transportation Authority	Automobile struck train	Limited Board resources
RR-- Transit	12/7/2010	Port Authority Transit Corporation	Train struck person at station	Limited Board resources
RR-- Transit	12/7/2010	Valley Metro Rail, Inc.	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/7/2010	Denver Regional Transportation District	Train struck trespasser	Limited Board resources
RR-- Transit	12/9/2010	San Diego Metropolitan Transit System	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/9/2010	Southeastern Pennsylvania	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/12/2010	Chicago Transit Authority	Train derailed one car	Limited Board resources
RR-- Transit	12/12/2010	Tri-County Metropolitan Transportation District of	Train struck trespasser	Limited Board resources
RR-- Transit	12/15/2010	Southeastern Pennsylvania	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/17/2010	Tri-County Metropolitan Transportation District of	Train struck bicyclist	Limited Board resources
RR-- Transit	12/19/2010	San Diego Metropolitan Transit System	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/20/2010	Metropolitan Transit Authority of Harris	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/21/2010	Southeastern Pennsylvania	Automobile struck train	Limited Board resources
RR-- Transit	12/22/2010	Bi-State Development Agency	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/24/2010	New Orleans Regional Transit Authority	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/27/2010	Valley Metro Rail, Inc.	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/27/2010	New Jersey Transit Corporation	Train derailed in curve	Limited Board resources
RR-- Transit	12/27/2010	New Jersey Transit Corporation	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/27/2010	Sacramento Regional Transit District	Train struck trespasser	Limited Board resources
RR-- Transit	12/28/2010	New Orleans Regional Transit Authority	Train struck motor vehicle	Limited Board resources
RR-- Transit	12/28/2010	San Francisco Municipal Railway	Automobile struck train	Limited Board resources
RR-- Transit	12/28/2010	Metropolitan Transit Authority of Harris	Automobile struck train	Limited Board resources
Railroad Freight Accidents over \$1 million				
RR-- Freight	1/11/2010	Dix, NE	UP derailment, \$1.07M. Burned off journal.	Limited Board resources
RR-- Freight	1/12/2010	Walker Springs, AL	NS fire, \$3.4M. Bridge fire damaged locomotives.	Limited Board resources
RR-- Freight	1/14/2010	Keystone, NE	UP derailment, \$\$2.68M. Broken car axle.	Limited Board resources
RR-- Freight	1/21/2010	Gila Bend, AZ	UP derailment, \$1.53M. High wind caused train to	Limited Board resources
RR-- Freight	2/6/2010	Glencoe, PA	CSX derailment, \$2.57M. Excessive snow & ice on	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	ACCIDENT DATE	ACCIDENT LOCATION	ACCIDENT CIRCUMSTANCES	REASON NOT INVESTIGATED
RR-- Freight	1/8/2010	Pleasant Prarie, WI	UP derailment, \$1.18M. Broken switch heel block.	Limited Board resources
RR-- Freight	2/18/2010	Hitchcock, TX	BNSF derailment, \$1.03M. Gapped switch point.	Limited Board resources
RR-- Freight	2/20/2010	Keene, CA	BNSF derailment, \$2.25M. Undesired emergency	Limited Board resources
RR-- Freight	3/6/2010	Wilson Creek, WA	BNSF derailment, \$2.47M. Broken rail car wheel.	Limited Board resources
RR-- Freight	3/7/2010	Jefferson, IA	UP derailment, \$3.05M. Suspected rail head	Limited Board resources
RR-- Freight	3/10/2010	Cheyenne, WY	UP derailment, \$1.48M. Broken rail car wheel.	Limited Board resources
RR-- Freight	3/14/2010	Benavides, TX	KCS derailment, \$1.98M. Undesired emergency	Limited Board resources
RR-- Freight	3/26/2010	Waterloo, IN	NS derailment, \$2.72M. Undesired emergency	Limited Board resources
RR-- Freight	3/27/2010	Alexandria, MO	BNSF derailment, \$1.14M. Derailed 22 cars; cause	Limited Board resources
RR-- Freight	3/31/2010	Norwood, VA	CSX derailment, \$2.3M. Broken rail.	Limited Board resources
RR-- Freight	4/19/2010	Melbern, OH	NS derailment, \$2.43M. Derailed 18 cars; cause	Limited Board resources
RR-- Freight	4/27/2010	Ideal, GA	CSX derailment, \$1.25M. Undesired emergency	Limited Board resources
RR-- Freight	5/4/2010	Ashland, NE	BNSF derailment, \$1.02M. Switch left in reverse	Limited Board resources
RR-- Freight	5/18/2010	Garryowen, MT	BNSF derailment, \$1.3M. Rail profile defective.	Limited Board resources
RR-- Freight	5/23/2010	Robards, KY	CSX derailment, \$1.04M. Emergency brake	Limited Board resources
RR-- Freight	6/1/2010	Slaughters, KY	CSX derailment, \$1.11M. Track alignment.	Limited Board resources
RR-- Freight	6/10/2010	Traber, SC	NS derailment, \$1.68M. Derailed 23 cars. Unkown	Limited Board resources
RR-- Freight	6/14/2010	Frisco, TX	BNSF derailment, \$2.46M. Overheated rail car	Limited Board resources
RR-- Freight	6/16/2010	Valparaiso, IN	CSX derailment, \$2.09M. Track alignment.	Limited Board resources
RR-- Freight	6/20/2010	Wichita Falls, KZ	BNSF derailment, \$1.09M. Defective rail car journal.	Limited Board resources
RR-- Freight	6/21/2010	Brazil, MS	CN derailment, \$1.02M. Track alignment.	Limited Board resources
RR-- Freight	6/23/2010	Libby, MT	BNSF derailment, \$1M. Mud/Rock slide fell into	Limited Board resources
RR-- Freight	6/23/2010	Ashdown, AR	KCS derailment, \$1.02M Track alignment.	Limited Board resources
RR-- Freight	7/3/2010	Sugar Creek, MO	Derailment resulting in collision of car into	Limited Board resources
RR-- Freight	7/8/2010	Duluth, KS	UP derailment, \$1.61M. Broken rail car axle.	Limited Board resources
RR-- Freight	7/10/2010	Mismarck, ND	BNSF derailment, \$2.01M. Undesired emergency	Limited Board resources
RR-- Freight	7/10/2010	Silver Lake, KS	UP derailment, \$3.23M. "Softened" roadbed.	Limited Board resources
RR-- Freight	7/12/2010	City of Industry, CA	UP derailment, \$1.55M. Broken rail.	Limited Board resources
RR-- Freight	7/21/2010	Lewellen, NE	UP derailment, \$1.33M. Defective drain culvert	Limited Board resources
RR-- Freight	7/27/2010	San Antonio, NM	BNSF derailment, \$2.13M. Broken rail.	Limited Board resources
RR-- Freight	7/31/2010	Merna, NE	BNSF derailment, \$1.25M. Track alignment.	Limited Board resources

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RR-- Freight	8/1/2010	Drummond, MT	MRL derailment, \$2.12M. Unkown cause.	Limited Board resources
RR-- Freight	8/3/2010	Melrose, IA	BNSF derailment, \$2.14M. Track alignment.	Limited Board resources
RR-- Freight	8/9/2010	Littlewoods, LA	NS derailment, \$1.55M. Unknown cause.	Limited Board resources
RR-- Freight	8/16/2010	Byhalia, MS	BNSF derailment, \$1.14M. Track alignment.	Limited Board resources
RR-- Freight	9/5/2010	Bartonville, IL	UP derailment, \$2.76M. Broken rail.	Limited Board resources
RR-- Freight	9/8/2010	Hope, KS	UP derailment, \$1.57M. Broken rail.	Limited Board resources
RR-- Freight	9/8/2010	Gibbon, NE	UP derailment, \$3.75M. Broken rail.	Limited Board resources
RR-- Freight	9/9/2010	Fontana, CA	UP rear-end low speed collision, \$1.06M. Red	Limited Board resources
RR-- Freight	9/13/2010	Hager City, WI	BNSF derailment, \$2.09M. Broken rail car axle.	Limited Board resources
RR-- Freight	10/8/2010	Chapmanville, WV	CSX derailment, \$1.49M. Broken rail.	Limited Board resources
RR-- Freight	10/14/2010	Maumelle, AR	UP derailment, \$1.94M. Wheel/Rail interaction.	Limited Board resources
RR-- Freight	10/23/2010	Hanna, WY	UP derailment, \$3.27M. Journal fracture on car	Limited Board resources
RR-- Freight	11/2/2010	Ashland, KY	CSX derailment. \$1.64M. Broken rail.	Limited Board resources
RR-- Freight	11/21/2010	Midville, GA	NS derailment, \$2.35M. Unknown cause.	Limited Board resources
RR-- Freight	11/27/2010	Pueblo, CO	BNSF derailment, \$2.14M. Broken car wheel.	Limited Board resources
RR-- Freight	12/12/2010	Jamestown, ND	BNSF derailment, \$1.28M.	Limited Board resources
RR-- Freight	12/26/2010	McGrew, NE	UP derailment, \$3.5M. Bro	Limited Board resources
Railroad Employee Fatalities				
RR- Employees	1/12/2010	Clarke, AL	NS employee riding on car.	Limited Board resources
RR- Employees	1/29/2010	Hudson, NJ	Conrail employee fell from bridge.	Limited Board resources
RR- Employees	3/16/2010	Allegheny, PA	Union RR collision. Employee in locomotive	Limited Board resources
RR- Employees	3/20/2010	Los Angeles, CA	UP employee in vehicle struck by train at highway-	Limited Board resources
RR- Employees	3/25/2010	Mclean, ND	DMVV employee crushed by locomotive after	Limited Board resources
RR- Employees	4/23/2010	Cook, IL	CSX employee struck by remote controlled	Limited Board resources
RR- Employees	5/31/2010	Hudson, NJ	NJT employee struck by locomotive.	Limited Board resources
RR- Employees	6/2/2010	Union, MS	MTNR employee's head struck by backhoe bucket.	Limited Board resources
RR- Employees	6/10/2010	Hanover, VA	CSX employee struck by freight train.	Limited Board resources
RR- Employees	6/15/2010	Madison, NE	NCRC employee on bridge that collapsed.	Limited Board resources
RR- Employees	6/20/2010	Orleans, LA	CSX employee assaulted and shot on locomotive.	Criminal act.
RR- Employees	7/1/2010	Lauderdale, MS	NS employee struck by rail car in yard.	Limited Board resources
RR- Employees	7/13/2010	Franklin, MA	GRS employee struck by rail car in yard.	Limited Board resources

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RR-Employees	8/27/2010	Jefferson, TX	KCS employee died from electrical shock in yard.	Limited Board resources
RR-Employees	9/23/2010	Nemaha, KS	UP employee in vehicle struck by train at highway-	Limited Board resources
RR-Employees	10/11/2010	Orange, TX	TXTX employee fell from rail car on industry track.	Limited Board resources
RR-Employees	12/1/2010	Douglas, WI	BNSF employee caught between machinery on	Limited Board resources
Accidents involving Passenger Trains				
RR-Pass.	1/7/2010	St Louis, MO	Amtrak derailment at crossover switch.	Limited Board resources
RR-Pass.	1/8/2010	New Haven, CT	Amtrak sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	1/12/2010	Boulogne, FL	Amtrak struck by dislodged door of adjacent	Limited Board resources
RR-Pass.	1/13/2010	Peotone, IL	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	1/15/2010	Bakersfield, CA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	1/15/2010	Bronx, NY	MNCW derailment due to broken wheel.	Limited Board resources
RR-Pass.	1/16/2010	Mount Vernon, NY	MNCW sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	1/18/2010	South Portsmouth, KY	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	1/18/2010	Great Notch, NJ	NJTR sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	1/23/2010	Newington, VA	Amtrak derailed lead wheel at low speed.	Limited Board resources
RR-Pass.	1/24/2010	Santa Ana, CA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	1/25/2010	Chester, PA	SEPTA sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	1/25/2010	Bryn Mawr, PA	SEPTA train struck tree after heavy winds.	Limited Board resources
RR-Pass.	1/27/2010	Washington, DC	Amtrak sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	1/29/2010	Baltimore, MD	MACZ sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	1/29/2010	Fayetteville, NC	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	2/2/2010	West Trenton, NJ	SEPTA train rolled loose due to defective hand	Limited Board resources
RR-Pass.	2/4/2010	Des Plaines, IL	METRA struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	2/10/2010	IL / DU PAGE / HINSDAL	NIRC struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	2/10/2010	Calverton, VA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	2/13/2010	Morrisville, PA	NJTR locomotive caught fire, resulting in	Limited Board resources
RR-Pass.	2/18/2010	Washington, DC	Amtrak sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	2/25/2010	Sunnyvale, CA	PCMZ struck abandoned vehicle on right of way.	Limited Board resources
RR-Pass.	2/26/2010	Bloomfield, NJ	NJTR struck fence that was fouling track,	Limited Board resources
RR-Pass.	2/27/2010	Cheverly, MD	Amtrak sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	2/27/2010	Ventura, CA	Amtrak struck abandoned vehicle on right of way.	Limited Board resources

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RR-Pass.	3/1/2010	Detroit, MI	Amtrak struck fire truck that was parked, fouling	Limited Board resources
RR-Pass.	3/1/2010	Simi Valley, CA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	3/3/2010	Oakland, CA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	3/7/2010	Fort Worth, TX	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	3/13/2010	Princeton Junction, NJ	NJTR sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	3/19/2010	Branchville, CT	MNCW struck another MNCW train that had not	Limited Board resources
RR-Pass.	3/20/2010	El Monte, CA	SCAX struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	3/25/2010	Braintree, MA	MBTA train derailed one car.	Limited Board resources
RR-Pass.	3/29/2010	Auburndale, FL	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	3/31/2010	Aberdeen, MD	MARC train sustained damage to pantagraph	Limited Board resources
RR-Pass.	4/1/2010	Bowie, MD	Amtrak sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	4/10/2010	Bakersfield, CA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	4/12/2010	New York, NY	MNCW struck bumper block in Grand Central	Limited Board resources
RR-Pass.	4/24/2010	Meridian, MS	Amtrak train struck downed trees.	Limited Board resources
RR-Pass.	4/27/2010	Milwaukee, WI	Amtrak derailed locomotive in a crossover.	Limited Board resources
RR-Pass.	4/28/2010	Pontiac, IL	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	5/3/2010	Chicago, IL	METRA struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	5/5/2010	New Haven, CT	MNCW side collision with standing equipment during	Limited Board resources
RR-Pass.	5/5/2010	Fredericksburg, VA	VRE derailment due to wide track gauge.	Limited Board resources
RR-Pass.	5/6/2010	Philadelphia, PA	SEPTA struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	5/10/2010	Claymond, DE	Amtrak sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	5/12/2010	Pompano Beach, FL	TRI-RAIL struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	5/13/2010	Mebane, NC	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	5/16/2010	Oriskany, NY	Amtrak collided with railroad work equipment	Limited Board resources
RR-Pass.	5/19/2010	Philadelphia, PA	Amtrak sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	5/25/2010	Bowie, MD	MACZ sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	5/27/2010	Breedsville, MI	Amtrak struck debris placed on track by	Limited Board resources
RR-Pass.	5/27/2010	Arlington, TX	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	5/28/2010	Frazer, PA	SEPTA sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	5/30/2010	Granite City, IL	Amtrak derailment due to defective rail alignment.	Limited Board resources
RR-Pass.	6/2/2010	Long Island, NY	Amtrak derailment due to gapped switch point.	Limited Board resources

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RR-Pass.	6/4/2010	Bay Head, NJ	NJTR derailment in crossover.	Limited Board resources
RR-Pass.	6/14/2010	Lake Como, FL	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	6/14/2010	Rye, NY	Amtrak struck railroad work equipment fouling	Limited Board resources
RR-Pass.	6/19/2010	Oak Ridge, TN	Museum excursion train derailed locomotive.	Limited Board resources
RR-Pass.	6/23/2010	Merced, CA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	6/23/2010	Floral Park, NY	LIRR struck debris in track, damaging all cars.	Limited Board resources
RR-Pass.	6/27/2010	Port Washington, NY	LIRR struck bumper block in station.	Limited Board resources
RR-Pass.	6/28/2010	Galesburg, MI	Amtrak locomotive on fire. Fire department	Limited Board resources
RR-Pass.	7/1/2010	Princeton Junction, NJ	NJTR train sustained damage to pantograph	Limited Board resources
RR-Pass.	7/1/2010	Hamilton, NJ	NJRT struck vehicle fouling right of way.	Limited Board resources
RR-Pass.	7/6/2010	Red Bank, NJ	NJTR sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	7/9/2010	Newark, NJ	NJTR sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	7/9/2010	Shafter, CA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	7/10/2010	Greenwich, CT	MNCW train damaged due to defective catenary.	Limited Board resources
RR-Pass.	7/14/2010	Coatesville, PA	Amtrak struck tree, causing damage to train	Limited Board resources
RR-Pass.	7/15/2010	Brooklyn, NY	LIRR derailed locomotive, due to going by red signal.	Limited Board resources
RR-Pass.	7/17/2010	Boston, MA	Amtrak sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	7/19/2010	Long Branch, NJ	NJTR sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	7/21/2010	Berlin, CT	Amtrak struck tree, causing damage to train.	Limited Board resources
RR-Pass.	7/31/2010	Williamsburg, VA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	8/6/2010	Shafter, CA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	8/9/2010	Sunset, UT	UFRC struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	8/10/2010	Denver, CO	Amtrak derailed locomotive in a crossover.	Limited Board resources
RR-Pass.	8/12/2010	Oakland Park, FL	SFRV struck vehicle that was intentionally placed to	Limited Board resources
RR-Pass.	8/16/2010	Morrisville, NC	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	8/19/2010	New Canaan, CT	MNCW derailment while operating over switch.	Limited Board resources
RR-Pass.	8/19/2010	Bridgeport, CT	Amtrak sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	8/24/2010	Fort Worth, TX	TREX struck tractor trailer that fouled right of way.	Limited Board resources
RR-Pass.	8/26/2010	Denair, CA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	8/27/2010	Mansfield, MA	Amtrak sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	9/2/2010	New Canaan, CT	MNCW derailed while operating over switch.	Limited Board resources

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RR-Pass.	9/5/2010	Concord, MA	MBTA struck debris in track, causing fuel tank	Limited Board resources
RR-Pass.	9/9/2010	Philadelphia, PA	SEPTA struck a piece of rail being dragged by	Limited Board resources
RR-Pass.	9/9/2010	Macedon, NY	Amtrak struck a pile of asphalt fouling right of	Limited Board resources
RR-Pass.	9/10/2010	Crowley, LA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	9/10/2010	Albuquerque, NM	NMRX struck abandoned vehicle.	Limited Board resources
RR-Pass.	9/23/2010	Stamford, CT	MNCW sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	9/23/2010	Tornillo, TX	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	9/29/2010	Greenwich, CT	MNCW sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	10/7/2010	Camarillo, CA	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	10/9/2010	Coward, SC	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	10/11/2010	Landover, MD	Amtrak sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	10/14/2010	Neward, NJ	Amtrak sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	10/17/2010	Bordentown, NJ	SNJX struck a downed tree.	Limited Board resources
RR-Pass.	10/18/2010	Princeton Junction, NJ	NJTR sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	10/19/2010	Union, NJ	Amtrak sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	10/19/2010	Hialeah, FL	SFRV struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	10/20/2010	Beaumont, TX	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	10/23/2010	Philadelphia, PA	Amtrak sustained damage to pantagraph unit.	Limited Board resources
RR-Pass.	10/25/2010	New York, NY	NJTR derailment due to loose wheel.	Limited Board resources
RR-Pass.	10/27/2010	Boston, MA	MBTA derailment west of switch.	Limited Board resources
RR-Pass.	11/1/2010	Fayetteville, NC	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	11/2/2010	Westwood, NJ	NJTR struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	11/2/2010	Westwood, NJ	NJTR struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	11/3/2010	North Branch, NJ	NJTR struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	11/6/2010	Berkely, SC	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	11/8/2010	Elmwood Park, NJ	NJRT struck vehicle fouling right of way.	Limited Board resources
RR-Pass.	11/9/2010	Coloma, MI	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	11/17/2010	Chicago, IL	NIRC struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	11/22/2010	Blue Island, IL	NIRC struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/1/2010	Rudyard, MT	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/1/2010	Paoli, PN	Amtrak sustained damage to pantagraph unit.	Limited Board resources

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RR-Pass.	12/3/2010	Jasper, IN	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/5/2010	Michigan City, IN	NIRC struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/5/2010	Summit, NJ	NJTR derailed while operating in crossover.	Limited Board resources
RR-Pass.	12/6/2010	Braintree, MA	MBTA struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/8/2010	Marcus Hook, PN	SEPTA sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	12/10/2010	Tualatin, Oregon	PNWR struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/12/2010	Chesterton, IN	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/13/2010	Melrose, NY	MNCW sustained damage to pantograph unit.	Limited Board resources
RR-Pass.	12/17/2010	South Charleston, WV	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/19/2010	Santa Fe, NM	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/24/2010	Michigan City, IN	Amtrak struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/26/2010	Red Bank, NJ	NJTR struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/28/2010	Belmar, NJ	NJTR struck vehicle at highway-rail grade	Limited Board resources
RR-Pass.	12/30/2010	Chicago, IL	Amtrak struck vehicle at highway-rail grade	Limited Board resources
Railroad Trespasser Fatalities				
RR-Trespasser	1/2/2010	CA / CONTRA COSTA	On track, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/3/2010	CA / PLACER	On bridge, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/5/2010	MD / BALTIMORE	On track, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/6/2010	GA / WHITFIELD	On track, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/8/2010	NJ / HUDSON	On track, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/9/2010	CA / MERCED	Between tracks, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/10/2010	LA / TANGIPAHOA	On track, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/13/2010	CA / KERN	On track, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/15/2010	MD / HARTFORD	On track, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/17/2010	AL / GREENE	On track, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/18/2010	NM / DONA ANA	Between tracks, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/22/2010	CA / SANTA CLARA	On track, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/24/2010	GA / WHITFIELD	On track, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/25/2010	NM / BERNALILLO	On bridge, struck by on-track equipment	Limited Board resources
RR-Trespasser	1/25/2010	MO / BUCHANAN	Between cars, slipped, fell, stumbled, other	Limited Board resources
RR-Trespasser	1/26/2010	CT / HARTFORD	On track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	ACCIDENT DATE	ACCIDENT LOCATION	ACCIDENT CIRCUMSTANCES	REASON NOT INVESTIGATED
RR-Tresspasse	1/26/2010	CA / SAN BERNARDINO	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	1/26/2010	WA / ADAMS	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	1/26/2010	FL / DADE	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	1/29/2010	CA / RIVERSIDE	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	1/30/2010	CA / ALAMEDA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	1/30/2010	CA / SOLANO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	1/30/2010	NY / WAYNE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	1/31/2010	CA / SAN JOAQUIN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/1/2010	NJ / MIDDLESEX	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/2/2010	CA / SACRAMENTO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/3/2010	CO / WELD	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/3/2010	NJ / MERCER	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/3/2010	CA / TEHAMA	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/4/2010	PA / TIOGA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/4/2010	MD / HOWARD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/4/2010	FL / DADE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/5/2010	IL / LAKE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/6/2010	FL / BROWARD	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/7/2010	OR / WASCO	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/8/2010	GA / COBB	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/10/2010	TX / DALLAS	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/10/2010	CA / STANISLAUS	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/11/2010	NY / SUFFOLK	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/12/2010	TX / HOCKLEY	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/13/2010	TN / MARSHALL	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/13/2010	AZ / PINAL	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/19/2010	OH / ASHTABULA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/19/2010	TX / HARRIS	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/20/2010	PA / LACKAWANNA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/20/2010	FL / BREVARD	On bridge, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/20/2010	TX / WILLACY	Beside track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	ACCIDENT DATE	ACCIDENT LOCATION	ACCIDENT CIRCUMSTANCES	REASON NOT INVESTIGATED
RR-Tresspasse	2/22/2010	TX / JACKSON	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/25/2010	PA / DELAWARE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/25/2010	CA / SANTA CLARA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/26/2010	CA / CONTRA COSTA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	2/28/2010	OH / HAMILTON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/1/2010	MS / QUITMAN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/1/2010	DE / NEW CASTLE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/1/2010	IL / COOK	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/4/2010	IL / SANGAMON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/7/2010	PA / ERIE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/8/2010	NY / NASSAU	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/8/2010	TX / JOHNSON	On, track, thrill seeking	Limited Board resources
RR-Tresspasse	3/11/2010	NJ / MONMOUTH	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/11/2010	PA / PHILADELPHIA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/11/2010	NJ / ESSEX	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/12/2010	LA / ST CHARLES	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/12/2010	GA / COBB	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/12/2010	NY / SUFFOLK	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/12/2010	NC / MECKLENBURG	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/12/2010	TX / UVALDE	On car, slipped, fell, stumbled, other	Limited Board resources
RR-Tresspasse	3/13/2010	OH / SUMMIT	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/15/2010	FL / HILLSBOROUGH	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/16/2010	SC / CHARLESTON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/17/2010	KY / GRAYSON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/22/2010	WI / MILWAUKEE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/23/2010	FL / BROWARD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/24/2010	FL / DUVAL	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/26/2010	MD / ALLEGANY	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	3/29/2010	PA / BUCKS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/1/2010	FL / MARION	On track, struck by object	Limited Board resources
RR-Tresspasse	4/2/2010	PA / ALLEGHENY	Beside track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
RR-Tresspasse	4/2/2010	TX / HARRIS	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/3/2010	TX / HAYS	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/5/2010	MO / HOWELL	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/5/2010	AL / MADISON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/5/2010	IA / STORY	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/6/2010	PA / DELAWARE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/6/2010	MN / BECKER	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/7/2010	FL / HILLSBOROUGH	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/8/2010	MS / HARRISON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/8/2010	CA / SAN MATEO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/9/2010	WI / MILWAUKEE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/9/2010	NY / NASSAU	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/10/2010	WI / DODGE	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/11/2010	OH / FRANKLIN	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/13/2010	NY / ERIE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/15/2010	LA / CADDO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/15/2010	VA / SMYTH	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/18/2010	IL / WILL	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/21/2010	GA / GWINNETT	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/22/2010	UT / DAVIS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/23/2010	CA / SANTA BARBARA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/23/2010	NM / VALENCIA	On car, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/23/2010	NY / SUFFOLK	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/24/2010	CA / LOS ANGELES	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/26/2010	FL / ESCAMBIA	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/26/2010	CA / KERN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/28/2010	CA / CONTRA COSTA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	4/29/2010	PA / DELAWARE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/3/2010	CA / SANTA CLARA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/5/2010	NJ / PASSAIC	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/6/2010	MD / ANNE ARUNDEL	On track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
RR-Tresspasse	5/8/2010	IA / WAPELLO	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/8/2010	NC / ROWAN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/9/2010	IN / NOBLE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/9/2010	CA / MADERA	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/9/2010	GA / CLARKE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/10/2010	NM / MCKINLEY	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/10/2010	TX / TAYLOR	Between tracks, thrill seeking	Limited Board resources
RR-Tresspasse	5/12/2010	CA / CONTRA COSTA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/12/2010	GA / HOUSTON	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/12/2010	WI / WAUKESHA	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/13/2010	OH / LUCAS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/13/2010	FL / HILLSBOROUGH	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/13/2010	OH / SUMMIT	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/13/2010	FL / BROWARD	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/13/2010	IL / COOK	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/14/2010	CO / OTERO	Struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/14/2010	MD / WASHINGTON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/15/2010	GA / BEN HILL	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/15/2010	FL / BREVARD	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/16/2010	CA / STANISLAUS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/17/2010	IL / DU PAGE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/19/2010	NM / MCKINLEY	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/20/2010	IL / IROQUOIS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/21/2010	NY / ERIE	On bridge, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/21/2010	CA / VENTURA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/22/2010	MO / FRANKLIN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/22/2010	IL / COOK	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/22/2010	IN / STARKE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/22/2010	PA / DAUPHIN	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/22/2010	PA / PHILADELPHIA	On car, electrical shock	Limited Board resources
RR-Tresspasse	5/23/2010	NC / DURHAM	On track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
RR-Tresspasse	5/24/2010	CA / TEHAMA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/25/2010	PA / BERKS	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/26/2010	CA / SAN BERNARDINO	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/26/2010	AZ / SANTA CRUZ	Between cars, caught between equipment	Limited Board resources
RR-Tresspasse	5/27/2010	NY / BRONX	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/27/2010	CA / PLACER	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/28/2010	IL / MADISON	Struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/28/2010	MO / HOWELL	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/29/2010	MI / KALAMAZOO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/29/2010	LA / LAFAYETTE	On car, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/29/2010	TN / DICKSON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/29/2010	NY / SUFFOLK	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/29/2010	NY / ROCKLAND	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/30/2010	CA / SAN DIEGO	Struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/30/2010	AR / FULTON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/30/2010	IL / COOK	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/31/2010	AZ / YAVAPAI	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	5/31/2010	NC / MECKLENBURG	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/2/2010	OH / WOOD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/2/2010	OH / FRANKLIN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/2/2010	MI / KALAMAZOO	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/2/2010	NJ / CAMDEN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/2/2010	MI / MONROE	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/2/2010	AR / HOT SPRING	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/3/2010	IN / ST JOSEPH	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/4/2010	IL / FRANKLIN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/5/2010	GA / TROUP	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/5/2010	MN / PENNINGTON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/5/2010	AR / PULASKI	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/7/2010	IL / COOK	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/8/2010	FL / PASCO	Beside track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	ACCIDENT DATE	ACCIDENT LOCATION	ACCIDENT CIRCUMSTANCES	REASON NOT INVESTIGATED
RR-Tresspasse	6/9/2010	OH / ERIE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/9/2010	CA / MONTEREY	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/10/2010	FL / BROWARD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/10/2010	TX / BEXAR	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/11/2010	PA / MONTGOMERY	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/14/2010	CA / FRESNO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/14/2010	IL / MACON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/14/2010	CA / SAN MATEO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/15/2010	TX / FORT BEND	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/15/2010	KY / FAYETTE	Between cars, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/15/2010	AZ / PINAL	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/16/2010	CA / SAN JOAQUIN	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/18/2010	OH / MIAMI	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/19/2010	CA / FRESNO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/19/2010	CA / KERN	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/20/2010	OR / DESCHUTES	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/20/2010	GA / DE KALB	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/20/2010	NY / JEFFERSON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/20/2010	MI / GENESEE	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/20/2010	SC / CHARLESTON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/21/2010	WA / PIERCE	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/22/2010	IN / GRANT	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/22/2010	FL / PALM BEACH	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/23/2010	CA / ORANGE	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/23/2010	NV / CHURCHILL	In car, slipped, fell, stumbled, other	Limited Board resources
RR-Tresspasse	6/24/2010	WA / PIERCE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/26/2010	NJ / UNION	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/27/2010	MT / ROOSEVELT	Struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/27/2010	GA / CLARKE	Beside track, caught, crushed, pinched, other	Limited Board resources
RR-Tresspasse	6/28/2010	OK / CLEVELAND	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/29/2010	PA / LEBANON	Beside track, struck by on-track equipment	Limited Board resources

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<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
RR-Tresspasse	6/30/2010	IL / COOK	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	6/30/2010	SC / OCONEE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/1/2010	WI / BUFFALO	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/1/2010	WA / SNOHOMISH	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/1/2010	NY / ESSEX	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/1/2010	IL / COOK	On platform, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/1/2010	IL / COOK	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/1/2010	AL / CALHOUN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/1/2010	TX / KINNEY	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/1/2010	TX / KINNEY	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/3/2010	AL / LIMESTONE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/5/2010	IL / WARREN	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/6/2010	NC / CABARRUS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/7/2010	WA / LEWIS	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/8/2010	GA / FULTON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/8/2010	MD / PRINCE GEORGE'S	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/9/2010	NJ / MIDDLESEX	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/9/2010	IN / RANDOLPH	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10-Jul	CO / ADAMS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/10/2010	NC / ORANGE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/10/2010	SD / DAY	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/10/2010	IL / VERMILION	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/10/2010	MI / WAYNE	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/10/2010	MS / FORREST	On end of car, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/11/2010	IL / COOK	On bridge, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/11/2010	LA / CADDO	On bridge, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/11/2010	OH / BUTLER	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/11/2010	PA / BERKS	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/13/2010	CA / SAN BERNARDINO	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/14/2010	CA / SACRAMENTO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/15/2010	CA / SAN LUIS OBISPO	On track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
RR-Tresspasse	7/16/2010	IL / DU PAGE	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/17/2010	TX / BEXAR	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/18/2010	GA / FULTON	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/18/2010	WI / OUTAGAMIE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/20/2010	TX / BEXAR	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/22/2010	SC / DORCHESTER	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/23/2010	IL / MCLEAN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/23/2010	NV / EUREKA	In car, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/24/2010	MO / BATES	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/25/2010	MD / MONTGOMERY	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/26/2010	MD / MONTGOMERY	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/26/2010	NJ / ESSEX	On bridge, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/27/2010	NJ / MONMOUTH	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/27/2010	IL / MARSHALL	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/27/2010	MA / BERKSHIRE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/28/2010	WV / BERKELEY	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/29/2010	NY / ULSTER	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/29/2010	OR / UMATILLA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/29/2010	CA / SACRAMENTO	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/31/2010	NM / BERNALILLO	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/31/2010	TX / DALLAS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/31/2010	CA / SAN LUIS OBISPO	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	7/31/2010	MO / FRANKLIN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/1/2010	WA / PIERCE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/1/2010	GA / HABERSHAM	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/2/2010	MA / WORCESTER	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/2/2010	TN / ANDERSON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/7/2010	FL / PALM BEACH	Struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/7/2010	LA / ST TAMMANY	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/7/2010	CA / STANISLAUS	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/8/2010	MD / BALTIMORE	On track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
RR-Tresspasse	8/8/2010	WA / PIERCE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/9/2010	FL / VOLUSIA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/11/2010	AZ / MARICOPA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/12/2010	FL / VOLUSIA	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/12/2010	TN / HAMBLEN	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/13/2010	GA / LOWNDES	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/16/2010	NJ / PASSAIC	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/17/2010	WI / VERNON	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/17/2010	KY / FAYETTE	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/18/2010	MT / LINCOLN	On side of car, lost balance	Limited Board resources
RR-Tresspasse	8/18/2010	NV / PERSHING	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/20/2010	AZ / COCONINO	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/20/2010	IL / DU PAGE	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/21/2010	CA / VENTURA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/21/2010	TN / HUMPHREYS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/21/2010	FL / INDIAN RIVER	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/21/2010	MS / HOLMES	On side of car, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/22/2010	TX / BEXAR	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/22/2010	WA / KING	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/23/2010	CT / HARTFORD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/23/2010	MN / ST LOUIS	Under car, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/24/2010	NJ / MONMOUTH	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/25/2010	AZ / LA PAZ	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/25/2010	TN / CAMPBELL	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/26/2010	IN / MADISON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/26/2010	CA / FRESNO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/27/2010	NC / IREDELL	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/28/2010	NY / HERKIMER	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/29/2010	NJ / MONMOUTH	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/29/2010	OK / LE FLORE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/31/2010	GA / BRANTLEY	Beside track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	ACCIDENT DATE	ACCIDENT LOCATION	ACCIDENT CIRCUMSTANCES	REASON NOT INVESTIGATED
RR-Tresspasse	8/31/2010	NJ / UNION	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	8/31/2010	TN / ROANE	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/1/2010	KY / MADISON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/2/2010	VA / CAMPBELL	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/3/2010	AL / LEE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/3/2010	OR / LANE	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/4/2010	VA / CHESTERFIELD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/4/2010	FL / HILLSBOROUGH	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/4/2010	FL / BROWARD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/4/2010	NJ / SOMERSET	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/4/2010	OH / PAULDING	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/6/2010	FL / BROWARD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/7/2010	MI / BERRIEN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/9/2010	CA / ORANGE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/11/2010	LA / LINCOLN	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/12/2010	IL / ST CLAIR	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/12/2010	TX / BEXAR	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/16/2010	NM / TORRANCE	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/17/2010	TX / CORYELL	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/17/2010	CA / LOS ANGELES	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/18/2010	FL / PALM BEACH	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/19/2010	WA / CLARK	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/20/2010	VA / CAROLINE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/21/2010	NJ / BERGEN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/21/2010	TX / DALLAS	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/22/2010	KS / WILSON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/23/2010	TX / TRAVIS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/25/2010	TX / FORT BEND	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/25/2010	FL / SUWANNEE	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/25/2010	NJ / ESSEX	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/25/2010	GA / JENKINS	On track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
RR-Tresspasse	9/26/2010	CO / DENVER	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/26/2010	CA / MERCED	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/28/2010	NY / ROCKLAND	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	9/28/2010	FL / WALTON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/2/2010	DC / WASHINGTON, DC	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/3/2010	WI / VERNON	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/3/2010	MD / ALLEGANY	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/3/2010	FL / BREVARD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/4/2010	MD / BALTIMORE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/6/2010	FL / PALM BEACH	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/6/2010	TX / BEXAR	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/7/2010	LA / AVOYELLES	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/8/2010	WI / TREMPEALEAU	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/8/2010	AL / TALLADEGA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/8/2010	VA / RICHMOND	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/8/2010	PA / PHILADELPHIA	Beside track, thrill seeking	Limited Board resources
RR-Tresspasse	10/9/2010	TX / HARRIS	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/11/2010	NC / DURHAM	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/11/2010	CA / ALAMEDA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/11/2010	NC / CATAWBA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/12/2010	MD / CARROLL	On bridge, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/13/2010	KS / SEDGWICK	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/13/2010	ND / MORTON	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/13/2010	MD / MONTGOMERY	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/14/2010	AZ / GILA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/15/2010	CA / KINGS	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/17/2010	CA / MADERA	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/17/2010	FL / BRADFORD	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/17/2010	NY / QUEENS	On end of car, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/17/2010	MA / PLYMOUTH	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/19/2010	CA / SAN JOAQUIN	On track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
RR-Tresspasse	10/19/2010	NC / UNION	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/20/2010	PA / CHESTER	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/20/2010	OR / LINN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/21/2010	PA / ALLEGHENY	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/21/2010	PA / PERRY	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/22/2010	AR / POINSETT	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/22/2010	IL / VERMILION	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/24/2010	FL / MARION	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/24/2010	SC / SPARTANBURG	On bridge, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/25/2010	WI / CRAWFORD	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/25/2010	LA / BIENVILLE	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/26/2010	NC / WAKE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/26/2010	MD / MONTGOMERY	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/26/2010	NC / ROCKINGHAM	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/29/2010	CA / SAN MATEO	Between cars, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/30/2010	MI / INGHAM	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/30/2010	FL / VOLUSIA	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/30/2010	OK / TEXAS	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	10/31/2010	NY / WAYNE	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/1/2010	NJ / SOMERSET	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/4/2010	MI / WAYNE	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/4/2010	AR / ARKANSAS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/4/2010	CA / SAN JOAQUIN	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/5/2010	CT / HARTFORD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/5/2010	CA / ALAMEDA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/5/2010	AZ / PIMA	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/6/2010	OH / HAMILTON	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/9/2010	CA / FRESNO	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/9/2010	TX / FRIO	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/10/2010	NJ / PASSAIC	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/11/2010	WV / JEFFERSON	On track, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
RR-Tresspasse	11/11/2010	NY / QUEENS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/12/2010	NC / CUMBERLAND	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/13/2010	OK / ROGERS	On end of car, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/14/2010	MD / HOWARD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/14/2010	CA / SAN JOAQUIN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/15/2010	NY / DUTCHESS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/18/2010	CT / HARTFORD	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/19/2010	FL / ORANGE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/19/2010	CA / SAN JOAQUIN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/21/2010	WA / KING	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/22/2010	MD / BALTIMORE	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/22/2010	CA / SHASTA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/23/2010	AR / POINSETT	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/24/2010	IL / COOK	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/24/2010	UT / DAVIS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/25/2010	WA / KING	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/25/2010	KY / HOPKINS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/26/2010	CA / SAN LUIS OBISPO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/28/2010	AZ / PIMA	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	11/30/2010	IL / TAZEWELL	On track, struck by object	Limited Board resources
RR-Tresspasse	12/1/2010	IL / KNOX	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/1/2010	PA / DELAWARE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/1/2010	TX / HAYES	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/3/2010	CA / ALAMEDA	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/3/2010	KS / SEDGWICK	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/5/2010	TX / DENTON	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/5/2010	PA / WESTMORELAND	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/6/2010	CT / NEW HAVEN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/6/2010	IL DU PAGE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/11/2010	NJ / MIDDLESEX	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/11/2010	FL / BROWARD	On bridge, struck by on-track equipment	Limited Board resources

Appendix A: Accidents Required to be Investigated Under Section 1131 But not Investigated				
<i>Mode</i>	<i>ACCIDENT DATE</i>	<i>ACCIDENT LOCATION</i>	<i>ACCIDENT CIRCUMSTANCES</i>	<i>REASON NOT INVESTIGATED</i>
RR-Tresspasse	12/11/2010	TX / WHARTON	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/13/2010	CA / ORANGE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/13/2010	NC / CABARRUS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/13/2010	NC / WAKE	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/16/2010	NC / CABARRUS	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/17/2010	MO / MACON	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/17/2010	NE / DOUGLAS	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/17/2010	NM / SANDOVAL	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/18/2010	NC / MECKLENBURG	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/18/2010	NJ / BERGEN	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/19/2010	MO / JACKSON	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/20/2010	OH / BUTLER	On bridge, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/20/2010	CA / SACRAMENTO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/21/2010	NJ / MONMOUTH	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/23/2010	CA / SAN BERNARDINO	Between tracks, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/25/2010	CA / SAN BERNARDINO	On track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/28/2010	OK / WOODWARD	Beside track, struck by on-track equipment	Limited Board resources
RR-Tresspasse	12/28/2010	TX / GREGG	Beside track, struck by on-track equipment	Limited Board resources

**Appendix B: Accidents Exceeding the expected time
allotted for completion by Board Order**

MODE	ACCIDENT DATE	ACCIDENT LOCATION	ACCIDENT CIRCUMSTANCES	REASON NOT INVESTIGATED
AVIATION	7/31/2008	Owatonna, Minnesota	Crash During Attempted Go-Around	Awaiting Information from External Sources; Limited Resources; Technical Complexity
AVIATION	1/27/2009	Lubbock, Texas	Crash on Approach	Awaiting Information from External Sources; Limited Resources
AVIATION	3/22/2009	Butte, Montana	Crash on Approach	Involved New Technology -- Needed to develop performance; Limited resources; Technical difficulty
AVIATION	6/6/2009	Santa Fe, New Mexico	Helicopter Accident During SAR Mission	Limited Resources
HIGHWAY	10/22/2009	Indianapolis, Indiana	Tanker rollover while negotiating a curve in the roadway. Tank contained propane.	Held a public hearing on 8/3/10 to gather additional information
MARINE	10/22/2008	Bering Sea, 120 miles west of Adak, Aleutian Islands, Alaska (Amchitka Pass)	F/V Katmai - Sinking - Marine Board of Investigation led by USCG	Limited Resources and conflicting higher priority investigations
RAILROAD	1/16/2007	Shepherdsville, Kentucky	CSX Freight Train Derailment of Hazardous Materials/Fire	Technical complexity; Limited Resources
RAILROAD	4/1/2008	Walbridge, Ohio	Yard Foreman Struck by CSX Freight Car	Limited Resources
RAILROAD	5/28/2008	Chicago, Illinois	Derailment of Chicago Transit Authority Passenger Cars on Elevated Track	Limited Resources
RAILROAD	11/20/2008	Rialto, California	Southern California Regional Rail Authority (Metrolink) Passenger Train in Raking Collision with BNSF Railway Company Freight Train	Limited Resources
RAILROAD	5/8/2009	Boston, Massachusetts	Collision of Two Massachusetts Bay Transportation Authority Trains	Limited Resources
RAILROAD			Employee Fatality While Switching Cars at CSX Selkirk Yard	Limited Resources
RAILROAD	6/19/2009	Cherry Valley, Illinois	Freight Train Derailment and Fire	Limited Resources
RAILROAD	7/5/2009	Lake Buena Vista, Florida	Disney Monorail System	Limited Resources
RAILROAD	7/18/2009	San Francisco, California	San Francisco Municipal Railway (MUNI) Rear-end Collision at West Portal Station	Limited Resources
RAILROAD	11/29/2009	Falls Church, Virginia	Washington Metropolitan Area Transit Authority (WMATA) Rear-end Collision with Standing Train	Awaiting information from external sources; Limited Resources

The following is the NTSB's report of progress toward adopting GAO recommendations, shown here in the same format as GAO reports [GAO-08-652T](#) and [GAO-10-183T](#). Following each table is an NTSB management analysis of improvements implemented between April 2008 and December 2010. The discussion focuses on areas where the agency has shown significant progress since the earliest GAO assessment. A full bubble indicates the status as *fully implemented*, a half bubble indicates *significant progress*, and an empty bubble indicates *new recommendation or limited progress*, based on either GAO's or our internal evaluation.

Management Recommendations

No.	GAO Recommendation	GAO Assessment Apr. 2008	GAO Assessment Oct. 2009	NTSB Assessment Dec. 2010
	Communication			
1	Develop mechanisms to facilitate communication from staff to management.	●	●	●
2	Report to Congress on the status of GAO recommendations.	◐	●	●
	Strategic Planning			
3	Develop a revised strategic plan.	◐	◐	●
	Information Technology (IT)			
4	Develop an IT plan.	○	●	●
5	Encrypt information/data on all laptops and mobile devices.	○	●	●
6	Limit local administrator privileges to those accounts that require that level of access.	○	◐	●
	Knowledge Management			
7	Develop a knowledge management plan to create, capture, and reuse knowledge to achieve NTSB objectives.	◐	◐	●
	Organizational Structure			
8	Align organizational structure to implement strategic plan.	●	●	●
9	Eliminate unnecessary management layers.	◐	◐	●
	Human Capital Management			
10	Develop a human capital plan.	◐	◐	●
	Training			
11	Develop a strategic training plan.	○	◐	●
12	Develop a core curriculum for investigators.	○	◐	●

No.	GAO Recommendation	GAO Assessment Apr. 2008	GAO Assessment Oct. 2009	NTSB Assessment Dec. 2010
	Financial Management			
13	Correct violation of the Anti-Deficiency Act related to purchasing accident insurance for employees on official travel.	●	●	●
14	Correct violation of the Ant-Deficiency Act related to agency's lease of the training center.	◐	◐	●
15	Develop a full cost accounting system to track time employees spend on each investigation and in training.	○	◐	●

Discussion

The NTSB has made significant progress addressing all of the general management recommendations originally issued by GAO in May and November 2006 and updated in April 2008 and October 2009. For example, the agency has greatly improved communications by disseminating management advisories, increasing the frequency of staff meetings, holding several all-hands meetings, and implementing a communications advisory committee. Three agency-wide communications surveys were implemented 1 year apart, and the third survey revealed significant improvements in communications over time. The survey schedule is now biennial, to better reflect communication implementations. The next survey will be conducted during spring of 2011.

Moreover, the Training Center and Human Resources Division have determined key competencies that are critical for various types of positions and have made progress in developing training to address these competencies. The instructions for developing individual development training plans (IDPs) include a requirement for addressing core competencies. Ongoing review of the curriculum offered by the Training Center ensures that this curriculum addresses the needs of the workforce. The [Strategic Human Capital Plan](#) offers insight into how the NTSB develops training consistent with the governmentwide best practices advocated by OPM. In 2010, the Training Center introduced the first of a series of investigative skills courses for NTSB investigative staff. The purpose is both to educate new investigators on NTSB policies, procedures and techniques and to allow experienced investigators to share best practices that they have learned and used over the years. More courses are planned for 2011. Also, by developing and implementing the *Strategic Development & Training Plan*, we will be able to use specific performance measures to gauge the progress of training objectives, which will allow the agency to identify core competencies and better address the needs of the workforce.

In addition, as reported by GAO in its October 2009 testimony, the NTSB has undertaken several initiatives to recruit a stronger, more diverse pool of candidates for positions. The agency's approach for increasing diversity and strengthening its workforce includes the continuation of such agency training programs as the Executive Leadership Program, the Management Development Candidate Program, and the Upward Mobility Program, all of which are designed to ensure equal opportunity and promote the most diverse workforce possible. In addition, the agency has published the *NTSB Diversity Resources Guide*, a recruitment handbook that provides specific strategies and guidance intended to ensure the most diverse pool of external applicants for all applicable staff vacancies through the senior executive level. In 2010, the NTSB chartered and implemented a diversity task force, a top-leadership-sponsored effort that will formulate additional strategies and action steps to promote a highly diverse and well-qualified workforce. This task force developed key recommendations in 2010 and is currently

implementing those recommendations. In addition, a diversity blog was created to increase awareness, update management and staff, and establish an internal communication channel for diversity issues.

Finally, regarding the full cost accounting system, a Management Advisory was issued to staff indicating that we have begun a 90-day pilot project that will include participants from the Office of the Chairman, the Office of the Chief Financial Officer, and selected employees from the Aviation Safety's Western Region and the Office of Highway Safety's Investigations Division. The NTSB completed negotiations over the terms of the pilot test with union representatives.

Employees participating in the pilot have been trained and are actively recording project information. The data is being monitored and reports are being designed in the financial management application.

We have begun the pilot of the system, which will run until April 23, 2011. To date, results have been satisfactory, and we are continuing to monitor our progress. The next steps include reviewing the results; finalizing guidance and training modules based on lessons learned and observations; conducting training with timekeepers, supervisors, and other employees; and implementing the process agency-wide.

Accident Investigation, Mission, and Safety Studies Recommendations

No.	GAO Recommendation	GAO Assessment Apr. 2008	GAO Assessment Oct. 2009	NTSB Assessment Dec. 2010
1	Accident Selection Develop agency orders for all modes articulating risk-based criteria for selecting which accidents to investigate	◐	●	●
2	Recommendation Close-out Computerize related documentation and use concurrent reviews	◐	◐	●
3	Report Development Identify better practices in the agency and apply them to all modes	◐	◐	●
4	Safety Studies Increase utilization of safety studies	○	◐	●

Discussion

Since the GAO report was finalized in April 2008, the NTSB has developed and published formal risk-based launch criteria for all modes of transportation. In addition, we have developed and deployed an agency-wide document-management platform, the Correspondence, Notation, and Recommendation System (CNS), in September 2010, that is based on Microsoft SharePoint and that streamlines both the recommendation closeout and report development processes. The implementation of this system has markedly reduced the agency's response time.

Finally, we have increased the utilization of safety studies and published one safety study during 2010, [Glass Cockpit Avionics into Light Aircraft](#). As a result of this safety study, the NTSB made six recommendations to the FAA. Airbags are now becoming standard equipment on newly manufactured general aviation (GA) aircraft. In January 2011, the [Airbag Performance in General Aviation Restraint Systems](#) safety study was

adopted by the Board. The NTSB initiated this study, which also resulted in six recommendations to the FAA, to examine accidents involving airbag-equipped GA aircraft to gain a better understanding of the effects of airbag deployment in actual accidents. In addition, an ongoing safety study is reviewing the associated safety risks with human fatigue in transportation safety. The goal of this study is to improve and standardize the methods for investigating fatigue in transportation accidents.

Training Center Utilization Recommendations

No.	GAO Recommendation	GAO Assessment Apr. 2008	GAO Assessment Oct. 2009	NTSB Assessment Dec. 2010
1	Maximize the delivery of core investigator curriculum at the Training Center	◐	◐	●
2	Develop plans to increase utilization of the Training Center	◐	●	●

Discussion

Since the GAO report was issued, the NTSB has taken a number of additional steps to increase the utilization of the Training Center. The agency entered into an agreement with the Federal Air Marshalls Service to sublease much of the first floor of the building. Since that time, the Department of Homeland Security has rented space on the second floor. With these two contracts; other smaller, short-term rentals; and additional classroom offerings, the Training Center increased its overall utilization rate to 79 percent during 2010. Among the additional courses is the first of a series devoted to investigative skills for NTSB investigative staff. The purposes of the series are to educate new investigators on NTSB policies, procedures and techniques, and to provide opportunities for experienced investigators to share best practices that they have learned and used over the years.

Information Technology and Privacy Recommendations

No.	GAO Recommendation	GAO Assessment Apr. 2008	NTSB Assessment Dec. 2010
	FISMA		
1	Ensure that the CIO monitors all key corrective actions and provides the necessary funding and human resources	◐	●
	Access Controls		
2	Remove access authorities to NTSB systems from personnel who are no longer NTSB employees	●	●
3	Maintain documentation supporting the initial access granted to a user	◐	●
4	Develop detailed operational procedures to guide system security officers and system owners in the process of recertifying users	○	●
5	Develop a process to properly analyze and complete the annual recertification of users' access authorities	○	●

No.	GAO Recommendation	GAO Assessment Apr. 2008	NTSB Assessment Dec. 2010
6	Implement a control to automatically suspend an account after a period of nonuse	○	●
7	Privacy Act Update the plan of action milestones to reflect the current status of the NTSB's actions to address Privacy Act and OMB memoranda	●	●
8	Comply with requirements of the Privacy Act and policy set forth by OMB memoranda	○	●

Discussion

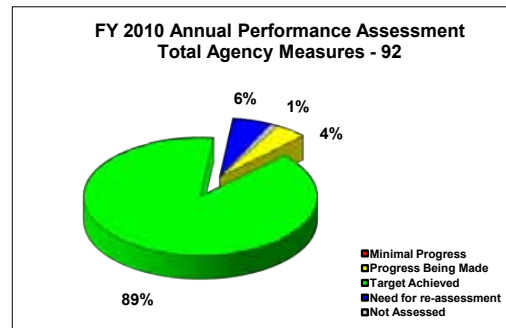
The NTSB's Office of the Chief Information Officer has demonstrated the commitment to monitor work on all key corrective actions and allocate available resources (human, capital, and technical) to continue to improve the agency's FISMA position. Given the dynamic nature of FISMA compliance, it is anticipated that future recommendations may be generated by GAO-sanctioned audits, and that any future recommendations would receive the same level of attention and commitment of resources. In addition, the NTSB has fully addressed the issues of removing access authorities for individuals who have left the agency, as well as automatically suspending accounts after a specified period. Moreover, the agency has made progress in the area of annual recertification of user access authorities. The establishment of new user access is tracked in the new hire process and documented in the NTSB's automated tracking system. Further, we have updated operational bulletins providing guidance and standards in the creation and maintenance of user accounts that explicitly address the requirements of recertifying users and their access rights. Finally, we have established a control to automatically suspend an account after a pre-set period of nonuse.

The NTSB has made significant progress in the area of privacy. The agency published a comprehensive and fully revised set of Systems of Records Notices in the *Federal Register* during the summer of 2008, and the NTSB also finalized and published eight agency-wide procedures documents related to privacy. Further, the agency developed an online privacy awareness training course, and the entire workforce successfully completed the new training. Finally, we developed role-specific privacy training, and we deployed this training, which includes Privacy Awareness for Managers and Privacy Awareness for List Managers, in 2010.



NATIONAL TRANSPORTATION SAFETY BOARD 2010 Annual Performance Assessment

The National Transportation Safety Board (NTSB) has achieved 89 percent of its performance targets for fiscal year 2010. NTSB performance is guided by four strategic goals: (1) accomplish objective investigations of transportation accidents, (2) from investigations, recommend and advocate actions that will improve transportation safety, (3) provide outstanding stewardship of resources, and (4) achieve organizational excellence. During fiscal year 2010, agency activities were based on 17 specific strategic objectives and 70 performance measures that cascaded from these four strategic goals and directly related to organizational and employee performance.



Listed below are several of the key performance targets that the agency successfully met:

- The Board adopted 23 reports that had resulted from the completion of major accident investigations.
- 75 percent of safety recommendations on the Federal Most Wanted List were closed based upon acceptable action taken by the Department of Transportation modal agencies and the United States Coast Guard over the last 5 years.
- The Office of Administrative Law Judges disposed of 80 percent of total cases.
- The Transportation Disaster Assistance team provided 100 percent support in family assistance coordination for 11 accident investigations.
- The NTSB enhanced human capital management through the completion of the 5 hiring reform action items required by the Office of Personnel Management.
- The NTSB improved internal operating efficiency by reengineering work processes as part of several technology deployments in support of agency goals.

Throughout the year, performance measures were evaluated as the agency continued to develop a targeted set of outcome/results-oriented measures consistent with the NTSB's mission. As a result of this effort, the 2011 Operating Plan includes just 32 performance measures, with 37.5 percent of those measures focusing on outcomes/results, in accordance with government performance management best practices. The remainder of the measures are classified as either output or efficiency performance measures. The NTSB will continue to evaluate and adjust its performance management program as applicable.

NTSB Planning Documents

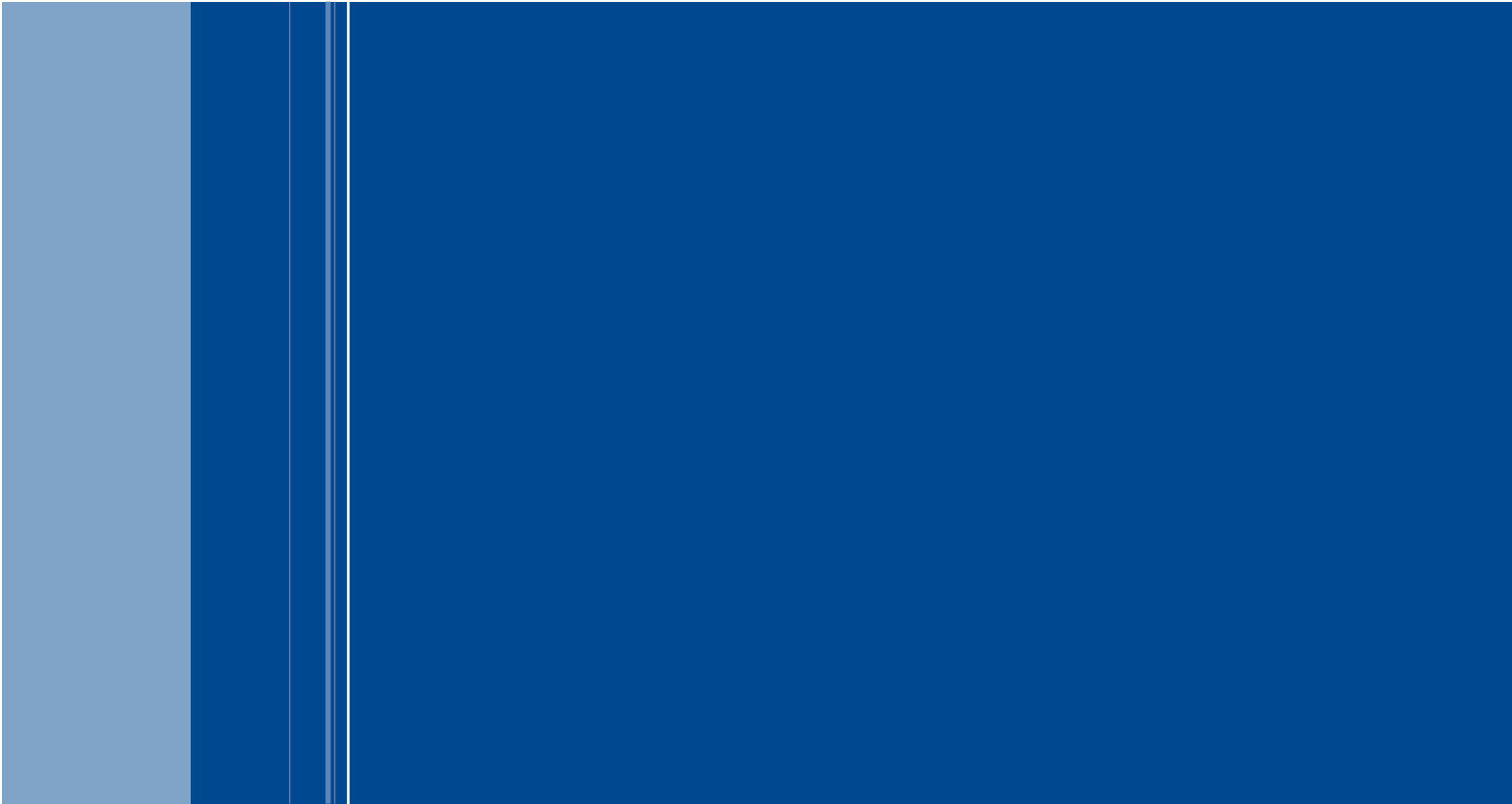
[2010-2015 NTSB Strategic Plan](#)

[2008-2012 Strategic Human Capital Plan](#)

[2010-2015 Information Technology Strategic Plan](#)

[2009 Annual Report to Congress](#)

[2009 Performance and Accountability Report](#)



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