National Transportation Safety Board

Fiscal Year 2026 Budget Request

National Transportation Safety Board

Office of the Chairwoman

Washington, DC 20594

May 30, 2025

The Honorable JD Vance
President
United States Senate
Washington, DC 20510

The Honorable Mike Johnson
Speaker
United States House of Representatives
Washington, DC 20515

Dear Mr. President and Mr. Speaker:

On behalf of the National Transportation Safety Board (NTSB), the enclosed budget submission reflects the president's request of **$145 million** and funds 445 full-time equivalents (FTE) for fiscal year (FY) 2026. This funding level is flat from the FY 2025 enacted funding levels and reflects a decrease of $5 million from the FY 2025 President's Budget Request of $150 million and 455 FTEs and a decrease of $3 million from the NTSB's FY 2026 authorized levels, as contained in the FAA Reauthorization Act of 2024 (Public Law 118-63). The funding level assumes no pay raise for federal staff and a 2.0% non-pay inflation increase for FY 2026.

We are exceedingly grateful to President Trump, the entire Administration, and Congress for their steadfast support of NTSB's critical safety mission. The decrease in requested funding reflects the agency's current hiring ability, as retirements and other departures combined with the current federal civilian hiring freeze have reduced staffing levels from a high of 445 employees in FY 2024 to 412 employees as of June 1, 2025, with more departures anticipated over the coming months. As you will see, the vast majority of the agency's budget is devoted to our workforce. In line with the Administration's goal of efficient utilization of government resources, we are currently performing reviews of agency structure and staffing; upon completion of that review, the agency will move forward with appropriate staffing decisions and corresponding requests. As conscious stewards of the American taxpayer's dollar, the NTSB is committed to spending what we have been enacted at before requesting funds that may not be fully utilized.

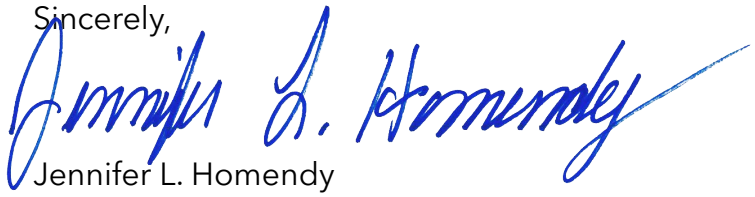
The NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in the other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events

we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and the US Coast Guard and adjudicate appeals of civil penalty actions taken by the FAA.

The products and initiatives highlighted in this submission not only reflect our agency's mission accomplishments in the past year, it also outlines initiatives that will enable us to continue to improve processes and products that support the agency's critical transportation safety mission into the future. The NTSB has already taken a myriad of actions intended to improve service for the American people, increase productivity, and reduce spending on contracts and other purchases. Such reforms include an agency leadership review of all employee positions and termination of any positions not deemed critical to the safety mission through attrition and a contract review that has resulted in nearly $1 million in cost savings through rescoping, renegotiation or termination of annual unnecessary contracts. This request will allow us to continue hiring professionals with highly technical skills, advance expertise in emerging technologies through training and development, modernize our own internal IT environment to enable efficient transportation investigations, and increase productivity and effectiveness in accomplishing our safety mission.

As an agency, we are grateful to have the opportunity to invest our resources in people and processes that help make transportation safer for the public. As we submit this budget for your consideration, there is no shortage of work for the NTSB: we continue to lead and support the investigations of over 1,000 domestic transportation accidents and incidents, including the ongoing investigation of the midair collision of an Army Black Hawk helicopter and PSA Airlines flight 5342 in Washington, DC on January 29, 2025; we continue to deliver transportation disaster assistance to over 1,900 family members of fatally injured passengers involved in our investigations; we continue to lead and support over 200 foreign aviation accident and incident investigations as Accredited Representative; and we continue to fully implement Executive Orders and Presidential Memorandums. Full funding at the requested level of $145 million provides sustained support of this critical mission.

Sincerely,



Jennifer L. Homendy
Chairwoman

Enclosures

cc: The Honorable Steve Womack
Chair
Subcommittee on Transportation, Housing and
Urban Development, and Related Agencies
Committee on Appropriations
US House of Representatives

The Honorable James Clyburn
Ranking Member
Subcommittee on Transportation, Housing and
Urban Development, and Related Agencies
Committee on Appropriations
US House of Representatives

The Honorable Cindy Hyde-Smith
Chair
Subcommittee on Transportation, Housing and
Urban Development, and Related Agencies
Committee on Appropriations
US Senate

The Honorable Kristen Gillibrand
Ranking Member
Subcommittee on Transportation, Housing and
Urban Development, and Related Agencies
Committee on Appropriations
US Senate

National Transportation Safety Board

Fiscal Year 2026
Budget Request

National Transportation Safety Board
490 L'Enfant Plaza, SW
Washington, DC 20594
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ABBREVIATIONS, ACRONYMS, AND INITIALISMS

AAL	American Airlines
ADS–B	automatic dependent surveillance–broadcast
AI	artificial intelligence
ATC	air traffic control
CAROL	Case Analysis and Reporting Online
CDO	chief data officer
CDS	chief data scientist
CFR	*Code of Federal Regulations*
CIDER	Crash Investigation Data Extraction and Readout
CSX	CSX Transportation
CVR	cockpit voice recorder
CVSA	Commercial Vehicle Safety Alliance
DAL	Delta Air Lines
DHS	Department of Homeland Security
DOT	US Department of Transportation
DREAM	Data Recorders, Electronics, and Analysis Management
EEO	equal employment opportunity
Evidence Act	Foundations for Evidence-Based Policymaking Act of 2018
FAA	Federal Aviation Administration
FDR	flight data recorder
FedEx	Federal Express
FEVS	Federal Employee Viewpoint Survey

FHWA	Federal Highway Administration
FISMA	Federal Information Security Management Act
FMCSA	Federal Motor Carrier Safety Administration
FOIA	Freedom of Information Act
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FTE	full-time equivalent
FY	fiscal year
ICAO	International Civil Aviation Organization
IIC	investigator-in-charge
IMO	International Maritime Organization
IT	information technology
JFK	John F. Kennedy International Airport
MAIIF	Marine Accident Investigators' International Forum
MEDICS	Medical Information Catalog System
mph	miles per hour
NARA	National Archives and Records Administration
NHTSA	National Highway Traffic Safety Administration
NPRM	notice of proposed rulemaking
NS	Norfolk Southern Railway
NTSB	National Transportation Safety Board
OMB	Office of Management and Budget
PAN	IMO ship registration code for Panama
PATCO	Port Authority Transit Corporation

PennDOT	Pennsylvania Department of Transportation
PREVIEW	Protected Recording Viewer
RMM	roadway maintenance machine
SAFTI	System for Analysis of Federal Transportation Investigations
SES	Senior Executive Service
SL	senior level
SMS	safety management system
SSA	Safe Skies for Africa
ST	scientific and professional
SUV	sport utility vehicle
SVK	IMO ship registration code for Slovakia
SWA	Southwest Airlines
TMF	Technology Modernization Fund
UAS	unmanned aircraft system (drone)
UP	Union Pacific Railroad
US	United States
U.S.C.	*United States Code*
WMATA	Washington Metropolitan Area Transit Authority

EXECUTIVE SUMMARY

The National Transportation Safety Board is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in the other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The enclosed budget submission reflects the president's request of **$145 million** and funds 445 full-time equivalents (FTE) for fiscal year (FY) 2026. This funding level is flat from the FY 2025 enacted funding levels and reflects a decrease of $5 million from the FY 2025 President's Budget Request of $150 million and 455 FTEs and a decrease of $3 million from the NTSB's FY 2026 authorized levels, as contained in the FAA Reauthorization Act of 2024 (Public Law 118-63).

We have seen, and public safety has benefited from, our annual appropriations increase from $129.3 million in FY 2023 to $145 million in FY 2025. As a result of these funding increases, the agency has been able to make much needed progress in hiring. As an agency, we rely on a staff of highly skilled individuals with technical expertise in the areas of aerospace, electrical, and mechanical engineering; chemistry; metallurgy; human performance; and other specialized fields to conduct accident investigations and identify life-saving safety improvements. To be able to carry out our mission-critical work, we must have a fully staffed and trained workforce ready to respond to more than 1,300 new accidents per year, 24 hours a day, 7 days a week, and deliver comprehensive, timely, and concise investigation outcomes and safety recommendations to protect life and property and prevent future transportation-related accidents and injuries from occurring.

We greatly appreciate the funding provided by the FY 2025 Continuing Appropriations and Extensions Act, which provided us the resources to hire staff for investigations and investigative support to fill our authorized level of 450 positions. The monumental technological transformation of the transportation industry over the last two decades has increased the complexity of our investigations. To continue as the world's preeminent safety agency, promptly complete our investigations, and develop recommendations that

advance safety improvements without delays, we must meet the challenges that come with the innovative technologies that will alter the transportation systems of tomorrow. Our requested resources will allow us to continue hiring professionals with highly technical skills, advance expertise in emerging technologies through training and development, and modernize our internal information technology systems to enable efficient transportation investigations, continue addressing mandated cybersecurity enhancements, and better protect against increasingly sophisticated malicious cyber-attacks.

MISSION AND ORGANIZATION OVERVIEW

Since its creation in 1967 as an accident investigation agency within the newly created US Department of Transportation (DOT), the NTSB's mission has been to determine the probable causes of transportation accidents and incidents and to formulate safety recommendations to improve transportation safety. Our authority currently extends to the following types of accidents:

- All US civil aviation accidents and certain public aircraft accidents.
- Select highway crashes and highway–rail grade-crossing collisions.
- Railroad accidents involving passenger trains and accidents involving freight trains that result in fatalities or significant property damage.
- Major marine casualty accidents and any marine accident involving both a public and a nonpublic vessel.
- Pipeline accidents involving fatalities, substantial property damage, or significant environmental damage.
- Select accidents resulting in the release of hazardous materials in any mode of transportation.
- Select transportation accidents that involve problems of a recurring nature or that are catastrophic, including defined commercial space transportation accidents.

In 1974, Congress passed the Independent Safety Board Act, which severed the NTSB's ties to the DOT and authorized the agency to take the following additional actions:

- Evaluate the effectiveness of government agencies involved in transportation safety.
- Evaluate the safeguards used in the transportation of hazardous materials.
- Evaluate the effectiveness of emergency responses to hazardous materials accidents.
- Conduct special studies on transportation safety problems.
- Maintain an official US census of aviation accidents and incidents.

- Review appeals from individuals and entities who have been assessed civil penalties by the FAA.
- Decide on appeals of enforcement actions by the FAA and US Coast Guard and certificate denials by the FAA.

The NTSB also leads US teams assisting in international aviation accident investigations conducted by foreign authorities under the provisions of the International Civil Aviation Organization (ICAO). In 1996, the Aviation Disaster Family Assistance Act assigned the NTSB the additional responsibility of coordinating federal government resources to support local and state governments, disaster relief organizations, and transportation carriers to address the concerns of accident survivors and family members following air carrier accidents that have occurred in the United States or its territories resulting in a loss of life (Title 49 *United States Code* [*U.S.C.*] section 1136). The rail passenger disaster family assistance provisions of the Rail Safety Improvement Act of 2008 assigned the NTSB similar responsibilities for rail passenger disasters resulting in a loss of life (Title 49 *U.S.C.* section 1139). In 2018, our reauthorization expanded our family assistance responsibilities, obligating the agency, to the maximum extent practicable, to provide information regarding NTSB investigative processes and products to the families of individuals involved in any accidents we investigate before we provide this information to the media (Title 49 *U.S.C.* section 1140). Currently, the primary focus of agency efforts is to ensure compliance for accidents involving fatalities.

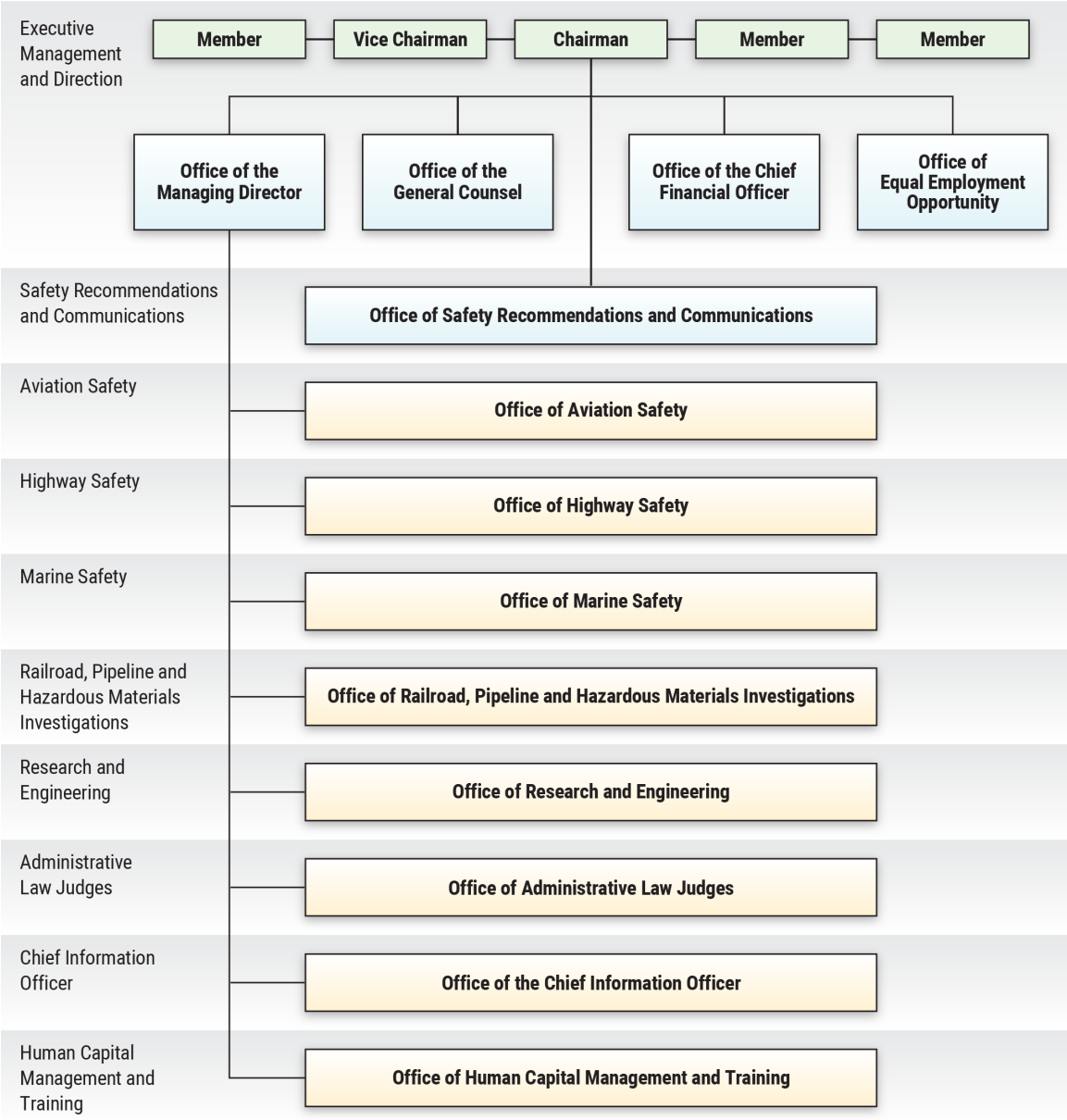
As of September 30, 2024, the NTSB has investigated more than 151,000 aviation accidents and incidents in the United States, assisted on more than 8,100 foreign events, and investigated thousands of surface transportation accidents. On call 24 hours a day, 365 days a year, our investigators have traveled throughout the United States and to every corner of the world to do their work. Because of this dedication, we are recognized as the world's leading accident investigation agency. We have issued 15,555 safety recommendations derived from the findings of NTSB investigations to more than 2,500 recipients in all transportation modes.

We are not authorized to regulate transportation equipment, personnel, or operations, or to initiate enforcement action. However, because of our reputation for objectivity and thoroughness, many safety features currently incorporated into airplanes, helicopters, automobiles, commercial motor vehicles, trains, pipelines, marine vessels, and space vehicles, in addition to numerous operational safety measures, had their genesis in NTSB safety recommendations. Additional information about the status of our safety recommendations is provided in Appendix B.

Our five-member Board comprises appointees nominated by the president and confirmed by the Senate. A chairman (one of the five members, nominated to this position by the president and confirmed by the Senate) serves as the chief executive officer and chief administrative officer of the NTSB. The president designates another member as vice chairman.

The NTSB is headquartered in Washington, DC. We also have staff stationed at offices in Aurora, Colorado; Anchorage, Alaska; and Federal Way, Washington; as well as other locations throughout the country.

Program Activity and Organization Structure



RESOURCE REQUIREMENTS

Appropriations Language

Salaries and Expenses – 424-2026-2026-0310

"For necessary expenses of the National Transportation Safety Board, including hire of passenger motor vehicles and aircraft; services as authorized by 5 *U.S.C.* 3109, but at rates for individuals not to exceed the per diem rate equivalent to the rate for a GS-15; uniforms or allowances therefore, as authorized by law (5 *U.S.C.* 5901-5902), $145,000,000 of which not to exceed $1,000 may be used for official reception and representation expenses."

Emergency Fund – 424-X-0311

No new funding is being requested for the Emergency Fund in FY 2026.

NATIONAL TRANSPORTATION SAFETY BOARD
SALARIES AND EXPENSES

Obligations by Object Classification ($000s)

	Identification Code: 424-0310-0-1-407	FY 2024	FY 2025	FY 2026
	Personnel Compensation & Benefits:			
11.1	Permanent Positions	65,723	69,224	69,968
11.3	Positions Other Than Permanent	2,483	3,292	3,327
11.5	Other Personnel Compensation	3,465	3,830	3,868
	Total Personnel Compensation	71,671	76,346	77,163
12.1	Personnel Benefits	25,666	28,094	28,316
	Subtotal, Personnel Compensation & Benefits	97,337	104,440	105,479
	Other Than Personnel Compensation & Benefits:			
21.0	Travel & Transportation of Persons	3,377	3,764	3,414
22.0	Transportation of Things	125	128	130
23.1	Rental Payments to General Services Administration	10,376	10,594	11,154
23.2	Rental Payments to Others	221	225	230
23.3	Communications, Utilities, & Miscellaneous Charges	1,146	987	1,007
24.0	Printing & Reproduction	92	94	96
25.0	Other Contractual Services	22,081	20,713	20,376
26.0	Supplies & Materials	996	1,029	953
31.0	Equipment	3,236	3,026	2,161
32.1	Leasehold Improvements	405	0	0
99.9	Total Obligations	139,392	145,000	145,000
	Personnel Summary:			
	Full-Time Equivalents (FTEs)	432	445	445
	Positions	440	450	450

NATIONAL TRANSPORTATION SAFETY BOARD
SALARIES AND EXPENSES

Obligations by Program Activity ($000s)

Identification Code: 424-0310-0-1-407	FY 2024	FY 2025	FY 2026
Executive Management and Direction	26,008	26,944	26,926
Safety Recommendations & Communications	9,988	10,327	10,321
Aviation Safety	37,495	39,040	39,010
Information Technology & Services	11,277	11,581	11,575
Research & Engineering	15,667	16,629	16,717
Administrative Law Judges	3,156	3,238	3,237
Highway Safety	10,433	10,855	10,847
Marine Safety	6,298	6,567	6,562
Railroad, Pipeline & Hazardous Materials Investigations	14,509	15,083	15,072
Human Capital Management & Training	4,561	4,736	4,733
Total	139,392	145,000	145,000

NATIONAL TRANSPORTATION SAFETY BOARD
SALARIES AND EXPENSES

FTEs and Positions by Program Activity

Identification Code: 424-0310-0-1-407	FY 2024		FY 2025		FY 2026	
	FTE	Pos.	FTE	Pos.	FTE	Pos.
Executive Management and Direction	**81**	**81**	**80**	**80**	**80**	**80**
Chairman, Vice Chairman, Board Members	14	14	17	17	17	17
Office of the Managing Director	36	36	34	34	34	34
Office of the General Counsel	7	9	10	10	10	10
Office of the Chief Financial Officer	22	20	18	18	18	18
Office of Equal Employment Opportunity	2	2	1	1	1	1
Safety Recommendations & Communications	**34**	**34**	**29**	**29**	**29**	**29**
Aviation Safety	**120**	**125**	**132**	**133**	**132**	**133**
Information Technology & Services	**27**	**27**	**26**	**26**	**26**	**26**
Research and Engineering	**45**	**47**	**48**	**49**	**48**	**49**
Administrative Law Judges	**11**	**9**	**7**	**7**	**7**	**7**
Highway Safety	**32**	**35**	**36**	**37**	**36**	**37**
Marine Safety	**21**	**22**	**23**	**24**	**23**	**24**
Railroad, Pipeline & Hazardous Materials Investigations	**48**	**47**	**49**	**50**	**49**	**50**
Human Capital Management & Training	**13**	**13**	**15**	**15**	**15**	**15**
Total	**432**	**440**	**445**	**450**	**445**	**450**

NATIONAL TRANSPORTATION SAFETY BOARD
SALARIES AND EXPENSES

Analysis of Changes – FY 2025 to FY 2026 ($000s)

$ 559 Staffing Changes

The requested funding level provides for an FTE level of 445, which is flat from the FTE level supported by the FY 2025 Enacted funding level.

$ 497 Pay Increase

Funds to cover the prorated impact of a 0-percent pay raise effective January 1, 2026.

$ (17) Other Personnel Compensation Decrease

Funds to cover other personnel-related compensation, including the FY 2026 increase to employee health benefits contributions offset by a decrease in Federal Employee Compensation Acts expenses.

$ 502 Non-pay Inflation

Inflation of 2-percent is used for non-pay inflation based on economic assumptions for discretionary programs.

$ (1,541) Operational Decrease

Increases in General Services Administration lease expenses offset by a reduction in contractual services, IT system modernization, and investigative equipment expenses.

$ 0 Total

Summary of Changes

$ 145,000	FY 2025 Level (supports 445 FTEs/450 positions)
$ 0	Total Increase/Decrease
$ 145,000	FY 2026 Level (supports 445 FTEs/450 positions)

NATIONAL TRANSPORTATION SAFETY BOARD
SALARIES AND EXPENSES

Non-Senior Executive Service/Senior Level/Scientific and Professional Awards

The following information outlines estimated non-Senior Executive Service/senior level/scientific and professional (non-SES/SL/ST) awards spending as a percentage of non-SES/SL/ST salary spending for FY 2024, FY 2025, and FY 2026.

	Non-SES/SL/ST Salary Spending ($000s)	Awards
FY 2024 Actuals	$62,964	2.2%
FY 2025 Estimate	$66,613	2.2%
FY 2026 Request	$67,359	2.2%

EXECUTIVE MANAGEMENT AND DIRECTION

	($000s)	FTEs	Pos.
FY 2025 Estimate	$26,944	80	80
FY 2026 Request	$26,926	80	80
Increase/Decrease	($18)	0	0

Overview of the Request

The funding level for this program assumes no pay raise in FY 2026 and includes a minor reduction to operational costs to absorb the impacts of a 2.0 percent non-pay inflation increase.

Program Description

The executive management and direction program resources fund the offices of the chairman, vice chairman, and members of the Board, as well as the Offices of the Managing Director, General Counsel, Chief Financial Officer, and Equal Employment Opportunity. Collectively, these offices provide overall leadership, management, and direction for the NTSB.

Chairman, Vice Chairman, and Board Members

The chairman serves as the chief executive officer and chief administrative officer for the agency. The chairman, vice chairman, and Board members participate in NTSB Board meetings; review and approve NTSB reports, safety studies, and safety recommendations; provide appellate review of FAA certificate and certain civil penalty actions, as well as US Coast Guard license actions; and act as spokespersons at accident scenes. They also advocate for specific safety recommendations with the transportation community, other federal agencies, state and local governments, and the public.

Office of the Managing Director

The Office of the Managing Director assists the NTSB chairman in managing the day-to-day operations of the agency and performs the agency's executive, investigative, and administrative functions to ensure maximum operational effectiveness. The office coordinates staff activities, develops operational procedures, and establishes plans to achieve program objectives. In addition, the office develops and oversees the implementation of agency-level performance and operating plans, including initiatives and results to improve agency processes and accountability. As the agency's chief

operating officer, the managing director is responsible for the overall leadership, direction, and performance of the agency. In this capacity, the managing director oversees the following:

- The chief data officer (CDO)
- Occupational Safety and Health Division
- The Office of Administrative Law Judges
- Operations and administrative programs (through the principal deputy managing director for management and operations)
- Transportation investigations and functions (through the deputy managing director for investigations)

Consistent with the Foundations for Evidence-Based Policymaking Act of 2018 (Evidence Act), the Office of the Managing Director (through the CDO) spearheads strategic planning efforts and uses data to ensure that the agency's objectives and performance outcomes are driven and measured by accurate and timely information. Additionally, the CDO evaluates agency programs, administers the agency's enterprise risk management program, and provides recommendations to the managing director and the NTSB chairman to improve organizational efficiency, effectiveness, and procedural compliance. The CDO promotes a data-driven culture by encouraging data sharing, informed decision-making, and data literacy among employees. As chairman of the Data Governance Board, the CDO advances data science techniques, including machine learning and artificial intelligence (AI), to anticipate and address emerging transportation safety trends and agency business needs.

The chief data scientist (CDS) works under the CDO to support agencywide efforts to better use data for strategic decision-making. The CDS is also the agency's chief AI officer and is responsible for applying machine learning, AI, and advanced data science methods and techniques to support agency investigations and research; analyzing and reporting emerging transportation safety trends; and monitoring agency operational performance.

The Occupational Safety and Health Division ensures agency compliance with the Occupational Safety and Health Act of 1970 and other occupational federal, state, and local statutory and regulatory mandates, guidelines, standards, and procedures, and ensures safe working conditions for NTSB employees (both in the office and on scene during investigations). This includes planning, implementing, and evaluating the agency's safety and health program to reduce the potential for human and economic losses associated with our work on incident and accident scenes. The division chief co-chairs the agency's Safety & Security Committee and directs the implementation and oversight of multiple programs to minimize agency safety

risks, including the agency's on-site risk assessment, peer support, employee wellness, and launch clinician programs.

The principal deputy managing director for management and operations manages and oversees the agency's operations and administrative programs, including the agency's real property leases for the NTSB headquarters and regional offices as well as the following offices and divisions:

- Office of the Chief Information Officer
- Office of Human Capital Management and Training
- Executive Secretariat Division
- Administrative Operations and Security Division
- Transportation Disaster Assistance Division

The Executive Secretariat Division coordinates all official written material sent to or from the agency. The division is responsible for the following:

- Managing Board voting processes in accordance with the Government in the Sunshine Act and agency directives.
- Issuing *Federal Register* notices.
- Coordinating executive-level reviews of Board products, such as investigation reports, operational procedures, and agency strategy documents.
- Controlling, monitoring, processing, and distributing all official agency correspondence.
- Standardizing and providing procedural guidance to Board members, the managing director, office directors, and their staff.
- Archiving official agency records related to Board actions.
- Writing and editing correspondence, agency reports, and other documents for the Board, the managing director, and agency offices.

The Administrative Operations and Security Division manages the NTSB's facilities and building management program, including physical and personnel security, property and space management, facilities maintenance, mail services, and fleet vehicle transportation. The division also operates and maintains the NTSB's Boardroom, which is used to conduct the agency's Government in the Sunshine Act meetings and other Board-related events in an open forum for public attendance.

The Transportation Disaster Assistance Division ensures that the agency meets its statutory obligations under Title 49 *U.S.C.* sections 1136, 1139, and 1140. These obligations include responding to all major aviation accidents and rail accidents investigated by the NTSB and coordinating federal government resources to support local and state governments, disaster relief organizations, and transportation carriers to address the concerns of survivors, families, and friends. The division also assists the agency's peer support and stress awareness programs as part of the agency's employee assistance program. Additional information on division activities is provided in Appendix C.

The deputy managing director for investigations oversees the agency's transportation investigations and functions, including the following offices and division:

- Office of Aviation Safety
- Office of Highway Safety
- Office of Marine Safety
- Office of Railroad, Pipeline and Hazardous Materials Investigations
- Office or Research and Engineering
- Special Operations Division

The Special Operations Division is responsible for the following:

- Coordinating the agency's engagement with special access programs.
- Serving as the primary interagency liaison with the Federal Bureau of Investigation; federal, state, and local emergency response organizations; and other pertinent first responder agencies.
- Helping public safety agencies better prepare their response to transportation disasters.
- Overseeing the Response Operations Center, which provides support 24 hours a day, 365 days a year for agencywide operational requirements, including accident launches and collecting and disseminating information related to transportation accidents and incidents.
- Coordinating and managing the agency's evidence management program and the unmanned aircraft systems (UAS) program to support accident scene documentation.

- Coordinating the NTSB's Official Passport Program and ensuring the agency follows all Department of State protocols and processes for obtaining and maintaining official passports.
- Managing the agency's continuity of operations plans and interfacing with the Federal Emergency Management Agency to ensure readiness and compliance.

Office of the General Counsel

The General Counsel serves as the agency's chief legal officer, ensuring the NTSB's statutory responsibilities are implemented and acting as the designated agency ethics official. The Office of the General Counsel advises NTSB officials on legal and operational issues arising under the NTSB's governing legislation and regulations, and related legal matters. The office is also responsible for the following:

- Providing enabling legal support to all NTSB modes of transportation and corresponding safety investigations, programs, and activities to ensure the effective and efficient operation of the NTSB.
- Issuing subpoenas from the General Counsel, on behalf of the NTSB Chairman, to gather the appropriate evidence needed in NTSB safety investigations.
- Coordinating with other Federal and State agencies that have parallel investigative roles related to accidents that the Board investigates to ensure that the NTSB maintains its lead federal agency role while coordinating as appropriate as set forth in 49 U.S.C. § 1131 and applicable regulations.
- Providing legal and drafting support to the Board enabling it to issue opinions and orders related to reviews on appeal of enforcement actions by the FAA and US Coast Guard and certificate denials by the FAA.
- Administering the agency's ethics program, including annual financial disclosure programs for General Schedule and SES employees and the annual ethics training program, and providing highly technical advice and assistance to Board members.
- Providing support related to board governance including public board meeting compliance with the Sunshine Act as well as open meetings and nonpublic collaborative discussions of the Board consistent with 49 U.S.C. § 1111(k).

- Launching in support of complex on-scene accident investigations and providing internal legal assistance and guidance on all other aspects of NTSB accident and incident investigations, such as hearings, witness appearances, acquiring evidence by subpoena and other means, and taking depositions.
- Making determinations about the release of official information for use in litigation not involving the United States and coordinating with the Department of Justice and assistant US attorneys across the United States to intervene in civil litigation as necessary to protect NTSB investigative information.
- Ensuring compliance with statutes concerning public access to information through publication of NTSB decisions and releases under the Freedom of Information Act (FOIA).
- Representing the NTSB (or assisting the Department of Justice) in administrative and judicial forums, including the US Equal Employment Opportunity Commission, the Merit Systems Protection Board, and US district courts in personnel matters and litigation arising from the agency's accident investigations, and in other matters and litigation in which the agency has an interest.
- Reviewing contracts and acquisition documents and files.

Office of the Chief Financial Officer

The Office of the Chief Financial Officer manages NTSB financial resources, develops the agency's budget requests for submission to the Office of Management and Budget (OMB) and Congress, and executes the budget for resources Congress appropriates to the NTSB. The office also does the following:

- Preparing the agency's financial statements, as required by the Accountability of Tax Dollars Act.
- Overseeing property- and inventory-control programs and the NTSB's travel and purchase card programs.
- Managing agency accounting and financial practices.
- Overseeing internal controls to comply with the requirements of the Federal Managers' Financial Integrity Act.
- Managing the NTSB acquisition program.
- Awarding and administering contracts and agreements.
- Awarding real property leases for the NTSB headquarters and regional offices.

- Providing internal customers with acquisition guidance and training.

Office of Equal Employment Opportunity

The Office of Equal Employment Opportunity (EEO) advises and assists the chairman and NTSB office directors in carrying out their responsibilities related to Title VII of the Civil Rights Act of 1964, as amended, and other laws, executive orders, equal employment opportunity (EEO) complaint processing, and reasonable-accommodation requests. Full-time staff provide these services to agency managers, employees, and job applicants. To maintain the integrity and impartiality of the EEO complaints resolution program, the agency contracts with external EEO counselors and investigators to help employees and job applicants who file formal or informal complaints of alleged discrimination. In addition, the office manages the agency's alternative dispute resolution and American Sign Language interpretation programs, and provides required educational compliance training to NTSB staff.

SAFETY RECOMMENDATIONS AND COMMUNICATIONS

	($000s)	FTEs	Pos.
FY 2025 Estimate	$10,327	29	29
FY 2026 Request	$10,321	29	29
Increase/Decrease	($6)	0	0

Overview of the Request

The funding level for this program assumes no pay raise in FY 2026 and includes a minor reduction to operational costs to absorb the impacts of a 2.0 percent non-pay inflation increase.

Program Description

The Office of Safety Recommendations and Communications comprises four divisions: Media Relations, Government and Industry Affairs, Safety Recommendations, and Investigative Support Services Division. The office ensures that information regarding NTSB investigations, activities, and safety recommendations is accurately and effectively communicated to a range of stakeholders, including elected officials and their staff at the federal, state, and local levels; industry representatives; media; and the public. The office's mission begins at the scene of an accident, continues through the NTSB accident investigation and the resulting issuance of safety recommendations, and is maintained through outreach efforts to secure favorable action on safety recommendations from the public and private sectors.

Media Relations Division

The Media Relations Division is responsible for the following:

- Serving as the primary point of contact for the release of investigative and other agency information to the public through the media.
- Providing on-scene media relations support to investigators and board members during and after major accident launches.
- Responding to media inquiries, including facilitating interviews with NTSB subject matter experts.
- Providing formal media relations training for Board members and investigators.
- Providing support for board meeting, forums, meetings, roundtables, and other special investigative events.

- Fulfilling the responsibilities of the NTSB party agreement for investigations, which states only the NTSB can release investigative information.
- Supporting the Safety Recommendations and Government and Industry Affairs Divisions and the agency's modal offices.

Government and Industry Affairs Division

The Government and Industry Affairs Division is responsible for the following:

- Informing Congress, other federal agencies, and state and local governments about NTSB activities and advising the chairman, vice chairman, Board members, and staff on congressional and legislative matters.
- Coordinating responses to requests for information and assistance from Congress, the White House, the Government Accountability Office, other federal agencies, and state and local governments through correspondence and briefings.
- Supporting the chairman, vice chairman, Board members, and staff with legislative testimony.
- Providing accident launch support to the chairman, vice chairman, Board members, and investigators.
- Monitoring federal and state legislative activity related to NTSB safety recommendations.
- Coordinating the development of NTSB legislative proposals and providing technical assistance to Congress and states drafting legislation.
- Supporting modal offices in planning and executing forums and roundtables.
- Working with Board members and NTSB staff to promote private and public sector action on safety recommendations.
- Developing and maintaining contact with industry and stakeholder organizations and providing information on NTSB activities and safety recommendations as part of the division's outreach efforts.
- Helping staff identify appropriate resources in state and local government to support investigations and other projects.

- Coordinating with the Safety Recommendation Division and modal offices to engage and educate state and local officials on the importance of implementing safety recommendations.

Safety Recommendations Division

The Safety Recommendations Division is responsible for the following:

- Evaluating responses from safety recommendation recipients and drafting classification response letters for Board member review and approval.
- Working with modal offices to develop safety recommendations that are actionable, effective, and measurable, based on the findings of accident investigations.
- Supporting and tracking safety recommendation implementation.
- Maintaining the safety recommendations database, which includes information on recommendation recipients, status, adoption, and implementation.
- Analyzing safety recommendation status and implementation and generating summary reports.
- Coordinating with Government and Industry Affairs Division and modal offices to engage and educate state and local officials on the importance of implementing safety recommendations.

Investigative Support Services Division

The Investigative Support Services Division is responsible for the following:

- Producing videos and animations, providing photography support, developing original graphics, and editing images in support of agency activities such as accident launches, investigative product development, and recommendations outreach, among others.
- Execute on-scene photography and videography support for major investigations, including real-time live streaming of investigative press conferences and mission-critical operations, to ensure comprehensive visual documentation and public communication.
- Support in-person investigative Board Meetings and hearings by developing graphics, providing videography and photography support.

- Implementing digital strategies to highlight the NTSB's investigative messages.
- Managing digital communications programs and platforms (website, social media, and visual media) to ensure consistent messaging across various digital channels and agency compliance with digital government policies and orders.
- Providing leadership and guidance regarding digital technology adoption for agency communications programs.

Accomplishments and Ongoing Efforts

Media Relations Division

Between October 1, 2023, and September 30, 2024, the Media Relations team played a pivotal role as part of the Go-Team in response to nine major investigations, including the high-profile January 2024 midflight door plug separation on a Boeing 737-9 MAX and the tragic March 2024 collapse of the Francis Scott Key Bridge in Baltimore, MD. Media Relations ensured the agency upheld its commitment to transparency, rapidly disseminating accurate, timely information to the public and media. Their work was instrumental in maintaining public trust and supporting the agency's investigative integrity during nationally significant crises.

Also during this time, Media Relations staff published 71 investigative news releases and briefings and 15 media advisories, which resulted in more than 659,000 separate news articles or television and radio segments. Staff also made 764 investigative and launch-related posts on X during this period, gathering more than 16.2 million views. The division provided training on media relations and response communications to 66 NTSB investigators, ensuring they communicate with the public clearly, and effectively when sharing investigative information.

Government and Industry Affairs Division

The Government and Industry Affairs Division initiated outreach to congressional, federal, state, and local officials who expressed an interest in improving transportation safety. It arranged numerous briefings by Board members and investigators and responded to requests for information regarding NTSB investigations and safety recommendations.

In FY 2024, the division coordinated activity to support the agency's reauthorization through FY 2028. Staff also prepared the chairman to testify at five congressional hearings regarding aviation safety, grade-crossing safety, the

status of all investigations, the strike and collapse of the Francis Scott Key Bridge, and rail safety in the aftermath of the East Palestine, Ohio, train derailment.

The division supported Board member and staff testimony and legislative advocacy on impairment in Connecticut, Hawaii, New York, and Washington; motorcycle helmet use in Maryland; speeding in California, Connecticut, Minnesota, New York, and Washington DC; distracted driving in Pennsylvania; occupant protection in Massachusetts; and school bus safety in Illinois, Maryland, Massachusetts, and Oregon.

The division supported major accident launches and general aviation regional investigations, and updated Congress, state, and local officials as these investigations continue, and serves as the main point of contact for additional outreach and inquiries.

Safety Recommendations Division

From October 1, 2023, through September 30, 2024, the Safety Recommendations Division reviewed and analyzed 128 responses from recommendation recipients and developed recommendation classification responses for Board review and approval. Staff generated 20 follow-up letters for recommendation recipients who had not responded to NTSB safety recommendations and helped the modal offices develop and issue 141 new safety recommendations resulting from 21 investigation reports and studies. In addition, the division developed numerous reports and data summaries on specific recommendation topics to support NTSB Board members, other agency staff, the media, and the public.

Outreach activities in FY 2024 included meetings to discuss open recommendations with government and industry organizations, including the following:

- Alliance for Automotive Innovation
- American Association of Motor Vehicle Administrators (AAMVA)
- American Association of State Highway Transportation Officials
- American Chemistry Council
- Amtrak (National Railroad Passenger Corporation)
- Apple
- ARC Runway Safety Alerting Subcommittee
- BNSF

- Canadian Pacific Kansas City
- Commercial Vehicle Safety Alliance (CVSA)
- CSX
- FAA
- Federal Highway Administration (FHWA)
- Federal Railroad Administration (FRA)
- Federal Transit Administration (FTA)
- Governors Highway Safety Association (GHSA)
- Impairment-related state legislators and organizations (.05 Coalition)
- National Association of Charterboat Operators
- National Association of State Boards of Education (NASBE)
- National Conference of State Legislatures (NCSL)
- National Weather Service
- National Highway Traffic Safety Administration (NHTSA)
- Norfolk Southern (NS)
- North Slope
- Oklahoma
- Pennsylvania Department of Transportation
- Pipeline and Hazardous Materials Safety Administration
- City of Pittsburgh
- Senate Commerce Committee
- Triton
- Union Pacific
- United States Department of Agriculture Forest Service
- United States Coast Guard
- Virginia Passenger Rail Authority
- Washington Metro Safety Commission
- West Virginia
- Washington Metropolitan Area Transit Authority (WMATA)

Investigative Support Services Division

From October 1, 2023, to September 30, 2024, the Investigative Support Services Division launched as part of the Go-Team to nine major investigations, including the collapse of the Francis Scott Key Bridge in Baltimore, MD, providing on-scene photography and videography in support of the agency's ongoing communications concerning the investigations.

Division staff also supported over 250 investigations through updates to the agency's website and working closely with the investigative offices to ensure accurate and timely releases of information. Staff also managed the public release of 78 investigation final reports, coordinating the web posting process with internal stakeholders.

The division supported 6 Board meetings and 10 other NTSB-led events, including the on-scene East Palestine Board Meeting. Staff completed nearly 600 graphics and illustrations for use in investigative reports and other products; developed eight major print publications, including the East Palestine Illustrated Digest; produced nearly 50 videos, investigative podcasts, and live video streams; and fulfilled more than 700 website update requests.

The division completed the next phase of the agency's branding and design standards project, which provides guidance on annotating and labeling images used in investigation reports and other products to optimize and standardize those graphic elements.

The division is responsible for compliancy with all federal website requirements and recommendations and worked closely with modal office staff to develop and manage new safety issues content for our website, creating a way to add additional issue areas and to regularly review and update existing content.

AVIATION SAFETY

	($000s)	FTEs	Pos.
FY 2025 Estimate	$39,040	132	133
FY 2026 Request	$39,010	132	133
Increase/Decrease	($30)	0	0

Overview of the Request

The funding level for this program assumes no pay raise in FY 2026 and includes a minor reduction to operational costs to absorb the impacts of a 2.0 percent non-pay inflation increase.

Program Description

The mission of the Office of Aviation Safety includes the following:

- Investigate all air carrier, commuter, and air taxi accidents and certain serious incidents; fatal and nonfatal general aviation accidents and serious incidents; UAS, advanced air mobility, and public aircraft accidents and serious incidents; and commercial space launch/reentry accidents.
- Participate in the investigation of aircraft accidents that occur in foreign countries involving US carriers, US-manufactured or -designed equipment, or US-registered aircraft, to fulfill US obligations under ICAO.
- Investigate safety issues that extend beyond a single accident to examine specific aviation safety problems from a broader perspective.

The Office of Aviation Safety conducts investigative activities through five specialty divisions based in Washington, DC, and a regional investigation management structure comprising four regions. Investigators are located throughout the country. International aviation activities are coordinated from the Washington, DC, office.

As applicable for domestic accident and incident investigations, a specialist in operational factors, aviation engineering, human performance, survival factors, or other organizational element may act as a group chairman on a major investigation to examine issues in their specialty area. Group chairman's lead their respective groups in the technical investigation of an accident under the direction of the investigator-in-charge (IIC) and produce a

factual report that is placed in the agency's public docket. They also produce analytical reports that are used to develop the draft accident report and proposed safety recommendations. NTSB technical specialists may also provide specialized assistance through the US-accredited representative in foreign accident and incident investigations.

Regional Investigations

Regional aviation safety investigators conduct investigations that primarily include personal or instructional flights, but also include corporate operations, air charter flights, air tours, law enforcement and air medical flights, agricultural operations, and many other types of nonpassenger-carrying commercial operations. The offices also support general aviation accident investigations that occur in other countries by providing accredited representatives. Regional investigations are often assigned to a single aviation safety investigator who gathers detailed information and works with party representatives and applicable subject-matter specialists to determine the probable cause of the accident. During each investigation, these investigators consider ways to prevent similar accidents from occurring in the future through a more immediate and informal solution (known as a safety accomplishment) or through the agency's formal safety alert or safety recommendation process. In addition, the investigators often support major accident investigations and may identify accidents that have broader safety issues to be addressed in a forum, at a Board meeting, or through a safety research report. The air safety investigators are based throughout the United States and are supported by four regional offices located in Anchorage, Alaska; Federal Way, Washington; Aurora, Colorado; and Washington, DC. A map of the four regional offices is in Appendix D.

Air Carrier and Space Investigations Division

The Air Carrier and Space Investigations Division performs the following functions:

- Provides an IIC for air carrier domestic aircraft accident and incident investigations, certain public aircraft accidents and incidents, commercial space launch/reentry accidents, and UAS accident and incident investigations.
- Prepares comprehensive aviation accident and incident reports and manages aviation investigative hearings, forums, and conferences related to air carrier operations.
- Coordinates and supervises the efforts of NTSB group chairman's and external investigation participants provided by industry, other

government agencies, and foreign authorities (for US investigations involving foreign-operated, -registered, -manufactured, or -designed aircraft).

- Provides accredited representatives to help investigate civil aviation accidents that occur in other countries. (The accredited representative informs domestic aviation interests of the progress of an investigation while providing needed technical expertise, as requested, to foreign accident investigation counterparts. The accredited representative also informs the FAA and US industry representatives of issues that may affect US aviation safety, or the safety of aircraft or aircraft components manufactured in the United States.)
- Develops investigative techniques and strategies for emerging transportation industries to improve safety. Current areas of development include increasing proficiency in investigating accidents and incidents involving UAS operations, commercial space launch and reentry operations, and advanced air mobility vehicle operations in the US National Airspace System, as well as using small UAS technology to document accident scenes.

Operational Factors Division

The Operational Factors Division examines issues related to air traffic control, flight operations, and meteorology, such as the following:

- Air traffic control facilities, procedures, and flight handling, including developing flight histories and animations from air route traffic control centers and terminal facility radar records.
- UAS operator or air carrier operations; flight crew or UAS and advanced air mobility pilot training, experience, and operational performance; and FAA surveillance of flight operations.
- Meteorological/environmental conditions that may have caused or contributed to an accident, and pertinent meteorological products, procedures, and services provided by government and industry.
- Commercial space crewmember training, experience, and operational performance.

Aviation Engineering Division

The Aviation Engineering Division examines issues related to powerplants (engines), structures, systems, system safety, and maintenance, such as the following:

- Powerplant components, including the airworthiness of aircraft engines and propellers.
- Integrity of aircraft structures and flight controls, including the adequacy of design and certification.
- Airworthiness of aircraft flight controls and electrical, pneumatic, hydraulic, and avionics systems.
- Hazards and associated safety risks introduced by aircraft equipment failures, including the adequacy of design and certification.
- Service history and maintenance of aircraft systems, structures, and powerplants.
- Airworthiness of helicopters, including powerplants, structures, and control systems.
- Commercial spacecraft engines, structure, and systems.

Human Performance and Survival Factors Division

Human performance specialists assess the knowledge, experience, training, and physical abilities of those whose actions may have caused or contributed to an accident or incident. They review the adequacy of established procedures, examine the work habit patterns and interrelationships among crewmembers and managers to assess organizational factors and safety culture, and investigate the ergonomics of equipment design and the potential effects of that design on operator performance. A human performance investigation may also assess sleep and rest cycles as well as alcohol and other drug use.

Survival factors specialists examine issues that affect accident survival, including the causes of injuries sustained by aircraft occupants or by others. They also examine safety procedures, search-and-rescue operations, crashworthiness, equipment design, emergency response and escape, crewmember emergency procedures training, and airport operations and certification.

Writing and Editing Division

The staff of the Writing and Editing Division manage the development of, write, and edit aviation investigation reports. Staff also write, analyze, and edit safety alerts, responses to notices of proposed rulemaking, and general correspondence related to aviation.

Administrative Support Division

The Administrative Support Division is responsible for processing budget, travel, payroll, personnel, timekeeping, procurement, contracting, and purchase card actions for the office.

Accomplishments and Ongoing Efforts

Office accomplishments include issuing products related to transportation safety arising from completed and ongoing investigations. Products completed between October 1, 2023, and September 30, 2024, are highlighted below, along with information about other efforts and focus areas important to our mission.

Investigation Reports

Investigation reports are issued for accident or incident investigations and may contain a determination of probable cause and safety recommendations, depending on the scope of the investigation and the safety issues identified. For select, larger scale investigations, the office launches an investigation team and presents a comprehensive investigation report to the Board. Investigations that are limited in scope are primarily intended to determine probable cause; the resultant report may be issued by the office director under delegated authority or may be adopted by the Board. Special investigation reports usually involve analysis of data from multiple accidents centered around a common safety issue and result in safety recommendations. A report containing only safety recommendations can be issued at any time during an investigation. If the Board determines that a recommended course of action requires immediate attention to avoid imminent loss of life from a similar accident, the safety recommendation is designated "urgent."

From October 1, 2023, through September 30, 2024, the Office of Aviation Safety issued a total of 1,839 investigation reports that solely determined probable cause. During this period, the office also published seven investigation reports identifying safety issues that led to the issuance of 35 safety recommendations.

Below are summaries of some of the aviation investigation reports completed between October 1, 2023, and September 30, 2024, arranged by report date.

Mitigate Safety Concerns Involving Boeing 737 Airplanes with Collins Aerospace SVO-730 Rudder Rollout Guidance Actuators
Newark, New Jersey
February 6, 2024

On February 6, 2024, about 3:55 p.m. local time, the flight crew of United Airlines flight 1539, a Boeing 737-8, N47280, experienced a rudder pedal anomaly while landing at Newark Liberty International Airport (EWR). In a postincident statement, the captain reported that, during the landing rollout, the rudder pedals were "stuck" in their neutral position and did not move in response to the "normal" application of foot pressure to maintain alignment with the runway centerline. The flight was operating under the provisions of Title 14 *Code of Federal Regulations* (*CFR*) Part 121 as a scheduled international passenger flight from Lynden Pindling International Airport, Nassau, Bahamas, to EWR.

During our ongoing investigation of this rudder pedal anomaly, we identified the potential for a jammed or restricted rudder control system on certain Boeing 737 airplanes. Additionally, based on the results of postincident testing conducted in July 2024 and information from Boeing and Collins Aerospace, we expressed concern that Boeing's mitigation to overcome a jammed or restricted rudder control system during landing could also result in a large input to the rudder pedals and a sudden, large, and undesired rudder deflection sufficient to cause loss of control or departure from the runway. A jammed or restricted rudder scenario could become even more concerning if a high-crosswind or an engine-out condition were simultaneously occurring, not only because the amount of rudder available to respond to these conditions might be insufficient to maintain control of the airplane if the jam is not cleared, but also because excessive rudder input may result if the jam is cleared by responding with Boeing's mitigation.

We issued urgent safety recommendations to the FAA and The Boeing Company.

Recommendations: 4 new (urgent)
Report Date: September 26, 2024

Define the Meaning and Operational Use of Instantaneous Wind Reports
Aspen, Colorado
February 21, 2022

On February 21, 2022, a Raytheon Aircraft Company Hawker 800XP airplane, N99AP, overran the end of runway 33 after the flight crew aborted the takeoff in gusting tailwind conditions at Aspen-Pitkin County Airport (ASE) in Aspen, Colorado. The flight crew of the 14 *CFR* Part 91 business flight initiated

the takeoff based on an unsolicited instantaneous wind report from the ASE tower controller. The report indicated a wind direction of 180° at 10 knots (kts), which was the airplane's maximum tailwind component for takeoff. However, just before providing the instantaneous wind report, the tower controller provided a 2-minute average wind report to the flight crew that indicated wind speeds at 16 kts gusting to 25 kts. Thus, the instantaneous wind was not representative of other wind reports the flight crew received during the 30-minute period before takeoff, which indicated wind speeds as high as 18 kts gusting to 30 kts.

We identified the following safety issue in this investigation report: the lack of an official definition for "instantaneous wind" and guidance on its use during flight operations in potentially hazardous wind conditions. We issued one new safety recommendation to the FAA.

Recommendations: 1 new
Report Date: August 20, 2024

Collision with Powerlines and Terrain During Forced Landing, MARPAT Aviation, Bell Helicopter UH-1B, N98F
Amherstdale, West Virginia
June 22, 2022

On June 22, 2022, about 4:45 p.m. local time, a Bell Helicopter UH-1B helicopter, N98F, was destroyed when it was involved in an accident in Amherstdale, West Virginia. About 15 minutes after the flight departed, the helicopter impacted two powerlines and a rock face during a forced landing, and a postcrash fire ensued. The pilot and five passengers were fatally injured. The helicopter was operated by MARPAT Aviation under 14 *CFR* Part 91.

The NTSB determined that the probable cause of this accident was the operator's failure to adequately inspect the former military turbine-powered helicopter, which allowed an engine issue to progress and result in a loss of engine power and subsequent loss of control after the helicopter struck powerlines during a forced landing. Also causal to the accident were the following:

- The FAA's inadequate inspection and maintenance standards for former military turbine powered aircraft operating with an experimental exhibition airworthiness certificate.
- The operator's use of those standards instead of more rigorous standards, which were readily available to the operator and previously used to inspect and maintain the helicopter.

- The FAA's inadequate oversight of the operator, which did not detect the inherent risk associated with the operation.

We identified the following safety issues in this accident investigation:

- Insufficient inspection requirements for the UH-1B and other former military turbine-powered aircraft.
- Inadequate operator maintenance of the accident helicopter and management of the helicopter's experimental airworthiness certificate.
- Lack of FAA oversight of the accident helicopter's airworthiness certificate.
- Lack of guidance for FAA inspectors to perform routine surveillance of operators with experimental exhibition airworthiness certificates.
- The need for a method to ensure that operators of experimental exhibition aircraft meet their annual obligation to submit program letters to the appropriate FAA flight standards district office.

The NTSB issued new safety recommendations and reiterated a previously issued recommendation to the FAA.

Recommendations: 6 new, 1 reiterated
Report Date: August 14, 2024

Safety and Industry Data Improvements for Part 135 Operations
Special Investigation Report

Title 14 *CFR* Part 135 applies to a wide variety of commercial aviation operations of all sizes providing diverse types of services. These range from single-pilot operators that conduct limited operations using one single-engine airplane, to small fleet air tour operators, to larger and more complex operations, such as commuter air carriers; air ambulance services; jet charters; and essential passenger and cargo operations for remote areas.

Historically, accident rates for Part 135 operations have remained substantially higher than the accident rates for commercial airline operations operated under 14 *CFR* Part 121. However, the diverse mission demands of some segments of the Part 135 industry may inherently involve unique risks that typically do not exist for Part 121 operations. Closing the safety gap for segments of Part 135 must involve targeted solutions that effectively mitigate unique risks without hindering operators' ability to provide their services.

Further, accident, incident, and flight activity data for various segments of the Part 135 industry are needed to support an industry safety assessment

that examines, for example, the suitability of varied regulatory standards to different segments and develops appropriate mitigations to prevent future accidents.

We identified a need for the following in this special investigation:

- Certificated dispatchers for all Part 135 operators except single-pilot and single-pilot-in-command operators.
- Aircraft load manifest and recordkeeping requirements to apply to all aircraft operated under Part 135.
- Safety management system (SMS) and flight data monitoring program requirements for all Part 135 operators.
- Guidance to help small operators scale an SMS appropriately for their operations.
- Accident and incident data collection improvements related to Part 135 certificate information for operators involved in accidents or incidents.
- Accurate flight activity data for the various segments of Part 135 operations.

We issued new safety recommendations, reiterated a previously issued recommendation, and classified previously issued recommendations to the FAA.

Recommendations: 3 new, 2 reiterated
Report Date: July 24, 2024

Runway Incursion and Overflight, Southwest Airlines Flight 708, Boeing 737-700, N7827A, and Federal Express Flight 1432, Boeing 767-300, N297FE
Austin, Texas
February 4, 2023

On February 4, 2023, about 6:40 a.m. local time, Southwest Airlines (SWA) flight 708, a Boeing 737-700, N7827A, and Federal Express (FedEx) flight 1432, a Boeing 767-300, N297FE, were involved in a runway incursion at Austin-Bergstrom International Airport in Austin, Texas. The flight crew of the FedEx airplane, which was arriving on runway 18L, executed a missed approach as the SWA airplane was departing from the same runway. The 128 occupants aboard the SWA airplane and the 3 occupants aboard the FedEx airplane were not injured, and neither airplane sustained damage. SWA flight 708 was a regularly scheduled international passenger flight operating under 14 *CFR* Part 121 from AUS to Cancún International Airport in Mexico. FedEx

flight 1432 was a domestic cargo flight operating under Part 121 from Memphis International Airport in Tennessee, to AUS. Night instrument meteorological conditions prevailed at the time of the incident.

We determined that the probable cause of this incident was the local controller's incorrect assumption that the SWA airplane would depart from the runway before the FedEx airplane arrived on the same runway, which resulted in a loss of separation between both airplanes. Contributing to the controller's incorrect assumption were his expectation bias regarding the SWA airplane's departure, his lack of situational awareness regarding the SWA airplane's position when the flight crew requested takeoff clearance, and the air traffic control tower's lack of training (before the incident) on low-visibility operations. Also contributing to the incident was the SWA flight crewmembers' failure to account for the traffic that was on short final approach and to notify the controller that they would need additional time on the runway before the takeoff roll. Additionally contributing to the incident was the FAA's failure to require surface detection equipment at AUS and direct alerting to flight crews.

Our investigation identified the following safety issues:

- The lack of surface detection equipment at AUS to alert controllers about potential conflicts on a taxiway or runway surface.
- The need for flight deck technology to alert flight crews about potential conflicts on an airport surface.
- The need to ensure, especially during low-visibility conditions, that controllers are aware when pilots, after receiving takeoff clearance, might need extra time on the runway.
- The lack of training on the AUS airport's Surface Movement Guidance and Control System Plan.
- The need for low-visibility operations training at all airports.
- The need for 25-hour cockpit voice recorders (CVRs).

We issued new safety recommendations reiterated previously issued recommendations to the FAA.

Recommendations: 7 new, 5 reiterated
Report Date: June 6, 2024

Runway Incursion and Rejected Takeoff American Airlines Flight 106, Boeing 777-200 and Delta Air Lines Flight 1943, Boeing 737-900
Queens, New York
January 13, 2023

On January 13, 2023, about 8:44 p.m. local time, American Airlines (AAL) flight 106, a Boeing 777-223, N754AN, crossed runway 4L on taxiway J without air traffic control clearance at John F. Kennedy International Airport (JFK), Queens, New York, causing Delta Air Lines (DAL) flight 1943, a Boeing 737-900ER, N914DU, to abort its takeoff roll on runway 4L. None of the 6 crew and 153 passengers on DAL1943, nor the 12 crew and 137 passengers on AAL106, was injured, and there was no damage to either aircraft. AAL106 operated as a 14 *CFR* Part 121 scheduled international passenger flight from JFK to London Heathrow International Airport, London, United Kingdom. DAL1943 was a 14 *CFR* Part 121 scheduled international passenger flight from JFK to Santo Domingo, Dominican Republic. Night visual meteorological conditions prevailed at the airport at the time of the incident.

Airport surface detection equipment, model X (ASDE-X) alerted the tower controller to the conflict, and the controller cancelled DAL1943's takeoff clearance. The crew of DAL1943 rejected the takeoff, reaching a maximum groundspeed of about 105 knots, about 2,300 ft from the taxiway J intersection, where AAL106 was crossing runway 4L. AAL106 continued across the runway and DAL1943 came to a stop before taxiing off the runway onto an adjacent taxiway without further incident.

We determined that the probable cause of the incident was the AAL106 flight crew's surface navigation error due to distractions caused by their performance of concurrent operational tasks during taxi, which resulted in a loss of situational awareness. Contributing to the incident was the air traffic control tower team's nondetection of the AAL106 crew's deviation from taxi instructions while performing concurrent operational tasks; the timing of the runway status light system, which activated too late to prevent the AAL106 crew from crossing the runway hold short line; and AAL's lack of adequate risk controls to prevent concurrent flight crew tasks from leading to distraction, loss of situational awareness, and deviation from an authorized taxi clearance. Reducing the severity of the incident, and likely preventing an accident, was the activation of the ASDE-X warning in the air traffic control tower and the local controller's prompt cancellation of DAL1943's takeoff clearance.

We identified the following safety issues in this investigation:

- The need for additional risk mitigation strategies to prevent flight crew surface navigation errors that result in runway incursions.

- The need for a procedural crosscheck that requires flight crews to verbalize the number of a runway they are about to cross as indicated by runway signs.
- The lack of flight deck technology to detect potential traffic conflicts.

Because the incident data on the 2-hour CVRs on both airplanes were overwritten, we also reiterated the need for CVRs with a 25-hour recording capability.

We issued eight new safety recommendations to the FAA, reiterated one previously issued recommendation to the FAA, and superseded two recommendations.

Recommendations: 8 new, 1 reiterated
Report Date: May 29, 2024

Landing Gear Collapse RED Air Flight 203 McDonnell Douglas MD-80
Miami, Florida
June 21, 2022

On June 21, 2022, about 5:38 p.m. local time, RED Air flight 203, a Boeing MD-82, HI1064, overran the end of runway 9 at Miami International Airport in Florida after the left main landing gear failed shortly after landing. The airplane impacted a concrete and steel structure in the grassy area to the left of the runway and came to a stop shortly afterward. A postcrash fire ensued while the airplane was being evacuated. Of the 140 occupants aboard the airplane, 4 passengers sustained minor injuries. The postcrash fire was extinguished by aircraft rescue and firefighting personnel from Miami-Dade Fire Rescue. The airplane was operating under 14 *CFR* Part 129 as a scheduled international passenger flight from Las Américas International Airport, Santo Domingo, Dominican Republic, to Miami.

We determined that the probable cause of the accident was the structural failure of the left main landing gear down lock following ineffective shimmy dampening during the landing roll, which caused the collapse of the left main landing gear, resulting in a runway excursion and postflight fire.

We identified the following safety issue in this investigation: the failure of landing gear components.

Recommendations: None
Report Date: April 25, 2024

Publish Spin Recovery Techniques for Twin Commander Aircraft
Hiles, Wisconsin
September 28, 2021

On September 28, 2021, about 9:00 a.m. local time, a Rockwell International 690B airplane, N690LS, impacted wooded terrain near Hiles, Wisconsin, after entering an inadvertent stall and spin (Rockwell International was acquired and sold by several different companies between 1981 and 2003 and then was reincorporated as Twin Commander Aircraft). The pilot and two passengers sustained fatal injuries. The aerial imagery survey flight was operated under 14 *CFR* Part 91. Postaccident examination of the airplane confirmed that it impacted the ground in a nose-low vertical attitude and at a high rate of speed. No pre-impact mechanical malfunctions or failures were noted during the examination of the airframe, engines, and propellers.

In addition to this accident, the NTSB identified five other accidents involving Twin Commander aircraft in which the pilot did not recover the airplane from a spin. We found that the pilot operating handbook for the Twin Commander 690B does not include a procedure for recovering from an inadvertent spin.

We identified the following safety issue in this investigation report: the need for a spin recovery procedure in the Twin Commander Aircraft Pilot Operating Handbooks for the 690, 690A, and 690B models to aid pilots in the event they inadvertently enter a stall and spin condition.

We issued one new safety recommendation to Ontic, the owner and parent company of Twin Commander Aircraft.

Recommendations: 1 new
Report Date: December 28, 2023

Domestic Investigative Workload Summarized by State

The NTSB carefully considers the level of detail necessary for each investigation with the aim of concentrating resources on investigations that are most likely to enhance aviation safety while fulfilling our mandate to investigate all civil aviation accidents. Because many accidents have similar causes and may not provide new information that would result in further safety action, investigating these in detail may not be justified, given the agency's limited resources. Therefore, the investigation depth and final report for each event (accident or incident) is stratified into one of four classes.

The following table summarizes statistical information on domestic accident and incident investigations initiated between October 1, 2023, and September 30, 2024, by state, territory, or major body of water.

State	Total
Alabama	17
Alaska	77
Arizona	41
Arkansas	18
California	94
Colorado	31
Connecticut	5
Delaware	2
Florida	98
Georgia	39
Guam	1
Hawaii	11
Idaho	34
Illinois	16
Indiana	21
Iowa	9
Kansas	15
Kentucky	9
Louisiana	23
Maine	9
Maryland	8
Massachusetts	6
Michigan	24
Minnesota	24
Mississippi	8
Missouri	20
Montana	17
Nebraska	16
Nevada	13
New Hampshire	7
New Jersey	10
New Mexico	20
New York	30
North Carolina	34
North Dakota	4

State	Total
Ohio	17
Oklahoma	22
Oregon	27
Pennsylvania	14
Puerto Rico	4
Rhode Island	3
South Carolina	10
South Dakota	7
Tennessee	33
Texas	96
Utah	30
Vermont	2
Virginia	32
Washington	31
West Virginia	4
Wisconsin	26
Wyoming	13
Total	**1,182**

International Investigations

The United States is a signatory to the Chicago Convention on International Civil Aviation, which is administered by ICAO. The NTSB is charged with fulfilling the US obligation for accident and incident investigations in accordance with Annex 13 of this agreement in full coordination with the US Department of State.

The international investigative process is critical to maintaining aviation safety in the United States and throughout the world. When an aircraft operated by—or designed, manufactured, or registered to—a US company has been involved in an accident in a foreign state, NTSB participation in that investigation enables the United States to gain access to critical safety information and ensure the airworthiness and operation of its aircraft operated here and overseas. ICAO Annex 13 protocols also define the agency's engagement with international authorities whose products or operations are involved in accidents within the United States. This international process of collaboration plays an important role in enabling us to identify safety concerns and issue appropriate recommendations. We have issued numerous safety recommendations that have resulted in safety improvements within the United

States and worldwide as a direct result of our participation in these foreign investigations.

Between October 1, 2023, and September 30, 2024, the Office of Aviation Safety was notified of 815 international investigations and assigned 477 accredited representatives. The following investigations required significant US involvement during this period.

Bombardier CL600 2B19, Crash After Takeoff
Kathmandu, Nepal
July 24, 2024

On July 24, 2024, a Saurya Airlines Bombardier CL-600-2B19 carrying 16 passengers and 3 crewmembers crashed and caught fire while taking off from Tribhuvan International Airport, Kathmandu, Nepal. All 16 passengers and two crewmembers sustained fatal injuries; the captain survived with non-life-threatening injuries. As the US-accredited representative of the state of design and manufacture of the engines, NTSB staff traveled to Singapore's Transport Safety Investigation Bureau facilities to assist Nepal's Aircraft Accident Investigation Commission investigation in downloading and interpreting data recovered from the flight data recorder and cockpit voice recorder.

Boeing 787, Inflight Upset
En route Over Turkey
May 26, 2024

On May 26, 2024, a Qatar Airways Boeing 787-900 flying from Doha, Qatar, to Dublin, Ireland, experienced an inflight upset while flying through Turkish airspace. A total of 12 people received hospital treatment, 8 of whom were passengers. As the US-accredited representative of the state of design and manufacture of the airframe and engines, NTSB staff traveled to the Republic of Ireland to support the Air Accident Investigation Unit's investigation.

Boeing 777, Turbulence Encounter
Irrawaddy Basin, Burma
May 21, 2024

On May 21, 2024, a Singapore Airlines Boeing 777 carrying 211 passengers and 18 crewmembers encountered severe turbulence at an altitude of about 37,000 ft. One passenger died, likely from a heart attack, and dozens of others sustained serious injuries. The flight made an emergency landing at Suvarnabhumi Airport, Bangkok, Thailand. As the US-accredited representative of the state of design and manufacture of the airframe, NTSB

staff traveled to Bangkok to assist in the Singapore Transport Safety Investigation Bureau's investigation.

Boeing 767, Landing with Nose Gear Retracted
Istanbul, Turkey
May 8, 2024

On May 8, 2024, a FedEx Boeing 767 landed at Istanbul Airport, Istanbul, Turkey, without its nose gear extended. No injuries were reported. On final approach to the runway, the flight crew initiated a go-around due to a system indication concerning the nose gear. They subsequently landed without the nose gear extended about 40 minutes later. Both pilots and all six passengers were fatally injured, as were two people on the ground. As the US-accredited representative of the state of design and manufacture of the airframe and engines, NTSB staff traveled to Turkey to support the Transport Safety Investigation Center's investigation.

Sikorsky S-92, Crash into Sea
Near Bergen, Norway
February 28, 2024

On February 28, 2024, a Sikorsky S-92 helicopter carrying six passengers and two pilots conducting a training exercise crashed into the sea off the coast of Norway. One occupant sustained fatal injuries and one occupant sustained serious injuries. As the US-accredited representative of the state of design and manufacture of the airframe, the NTSB assigned staff to support the Norwegian Safety Investigation Authority's investigation.

Airbus A350 and DHC-8, Runway Incursion
Tokyo, Japan
January 2, 2024

On January 2, 2024, a Japan Airlines A350-900 and a Japanese Coast Guard de Havilland DHC-8 collided on the runway at Haneda Airport in Tokyo, Japan. Of the six crew on the DHC-8, five sustained fatal injuries; the captain survived with serious injuries. All 379 occupants of the A350 survived, 17 of whom received medical attention. The Japan Transport Safety Board requested US assistance to coordinate readout of the A350's Honeywell-manufactured flight data recorder.

Boeing 787, Uncontained Engine Failure
Addis Ababa, Ethiopia
November 7, 2023

On November 7, 2023, an Ethiopian Airlines Boeing 787-9, experienced an uncontained failure of its left engine toward the end of climbout. The engine, a General Electric GEnx 1B, lost power and set off a fire alarm, prompting the flight crew to shut it down and return to Addis Ababa Bole International Airport, where they landed safely about 50 minutes after departure. As the US-accredited representative of the state of design and manufacture of the airframe and engines, NTSB staff traveled to Ethiopia to support the Aircraft Accident Investigation Bureau's investigation.

US Comments on Foreign Accident Reports

The NTSB completed comments on behalf of the United States on several international investigations in which the United States had significant involvement under Annex 13, including the following events.

Boeing 777, Altitude Deviation
Muscat, Oman
January 13, 2024

On January 13, 2024, at 11:12 p.m. local time, a controller in Muscat, Oman, noticed Singapore Airlines flight 306, a Boeing 777, depart its assigned altitude into the path of crossing traffic. The controller attempted several times to call the airplane's pilots on the radio, but the crew did not respond. The airplane climbed to 32,500 ft, where contact was established between the flight crew and controller. When asked why the crew climbed to an unassigned altitude, the crew responded it was an autopilot error and that they would have to manually descend. As the US-accredited representative of the state of design and manufacture of the airframe, the NTSB provided comments on a draft report to the Oman's Civil Aviation Authority. The final report is pending.

Boeing 737, Ground Collision During Taxi
London, England
October 4, 2023

On October 4, 2023, a Ryanair 737 collided with a catering truck while taxiing to the gate at London-Stansted Airport. No injuries were reported, and a leading-edge slat on the airplane's right wing sustained substantial damage. As the US-accredited representative of the state of design and manufacture of the airframe, the NTSB provided comments on a draft report to the United Kingdom's (UK's) Air Accidents Investigation Branch in October 2024. The final report is pending.

Boeing 777 and Airbus A330, Ground Collision During Taxi
Paris, France
August 30, 2023

On August 30, 2023, an Air France Boeing 777-328ER and a Delta Air Lines Airbus A330-941 were involved in a ground collision accident at Paris-Charles de Gaulle Airport in Paris, France. After arrival, as the flight crew of the Airbus A330 was taxiing, the airplane's right winglet collided with the tail of the Boeing 777, which was holding on an adjacent runway. No injuries to occupants on either airplane were reported. As the US-accredited representative of the state of design and manufacture of the Boeing 777 airframe and the state of registration of one of the operators involved, the NTSB provided comments on a draft report to the Bureau d'Enquêtes et d'Analyses in April 2024. The final report was issued in May 2024.

Avions de Transport Regional ATR-72, Landing Gear Failure
Gran Canaria, Spain
August 9, 2023

On August 9, 2023, an ATR-72-212A with Pratt Whitney PW127M engines, operated by Binter Canarias, was performing a positioning flight from Valverde to Tenerife Norte with three crewmembers when it diverted to Gran Canaria due to a problem with the left main landing gear. The crew landed the plane on the right main gear, lowered the nose gear, and kept the left main gear airborne as long as practicable before lowering the left main gear onto the ground. No injuries were reported. Postincident analysis found the left main gear severely abraded. As the US-accredited representative of the state of manufacture of the engines, the NTSB provided comments on a draft report to Spain's Civil Aviation Accident and Incident Investigation Commission.

Boeing 787, Nose Gear Failure
Incheon, South Korea
June 18, 2023

On June 18, 2023, a Scoot Boeing 787-900 experienced a failure of its nose gear during departure from Incheon International Airport, Seoul, South Korea. Officials at Incheon International Airport found nose wheel parts, including tire fragments, along one of the airport's taxiways; about the same time, the airplane was reaching the top of its climb, and the flight crew discovered that pressure readings for both nose landing gear tires were not available. The airplane landed without incident at its intended destination, Taiwan Taoyuan International Airport, Taipei, Taiwan. As the US-accredited representative of the state of design and manufacture of the Boeing 787 airframe, the NTSB provided comments on a draft report to the Singapore

Transport Safety Investigation Bureau (Scoot is a Singaporean airline). The final report was issued in August 2024.

Boeing 767, Contained Engine Failure
Glasgow, United Kingdom
February 10, 2023

On February 10, 2023, a Delta Air Lines Boeing 767-332ER with Pratt and Whitney PW4060 engines had a failure of its right engine on takeoff from Edinburgh Airport and experienced airframe vibration and engine indications resulting in the aircraft diverting to Glasgow's Prestwick Airport. During the diversion, fuel escaping from the wing was ignited by the hot engine exhaust, but the flames extinguished before the landing. All 211 passengers and 10 crew members safely disembarked without injury. As the US-accredited representative of the state of design and manufacture of the airframe and engines and the state of registration of the operator, the NTSB provided comments on a draft report to the UK's Air Accidents Investigation Branch. The final report was issued in July 2024.

Boeing 737, Landing Gear Collapse
Brazzaville, Democratic Republic of the Congo
February 9, 2023

On February 9, 2023, the tire on the left main landing gear of an Allied Air Cargo 737 burst on landing, and the gear collapsed. As the US-accredited representative of the state of design and manufacture of the airframe, the NTSB provided comments on a draft report to the Democratic Republic of the Congo in March 2024. The final report is pending.

Airbus A330, Runway Excursion
Amsterdam, the Netherlands
January 12, 2023

On January 12, 2023, a Delta Air Lines Airbus A330-300 landed short of the runway at Amsterdam Airport Schiphol in the Netherlands. No injuries to the airplane occupants were reported. The airplane sustained minor damage, and the runway pavement and runway lights were damaged. As the US-accredited representative of the state of registration of the operator, the NTSB provided comments on the draft report to the Dutch Safety Board in February 2024. The final report is pending.

Boeing 737, Runway Excursion
Brisbane, Australia
November 30, 2022

On November 30, 2022, during departure from a runway operating with reduced length due to work in progress, a Virgin Australia Airlines Boeing 737 briefly entered and became airborne in the section of the runway that was closed. The airplane overran the available runway for takeoff but completed the departure and continued to its destination. No injuries were reported. As the US-accredited representative of the state of design and manufacture of the airframe, the NTSB provided comments on a draft report to the Australia Transportation Safety Board in December 2023. The final report is pending.

Boeing 737, Wing Strike During Pushback
Paris, France
November 20, 2022

On November 20, 2022, during pushback for departure, the flight crew of a cargo Boeing 737 was asked to apply the parking brake so that the towbar could be removed and the tug released. The crew applied the parking brake. After the tug was released, the airplane was observed to move forward while the towbar was still connected. The flight crew reported that they could not brake, although the parking brake was engaged and the left wing subsequently struck a lamppost, causing substantial damage. No injuries were reported to either flight crewmember or the ground crew. As the US-accredited representative of the state of design and manufacture of the airframe, the NTSB provided comments on a draft report to the Bureau d'Enquêtes et d'Analyses in October 2023. The final report was issued in November 2023.

Airbus A320, In-flight fire
Mediterranean Sea
May 19, 2016

On May 19, 2016, an Airbus A320-200, equipped with International Aero V2500 engines, operating as EgyptAir flight 804 from Paris Charles de Gaulle, France, to Cairo, Egypt, was en route at 37,000 ft over the Mediterranean Sea when the airplane's transponder signal ceased at 2:33 a.m. local time. Postaccident analysis determined the airplane experienced an in-flight fire. As the US-accredited representative of the state of manufacture of the engines, the NTSB provided comments on a draft report to the Egyptian Ministry of Civil Aviation. The final report was issued in October 2024.

Investigative Hearing

Investigative hearings are public hearings related to investigations in which the agency is authorized to obtain testimony under oath.

Alaska Airlines Flight 1282 In-flight Mid Exit Door Plug Separation, January 5, 2024
Investigative Hearing
August 6–7, 2024

The NTSB convened an investigative hearing in August 2024 to gather sworn testimony about the January 5, 2024, accident involving Alaska Airlines flight 1282. The accident occurred when a left mid-exit door plug departed the airplane at an altitude of about 16,000 ft shortly after departing Portland, Oregon, on a flight destined for Ontario, California. Following the loss of the door plug, which led to a rapid decompression, the flight crew returned to Portland, where the airplane landed safely. The NTSB will use the information gathered to complete the investigation, determine probable cause, and make recommendations to improve transportation safety.

Safety Alerts

A safety alert is a short informational bulletin that pinpoints a particular safety issue. It contains information based on the findings of one or more NTSB investigations and enhances the dissemination of safety information and actions to the traveling public.

Know When to Feather Your Propeller When One Engine Loses Power

This safety alert and its companion video were derived from multiple investigations involving a total or partial loss of engine power and the pilots' failure to timely feather the propeller of the affected engine.

This safety alert identified and addressed the following issues: lack of guidance about when to feather the propeller of the affected engine during a total or partial loss of engine power; a gap in pilot preparedness for total or partial loss of engine power situations because existing training and checklists primarily address total engine failures; and delay of propeller feathering in multiengine aircraft that have lost power in one engine, resulting in dangerous drag that compromises aircraft control and safety.

Issue Date: August 2024

Flying in Icing Conditions?

This safety alert, which replaced a 2008 safety alert on the same subject, was derived from multiple investigations involving flight in icing conditions in which pilots did not follow their pilot's operating handbooks or aircraft flight manuals, which led to in-flight loss of control.

The following safety issue was identified and addressed in this safety alert: the need for pilots to be aware of a range of operational considerations when flying in icing conditions, including the potential effects of icing on aircraft performance, and adequately manage their flightpath and airspeed.

Issue Date: August 2024

Wake Turbulence: Helicopters and Small General Aviation Aircraft Also Pose a Risk

This safety alert was derived from multiple investigations involving small aircraft encountering wake turbulence from helicopters and other small general aviation aircraft. These encounters have led to serious damage to the aircraft and have also caused fatal injuries to the occupants.

The following safety issue was identified and addressed in this safety alert: the hazard posed by wake vortices, or turbulence, to other nearby aircraft, including damaging aircraft components and causing a loss of aircraft control as well as occupant injuries.

Issue Date: August 2024

Mechanics: Check the Engine Control Cables!

This safety alert was derived from multiple investigations involving the failure of worn throttle and/or mixture cables that resulted in partial or total loss of engine power.

The following safety issue was identified and addressed in this safety alert: partial or total loss of engine power due to missing or incorrectly installed securing hardware at the connection of the carburetor or fuel servo.

Issue Date: May 2024

Aluminum Propeller Blades: Prevent Fractures with Proper Inspections and Maintenance

This safety alert was derived from multiple accident investigations involving the failure of aluminum propeller blades. The investigations described highlight scenarios in which fatigue cracking and fractures were not

detected before takeoff, resulting in propeller blades fracturing during takeoff or flight, causing forced landings and aircraft damage.

The following safety issue was identified and addressed in this safety alert: the susceptibility of aluminum propeller blades to fatigue cracking and fracture if not properly inspected and maintained.

Issue Date: April 2024

Dust Devils: Silent Sky Snares

This safety alert and accompanying video were derived from more than 170 accident investigations involving dust devils. Although often considered a harmless phenomenon, dust devils can present significant hazards to aviation. Our investigations found that FAA literature has limited information on dust devils and the potential hazards associated with them, and pilots may underestimate or be unaware of the threats these phenomena can introduce during flight operations.

The following safety issue was identified and addressed in this safety alert: the spiraling updrafts of dust devils can disrupt the flight of small aircraft.

Issue Date: December 2023

Public Forums

A forum is a public proceeding focused on a specific topic where invited participants provide presentations and are available for questions.

Navigating Mental Health in Aviation Summit
December 6, 2023

Chairman Homendy brought together safety experts from the aviation industry, academia, the mental health profession, and government to examine the unintended consequences of the current system for evaluating mental fitness in the aviation workforce and to explore ways that the United States can modernize its approach to mental health while managing risk in the national airspace. Panelists shared first-person accounts of how the current system has affected them, and mental health experts discussed concerns with the aviation industry's current approach to evaluating mental illness in pilots and air traffic controllers.

Other Efforts and Focus Areas

Outreach Activities

During FY 2024, senior management and staff from the Office of Aviation Safety delivered presentations or otherwise represented the NTSB at more than 45 government and industry meetings and events to promote aviation safety, including the following:

- FAA advisory and rulemaking committee on pilot mental health
- National Business Aviation Association annual convention and exhibition
- Women in Aviation annual conference
- Alaska Air Carriers Association annual convention
- National Air Transportation Association air charter summit and aviation business conference

Comments on FAA Notice of Proposed Rulemaking Concerning Airworthiness Directives for Various Helicopters

In June 2024, the NTSB submitted comments on a proposed FAA airworthiness directive (AD) applicable to helicopters equipped with certain aftermarket emergency float kits or emergency floats with life raft kits. The proposed AD would require repetitively inspecting the pull force on the float activation handle and, depending on the results, accomplishing corrective actions; additionally, the proposed AD would require replacing certain part-numbered components from an emergency flotation system and would prohibit their installation. The proposed rule was prompted by NTSB safety recommendations resulting from our investigation of the March 11, 2018, accident involving an Airbus Helicopters AS350 B2 helicopter in New York, New York (AAR-19-04). We are pleased that the proposed AD would require the recommended repetitive inspections for those FAA-approved emergency flotation systems that were not included in AD 2020-02-23; we further noted that publishing a final AD consistent with the NPRM would likely satisfy the intent of Safety Recommendation A-19-26.

Project to Optimize Regional Investigator Launch Coverage

During the first quarter of FY 2024, the office formed a working group to evaluate the various duty schedules among the regional offices and recommend a single unified duty rotation schedule. The objectives of this project are to use limited launch resources more efficiently while maintaining launch readiness and to provide seasonally appropriate launch depth by

leveraging cross-regional support. The working group completed its evaluation and delivered recommendations to office management in March 2024. Recommendations from the working group will go into effect on January 1, 2025.

2024 Audit by the International Civil Aviation Organization

The NTSB provided extensive support during a July 2024 audit of the US civil aviation system conducted by ICAO under its Universal Safety Oversight Aviation Program (USOAP). The NTSB led efforts demonstrating US implementation of USOAP critical elements and protocols related to aviation accident and incident investigation (AIG). The US achieved an effective implementation score of 94 percent for the AIG portion of the audit—well above the global average and reflective of the comprehensive system and capabilities in place at the NTSB for accident investigation.

Comments on FAA Notice of Proposed Rulemaking Concerning 25-Hour CVR Requirements

In January 2024, the NTSB submitted comments on the FAA's proposal to require the installation of 25-hour-duration CVRs on only newly manufactured aircraft that require a CVR operating under 14 *CFR* Parts 91, 121, 125, and 135. Although we were pleased the FAA's proposal addressed action recommended in Safety Recommendation A-18-30, we expressed disappointment that the NPRM did not include a similar requirement to retrofit existing airplanes, as recommended in Safety Recommendation A-18-31 (which was superseded by Safety Recommendation A-24-9 on June 11, 2024). As a result, we did not fully support the NPRM and urged the FAA to reconsider its position.

Comments on FAA Notice of Proposed Rulemaking Concerning Supplemental Restraint Systems

In January 2024, the NTSB submitted comments on the FAA's proposal to prohibit civil aircraft operations conducted with supplemental restraint systems unless operators meet certain requirements for ensuring passenger safety during all phases of the operation. The proposed rule was prompted by NTSB safety recommendations resulting from our investigation of the March 11, 2018, accident involving an Airbus Helicopters AS350 B2 helicopter in New York, New York (AAR-19-04). We pointed out that, although the NPRM addressed some of our safety concerns, it did not address other hazards identified in our investigation, and more detail was needed in the rulemaking to address the evaluation and review of such systems as well as their permitted attachment points.

Ongoing Significant Aviation Accident and Incident Investigations

Location	Date	Description	Fatalities
Halloran Springs, California	2/10/2024	Airbus EC130 helicopter crash	6
Newark, New Jersey	2/6/2024	Boeing 737-8 rudder system anomaly	0
Portland, Oregon	1/5/2024	Boeing 737-9 door plug separation and rapid decompression	0
St. Mary's, Alaska	9/12/2023	Cessna 207 controlled flight into terrain	4
Stagecoach, Nevada	2/24/2023	Loss of control in flight	5

Note: We are devoting significant resources to the investigations listed and anticipate producing a report upon the completion of each investigation. These investigations were ongoing as of September 30, 2024.

HIGHWAY SAFETY

	($000s)	FTEs	Pos.
FY 2025 Estimate	$10,855	36	37
FY 2026 Request	$10,847	36	37
Increase/Decrease	($8)	0	0

Overview of the Request

The funding level for this program assumes no pay raise in FY 2026 and includes a minor reduction to operational costs to absorb the impacts of a 2.0 percent non-pay inflation increase.

Program Description

The Office of Highway Safety investigates crashes that have significant safety implications nationwide, highlight national safety issues, involve the loss of numerous lives, or generate high interest because of emerging technologies or the circumstance of the crash. Such investigations may focus on mass casualties and injuries on public transportation vehicles (such as motorcoaches and school buses), collapses of bridges spanning roadways or tunnel structures, or collisions at highway–railroad grade crossings. This office also investigates crashes that involve new safety issues or technologies (such as automated vehicles and alternatively fueled vehicles) and develops reports based on trends emerging from NTSB investigations and from research and data that identify common risks or underlying causes of crashes, injuries, and fatalities.

The NTSB is the only US organization that performs independent, comprehensive, and transparent multidisciplinary investigations to determine the probable causes of highway crashes, with the goal of making recommendations to prevent similar events and to reduce injuries and fatalities. Our investigations result in recommendations that provide policymakers and stakeholders with unbiased analysis and that, if implemented, would reduce or eliminate the safety risks identified in the investigations.

The Office of Highway Safety comprises the Investigations Division and the Report Development Division.

Investigations Division

The Investigations Division manages the go-teams launched to crash sites to collect the factual and develop the analytical information for investigations. Currently, the division is separated into two branches: multidisciplinary investigations and special investigations. The multidisciplinary investigation branch conducts major highway investigations through a multidisciplinary team comprising an IIC and five other investigators with expertise in vehicle, highway, human performance, survival, and motor carrier factors. The special investigations branch performs focused investigations by specific subject matter experts on targeted safety issues. All investigations are supported by two crash reconstruction experts and a national resource specialist. To enhance geographic coverage and reduce response time, team members are located throughout the country, including in California, Colorado, Florida, Tennessee, Texas, Washington, Wisconsin, Wyoming, and Washington, DC.

Report Development Division

The Report Development Division manages investigation report development. Project managers and technical writer-editors review the information provided by the investigators for accuracy and completeness; research, analyze, and develop national highway safety issues based on this investigative information; and write and edit technical reports. This division is also responsible for managing investigative hearings, forums, and other specialized meetings on national highway safety issues.

Accomplishments and Ongoing Efforts

Office accomplishments include issuing products related to transportation safety arising from completed and ongoing investigations. Products completed between October 1, 2023, and September 30, 2024, are highlighted below, along with information about other efforts and focus areas important to our mission.

Investigation Reports

Investigation reports are issued for accident or incident investigations and may contain a determination of probable cause and safety recommendations, depending on the scope of the investigation and the safety issues identified. For select, larger scale investigations, the office launches an investigation team and presents a comprehensive investigation report to the Board. Investigations that are limited in scope are primarily intended to determine probable cause; the resultant report may be issued by the office director under delegated authority or may be adopted by the Board. Special

investigation reports usually involve analysis of data from multiple accidents centered around a common safety issue and result in safety recommendations. A report containing only safety recommendations can be issued at any time during an investigation. If the Board determines that a recommended course of action requires immediate attention to avoid imminent loss of life from a similar accident, the safety recommendation is designated "urgent."

From October 1, 2023, through September 30, 2024, the Office of Highway Safety published four investigation reports identifying safety issues that led to the issuance of 32 new safety recommendations. During this period, the office also issued five investigation reports that solely determined probable cause.

Below are summaries of the highway investigation reports completed between October 1, 2023, and September 30, 2024, arranged by report date.

Pickup Collision with a Group of Bicyclists
Goodyear, Arizona
February 25, 2023

On February 25, 2023, about 7:55 a.m. local time, a group of bicyclists was struck by a 2019 Ford F-250 pickup truck while traveling south over the Cotton Lane Bridge near Goodyear, Arizona. The pickup truck, which was also traveling south, departed the left lane and crossed the right southbound lane and shoulder before striking the southbound bridge barrier. Following the impact, the pickup truck veered left, struck the bicyclists, crossed over both southbound travel lanes, and stopped in the center median of the roadway. As a result of the crash, 2 bicyclists were fatally injured, 14 received injuries ranging from serious to minor, and 2 were not injured. The driver was wearing a lap/shoulder belt and was also uninjured.

We determined that the probable cause of the Goodyear, Arizona, crash between a pickup and a group of bicyclists was the pickup driver's diminished state of alertness, likely due to fatigue. Contributing to the severity of the bicyclists' injuries was the pickup driver's speed and lack of response once the crash sequence began.

We identified safety issues associated with the pickup truck driver's fatigue and the lack of adequate protections for vulnerable road users, including bicyclists.

Recommendations: None
Report Date: September 20, 2024

Rear-End Collision Between Combination Vehicle and Medium-Size Bus
Williamsburg, Virginia
December 16, 2022

On Friday, December 16, 2022, about 1:36 a.m. local time, a truck-tractor in combination with a semitrailer, operated by Triton Logistics Incorporated, was traveling east on Interstate 64 near Williamsburg, Virginia, when it crashed into the rear of a slower-moving medium-size bus, operated by Futrell's Party Adventures, LLC. The bus was traveling about 20–25 mph, while the truck was traveling about 65–70 mph. The truck driver did not brake or take any evasive action while approaching the slower-moving vehicle. As a result of the crash, 3 bus occupants died, 9 sustained serious injuries, and 11 sustained minor injuries. The truck driver also sustained serious injuries.

We determined that the probable cause of the Williamsburg, Virginia, crash was the truck driver's fatigue, due to excessive driving time and limited sleep opportunity, which resulted in his lack of response to the slow-moving bus ahead. Contributing to the truck driver's fatigue was the motor carrier, Triton Logistics Incorporated, which created fictitious driver accounts in the electronic logging device system and enabled drivers to operate their vehicles for hours in excess of federal regulations. Contributing to the severity of the crash was the operation of the bus at a significantly slower speed than other highway traffic.

We identified safety issues associated with the inadequate safety culture of the truck motor carrier, the need for federal requirements for commercial vehicle collision avoidance systems, and the inadequate safety management and oversight of the bus carrier.

We issued new safety recommendations to the Federal Motor Carrier Safety Administration (FMCSA), the Commonwealth of Virginia, Triton Logistics Incorporated, and the Commercial Vehicle Safety Alliance. The NTSB also reiterated recommendations to the National Highway Traffic Safety Administration (NHTSA) and the FMCSA.

Recommendations: 6 new, 3 reiterated
Report Date: August 12, 2024

Intersection Crash Between Passenger Car and Combination Vehicle
Tishomingo, OK
March 22, 2022

On March 22, 2022, at 12:19 p.m. local time, a 2015 Chevrolet Spark four-passenger car, occupied by a 16-year-old driver and five teen passengers, was traveling east on Oklahoma State Highway 22 (SH-22) approaching US

Highway 377 (US-377) in Tishomingo, Oklahoma. The flow of traffic on SH-22 was controlled by a stop sign, and vehicles on US-377 had no traffic controls. At the same time, a 1994 Peterbilt truck-tractor in combination with a 2017 Travis semitrailer (combination vehicle) was traveling south on US-377 at a calculated speed of 51–53 mph and approaching the intersection with SH-22. The car driver slowed her vehicle in advance of the intersection (behind another vehicle) but did not come to a complete stop at the stop sign or yield to the oncoming combination vehicle. Instead, the car driver sped up to make a left turn in front of the combination vehicle. The combination vehicle driver applied braking and steered to try to avoid the collision, but the combination vehicle struck the driver's side of the car; all six occupants in the car were fatally injured. The combination vehicle driver was not injured in the crash.

We determined that the probable cause of the Tishomingo, Oklahoma, collision was the teen driver's acceleration through the intersection after briefly slowing without stopping, due to distraction from having five teen passengers in the car, limited driving experience, and likely impairment from cannabis.

We identified safety issues associated with the car driver's distraction from transporting multiple teen passengers, inexperience with driving, and likely impairment due to recent cannabis use. Additional safety issues include the need for public awareness, effective communication, and access to resources about the impairing effects of cannabis use on driving.

We issued new safety recommendations to the Oklahoma State Department of Education, the Oklahoma Highway Safety Office, Service Oklahoma, the Governors Highway Safety Association, the National Conference of State Legislatures, the National Association of State Boards of Education, and the American Association of Motor Vehicle Administrators. We reiterated recommendations to various states.

Recommendations: 7 new, 2 reiterations
Report Date: May 30, 2024

Fire on Battery Electric Transit Bus
Hamden, Connecticut
June 23, 2022

On Saturday, July 23, 2022, about 3:39 a.m. local time, a battery electric transit bus, owned by the Connecticut Department of Transportation and operated by public transit system CTtransit, began emitting smoke while parked inside a CTtransit maintenance facility in Hamden, Connecticut. The bus had been placed out of service 2 days earlier due to an error in the bus charging system. Responding fire department personnel did not observe any visible flames, and the bus was pushed to an outdoor, isolated parking area. In

the process, two CTtransit maintenance workers suffered smoke inhalation and were treated at an area hospital. Later that same morning, the bus was again emitting smoke, and fire was observed coming from the rear of the vehicle. Fire personnel returned to the site and the incident commander decided to let the bus burn in the controlled environment. The fire remained active for several hours and fully consumed the vehicle. Following the departure of fire personnel, the bus continued to smolder while remaining isolated in the parking lot. On Monday, July 25, 2022, smoke and an orange glow were observed emanating from the right rear wheel well of the burned bus. Fire department personnel responded for a third time and applied water to the smoking battery compartment. No additional injuries were reported. We investigated two additional battery electric transit bus fires, one that occurred at an IndyGo facility in Indianapolis, and another at a Southeastern Pennsylvania Transportation Authority facility in Philadelphia, that we summarized in this report.

We determined that the probable cause of the Hamden, Connecticut, fire was moisture in the high-voltage lithium-ion battery system, which led to battery damage resulting in the fire. Contributing to the injuries to facility personnel was the lack of a safety plan by CTtransit for mitigating risks associated with high-voltage lithium-ion battery fires during emergency response.

We identified safety issues associated with emergency responder safety and emergency response guides that provide vehicle-specific information about safely extinguishing fires, mitigating reignition events, and transporting and storing damaged vehicles. Following the investigation, the Federal Transit Administration issued additional guidance.

Recommendations: None
Report Date: March 4, 2024

Collapse of the Fern Hollow Bridge
Pittsburgh, Pennsylvania
January 28, 2022

On Friday, January 28, 2022, about 6:37 a.m. local time, the Fern Hollow Bridge, which carried Forbes Avenue over the north side of Frick Park in Pittsburgh, Pennsylvania, experienced a structural failure. As a result, the 447-foot-long bridge fell about 100 feet into the park below. The collapse began when the transverse tie plate on the southwest bridge leg failed due to extensive corrosion and section loss. The corrosion and section loss resulted from clogged drains that caused water to run down bridge legs and accumulate along with debris at the bottom of the legs, which prevented the development of a protective rust layer (patina). Although repeated

maintenance and repair recommendations were documented in many inspection reports, the city of Pittsburgh failed to act on them, leading to the deterioration of the fracture-critical transverse tie plate and the structural failure of the bridge. At the time of the collapse, a 2013 New Flyer articulated transit bus, operated by the Port Authority of Allegheny County, and four passenger vehicles were on the bridge. A fifth passenger vehicle drove off the east bridge abutment after the collapse began and came to rest on its roof on the ground below. As a result of the collapse, the bus driver sustained minor injuries, and two bus occupants were uninjured. Of the six passenger vehicle occupants, two sustained serious injuries, one sustained a minor injury, two were uninjured, and the injury status of one was unknown.

We determined that the probable cause of the collapse of the Fern Hollow Bridge in Pittsburgh, Pennsylvania, was the failure of the transverse tie plate on the southwest leg of the bridge, a fracture-critical member (nonredundant steel tension member), due to corrosion and section loss resulting from the city of Pittsburgh's failure to act on repeated maintenance and repair recommendations from inspection reports. Contributing to the collapse were the poor quality of inspections, the incomplete identification of the bridge's fracture-critical members (nonredundant steel tension members), and the incorrect load rating calculations for the bridge. Also contributing to the collapse was insufficient oversight of Pittsburgh's bridge inspection program by the Pennsylvania Department of Transportation (PennDOT).

We identified safety issues associated with the lack of action on repeated recommendations from bridge inspection reports, including the following:

- The city of Pittsburgh's failure to maintain and repair the Fern Hollow Bridge and PennDOT's failure to ensure that the city completed the maintenance and repairs specified in the recommendations from the bridge inspection reports.
- PennDOT's ineffective bridge inspection program, which used bridge inspection methods and measures that did not comply with Federal Highway Administration (FHWA) and American Association of State Highway and Transportation Officials guidance, failed to identify all of the bridge's fracture-critical members, and produced inaccurate bridge load rating calculations.
- Insufficient oversight by the city, PennDOT, and the FHWA of their responsibilities within the bridge inspection program to detect and prevent bridge failures.

As a result of this investigation, we issued new safety recommendations to the FHWA, PennDOT, the city of Pittsburgh, and the American Association of State Highway and Transportation Officials. We also classified one previously issued recommendation to the FHWA.

Recommendations: 11 new, 1 classified in the report
Report Date: February 21, 2024

Intersection Crash between a Medium-Size Bus and a Combination Vehicle
Dermott, Arkansas
June 6, 2022

On June 6, 2022, about 2:41 p.m. local time, a crash occurred between a medium-size bus and a truck-tractor combination vehicle at an intersection of US Highway 65 and State Highway 35 near Dermott, Arkansas. The bus was traveling westbound on SH-35 and, without yielding, began crossing the southbound lanes of US-65, where it was struck by the combination vehicle. Five bus passengers died, and three bus passengers sustained serious injuries; both drivers were seriously injured.

We determined that the probable cause of the Dermott, Arkansas, intersection crash was the failure of the bus driver to yield to the combination vehicle, likely as the result of fatigue.

We identified safety issues associated with onboard video recorders and driver's fitness for duty in this investigation. The bus's postcrash changes—including installing inward-facing cameras on all its buses, the new oversight policies, and expanding its existing defensive driving training program—would help address the deficiencies uncovered in this investigation.

Recommendations: None
Report Date: February 5, 2024

Pickup Truck Centerline Crossover Collision with Transit Van and Postcrash Fire
Andrews, Texas
March 15, 2022

About 8:17 p.m. local time on March 15, 2022, a crash occurred between a pickup truck and a van towing a trailer on Farm to Market Road 1788 in Andrews, Texas. A 2007 Dodge Ram 2500 pickup truck, traveling southbound, crossed the centerline and collided nearly head-on with a northbound 2017 Ford Transit 350 van towing a 2019 Salvation trailer. The impact initiated a postcrash fire that consumed the van and the pickup truck. Seven occupants of the van and two occupants of the pickup truck died, and two van passengers were seriously injured.

We determined that the probable cause of the Andrews, Texas, crash was the pickup truck driver's excessive speed and his crossing into the oncoming lane of travel, likely because of impairment from methamphetamine use.

We identified excessive speed and impairment as safety issues in this investigation. Driving above the speed limit or too fast for conditions is dangerous on its own, but as this crash has exemplified, speeding is particularly dangerous when combined with impairment. The NTSB has adopted a multifaceted approach in addressing these risks, including advocating for our previously issued safety recommendations related to vehicle technologies—impairment-detection systems, advanced driver-monitoring systems, and intelligent speed assistance—as well as improving toxicological testing and enforcing speeding violations.

Recommendations: None
Report Date: December 27, 2023

Grade Crossing Collision Between Commuter Train and Box Truck
Clarendon Hills, Illinois
May 11, 2022

On May 11, 2022, at 8:16 a.m. local time, an eastbound Metra commuter train struck a 2004 International box truck that was blocking a highway–railroad grade crossing at Prospect Avenue in Clarendon Hills, Illinois. The box truck had stalled as it was traversing the crossing, and while stopped, the grade-crossing warning lights and gates activated for the oncoming commuter train. The three truck occupants exited the vehicle before the train struck the left front of the truck. The collision and secondary impact resulted in exterior and interior damage to the lead cab car. The train did not derail. The box truck sustained heavy collision damage and was then engulfed in a postcrash fire. As a result of the collision, one train passenger was fatally injured, four train occupants sustained minor injuries, and the occupants of the box truck were not injured.

We determined that the probable cause of the Clarendon Hills, Illinois, collision was the improperly licensed truck driver's failure to manage the box truck's power, causing the box truck to stall on the railroad, and his subsequent inability to restart the engine, causing the vehicle to block the path of the commuter train. Contributing to the collision were the motor carrier's inadequate safety policies.

This investigation uncovered a safety issued associated with the commercial vehicle inspection procedures used by the Commercial Vehicle Safety Alliance (CVSA). As a result of the investigation, CVSA updated its

inspection procedures to require confirmation that a driver's commercial driver's license matches the gross vehicle weight rating of the vehicle being driven. The Illinois State Police will follow the updated CVSA guidance and have emphasized to their workforce the importance of verifying that commercial drivers have the proper class of license for the vehicle they are driving. These changes improve safety for road users in the state of Illinois and across North America.

Recommendations: None
Report Date: November 22, 2023

Multivehicle Crash at Signalized Intersection
North Las Vegas, Nevada
January 29, 2022

On Saturday, January 29, 2022, about 3:12 p.m. local time, a 2018 Dodge Challenger passenger car was traveling northbound on North Commerce Street in North Las Vegas, Nevada. The Dodge driver approached the traffic signal-controlled intersection with Cheyenne Avenue, reaching a maximum vehicle-recorded speed of 103 miles per hour (mph). The Dodge driver entered the intersection on a red traffic signal (which had been red for at least 29 seconds) and struck the right side of a Toyota Sienna minivan traveling eastbound on Cheyenne Avenue. Four additional vehicles traveling on Cheyenne Avenue became involved in subsequent impacts. As a result of the crash, the driver and passenger of the Dodge and all seven occupants of the Toyota minivan died.

We determined that the probable cause of the crash was the Dodge driver's excessive speed and failure to obey traffic control devices. Contributing to the driver's behavior was his impairment from the effects of cocaine and phencyclidine and his disregard for safety and traffic laws. Also contributing to the driver's repeated disregard for safety and traffic laws despite numerous citations was the state of Nevada's failure to deter the driver's speeding recidivism due to systemic deficiencies, including routine plea agreements that alter or drop violations, inaccurate driver records, failure to accurately track citations, and delays in reporting convictions.

We identified the following safety issues during this investigation: drug-impaired driving, the need for technology to prevent excessive speed, and the need for countermeasures targeted at repeat speeding offenders.

As a result of this investigation, we issued safety recommendations to NHTSA; the 50 states, the Commonwealth of Puerto Rico, and the District of Columbia; the Insurance Institute for Highway Safety; and passenger vehicle manufacturers. We also reiterated a safety recommendation to NHTSA.

Recommendations: 8 new, 1 reiterated
Report Date: November 14, 2023

Safety Alerts

A safety alert is a short informational bulletin, usually only a page long, that pinpoints a particular safety issue. It contains information based on the findings of one or more NTSB investigations and enhances the dissemination of safety information to the traveling public.

Parents: Protect Your Teen from Marijuana-Impaired Driving

Educating drivers about the risks of marijuana-impaired driving is essential for preventing fatal crashes like the one that occurred in Tishomingo, Oklahoma. As states continue to legalize marijuana and thereby remove barriers to its access and use, it becomes even more important to provide accurate information about marijuana's impairing effects and the continued illegality of driving under its influence. The NTSB's safety alert focuses on parents' role in protecting their teen drivers from marijuana-impaired driving.

Issue Date: July 2024

Other Efforts and Focus Areas

Regulatory Correspondence

We provided feedback and guidance on seven regulatory efforts, including rulemaking related to the FMCSA's Safety Fitness Determinations, NHTSA's Federal Motor Vehicle Safety Standards Occupant Crash Protection and Seat Belt Reminder Systems, and NHTSA's Federal Motor Vehicle Safety Standards "FMVSS No. 305a Electric-Powered Vehicles: Electric Powertrain Integrity Global Technical Regulation No. 20."

Investments in Technology

We invested time and resources to train multiple investigators in the Office of Highway Safety and other modal offices on using drone technology to accurately and completely document our investigations. We invested in software to help us visualize drone data and in iPads to expand our investigators' on-scene capabilities during drone flights.

Ongoing Significant Highway Accident Investigations

Location	Date	Description	Fatalities
Vicksburg, Mississippi	8/31/2024	Motorcoach roadway departure and overturn	7
Emigrant Gap, California	8/19/2024	Electric truck-tractor roadway departure and postcrash fire	0
Swanton, Ohio	8/15/2024	Rear-end collision and subsequent multivehicle collisions near toll plaza on Interstate 80	4
Belle Glade, Florida	8/5/2024	SUV roadway departure and overturn	9
Kenly, North Carolina	7/24/2024	Multivehicle work zone collision and postcrash fire	5
Carrizo Springs, Texas	6/6/2024	Centerline crossover collision between passenger car and pickup truck, with postcrash car fire	7
Rushville, Illinois	3/11/2024	School bus collision with combination vehicle and postcrash fire	5
Millstone, West Virginia	3/4/2024	School bus roadway departure and overturn	0
Philadelphia, Pennsylvania	3/3/2024	Rear-end collision between a sport utility vehicle (SUV) operating with partial driving automation and two stationary passenger vehicles	2
San Antonio, Texas	2/24/2024	Rear-end collision between an SUV operating with partial driving automation and a stationary SUV	1
Etna, Ohio	11/14/2023	Multivehicle collision including motorcoach transporting students and postcrash fire	7
Teutopolis, Illinois	9/29/2023	Cargo tank combination vehicle roadway departure crash and subsequent release of anhydrous ammonia	5
Wawayanda, New York	9/21/2023	Motorcoach roadway departure and overturn	2
Highland, Illinois	7/12/2023	Crash between motorcoach and combination vehicles parked along rest area ramp	3
Philadelphia, Pennsylvania	6/11/2023	Combination vehicle overturn, fire, and Interstate 95 overpass collapse	1
Millersburg, Oregon	5/18/2023	Crash involving a combination vehicle departing the roadway and colliding with a parked van and second combination vehicle	7
Excelsior Township, Wisconsin	5/12/2023	Vehicle collision with stopped school bus and student pedestrian	1
Woodlawn, Maryland	3/22/2023	Vehicle collision with workers in a highway work zone	6

Location	Date	Description	Fatalities
Delray Beach, Florida	2/8/2023	Grade-crossing crash between SUV and intercity passenger train	2
Louisville, New York	1/28/2023	Cross-over crash between a medium size bus and truck	6

Note: We are devoting significant resources to the investigations listed and anticipate producing a report upon the completion of each investigation. These investigations were ongoing as of September 30, 2024.

MARINE SAFETY

	($000s)	FTEs	Pos.
FY 2025 Estimate	$6,567	23	24
FY 2026 Request	$6,562	23	24
Increase/Decrease	($5)	0	0

Overview of the Request

The funding level for this program assumes no pay raise in FY 2026 and includes a minor reduction to operational costs to absorb the impacts of a 2.0 percent non-pay inflation increase.

Program Description

The Office of Marine Safety investigates and determines the probable cause of major marine casualties in US territorial waters, major marine casualties involving US-flagged vessels worldwide, and accidents involving both US public (federal) and nonpublic vessels in the same casualty. In addition, the office investigates select catastrophic marine accidents and those of a recurring nature.

The US Coast Guard conducts preliminary investigations of all marine accidents and notifies the NTSB when an accident qualifies as a major marine casualty, which includes any one of the following:

- The loss of six or more lives.
- The loss of a mechanically propelled vessel of 100 or more gross tons.
- Property damage initially estimated to be $500,000 or more.
- A serious threat, as determined by the commandant of the US Coast Guard with the concurrence of the NTSB chairman, to life, property, or the environment by hazardous materials.

The office is also responsible for the overall management of the NTSB's international marine safety program, under which the office investigates major marine casualties involving foreign-flagged vessels in US territorial waters and those involving US-flagged vessels anywhere in the world. Under the International Maritime Organization (IMO) *Code of International Standards and Recommended Practices for a Safety Investigation Into a Marine Casualty or Marine Incident* (Casualty Code), the office also participates with the US Coast Guard as a substantially interested State (SIS) in investigations of serious

marine casualties involving foreign-flagged vessels in international waters. The international program involves reviewing US administration position papers related to marine accident investigations and participating in select IMO subcommittee meetings.

As part of the international program, the office coordinates with other US and foreign agencies to ensure consistency with IMO conventions. We also cooperate with other accident investigation organizations worldwide at annual meetings, such as the Marine Accident Investigators' International Forum (MAIIF), Europe MAIIF, and MAIIF Americas, which track developments related to marine casualty investigations and prevention and have status as a nongovernmental organization with the IMO.

The NTSB is the only federal organization that performs independent, comprehensive, and transparent multidisciplinary investigations to determine the probable cause of marine accidents, with the goal of making safety recommendations to prevent similar events from occurring in the future. The thoroughness and independence of these investigations maintain public confidence in marine transportation systems and provide policymakers with unbiased analysis.

The Office of Marine Safety comprises the Investigations Division and the Product Development Division.

Investigations Division

The Investigations Division coordinates and oversees investigations of major marine casualties. The division manages the multidisciplinary go-teams that launch to accident sites, collect information, and analyze collected information to determine the probable cause of an accident. It is comprised of investigators that specialize in disciplines including navigation and ship handling, marine propulsion and ship systems, naval architecture, lifesaving and survival factors, and human factors.

Product Development Division

The Product Development Division works with the Investigations Division to produce all marine investigation reports and safety alerts. The division, which consists of technical writer-editors, is responsible for quality control of all products and ensuring adherence to agency publications guidelines. The division is also responsible for drafting and editing the annual *Safer Seas Digest* publication, as well as responding to NPRMs, petitions for reconsideration, and general correspondence.

Accomplishments and Ongoing Efforts

Office accomplishments include issuing products related to transportation safety arising from completed and ongoing investigations. Products completed between October 1, 2023, and September 30, 2024, are highlighted below, along with information about other efforts and focus areas important to our mission.

Investigation Reports

Investigation reports are issued for accident or incident investigations and may contain a determination of probable cause and safety recommendations, depending on the scope of the investigation and the safety issues identified. For select, larger scale investigations, the office launches an investigation team and presents a comprehensive investigation report to the Board. Investigations that are limited in scope are primarily intended to determine probable cause; the resultant report may be issued by the office director under delegated authority or may be adopted by the Board. Special investigation reports usually involve analysis of data from multiple accidents centered around a common safety issue and result in safety recommendations. A report containing only safety recommendations can be issued at any time during an investigation. If the Board determines that a recommended course of action requires immediate attention to avoid imminent loss of life from a similar accident, the safety recommendation is designated "urgent."

From October 1, 2023, through September 30, 2024, the Office of Marine Safety issued a total of 41 investigation reports, two of which identified safety issues that led to the issuance of 11 new safety recommendations, and 39 of which solely determined probable cause.

Below are summaries of a sampling of the marine investigation reports completed between October 1, 2023, and September 30, 2024, arranged by report date.

Contact of *Cindy B* Tow with Dock
Clatskanie, Oregon
November 12, 2023

On November 12, 2023, about 5:52 a.m. local time, the towing vessel *Cindy B* was pushing the loaded deck barge *St. John* upbound on the Columbia River at mile 53 near Clatskanie, Oregon, when the tow gradually moved to starboard out of the navigation channel and struck the Port Westward Beaver Dock. None of the three crewmembers aboard the *Cindy B* were injured. During the cleanup, about 2 gallons of renewable diesel fuel

leaked onto the dock from a damaged pipe on the dock, with about 1 gallon going into the river; a portion of the spilled fuel was recovered. Damage to the *St. John* and the Beaver Dock was estimated to be about $6 million.

We determined that the probable cause of the contact of the *Cindy B* tow with the Port Westward Beaver Dock was the deckhand falling asleep at the helm due to fatigue that he did not perceive, which occurred during a night watch, at a low point in his circadian rhythm, and following a change in his awake/sleep cycle. Contributing to the casualty was the pilothouse alerter system not alarming to wake the incapacitated deckhand at the helm because a swinging VHF radio microphone in the motion sensors' field of view defeated the system.

As a result of this investigation, the NTSB identified lessons learned related to transitioning from daytime to nighttime work and using pilothouse alerter systems.

Recommendations: None
Report Date: September 23, 2024

Contact of Towing Vessel *John 3:16* with Pier
Saint Rose, Louisiana
September 12, 2023

On September 12, 2023, about 6:41 a.m. local time, the towing vessel *John 3:16* was transiting the Lower Mississippi River near Saint Rose, Louisiana, when the vessel contacted an industrial cargo pier. No pollution or injuries were reported. The final cost to repair the damages to the towing vessel and pier was $285,441.

We determined that the probable cause of the contact of the *John 3:16* with an industrial cargo pier was the pilot falling asleep while navigating due to an accumulated sleep debt. Contributing to the pilot's fatigue was cell phone use during off-watch time, which significantly limited the pilot's opportunity for sleep.

As a result of this investigation, the NTSB identified lessons learned related to maximizing sleep during off-watch rest periods.

Recommendations: None
Report Date: August 1, 2024

Engine Room Fire on board Passenger Ferry *Sandy Ground*
Staten Island, New York
December 22, 2022

On December 22, 2022, about 4:54 p.m. local time, an engine room fire broke out aboard the passenger ferry *Sandy Ground* while the vessel was underway in New York Harbor near Staten Island, New York, with 884 persons aboard. The crew extinguished the fire by activating the engine room's fixed fire extinguishing system. The vessel lost propulsion and electricity, and the crew deployed both anchors. The majority of the passengers transferred to responding Good Samaritan vessels; the *Sandy Ground* was towed to the St. George Ferry Terminal in Staten Island, where the remaining persons on board disembarked. There were no injuries, and no pollution was reported. Damage to the vessel was estimated at $12.7 million.

We determined that the probable cause of the engine room fire aboard the passenger ferry *Sandy Ground* was the design of the vessel's diesel engine fuel oil return system, which included isolation valves that could be regularly adjusted by the crew and, when closed, stopped return fuel oil flow from all operating engines, resulting in the overpressurization of the fuel oil system and the ignition of fuel oil spraying from ruptured fuel oil filters onto the exhaust manifold of a running engine. Contributing to the overpressurization was the operator's inadequate training program on fuel oil system operation, which did not provide follow-on instruction after the installation of fuel oil return isolation valves at the day tanks.

As a result of this accident, we issued new recommendations to the Coast Guard and the American Bureau of Shipping regarding the design rules and regulations for diesel engine fuel oil return systems.

Recommendations: 5 new
Report Date: July 9, 2024

Contact of *Queen City* Tow with Vane Dike
Louisville, Kentucky
March 28, 2023

On March 28, 2023, about 2:24 a.m. local time, the towing vessel *Queen City* was downbound on the Ohio River in high-water conditions, pushing an 11-barge tow, when the tow struck the Vane Dike at the arrival point for the McAlpine Locks and Dam in Louisville, Kentucky, and broke apart. No pollution or injuries were reported. Total damages to the barges and cargo were estimated to be $1.98 million.

We determined that the probable cause of the contact of the *Queen City* tow with the Vane Dike was the pilot not effectively compensating for the strong outdraft while navigating toward the lock channel entrance during a period of high-flow conditions.

As a result of this investigation, the NTSB identified lessons learned about preparing for dam outdrafts when entering or exiting locking channels.

Recommendations: None
Report Date: May 7, 2024

Contact of Tank Vessel *Bow Triumph* with Pier
Charleston, South Carolina
September 5, 2022

On September 5, 2022, about 4:02 p.m. local time, the 600-foot-long tanker *Bow Triumph* was transiting outbound on the Cooper River near Naval Weapons Station, Joint Base Charleston, South Carolina, when the vessel struck Naval Weapons Station Pier B. The vessel's bow sustained significant damage, and a 300-foot section of the pier collapsed. No pollution or injuries were reported. Damage to the vessel and pier was estimated at $29.5 million.

We determined that the probable cause of the contact of the *Bow Triumph* with Naval Weapons Station Pier B was the pilot's decision to maneuver the vessel close to the left bank while approaching the turn immediately before the pier, exposing the tanker to bank effect, which the pilot's subsequent rudder and engine orders could not overcome.

As a result of this investigation, the NTSB identified lessons learned on planning for hydrodynamic forces in areas subject to shoaling.

Recommendations: None
Report Date: April 15, 2024

Contact of *Susan K* Tow with Natchez-Vidalia Bridge
Natchez, Mississippi
April 23, 2023

On April 23, 2023, about 10:42 p.m. local time, the towing vessel *Susan K* was pushing 25 barges downbound on the Lower Mississippi River when the tow struck the center bridge pier on the Natchez-Vidalia Bridge, which connects the cities of Natchez, Mississippi, and Vidalia, Louisiana. One barge sank, and two other barges were damaged; the *Susan K* was undamaged. No pollution or injuries were reported. Damage to the barges and cargo was estimated at $2 million.

We determined that the probable cause of the contact of the *Susan K* tow with the Natchez-Vidalia Bridge was the captain's complacency, which resulted in his inattention to the tow's position as it approached the bridge.

As a result of this investigation, the NTSB identified lessons learned on combatting complacency—specifically, how repetition and monotony can cause mariners to become complacent and lose situational awareness.

Recommendations: None
Report Date: March 19, 2024

Collision between Tugboat *Mark E Kuebler* and Tanker *Nisalah*
Port Aransas, Ingleside, Texas
January 22, 2023

On January 22, 2023, about 3:30 p.m. local time, the tugboat *Mark E Kuebler* and the tanker *Nisalah* collided while the tanker was transiting inbound in the Corpus Christi Ship Channel near Ingleside, Texas. The tugboat's hull was breached, and the tanker's propeller was damaged in the collision. The captain of the *Mark E Kuebler* grounded the tugboat to prevent it from sinking, and, while aground, a small sheen of hydraulic oil was observed near the tugboat. The oil was recovered with absorbent pads. No injuries were reported. Damage to the *Mark E Kuebler* was estimated at $3 million; damage to the *Nisalah* was estimated at $3.9 million.

We determined that the probable cause of the collision between the tugboat *Mark E Kuebler* and the tanker *Nisalah* was the mate maneuvering the tugboat near the starboard quarter of the tanker, which resulted in the tugboat being drawn in toward the tanker by hydrodynamic forces that the tugboat had insufficient reserve power to counteract due to the transit speed of the vessels.

As a result of this investigation, the NTSB identified lessons learned on increasing awareness about the hydrodynamic forces between vessels in a channel and speed during harbor-assist maneuvers.

Recommendations: None
Report Date: February 21, 2024

Anchor Strike of Underwater Pipeline and Eventual Crude Oil Release
San Pedro Bay near Huntington Beach, California
October 1, 2021

On October 1, 2021, at 4:10 p.m. local time, San Pedro Bay Pipeline controllers received the first of a series of leak detection system alarms for their underwater pipeline, which was located in San Pedro Bay, 4.75 nautical miles

off the coast of Huntington Beach, California. Over the next 13 hours, the controllers conducted seven pipeline shutdowns and restarts while troubleshooting the alarms. At 6:04 a.m. on October 2, controllers shut down the pipeline for the eighth and final time. A pipeline contractor vessel crew visually confirmed a crude oil release at 8:09 a.m. and Beta Offshore, the pipeline operator, then initiated an oil spill response. An estimated 588 barrels of oil leaked from the pipeline. Damage, including clean-up costs, was estimated at $160 million. There were no injuries. A postaccident underwater examination of the pipeline found a crack along the top of the pipeline within a section of the pipeline that had been displaced from its originally installed location. Additionally, scarring consistent with anchor dragging was identified on the seafloor near the crack location. Postaccident investigation determined that the containerships *MSC Danit* and *Beijing* had dragged anchor near the pipeline months before the oil release, on January 25, 2021.

We determined that the probable cause of the damage to and subsequent crude oil release from the San Pedro Bay Pipeline was the proximity of established anchorage positions to the pipeline, which resulted in two containerships' anchors striking the pipeline when the ships dragged anchor in high winds and seas. Contributing to the crude oil release was the undetected damage to the pipeline, which allowed fatigue cracks to initiate and grow to a critical size and the pipeline to leak nearly 9 months later. Contributing to the amount of crude oil released was Beta Offshore's insufficient training of its pipeline controllers, which resulted in the failure of the controllers to appropriately respond to leak alarms by shutting down and isolating the pipeline. Contributing to the pipeline controllers' inappropriate response to the leak alarms was the water buildup in the pipeline, an incorrect leak location indicated by Beta Offshore's leak detection system, and frequent previous communication-loss alarms.

We identified the following safety issues in this investigation:

- Insufficient distance between anchorage locations and the pipeline.
- The need to notify pipeline operators about potential pipeline damage.
- The need to improve vessel traffic services vessel monitoring systems.
- Pipeline controllers' incorrect response to leak alarms.
- Lack of postaccident alcohol and other drug testing for pipeline controllers.
- The need for pipeline operators to implement pipeline safety management systems.

As a result of this investigation, we issued new safety recommendations to the US Coast guard, PHMSA, and the Marine Exchange of Southern California.

Recommendations: 6 new
Report Date: January 2, 2024

Collision between *Big D* and *Carol McManus* Tows
Fort Adams, Mississippi
January 9, 2023

On January 9, 2023, the towing vessel *Big D* was pushing 19 barges downbound on the Lower Mississippi River, and the towing vessel *Carol McManus* was pushing 42 barges upbound on the river. At 1:52 a.m. local time, the two tows collided at mile 312 near Fort Adams, Mississippi, causing the barges in both tows to break free. Several barges were damaged in the collision, and about 1,380 gallons of ethanol spilled into the waterway. Two minor injuries were reported. Damages to the barges were estimated at $1.36 million.

We determined that the probable cause of the collision between the *Big D* tow and the *Carol McManus* tow was the *Carol McManus* pilot incorrectly recalling the agreed-upon passing arrangement, which resulted in the *Carol McManus* tow encroaching on the downbound *Big D* tow.

As a result of this investigation, the NTSB identified lessons learned on the importance of repeating passing arrangements via radio to ensure both parties have a shared understanding of the arrangement.

Recommendations: None
Report Date: December 27, 2023

Collision between Containership *MSC Rita* and Fishing Vessel *Tremont*
Chincoteague, Virginia
October 28, 2022

On October 28, 2022, about 12:36 a.m. local time, the containership *MSC Rita* and the fishing vessel *Tremont* were underway in the Atlantic Ocean, 55 miles southeast of Chincoteague, Virginia, when the two vessels collided. The 13 people aboard the *Tremont* abandoned the vessel and were rescued by Good Samaritan vessels and a US Coast Guard helicopter. No injuries were reported. An oil sheen was reported; a potential of up to 31,000 gallons of diesel fuel were lost with the fishing vessel. Damage to the vessels was estimated at $4.75 million (*Tremont*) and $1.5 million (*MSC Rita*).

We determined the probable cause of the collision between the containership *MSC Rita* and the fishing vessel *Tremont* was the *Tremont* mate not maintaining a proper lookout and keeping the autopilot engaged while troubleshooting the vessel's gyrocompass, which resulted in the vessel turning into the path of the *MSC Rita*.

As a result of this investigation, the NTSB identified lessons learned on conducting maintenance on critical equipment while underway and using VHF-DSC to communicate distress.

Recommendations: None
Report Date: December 18, 2023

Crane Wire Failure on Cargo Ship *Thorco Basilisk*
Houston, Texas
July 23, 2022

On July 23, 2022, about 2:40 p.m. local time, the cargo ship *Thorco Basilisk* was discharging cargo at the Greensport Terminal on the Houston Ship Channel in Houston, Texas. While off-loading a wind turbine component, the hoisting wire rope on a shipboard crane failed, causing the component to drop onto the vessel's cargo hold tween deck. No pollution or injuries were reported. Damages to the ship and the component were estimated at $3–5 million.

We determined that the probable cause of the failure of the hoisting wire on the cargo ship *Thorco Basilisk*'s crane was undetected corrosion and wear in strand wires.

As a result of this investigation, the NTSB identified lessons learned on the importance of inspecting and maintaining wire ropes.

Recommendations: None
Report Date: November 28, 2023

Fire Aboard Tank Vessel *S-Trust*
Baton Rouge, Louisiana
November 13, 2022

On November 13, 2022, about 3:30 p.m. local time, a fire started on the bridge of the oil tanker *S-Trust* while the vessel was docked at the Genesis Port Allen Terminal in Baton Rouge, Louisiana. About 3:50 p.m., fire teams from the vessel's crew extinguished the fire. No pollution or injuries were reported. The damage to the vessel was estimated at $3 million.

We determined that the probable cause of the fire on the bridge of the *S-Trust* was the thermal runaway of one of the cells in a lithium-ion battery for an ultra-high frequency handheld radio.

As a result of this investigation, we identified lessons learned on the dangers of lithium-Ion battery fires and thermal runaway, a chemical reaction that can cause a cell to ignite and explode.

Recommendations: None
Report Date: October 25, 2023

Investigative Hearings

Investigative hearings are public hearings related to investigations in which the agency is authorized to obtain testimony under oath. In the investigations listed below, the NTSB participated in the hearing held by the U.S. Coast Guard on the subject investigations.

Hull Failure of Submersible *Titan*
US Coast Guard Marine Board of Investigation Hearing
September 16–27, 2024

From September 16 to September 27, 2024, the US Coast Guard held a Marine Board of Investigation hearing in Charleston, South Carolina, regarding the hull failure of the submersible *Titan*, which occurred on June 18, 2023, about 900 nautical miles east of Cape Cod, Massachusetts. The Marine Board of Investigation, the highest level of marine casualty investigation conducted by the Coast Guard, is tasked with examining the causes of a marine casualty and making recommendations to improve maritime safety. The *Titan* had submerged at 8:00 a.m. local time with five people on board and was scheduled to surface in the afternoon after viewing the wreckage of the *Titanic*, but the research vessel *Polar Prince* lost contact with the submersible about 1 hour 45 minutes into its voyage. On June 22, about 3:00 p.m. local time, the Coast Guard announced that the *Titan*'s tail cone and additional debris had been found. All five people on board are presumed dead.

One representative each from the Office of Marine Safety and the Office of Research and Engineering participated in the hearing.

Fire Aboard the Roll-On/Roll-Off Cargo Vessel *Grande Costa D'Avorio*, July 5, 2023
Investigative Hearing
January 10–18, 2024

From January 10 to January 18, 2024, the US Coast Guard held a formal public investigative hearing in Newark, New Jersey, into the fire aboard the

roll-on/roll-off cargo vessel *Grande Costa D'Avorio*, which occurred at the Port of Newark during cargo loading operations on July 5, 2023. The 692-foot Italian-flagged vessel was on a regular run, loading containerized cargo and used vehicles in ports along the US east coast and delivering them to ports in West Africa. The vessel was loading used vehicles in Newark when a vehicle fire broke out. Crewmembers were unable to extinguish the fire and evacuated the cargo space. Shoreside firefighters responded to assist, and two firefighters were fatally injured. The fire was extinguished on July 11, 2024.

One representative each from the Office of Marine Safety and the Office of Research and Engineering participated alongside the Coast Guard in questioning witnesses. The hearing detailed the condition of the *Grande Costa D'Avorio* before and at the time of the fire, including the cargo loading process for vehicles at the Port of Newark; initial response actions by the ship's crew; and subsequent response and recovery efforts by local land-based fire departments.

Safety Alerts

A safety alert is a short informational bulletin, usually only a page long, that pinpoints a particular safety issue. It contains information based on the findings of one or more NTSB investigations and enhances the dissemination of safety information to the traveling public.

Reducing the Risk of Diesel Engine Fuel Return System Overpressurization

Diesel engine fuel return systems are designed to return unburned, excess fuel from the engine back to a designated tank, typically at atmospheric pressure. If an isolation (shutoff) valve is installed in the return line before the tank, closing the valve will result in a pressure build up in the return line. High fuel return system pressure may also subsequently overpressurize the fuel supply lines to engines. Engine-mounted pressure relief valves built into supply line fittings can be routed to relieve overpressurized fuel supply lines into the return lines. However, if relief valves are piped into a fuel oil return line that has a closed isolation (shutoff) valve, the relief valves will be ineffective, and pressure will continue to rise. In diesel engine fuel return systems, pressure can build up in a closed return line such that the fuel system components rupture, causing fuel to spray into the engine room and possibly ignite a fire.

Issue Date: July 2024

Personal Locator Devices: Improve Your Chance of Rescue

During an emergency at sea, a mariner's chances of survival decrease if there is not a way to quickly and accurately identify their location to search-

and-rescue responders. Although many commercial vessels are required to carry emergency position-indicating radio beacons, this equipment does not provide the precise location of all individuals who may be in the water and drifting away from the vessel's position. Although personal locator devices, such as personal locator beacons or satellite emergency notification devices, are affordable and can accurately pinpoint a person's location, the use of these devices is currently not mandated. The NTSB has investigated several casualties in which crewmembers had to abandon a vessel without a means to communicate their individual locations to search-and-rescue assets.

Issue Date: December 2023

Support to Foreign Accident Investigations

Between October 1, 2023, and September 30, 2024, the Office of Marine Safety participated with the US Coast Guard as a marine-safety-investigating State in three investigations of serious marine casualties involving foreign-flagged vessels in international waters under the IMO Casualty Code.

Location	Date	Description	Fatalities
South Atlantic Ocean (Antarctic Ocean–Drake Passage)	11/29/2022	*Viking Polaris* (NO), Heavy weather damage/SIS investigation	1
Elephant Island, Antarctica	11/15/2022	*World Explorer* (PT), Small boat capsize/SIS investigation	2
Sicily, Italy	8/11/2024	*Bayesian* (GB) capsizing/listing	5

Other Efforts and Focus Areas

Congressional Briefings

US House of Representatives, Transportation and Infrastructure Committee May 23, 2024

Staff supported Chairman Homendy's briefing to Congressional authorizing committee members and staff regarding the *Dali*–Francis Scott Key Bridge strike investigation and preliminary findings.

May 15, 2024

Staff supported the Chairman Homendy's testimony at the Transportation and Infrastructure Committee hearing on the topic of reviewing and examining the Francis Scott Key Bridge federal response.

Conferences

American Marine Accident Investigators' International Forum
August 5–9, 2024

The Office of Marine Safety's acting director attended and presented at this conference in Valparaiso, Chile.

Regional Conference on Maritime Safety, Ocean Science Centre Mindelo, Cabo Verde
November 15–16, 2023

The Office of Marine Safety's deputy director presented the lessons learned from the NTSB's investigation into the sinking the *El Faro*.

Meetings

US Committee on the Marine Transportation System Coordinating Meeting
September 17, 2024

The Office of Marine Safety's acting director presented information and took questions from committee members regarding the ongoing *Dali* investigation.

Science for Disaster Reduction Interagency Working Group
July 11, 2024

The office's chief of investigations presented information and took questions from working group members regarding the ongoing *Dali* investigation.

International Maritime Organization Subcommittee on Ship Systems and Equipment
Meeting
March 4–8, 2024

An investigator participated in this meeting as a member of the US delegation, headed by the US Coast Guard, in London, England. The subcommittee deliberates on a wide range of technical and operational matters related to systems and equipment on all types of ships, vessels, craft, and mobile units covered by IMO instruments. This includes lifesaving equipment, lifting appliances and arrangements, and fire detection and fire extinguishing systems.

International Maritime Organization Subcommittee on Human Element, Training, and Watchkeeping Meeting
February 5–9, 2024

An investigator participated in the meeting's plenary group, which was tasked with validating the specific areas for the upcoming comprehensive review of the 1978 Standards of Training and Certification of Watchkeeping Convention and Code. The investigator also participated in discussions regarding maritime emergent technologies, such as alternative fuels and maritime autonomous surface ships, and the implications of each for the upcoming review.

Investments in Technology

Marine Investigation Software

In collaboration with the Offices of the Chief Information Officer and the Chief Financial Officer, the Office of Marine Safety uses various software programs to assist in aspects of accident investigations. The office maintains annual subscriptions and recurrent training for an accurate vessel automatic information system tracking and plotting program, a vessel simulator, worldwide marine rules, regulations, and guidance library, and the most used electronic charting system in domestic waters. These programs are regularly reviewed and offer a high return on investment, as they improve investigation efficiency, accuracy, and depth.

Safer Seas Digest 2022 and *Safer Seas Digest 2023*: Annual Publication

The Office of Marine Safety released two *Safer Seas Digests*—the 2022 and 2023 editions. The *Safer Seas Digest 2022*, released in October 2023, was the 10th anniversary of the digest. The *Safer Seas Digest 2023* was released in May 2024.

The digest comprises concise summaries of the previous year's casualty investigations and represents the NTSB's continuing commitment to sharing the lessons that we learn through our marine investigations to inspire safety improvements. Some of the safety issues examined in the 2022 and 2023 editions included the following:

- Containing engine room fires.
- Importance of personal locator technology.
- Vessel stability.
- Proper installation, operation, and maintenance of electrical equipment.

- Sound navigation practice.
- Response to loss of steering and propulsion.
- Mooring system arrangements.
- Engine repairs.
- Detecting small vessels.
- Effectively communicating.
- Proactively inspecting equipment.
- Mitigating fatigue.
- Anticipating fire hazards.
- Improving firefighting training.
- Conducting timely hull maintenance and repair.
- Maintaining an effective watch.
- Avoiding nonoperational cell phone use.
- Reporting chart changes and hazards.
- Avoiding excessive speed during bow-to-bow harbor-assist operations.
- Preventing vessel damage from the risk of thermal runaway of lithium-ion batteries.
- Reporting potential damage from dragging anchors.

Responses to Notices of Proposed Rulemaking

Between October 1, 2023, and September 30, 2024, NTSB's Office of Marine Safety provided comments on two proposed rulemakings: the US Coast Guard's proposed rulemaking regarding amphibious passenger vessels, and the DOT's proposed data collection SafeMTS—Voluntary Near-Miss Reporting and Analysis System.

Ongoing Significant Marine Accident Investigations

Location	Date	Description	Fatalities
La Salle, Michigan	8/10/2024	NOAA Autonomous Vessel (USA)	0
Baltimore, Maryland	3/26/2024	*Dali* (SVK)–Key Bridge	6
Goose Creek, South Carolina	1/14/2024	*Hafnia Amessi* (SVK)	0
La Porte, Texas	1/8/2024	M/V *Stride* (PAN)	2
Dutch Harbor, Alaska	12/27/2023	*Genius Star XI* (PAN)	0
Newark, New Jersey	7/5/2023	*Grande CostaD'Avorio* (ITA)	2
Atlantic Ocean, 900 nautical miles east of Cape Cod, Massachusetts	6/22/2023	*Titan* sub–*Polar Prince* (USA)	5
Boston, Massachusetts	3/24/2023	*Spirit of Boston* (USA)	0

Note: We are devoting significant resources to the investigations listed and anticipate producing a report upon the completion of each investigation. These investigations were ongoing as of September 30, 2024.

RAILROAD, PIPELINE AND HAZARDOUS MATERIALS INVESTIGATIONS

	($000s)	FTEs	Pos.
FY 2025 Estimate	$15,083	49	50
FY 2026 Request	$15,072	49	50
Increase/Decrease	($11)	0	0

Overview of the Request

The funding level for this program assumes no pay raise in FY 2026 and includes a minor reduction to operational costs to absorb the impacts of a 2.0 percent non-pay inflation increase.

Program Description

The Office of Railroad, Pipeline and Hazardous Materials Investigations comprises four divisions: Railroad Division, Pipeline and Hazardous Materials Division, System Safety, and Report Development. Based on the findings of our investigations, the NTSB may issue safety recommendations to federal and state regulatory agencies; unions, 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 may also issue safety alerts to industry.

Railroad Division

Staff investigate accidents and incidents involving passenger and freight railroads, commuter rail transit systems, and other fixed guideway systems. Accidents are typically collisions or derailments, some of which involve fatalities, severe injuries, hazardous materials release, or residence evacuation. The division is separated into four branches of multidisciplinary investigative teams with expertise in the areas of track and engineering, operations, mechanical, signal and train control, survival factors, crashworthiness, and emergency response.

The division does not investigate every railroad accident reported to the FRA or every rail transit accident reported to the FTA. To use NTSB resources most efficiently and effectively, criteria have been established to help identify those accidents that pose significant safety risks. The division also assesses selected railroad safety issues, often based on a set of accident investigations with similar safety issues. In other cases, staff may focus on analyzing

regulations, railroad safety programs or procedures, or audit reviews of management and operations practices.

Pipeline and Hazardous Materials Division

Staff in the Pipeline and Hazardous Materials Division investigate accidents occurring during the transport of natural, flammable, toxic, or corrosive gas or hazardous liquids, such as crude oil or gasoline, through underground pipeline systems, as well as accidents that threaten public safety by the release of hazardous substances. Pipeline investigations focus on accidents that involve fatalities or result in substantial property damage or significant injury to the environment. The division is separated into two branches: pipeline investigations and hazardous materials investigations, with investigators having expertise in pipeline engineering, hazardous materials, survival factors, environmental response, and emergency response.

The division also investigates accidents involving the release of hazardous materials in all modes of transportation, including aviation, highway, railroad, and marine, and may also investigate select hazardous materials accidents that highlight safety issues of national importance or involve a specific accident prevention issue. An investigation may include analyzing the performance of hazardous materials containers, such as rail tank cars, highway cargo tanks, or smaller nonbulk packaging. In addition, the division investigates environmental response issues in all modes, including pipeline.

System Safety Division

System Safety Division staff are responsible for the following:

- Supporting Railroad Division and the Pipeline and Hazardous Materials Division investigations.
- Investigating the role of system safety management in the regulated transportation modes, as well as the role of individual, workgroup, and organizational factors in an accident.
- Examining the role of regulatory, industry, and company practices in the accidents under investigation.
- Overseeing emerging safety regulations, methods, and data related to railroad, pipeline, and hazardous materials.

Staff typically lead inquiries that extend well beyond the debris field of an accident site. Operational system failures are rarely isolated to the last component to break or malfunction; rather, the reasons for system failures are often traceable back to management decisions and corporate cultural

influences. Once these systemic failures are identified and understood, staff work to develop corresponding safety recommendations. Specific topics evaluated include drug and alcohol use, work-rest cycles and human fatigue, individual and team training, organizational safety culture, safety management, and public awareness.

Report Development Division

The Report Development Division is responsible for the following:

- Drafting and editing railroad, pipeline, and hazardous materials investigation reports.
- Writing and editing NPRM responses; congressional testimony; speeches on matters pertaining to railroad, pipeline, or hazardous materials safety; and replies to safety inquiries from Congress, other federal agencies, state and local agencies, industry, and the public.
- Implementing the agency's guidance, protocols, and applicable portions of NTSB Board orders and operations bulletins related to product standardization and development.

Accomplishments and Ongoing Efforts

Office accomplishments include issuing products related to transportation safety arising from completed and ongoing investigations. Products completed between October 1, 2023, and September 30, 2024, are highlighted below, along with information about other efforts and focus areas important to our mission.

Investigation Reports

Investigation reports are issued for accident or incident investigations and may contain a determination of probable cause and safety recommendations, depending on the scope of the investigation and the safety issues identified. For select, larger scale investigations, the office launches an investigation team and presents a comprehensive investigation report to the Board. Investigations that are limited in scope are primarily intended to determine probable cause; the resultant report may be issued by the office director under delegated authority or may be adopted by the Board. Special investigation reports usually involve analysis of data from multiple accidents centered around a common safety issue and result in safety recommendations. A report containing only safety recommendations can be issued at any time during an investigation. If the Board determines that a recommended course

of action requires immediate attention to avoid imminent loss of life from a similar accident, the safety recommendation is designated "urgent."

From October 1, 2023, through September 30, 2024, the Office of Railroad, Pipeline and Hazardous Materials Investigations issued four investigation reports identifying safety issues that led to the issuance of 45 new safety recommendations; we also issued a total of 10 investigation reports that solely determined probable cause.

Below are summaries of select investigation reports completed between October 1, 2023, and September 30, 2024, arranged by report date.

CSX Transportation Employee Fatality
Cumberland, Maryland
August 6, 2023

On August 6, 2023, about 11:42 p.m. local time, a CSX Transportation conductor trainee was fatally injured during switching operations at the CSX railyard in Cumberland, Maryland. The conductor trainee was riding on the side of a railcar during an eastbound shoving movement that passed through a temporary close clearance location—a narrow gap between his train and three locomotives temporarily stored on an unusually close adjacent track. During this movement, he was injured when he was caught between the railcar and a locomotive handrail; he was taken to a nearby hospital where he later died.

The NTSB determined that the probable cause of the accident was the accident train's movement through an unidentified and unmitigated close clearance location that resulted in the employee being caught between the side of the railcar he was riding and equipment parked on an adjacent track.

Recommendations: None
Report Date: September 17, 2024

Union Pacific Railroad Head-On Collision with Stationary Intermodal Railcars
Imperial County, California
September 8, 2022

On September 8, 2022, about 2:40 a.m. local time, a conductor and engineer of Union Pacific Railroad (UP) train ISILB5-07 were killed when the train collided with railcars stored in a siding in Imperial County, California. Train ISILB5-07 had been traveling timetable eastbound on main track 2 of the Yuma Subdivision when, because of a change of route plans, the train reversed direction into Bertram siding, a signal-controlled siding at milepost 646.1. Upon entering the siding, with helper locomotives in the lead, the train traveled about 802 feet before colliding with a string of 74 empty intermodal

railcars that had been stored in the siding since December 2021, killing the conductor and engineer. The two lead locomotives and one intermodal railcar of train ISILB5-07 derailed, along with two of the empty stored intermodal railcars. UP estimated damage to track and equipment to be about $1.2 million.

The NTSB determined that the probable cause of the accident was the routing of UP train ISILB5-07 into Bertram siding, which was occupied by 74 empty intermodal railcars, made possible by the inappropriate removal of a computer-aided dispatching system block on the siding at the dispatch center. Contributing to the cause of the accident were (1) the Bertram siding track not being spiked or clamped, as UP rules require for tracks where railcars are being stored long-term; and (2) the surface rust on the rails and wheels of the stored railcars that degraded the performance of the track circuit in Bertram siding and caused the computer-aided dispatching system to inaccurately indicate the siding was unoccupied.

Recommendations: None
Report Date: August 19, 2024

Norfolk Southern Railway Employee Fatality
Cleveland, Ohio
March 7, 2023

On March 7, 2023, about 1:08 a.m. local time, a Norfolk Southern Railway (NS) conductor on NS train C75B106 was killed when the train collided with a dump truck as it entered a private highway–railroad grade crossing in the Cleveland-Cliffs Incorporated steel plant in Cleveland, Ohio. The conductor was riding the lead railcar during a shoving movement when he was pinned between the railcar and the dump truck during the collision.

The NTSB determined that the probable cause of the accident was the crew not following Norfolk Southern Operating Rule 120 requiring a member of the crew to be on the ground at the private highway–railroad grade crossing to warn traffic. Contributing to the accident was the design of the intersection at the private highway–railroad grade crossing preventing adequate sight distance for the driver to be able to determine if it was safe to cross the tracks.

Recommendations: None
Report Date: July 22, 2024

Norfolk Southern Railway Derailment and Hazardous Materials Release
East Palestine, Ohio
February 3, 2023

On February 3, 2023, about 8:54 p.m. local time, eastbound NS train 32N derailed 38 mixed freight railcars at milepost 49.5 on the NS Fort Wayne Line of the Keystone Division in East Palestine, Ohio. Three tank cars carrying flammable and combustible hazardous materials were mechanically breached during the derailment. A fire ignited and grew to involve lading released from the three mechanically breached tank cars, additional derailed tank cars carrying both hazardous and nonhazardous materials, and freight cars. Emergency responders established a 1-mile evacuation zone that affected about 2,000 residents. No injuries were reported during the derailment or emergency response.

We determined that the probable cause of the accident was the failure of the L1 bearing on the 23rd railcar in the consist that overheated and caused the axle to separate, derailing the train and leading to a postderailment fire that likely began with the release of a Class 3 flammable liquid from a DOT-111 tank car that was punctured during the derailment.

Contributing to the postderailment fire and the severity of the hazardous materials release was the following:

- Continued use of DOT-111 tank cars in hazardous materials service.
- Failure of Norfolk Southern Railway and its contractors to communicate relevant expertise and dissenting opinions to the incident commander.
- Inaccurate representation by Norfolk Southern Railway and its contractors that the tank cars were at risk of catastrophic failure from a polymerization reaction, which created unwarranted urgency and led to the unnecessary decision to vent and burn five derailed vinyl chloride monomer tank cars to prevent a polymerization-induced tank car rupture.

Contributing to the exposure of emergency responders and the public to postderailment hazards were Norfolk Southern Railway's delay in transmitting the train consist information to emergency responders and the state of Ohio's insufficient training requirements for volunteer firefighters.

As a result of this investigation, we issued new recommendations to the Secretary of Transportation, the FRA, PHMSA, the state of Ohio, the Columbiana County Emergency Management Agency, the Association of American Railroads, the National Volunteer Fire Council, the International

Association of Fire Chiefs, the International Association of Fire Fighters, The Chlorine Institute, the American Chemistry Council, Norfolk Southern Railway, and Oxy Vinyls, LP. We reiterated a recommendation to the Class I Railroads, and classified recommendations to the Secretary of Transportation, the FRA, and PHMSA Closed—Superseded.

Recommendations: 34 new; 1 reiterated
Report Date: June 25, 2024

Port Authority Transit Corporation Train Strikes Two Subcontractor Employees
Camden, New Jersey
October 14, 2022

On October 14, 2022, about 9:21 p.m. local time, Port Authority Transit Corporation (PATCO) train Westbound #1 struck and killed two subcontractor employees from JPC Group, Inc. on main track 2 on the Benjamin Franklin Bridge in Camden, New Jersey. The train was traveling west at 33 mph and had a train operator and 68 passengers aboard; 8 passengers were in the lead car.

Main track 2 was scheduled to be placed out of service at 9:30 p.m. for a crew of contractor and subcontractor employees to put new caulking on columns on a bridge near the track's third rail. Skanska Koch, Inc. was the contractor and JPC Group, Inc. was the subcontractor for this long-term construction project on the Benjamin Franklin Bridge. This was the crew's third night of work at that site. Two of the subcontractor employees entered a close-clearance area on main track 2 before the track was out of service, and PATCO train Westbound #1 entered their work area. Upon identifying the subcontractor employees on the track, the train's operator initiated emergency braking before striking them. The train's head end stopped about 100 feet (1.5 railcar lengths) west of where the two subcontractor employees were struck.

The NTSB determined that the probable cause of the accident was the subcontractor employees being on the right-of-way on main track 2 before a track outage had been established. Contributing to the accident was the exclusion of right-of-way information from the preshift job briefing, despite it being required under PATCO's Right-of-Way Safety Plan.

Recommendations: None
Report Date: May 8, 2024

Union Pacific Railroad Employee Fatality
El Paso, Texas
August 29, 2022

On August 29, 2022, about 9:14 p.m. local time, the conductor of UP train ISIEP 29 was killed during a shoving movement when two railcars of the train derailed in UP's Alfalfa Yard in El Paso, Texas. The conductor was riding on the lead end of the first railcar when the train encountered a derail. The derail was placed on the yard lead earlier in the day to protect maintenance-of-way employees during an upcoming installation project. As the train entered the yard on the yard lead, it encountered the derail device and two railcars derailed. One of these railcars overturned, landing on its side, then sliding into a residential property where it struck a natural gas line owned by Texas Gas Service. The railcar's contact with the gas line did not result in a gas leak.

The NTSB determined the probable cause of the employee fatality was the failure of personnel to contact the employee-in-charge before granting train ISIEP 29 permission to enter the yard lead track.

Recommendations: None
Report Date: April 25, 2024

Norfolk Southern Railway Employee Fatality
Bessemer, Alabama
December 13, 2022

On December 13, 2022, about 12:01 a.m. local time, the lead locomotive of NS freight train A55-12 (train A55) struck a length of steel angle iron protruding from a gondola car on stationary NS freight train 340-12 (train 340) on the Alabama Great Southern South Subdivision in Bessemer, Alabama. Train A55 was traveling northbound about 54 mph on main track 2; train 340 was stopped on main track 1. The gondola car was part of a block of 21 railcars recently added to train 340 from a yard track near a U.S. Pipe recycling facility. The section of angle iron was protruding from the top edge of the gondola car on its east side, fouling main track 2 at milepost 153.5. As the lead locomotive of train A55 passed the gondola car on the adjacent track, the section of angle iron penetrated the locomotive's left-front door window, continued into the operating cab, and struck the conductor trainee. The conductor trainee was killed, and the conductor was transported to a local hospital for minor injuries.

The NTSB determined the probable cause of the NS employee fatality was the hazardous condition of a gondola car that was identified by personnel

within a U.S. Pipe facility but not communicated to nor identified by NS personnel during required predeparture inspections.

Recommendations: None
Report Date: April 3, 2024

PSC Group Conductor Fatality
Beaumont, Texas
October 28, 2022

On October 28, 2022, about 12:03 a.m. local time, a PSC Group conductor was struck and killed by train 3832 as the train was reversing at an ExxonMobil lubricant plant in Beaumont, Texas. The conductor was protecting the movement from the ground near where the train cars were to be spotted, or placed, at the end of track 7 for product loading.

We determined the probable cause of the PSC Group conductor fatality was (1) the conductor, for unknown reasons, entering the red zone (the envelope of space surrounding the train cars) where there is an increased risk of being struck by equipment, and (2) the engineer not following PCS Group operating procedures to stop the train after hearing no additional instructions from the conductor.

Recommendations: None
Report Date: December 22, 2023

Marathon Pipe Line LLC Pipeline Rupture and Crude Oil Release
Edwardsville, IL
March 11, 2022

On March 11, 2022, at 8:15:21 a.m. local time, a 22-inch diameter crude oil pipeline operated by Marathon Pipe Line, LLC ruptured at a girth weld in Edwardsville, Illinois, resulting in the release of about 3,500 barrels of crude oil, some of which entered Cahokia Creek. The rupture occurred at milepost 6.2 on the Woodpat pipeline. No injuries or fatalities occurred as a result of the rupture.

The NTSB determined that the probable cause of the crude oil pipeline rupture was an overstress fracture of a girth weld from external loads caused by slope instability that had not been completely mitigated by Marathon before the accident.

Recommendations: None
Report Date: December 18, 2023

Derailment of Washington Metropolitan Area Transit Authority Train Near Rosslyn Station
Arlington, Virginia
October 12, 2021

On October 12, 2021, about 4:49 p.m. local time, Washington Metropolitan Area Transit Authority (WMATA) train 407, consisting of 8 railcars and carrying 187 passengers and the operator, derailed while traveling from Rosslyn Station toward Arlington Cemetery Station on the Blue Line in Arlington, Virginia. The derailment occurred in a tunnel south of the Rosslyn Station platform. All railcars remained upright and in-line. The passengers and operator were evacuated to Arlington Cemetery Station. One passenger was transported to the hospital, treated, and released.

The derailment occurred because the wheels of one wheelset had, over time, migrated outward on their axle, resulting in a width larger than the design specification. When this wheelset traveled over a turnout (a type of special track work that allows a train to change tracks), the out-of-specification wheelset width caused a wheel to leave the rail, derailing a railcar.

We found that one department within WMATA was aware of wheel migration in its railcar fleet and attempted to mitigate the associated safety risks, but the department did not conduct a trend analysis to monitor the incidence of wheel migration or how effective its mitigations were. A trend analysis would have shown the increasing incidence of wheel migration and made an effective response more likely.

We determined that the probable cause of the derailment of WMATA train 407 south of Rosslyn Station was an out-of-specification wheelset that caused a wheel to depart the rail at a turnout; the wheelset was out of specification because the wheelset's design allowed the wheels to migrate outward and eventually exceed the maximum permitted back-to-back measurement.

As a result of this investigation, we issued safety recommendations to WMATA and the Washington Metrorail Safety Commission.

Recommendations: 2 new
Report Date: December 12, 2023

Norfolk Southern Railway Contract Roadway Worker Fatality
Reed, PA
December 8, 2021

On December 8, 2021, about 11:20 a.m. local time, a National Salvage and Service Corporation worker who was part of an NS work gang was struck and killed by a roadway maintenance machine (RMM) on a main track in Reed, Pennsylvania. Three RMMs, or spikers, were driving railroad spikes into crossties when the middle spiker (Spiker 2) reversed direction. The operator reported that he blew the spiker's horn and looked in the mirror before reversing but did not see the National Salvage and Service Corporation contract worker standing behind the spiker.

The NTSB determined the probable cause of the accident was the inability of the spiker operator to see the contract worker behind the spiker and the contract worker not being alerted by the spiker's nonfunctional horn and change-of-direction alarms. Contributing to the accident were the following:

- NS's preshift inspection that did not check the audibility of the spiker's alerts above ambient noise.
- Nordco Inc. allowing the spikers to leave the factory without assuring the change-of-direction alarm was working.
- Insufficient standoff distance chosen by NS that did not provide adequate visibility behind the spiker.

As a result of this investigation, we issued new safety recommendations to the FRA, all Class I railroads, NS, and the American Short Line and Regional Railroad Association.

Recommendations: 6 new
Report Date: November 14, 2023

Watco Dock and Rail, L.L.C. Employee Fatality
Houston, TX
October 29, 2021

On October 29, 2021, about 4:02 a.m. local time, a Watco Dock and Rail, L.L.C. conductor was killed protecting a shoving movement when the train collided with a Gemini Motor Transport-operated combination vehicle at a private highway–railroad grade crossing outside the Greens Port Industrial Park in Houston, Texas. The conductor was riding on the platform of the leading railcar of train 202 when he was pinned between the train and the combination

vehicle as both vehicles simultaneously entered the grade crossing of the industrial park.

The NTSB determined the probable cause of the accident was the failure of the combination vehicle driver to follow the Gemini Motor Transport Driver Code of Conduct to stop the vehicle before entering the highway–railroad grade crossing. Contributing to the accident was the train's movement through a passive highway–railroad grade crossing without adequate protection.

As a result of this investigation, we issued new safety recommendations to the FRA, the General Code of Operating Rules Committee, the Northeast Operating Rules Advisory Committee, Canadian National Railway, NS, and the American Short Line and Regional Railroad Association.

Recommendations: 3 new
Report Date: October 4, 2023

Other Efforts and Focus Areas

Special Investigation into Norfolk Southern Railway's Safety Practices and Culture

Following the NS train derailment and subsequent hazardous material release and fires in East Palestine, Ohio, on February 3, 2023, and several other significant NS accidents being investigated by the NTSB, in March 2023, the NTSB initiated a special investigation into NS Railway's organization and safety culture. The Railroad Division and Office of Aviation Safety's Human Performance and Survival Factors Division are leading the investigation.

As part of this special investigation, the NTSB surveyed the NS workforce to gather real-time information from NS employees across its entire network about the organization's safety culture. The survey will allow us to gather valuable insights directly from NS employees to assess its safety practices and culture.

Special Inquiry into Railroad Trespassing at Lake Accotink Park
Springfield, VA

On June 5, 2024, about 8:20 p.m. local time, eastbound NS train K94HP05 encountered two adults and one child trespassing on a trestle bridge in Lake Accotink Park in Springfield, Virginia. The bridge was 65 feet tall and 1,120 feet long, had two main tracks, and was designed only for rail traffic. The train crew sounded the train horn at the whistle post 1,433 feet from the bridge. Shortly afterward, when the crew saw people on the bridge, they

began an emergency braking application. The three people fell from the bridge into a shallow creek and were fatally injured.

The NTSB initiated a special inquiry into the accident and met with NS, the Fairfax County Parks Authority, and the FRA to discuss the incident and ways to mitigate trespasser issues in the park. As a result of these meetings, several safety actions were undertaken by the stakeholders, including community engagement activities to raise awareness for the dangers of trespassing and the installation of additional signage near the tracks.

National Volunteer Fire Council Annual Fall Meeting
September 19, 2024

The NTSB Hazardous Materials Investigations branch chief joined a panel discussion titled, "Railway Safety and Volunteer Fire Departments: Best Practices and Collaborative Solutions." He discussed the NTSB East Palestine, Ohio, investigation and recommendations relevant to the volunteer fire community and emphasized the importance of obtaining the train consist and contacting the shipper who is required to provide incident mitigation information to the first responders in the event of an accident.

East Palestine, Ohio, Community Meetings
June 24 and 25, 2024

NTSB Chairman Homendy hosted two community meetings in East Palestine, Ohio, before and after the final Board meeting on the 2023 train derailment and subsequent hazardous material release and fires. The meetings provided an opportunity for the public to ask about the NTSB, its investigative process, the probable cause of the accident, the final investigative report, findings and recommendations.

Pipeline Safety Trust Meeting
May 1, 2024

The Pipeline Safety Trust hosted a meeting with the NTSB where the group visited the site of a major pipeline accident that occurred in Bellingham, Washington, about 25 years ago, to learn more about the lasting impact these accidents have on nearby communities.

Jackson, Mississippi, Community Meeting
April 24, 2024

Congressman Bennie Thompson hosted a public briefing with federal, state, and local agencies for Jackson residents about the January 24 and 27, 2024, natural gas-fueled home explosions and fires. Chairman Homendy and

NTSB staff gave an overview of the NTSB and provided residents with an update on the NTSB's ongoing investigation.

2023 FTA Joint State Safety Oversight and Rail Transit Agency Workshop
November 16, 2023

The FTA hosted the 2023 Joint Safety Oversight and Rail Transit Agency Workship, with attendees representing state safety oversight, rail transit agencies, program managers, chief safety officers, safety directors, other program offices and contractors, and government regulators. This annual gathering focused on effective working relationships. During the event, NTSB investigators and an Office of Safety Recommendations and Communications staff member provided an overview of the NTSB, explained how to work with the NTSB during an accident investigation, and gave an update on ongoing NTSB investigations and safety recommendations.

Ongoing Significant Railroad, Pipeline and Hazardous Materials Accident Investigations

Location	Date	Description	Fatalities
Jackson, Mississippi	1/24/2024	Atmos Energy Corporation natural gas-fueled home explosions and fires	1
New York, New York	11/29/2023	Transit employee fatality	1
Gulf of Mexico	11/15/2023	Third Coast Infrastructure LLC crude oil release	0
Great Barrington, Massachusetts	8/4/2023	Railroad employee fatality	1
Baltimore, Maryland	6/26/2023	Fatality of conductor trainee	1
West Reading, Pennsylvania	3/24/2023	UGI Corporation natural gas-fueled explosion and fire at candy factory	7

Note: We are devoting significant resources to the investigations listed and anticipate producing a report upon the completion of each investigation. These investigations were ongoing as of September 30, 2024.

RESEARCH AND ENGINEERING

	($000s)	FTEs	Pos.
FY 2025 Estimate	$16,629	48	49
FY 2026 Request	$16,717	48	49
Increase/Decrease	$88	0	0

Overview of the Request

The funding level for this program assumes no pay raise in FY 2026 and a minor increase for the 2.0 percent non-pay inflation increase and rising costs of annual maintenance contracts for the laboratory instruments.

Program Description

The Office of Research and Engineering is an investigative office providing scientific and technical expertise for NTSB accident investigations in all modes of transportation. The office, which includes four divisions and one program area, also conducts safety research, generates periodic statistical reviews of aviation accidents, and provides medical and toxicology expertise for investigations in all modes.

Safety Research Division

The Safety Research Division examines transportation accidents, accident trends, and technological changes to identify problems and associated remedial actions that will reduce risk and improve the safety of the transportation system. Division staff comprises transportation safety researchers, data analysts, and statisticians who systematically examine the following:

- Risks and hazards in the transportation environment that may influence accidents or injury.
- Accident investigation techniques and methods.
- Effectiveness of various safety countermeasures, such as policies, programs, and technologies.

The division also provides data science, data visualization, and statistical expertise to support accident launches and investigations agencywide, assists in developing safety recommendations, and publishes annual statistical reviews for the NTSB, Congress, and the public.

Materials Laboratory Division

The Materials Laboratory Division is responsible for the following:

- Performing expert multidisciplinary engineering and scientific analyses to determine if material or structural performance is related to the cause or severity of an accident.
- Analyzing wreckage to determine the causes of fires and explosions.
- Providing chemical and forensic science expertise, as well as technical advice and resources for experimental testing and research in the physical sciences.

Vehicle Recorder Division

The Vehicle Recorder Division is responsible for the following:

- Extracting, formatting, and analyzing data from aircraft flight data recorders (FDRs) and CVRs and from recorders installed in locomotives, large ships, and some highway vehicles.
- Examining recorded electronic audio and video information captured by aircraft, ship, train, and support communication systems.
- Providing electronic engineering expertise for all accident investigation modes regarding examining communication and control systems.
- Providing time synchronization to correlate voice, data, and video recorder outputs.
- Using advanced digital and analog filtering and signal representation techniques to extract critical recorder information.
- Performing forensic examinations of personal electronic devices and other computer hardware.

Vehicle Performance Division

The Vehicle Performance Division is responsible for the following:

- Providing specialized aeronautical, mechanical, structural, and biomechanical engineering expertise; three-dimensional laser scanning and accident reconstruction; photogrammetry and video analysis; and animation and graphics development for all modes.
- Using computational and visualization technology to provide accurate time-motion histories of the sequence of events and

evaluating data from multiple sources to determine vehicle and occupant motion and the underlying causes of that motion.

- Developing video animations of accident scenarios, evaluating occupant injury mechanisms, and participating in and directing research into special projects, as required.

Program Area: Medical Investigations

NTSB medical officers evaluate the medical aspects of investigations, including medical fitness, pathology, toxicology, injury causation, and biomechanics. Examples of medical issues addressed include injury survivability and operator incapacitation and impairment from the effects of substances and medical conditions.

Accomplishments and Ongoing Efforts

Safety Research Division

From October 1, 2023, through September 30, 2024, the Safety Research Division responded to 275 requests for data analysis and statistical information from other NTSB offices, Board members, Congress, and the public. Division staff researched and evaluated safety issues for multiple accident investigations, including a specialist study report on accident and injury trends in Class I railroads and a safety culture assessment of Norfolk Southern. In addition, the division responded to an advanced NPRM on impaired-driving prevention technology from NHTSA, published the NTSB's annual statistical review of aviation accidents, created the NTSB's US civil aviation accidents dashboard, and completed a preliminary literature review of crash risk factors and patterns of driver and passenger harm in two-vehicle crashes involving an electric vehicle. Division staff published a study on delays in blood collection and drug toxicology results among crash-involved drivers arrested for impaired driving for the scientific journal, *Traffic Injury Prevention*, and updating the NTSB's safety report on US drug use trends in aviation.

Materials Laboratory Division

From October 1, 2023, through September 30, 2024, the Materials Laboratory staff examined parts and wreckages from 142 accidents from all transportation modes and documented their findings through study, analytical, and formal factual reports and safety recommendations.

Vehicle Recorder Division

From October 1, 2023, through September 30, 2024, the Vehicle Recorder laboratories processed 454 recording devices and completed essential readouts, transcripts, and studies for aviation, rail, marine, and highway investigations. In addition, the division led the agency's response to the FAA's NPRM on 25-hour CVR requirements for newly manufactured aircraft.

Vehicle Performance Division

From October 1, 2023, through September 30, 2024, Vehicle Performance staff produced 53 study reports and animations. Staff also participated in the development of safety recommendations and modal accident reports.

Medical Investigations

From October 1, 2023, through September 30, 2024, NTSB medical officers produced over 150 reports in all transportation modes. Our medical officers evaluate and address medical issues through formal factual and analytical reports, safety recommendations, coordination with other agencies, and formal presentations to the agency and to external audiences.

Below are examples of the work performed by each of our divisions from October 1, 2023, through September 30, 2024.

Cirrus Design Corp SR22
Tomball, Texas
September 1, 2022

A newly manufactured Cirrus Aircraft SR22 airplane was substantially damaged when it was involved in an accident near Tomball, Texas. The flight instructor was fatally injured; the pilot and passenger sustained serious injuries. The *Materials Laboratory Division* conducted a metallurgical evaluation of a separated 90° elbow fitting for the fuel system. *Medical Investigation* staff investigated the medical and toxicological status of the flight crew.

Recommendations: None
Report Date: October 23, 2024

High-Speed Vehicle Collision with Workers in a Highway Work Zone
Woodlawn, Maryland
March 22, 2023

Six highway construction workers were struck and fatally injured by an errant passenger car while working within a work zone along northbound Interstate 695 in Woodlawn, Maryland. The car driver stated that she had experienced a seizure leading to the event. *Medical Investigations* staff evaluated the car driver's medical records and postcrash toxicology findings.

Recommendations: None
Report Date: October 9, 2024

Rear-End Collision Between Combination Vehicle and Medium-Size Bus
Williamsburg, Virginia
December 16, 2022

A Freightliner truck tractor in combination with a semitrailer struck the rear of a medium-size bus, resulting in the ejection of multiple passengers on the bus; three of the passengers were fatally injured. *Vehicle Performance Division* staff used forward-looking video from the Freightliner truck tractor to calculate the speed of the combination vehicle and the speed of the medium-size bus in the seconds leading to impact. *Medical Investigation* staff investigated the medical and toxicological status of the drivers.

Recommendations: 6 new; 3 reiterated
Report Date: September 24, 2024

Collision with Powerlines and Terrain During Forced Landing MARPAT Aviation Bell Helicopter UH-1B, N98F
Amherstdale, West Virginia
June 22, 2022

A Bell UH-1B helicopter, N98F impacted two powerlines and a rock face located about 3.5 nautical miles east of the airport during an attempted forced landing. The helicopter came to rest partially inverted on its right side on an asphalt road, and a postcrash fire ensued. The six helicopter occupants were fatally injured, and the helicopter was destroyed. The *Materials Laboratory Division* examined components from the turbine and tail rotor and found cracks in the turbine's exhaust diffuser.

Recommendations: 6 new
Report Date: August 28, 2024

Norfolk Southern Railway Derailment and Hazardous Material Releases
East Palestine, Ohio
February 3, 2023

An NS freight train derailed 38 railcars, including 11 tank cars carrying hazardous materials that subsequently ignited and fueled fires that damaged an additional 12 nonderailed railcars. The *Materials Laboratory Division* supported the failure analysis of the train wheelset and its burned-off axle and also helped evaluate the pressure release devices from the vinyl chloride tank cars. *Vehicle Recorder Division* staff analyzed data from the locomotive event recorders and inward- and outward-facing audio and image recorders.

Recommendations: 34 new; 1 reiterated; 4 classified
Report Date: June 25, 2024

Runway Incursion and Overflight, Southwest Airlines Flight 708, Boeing 737-700, N7827A, and Federal Express Flight 1432, Boeing 767-300, N297FE
Austin, Texas
February 4, 2023

FedEx flight 1432, a Boeing 767-32LF, and Southwest Airlines flight 708, a Boeing 737-79P, were involved in a runway incursion with overflight that resulted in a loss of separation at the Austin-Bergstrom International Airport. The *Vehicle Recorder Division* downloaded and analyzed data from FDRs on both aircraft and evaluated the FDR data from both airplanes, ADS–B data provided by the FAA, and Saab Aerobahn surface management ADS–B data to determine the paths of both airplanes and their closest approach; they also created an animation depicting the sequence of events for the Board meeting. *Medical Investigation* staff evaluated medical and toxicological information, including on the air traffic controller's obstructive sleep apnea. The *Safety Research Division* completed statistical summaries of runway incursions that resulted in aviation accidents in the United States.

Recommendations: 7 new, 2 reiterated
Report date: June 6, 2024

Intersection Crash Between Passenger Car and Combination Vehicle
Tishomingo, Oklahoma
March 22, 2022

A Peterbuilt truck-tractor in combination with a trailer loaded with gravel struck a Chevrolet Spark passenger car occupied by a 16-year-old driver and five teenage passengers at an intersection, fatally injuring all six car occupants. Toxicology testing of the car driver detected the psychoactive substance in

cannabis. *Medical Investigation* staff analyzed the driver's toxicology findings and the potential relevance of those findings to the driver's performance.

Recommendations: 7 new, 2 reiterated
Report date: May 30, 2024

Response to National Highway Traffic Safety Administration Advance Notice of Proposed Rulemaking, *Advanced Impaired Driving Prevention Technology*, Published at 89 *Federal Register* 830
January 5, 2024

NHTSA sought comments to gather information necessary to develop performance requirements and require that new passenger motor vehicles be equipped with advanced drunk and impaired driving prevention technology through a new Federal Motor Vehicle Safety Standard (FMVSS). The *Safety Research Division* reviewed scientific literature and the history of NTSB safety recommendations related to impaired-driving prevention technologies to assist with the NTSB's response.

Recommendations: None
Report date: March 4, 2024

Collapse of the Fern Hollow Bridge
Pittsburgh, Pennsylvania
January 28, 2022

A 447-foot-long bridge in Pittsburgh fell about 100 feet into the park below. At the time of the collapse, a 2013 New Flyer articulated bus, operated by the Port Authority of Allegheny County, and four passenger vehicles were on the bridge. A fifth passenger vehicle drove off the east bridge abutment following the collapse and came to rest on its roof on the exposed ground below. As a result of the bridge collapse, 10 vehicle occupants sustained injuries. The *Materials Laboratory Division* staff launched to the site, visually inspected the wreckage as portions were removed to reveal the support structure, and documented corrosion of the structural members. *Safety Research Division* staff completed a rapid data report on bridge characteristics and inspection data for the launch team. *Vehicle Recorder Division* staff analyzed video from cameras on a bus traveling on the bridge during the collapse. *Vehicle Performance Division* staff developed an animation documenting the circumstances of the collapse that was used at the Board meeting for this accident.

Recommendations: 12 new
Report date: February 21, 2024

Anchor Strike of Underwater Pipeline and Eventual Crude Oil Release
Newport Beach, California
October 1, 2021

The offshore oil platform ELLY, located 9.75 nautical miles southwest of Newport Beach, experienced a pipeline leak. Coast Guard Sector Los Angeles/Long Beach initiated a critical incident communication for a sheen in vicinity of Newport Beach, and an assessment of the pipeline indicated that it was 150 feet off station with an identified rupture in the line. It was determined that the pipeline damage was indicative of an anchor strike. The *Materials Laboratory Division* staff supported the recovery and evaluation of evidence and conducted a metallurgical evaluation of the pipeline. The *Safety Research Division* provided geospatial map products to assist investigators.

Recommendations: 6 new
Report date: January 2, 2024

Marathon Pipe Line LLC Hazardous Liquids Pipeline Rupture and Crude Oil Release
Edwardsville, Illinois
March 11, 2022

A 22-inch-diameter hazardous liquids pipeline operated by Marathon Pipe Line ruptured and resulted in the release of about 3,900 barrels of crude oil, some of which entered Cahokia Creek, a tributary of the Mississippi River. No injuries occurred, and the crude oil did not ignite. The *Materials Laboratory Division* supported the metallurgical evaluation of the rupture and the characterization of the mechanical properties of the pipe steel. The *Safety Research Division* provided geospatial map products to assist investigators.

Recommendations: None
Report date: December 18, 2023

Norfolk Southern Railway Safety Culture
Special Investigation Report

Multiple accidents involving Norfolk Southern Railway prompted an NTSB special investigation of the organization's safety culture. The report is focused on common safety issues shared by the accidents, lessons learned from our investigations, and recommendations for corrective actions. The *Safety Research Division* completed a statistical analysis of accident and injury trends among Class I railroads and analyzed respondent data collected from a safety culture survey of Norfolk Southern.

Investigation in process as of September 30, 2024.

Natural Gas Leak and Residential Explosion
Bel Air, Maryland
August 11, 2024

A natural gas explosion destroyed a single-family residence in Bel Air, Maryland. Two people died and three people were injured. Several nearby residences were damaged, and families were displaced. Damaged electrical service lines and a plastic natural gas service line with a hole on the bottom were recovered from the site. The *Materials Laboratory Division* is supporting the examination of the electric and natural gas service components.

Investigation in process as of September 30, 2024.

Multivehicle Work Zone Collision and Postcrash Fire on Interstate 95
Kenly, North Carolina
July 24, 2024

A 2020 Freightliner Cascadia truck-tractor in combination with a 2022 Wabash refrigerated semitrailer (Freightliner combination), operated by Leonard's Express, Inc., struck the rear of a 2013 Chevrolet Tahoe sport utility vehicle. After impacting the Chevrolet, the Freightliner combination continued forward and struck three other vehicles: a 2017 Toyota RAV4 SUV, a 2025 Kenworth T680 truck-tractor in combination with a 2018 Great Dane refrigerated van semitrailer, and a 2014 International LF687 truck-tractor in combination with a 2003 Somerset Welding & Steel end-dump semitrailer. A postcrash fire ensued and consumed the Freightliner combination. As a result of the crash, the driver and passenger in the Chevrolet and the driver and two passengers in the Toyota were fatally injured. The drivers of the Freightliner, Kenworth, and International were treated for various injuries. The *Materials Laboratory Division* is providing fire investigation support for the postcrash fire.

Investigation in process as of September 30, 2024.

Contact of Cargo Vessel *Dali* with Francis Scott Key Bridge and Subsequent Bridge Collapse
Baltimore, Maryland
March 26, 2024

The Singapore-flagged cargo vessel (containership) *Dali* lost electrical power and propulsion and struck the southern pier supporting the central truss spans of the Francis Scott Key Bridge. A portion of the bridge subsequently collapsed into the river, and portions of the deck and the truss spans collapsed onto the vessel's forward deck. Six construction crewmembers who were on the bridge when the vessel struck it were fatally injured. The *Materials Laboratory*

Division staff have evaluated a component related to the *Dali*'s power loss. *Vehicle Recorder Division* staff traveled to Baltimore to recover voyage data recorder (VDR) audio and parametric data. *Vehicle Recorder Division* staff analyzed the parametric data, reviewed the audio, produced a timeline of events, and held a transcription group at NTSB headquarters to produce a written transcript of the VDR audio. *Medical Investigation* staff helped investigators identify pertinent sources of information regarding postaccident drug testing. *Safety Research Division* staff are conducting two data studies in support of this investigation: bridge strike trends and characteristics, using data from the Coast Guard's Marine Information for Safety and Law Enforcement and Aids to Navigation Information Management systems.

Investigation in process as of September 30, 2024.

Loss of Control on Ground
Houston, Texas
March 8, 2024

United Airlines flight 2477, a Boeing 737-8, N27290, experienced a runway excursion while exiting runway 27 onto taxiway SC at the George Bush Intercontinental Airport in Houston, Texas. The left main landing gear departed the paved surface and contacted a concrete structure that was recessed into the ground, resulting in its separation. *Vehicle Recorder Division* staff analyzed data from the FDR and held a group to transcribe audio from the CVR. *Vehicle Performance Division* staff are evaluating the stopping performance of the airplane for a range of runway conditions and pilot actions.

Investigation in process as of September 30, 2024.

Atmos Energy Corporation Natural Gas-Fueled Home Explosions and Fires
Jackson, Mississippi
January 24, 2024

A home explosion and fire occurred in Jackson, Mississippi, on January 24, 2024, resulting in one fatality and one injury. While the NTSB investigative team was traveling to the scene, the NTSB learned of a second home explosion and fire. The second explosion occurred on January 27, 2024, about 0.7 miles southeast of the first, and the fire from the explosion spread to a neighboring home. No fatalities or injuries were reported in relation to the explosion at the latter location. Natural gas service to the affected homes was provided by Atmos Energy Corporation. Atmos's natural gas distribution system near the locations was constructed of 2-inch coated steel main and installed in the 1960s and early 1970s. *Materials Laboratory Division* staff evaluated leaks at

the service line tee fittings and conducted failure analyses on fitting components.

Investigation in process as of September 30, 2024.

In-flight Structural Failure, Alaska Airlines flight 1282
Portland, Oregon
January 5, 2024

Alaska Airlines flight 1282, a Boeing 737-9, returned to Portland International Airport in Oregon, after the left mid exit door plug departed the airplane, leading to a rapid decompression. Seven passengers and one flight attendant received minor injuries. *Materials Laboratory Division* staff evaluated the door plug and associated hardware and have completed a report documenting their findings. *Vehicle Recorder Division* staff analyzed data from the FDR and reviewed audio from the CVR, noting that the CVR had been overwritten.

Investigation in process as of September 30, 2024.

End of Traffic Queue Multivehicle Collision and Postcrash Fire on Interstate 70
Etna, Ohio
November 14, 2023

A motor coach transporting 57 passengers and an SUV that was part of this same trip traveling behind the motorcoach encountered a traffic queue resulting from an earlier crash on Interstate 70. A truck-tractor in combination with a van semitrailer failed to slow down as it approached the traffic queue and collided with the SUV, pushing it into the back of the motorcoach, which was then pushed into other traffic. A postcrash fire ensued and three student passengers on the motorcoach and three adults in the SUV were fatally injured. The remaining vehicle occupants were transported to area hospitals for treatment of various injuries. The *Safety Research Division* is analyzing crash and injury data from NHTSA's Fatality Analysis Reporting System (FARS) to summarize national end-of-queue crash characteristics.

Investigation in process as of September 30, 2024.

BNSF Railway Derailment with Bridge Strike
Pueblo West, Colorado
October 15, 2023

BNSF Railway coal train CNAMCRD0-31D derailed 30 railcars at milepost 109.654 on the Pikes Peak Subdivision in Pueblo West, Colorado. The

derailment occurred near a track switch east of a railroad bridge that crossed over Interstate 25 and the derailed railcars struck the bridge, six dropping to the interstate below and one or more striking a northbound truck-tractor in combination with a utility trailer (combination vehicle). The eastern span of the bridge partially collapsed over the interstate's northbound lanes. The combination vehicle came to rest beneath the collapsed bridge span, derailed railcars, and lading. The truck driver was killed; no members of the train crew were injured. Metallurgists from the *Materials Laboratory Division* evaluated the quality of thermite welds within rail segments.

Investigation in process as of September 30, 2024.

Motorcoach Roadway Departure and Crash on Interstate 84
Wawayanda, New York
September 21, 2023

A motorcoach operated by Regency Transportation was transporting 40 high school students and four adults to a band camp in Greeley, Pennsylvania, when the motorcoach experienced a blow out of the left steer axle tire. The motorcoach departed the travel lane, penetrated a roadside cable barrier, and came to rest on its left side. Two of the motorcoach occupants were fatally injured. The *Materials Laboratory Division* supported the investigation into the tire failure.

Investigation in process as of September 30, 2024.

Fire Aboard Container Ship *Grande Costa D'Avorio*
Newark, New Jersey
July 5, 2023

A 692-foot roll-on/roll-off container vessel, *Grande Costa D'Avorio*, was docked in the port of Newark, New Jersey, when shoreside workers saw that a vehicle being used to load other vehicles onto the vessel was on fire. Vessel crews were unable to put out the fire using portable fire extinguishers. The shipboard carbon dioxide fix-firefighting system also failed to put out the fire. Shoreside firefighters arrived on scene. While attempting to locate and fight the fire, two shoreside firefighters got lost in the smoky loaded deck and died. The fire was eventually extinguished by marine salvors on July 10, 2023. The *Materials Laboratory Division* supported the investigation into the source of the fire and the extent of fire damage.

Investigation in process as of September 30, 2024.

Fire Involving Combination Vehicle with Gasoline Tank Trailer
Philadelphia, Pennsylvania
June 11, 2023

A truck tractor in combination with a tank trailer carrying gasoline caught fire while under an overpass of Interstate 95. The fire resulted in a collapse of the northbound lanes of Interstate 95. Safety Research Division staff analyzed traffic crash data to determine the likelihood of fire occurrence following a vehicle rollover based on vehicle type and hazardous material classification. *Vehicle Performance Division* staff are analyzing video to determine the speed of the vehicle when exiting the highway and evaluating the capability of stability control systems to affect the accident outcome.

Investigation in process as of September 30, 2024.

UGI Corporation Natural Gas-Fueled Explosion and Fire
West Reading, Pennsylvania
March 24, 2023

A natural gas–fueled explosion and fire occurred at Building 2 of the R.M. Palmer Company in West Reading, Pennsylvania, destroying Building 2 and causing significant structural damage to the adjacent Building 1 and other surrounding structures. Seven people were killed, 11 people were injured, three families were displaced from a neighboring apartment building, and many more people were evacuated from the area. The *Materials Laboratory Division* supported the fire and explosion investigation as well as the evaluation of the jurisdictional pipe components. *Vehicle Performance Division* staff are evaluating photographic evidence to determine the location of a 2021 excavation to expose the gas service line.

Investigation in process as of September 30, 2024.

Crash of Pilatus PC-12/45
Dayton, Nevada
February 24, 2023

A Pilatus PC-12/45, operated by Guardian Flight LLC as a Title 14 *CFR* Part 135 air ambulance flight, crashed near Dayton, Nevada. *Vehicle Recorder Division* staff extracted and analyzed data from multiple personal electronic devices and cockpit displays.

Investigation in process as of September 30, 2024.

Midair Collision Between a B-17 and P-63
Dallas, Texas
November 12, 2022

A Boeing B-17G and a Bell P-63F collided midair while performing at the Wings Over Dallas WWII Airshow at the Dallas Executive Airport Terminal. *Vehicle Recorder Division* staff downloaded data from various devices containing nonvolatile memory and developed a transcript of ATC audio. *Vehicle Performance Division* staff are using video and photographs from multiple sources to calculate the position and orientation of both airplanes at impact. *Vehicle Performance Division* staff are also using ADS–B data from the FAA and recorded communications among the airshow participants to document the sequence of events and determine the visibility of each airplane to the other pilot in the time leading to the collision. *Medical Investigation* staff are investigating the medical and toxicological status of the flight crew of both airplanes.

Investigation in process as of September 30, 2024.

Summary of Research and Engineering Systems and Instruments

The Office of Research and Engineering is dedicated to developing innovative systems that make our work more efficient and accurate. Due to rapidly changing technology, these systems require annual updating and maintenance.

System	Description	RE Division
DREAM	The Data Recorders, Electronics, and Analysis Management (DREAM) system is an internal workflow tool, integrated with SAFTI, used by recorder specialists to track devices sent in by field investigators. Specialists use the database to record the entire lifecycle of a device in the lab, from when it arrives from the field to when it is eventually returned to its owner. Intermediate steps of download, recovery, audition (when applicable), and product development are also tracked.	Vehicle Recorder Division

System	Description	RE Division
CIDER	The Crash Investigation Data Extraction and Readout (CIDER) system is a client/server application used for processing parametric recorder data. Recorder specialists use CIDER to recover data from tape-based FDRs, convert data from raw binary formats into engineering units for analysis, analyze and validate the data, and generate plots, tabular data files, and other products for other investigative teams and reports. CIDER can also be used to manage investigation recorder data and document recorder conversion libraries.	Vehicle Recorder Division
MEDICS	The Medical Information Catalog System (MEDICS) is a web-based application used to store medical records from NTSB investigations. NTSB medical officers use MEDICS as a case management tool for their reviews across all modal offices. The MEDICS software automatically enforces the security, storage, transmission, and access control requirements for medical records. MEDICS also connects to the SAFTI database used to manage investigation data, which allows investigators to access records, receive autopsy and toxicology reports, request subpoenas for medical records, and request medical officer reviews. Only those employees with a need to access this health information may use MEDICS.	Medical Investigations
PREVIEW	The Protected Recording Viewer (PREVIEW) system is a web-based application that allows access to protected content products (such as audio and video transcripts) and recordings normally stored on non-networked secure servers within the laboratory at NTSB headquarters for authorized NTSB employees working remotely. The application automatically enforces the security requirements for storage, transmission, and access control to prevent inadvertent public release of the products and recordings in accordance with statutory requirements and NTSB requirements for protecting the content.	Vehicle Recorder Division

System	Description	RE Division
RAPT-R	The Rome Audio Processing Tool-Revision (RAPT-R) is a software tool developed by the Air Force Research Laboratory that enables multitrack audio playback, video playback, and transcription. It is the NTSB's primary tool for analyzing CVR content.	Vehicle Recorder Division
Reveal	Reveal is a digital data recovery and analysis tool for visualizing, exploring, and extracting binary data files. It allows users to mine unstructured binary data for useful data parameters, either through manual inspection or by using scripted routines.	Vehicle Recorder Division

In addition, the office also uses laboratory instruments to support accident investigations. These include digital and electron microscopes and analytical spectrometers to conduct materials failure analyses, specialized recorder readout equipment, and x-ray computed tomography and wire bonding equipment for memory chip recovery from recording devices. These instruments typically require annual maintenance contracts, updates, and replacement at certain intervals.

ADMINISTRATIVE LAW JUDGES

	($000s)	FTEs	Pos.
FY 2025 Estimate	$3,238	7	7
FY 2026 Request	$3,237	7	7
Increase/Decrease	($1)	0	0

Overview of the Request

The funding level for this program assumes no pay raise in FY 2026 and includes a minor reduction to operational costs to absorb the impacts of a 2.0 percent non-pay inflation increase.

Program Description

The NTSB serves as the court of appeals for pilots, aircraft mechanics, air traffic controllers, air carriers, repair facilities, and any other individual or entity against whom the FAA has taken a certificate action, and for mariners against whom the US Coast Guard has taken a certificate action. The agency's administrative law judges hear, consider, and issue initial decisions on administrative appeals regarding FAA aviation enforcement actions, including the following:

- Orders issued by the FAA administrator amending, modifying, suspending, or revoking, in whole or in part, certificates of airmen, air agencies, and air carriers for alleged violations of the *Federal Aviation Regulations* or for lack of qualifications.
- FAA actions denying applications for the issuance or renewal of airman certificates, including airman medical certificates.
- Certain FAA civil penalty orders issued against individuals, pilots, flight engineers, mechanics, or repair people where the amount in dispute is less than $50,000.

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

An administrative law judge must issue an oral initial decision regarding the appeal of an emergency order or an immediately effective order within 30 days of receipt. If the law judge's decision is appealed to the full Board, an opinion and order must be issued within 60 days of the appeal's initial receipt.

Marine certificate actions are heard first by the US Coast Guard administrative law judges and may be appealed to the vice commandant of the US Coast Guard. The ruling of the vice commandant may then be appealed to the NTSB's full Board.

The NTSB has three judges and a vacant chief judge position. One judge is stationed in Washington, DC; one is stationed in the circuit that includes Denver, Colorado; and one is stationed in the circuit that includes San Antonio, Texas.

Accomplishments and Ongoing Efforts

The Office of Administrative Law Judges completed the following actions from October 1, 2023, through September 30, 2024:

- Filed 120 emergency order appeals.
- Closed 98 emergency order appeals.
- Held 12 emergency order appeal hearings.
- Had 68 cases in which respondents waived the emergency procedures.
- Processed 29 petitions challenging the FAA's determination to bring a case as an emergency.
- Filed 446 new cases (148 of which were enforcement cases; 291 of which were certificate denials, mainly medical certificate denials).
- Closed 257 cases.
- Scheduled 71 hearings (48 of which were emergency appeals).
- Held 19 hearings.

INFORMATION TECHNOLOGY AND SERVICES

	($000s)	FTEs	Pos.
FY 2025 Estimate	$11,581	26	26
FY 2026 Request	$11,575	26	26
Increase/Decrease	($6)	0	0

Overview of the Request

The funding level for this program assumes no pay raise in FY 2026 and includes a minor reduction to operational costs to absorb the impacts of a 2.0 percent non-pay inflation increase.

Program Description

The Office of the Chief Information Officer provides strategic direction and operational support for NTSB information systems and develops and distributes programs and products for use by the agency and the public. The office comprises four divisions and two program areas, described below.

Computer Services Division

The Computer Services Division is responsible for the following:

- Providing computer and network services for headquarters and regional offices, including internet access, web services, e-mail, backup, continuity-of-operations infrastructure, and disaster recovery.
- Securing the network and defending against outside threats.
- Helpdesk staff who perform a wide range of tasks, including desktop/laptop setup, repair, and replacement; network connectivity; and software installation and upgrades.
- Deploying and maintaining essential systems and services that range from desktop telephones to enterprise storage systems, cell phones, and tablets.

Systems Support Division

The Systems Support Division is responsible for the following:

- Developing, distributing, and maintaining agency-specific applications.

- Providing web design and content management.
- Delivering database administration services.
- Supporting accident data collection, storage, analysis, and dissemination for all modes, as well as managing systems for accident records, safety recommendations, correspondence, FOIA requests, and general administration.
- Developing office-centric applications for modal and support offices.

Records Management Division

The Records Management Division is responsible for the following:

- Maintaining accident investigation files, NTSB reports, and other agency records in accordance with applicable law.
- Fulfilling public requests for information, including FOIA requests, and providing training on the docket management system and guidance on redaction policies and techniques.
- Monitoring the privacy and confidentiality of data and information.
- Providing records management services that enable NTSB staff to locate and use investigative records to respond to media and public requests for accident safety data and records more efficiently and effectively.

Enterprise Architect Division

The Enterprise Architect Division provides a logical business and technological blueprint for how the NTSB operates today, plans to operate in the future, and intends to invest in technology. The division understands the agency's business needs and defines the processes and information necessary to operate the business-support technologies and transitional processes required to implement new technologies.

Chief Technology Officer Program

The chief technology officer outlines the office's technological vision, researching new technologies for potential benefits, implementing technology strategies, and ensuring that the technological resources are aligned with the agency's mission needs and goals.

Information Technology Security Program

The chief information security officer protects the availability, confidentiality, and integrity of IT resources by applying the requirements specified in OMB Circular A-130, the Federal Information Security Management Act (FISMA), and various US Department of Commerce National Institute of Standards and Technology publications. The IT security program uses a risk-based, cost-effective approach to secure information and systems, identify and resolve current IT security weaknesses and risks, and protect the NTSB's networked capabilities against future vulnerabilities and threats.

Accomplishments and Ongoing Efforts

Computer Services Division

The Computer Services Division resolved over 2,470 service desk tickets and filled over 240 service requests for the agency's headquarters, regional office, and teleworking/remote staff from October 1, 2023, through September 30, 2024. The division's IT specialists continued to support the agency's mission by launching on several major accident investigations to assist Board members and staff on scene.

Additionally, the division continued to fight daily threats against agency systems by applying patches and updates to all systems on a regular basis. We continue to comply with and respond to any advisories from the Federal Continuous Diagnostics and Mitigation Program. Systems are backed up daily, and file recoveries have been conducted during the past year, serving as a regular test of the backup and recovery system. We also preserve files and emails in support of the Office of General Counsel and have processed litigation hold requests for several agency staff since October 1, 2023.

The division evaluated, purchased, configured, and deployed new iPad devices to agency investigative staff. The evaluation process accounted for the specific needs of agency investigators, including specialized software that helps them perform their duties.

The division also continued to refine and deploy the agency's Zero Trust platform. Working with staff, contractors, and potential vendors, we identified paths to apply Zero Trust principles to many agency systems. We assessed current agency posture, identified gaps, and evaluated available solutions. We presented the IT and financial requirements for a Zero Trust platform to agency leadership and attained funding to execute major aspects of the Zero Trust plan this fiscal year.

During FY 2024, the division also worked with the Office of the Managing Director and the Office of Railroad, Pipeline and Hazardous Materials Investigations to develop a plan for conducting the on-location Board meeting in support of the East Palestine, Ohio, railroad accident investigation. Division staff worked with meeting coordinators, agency staff, and external contractors to determine requirements, review statements of work, and ensure all technical requirements were identified and addressed. The division sent staff to East Palestine to facilitate and support agency staff with IT requirements and to oversee the Board meeting livestream.

In addition to daily IT systems maintenance and projects, the division also successfully recompeted two major contracts with significant impact to the agency. These contracts were the Microsoft Cloud Services contract, and the Agency Enterprise Infrastructure Solutions (EIS) contract, which governs the agency's network connections.

Systems Support Division

The Systems Support Division made several enhancements to the Board's suite of in-house applications that support various agency program offices and activities, including the Product Management Application (PMA), the Case Appeals Filing System, MEDICS, SAFTI, CAROL, DREAM, and PREVIEW. Division staff worked closely with other offices and teams as described below to help successfully launch their projects.

- SAFTI and CAROL: Developed the ability to associate products and recommendations with multiple investigations in SAFTI, search for them in CAROL, and enter safety actions in SAFTI. (A safety action is a positive transportation safety change brought about by an NTSB investigation or study without our agency issuing a formal safety recommendation.) Applied additional automation into SAFTI to notify foreign states when reports are issued for accidents that involved foreign operators or foreign aircraft or engine manufacturers to meet ICAO requirements. Began to import the initial set of legacy investigations into production, which we are scheduled to complete later this year.
- DREAM: Deployed template-to-report functionality to automatically generate device-related reports from data entered into the application, reducing reliance on the preexisting manual process.
- PMA: Reduced technical debt by transitioning from legacy technology (on-premises SharePoint 2010) to cloud-based SharePoint Online.

- PREVIEW: Improved data security through video watermarks, warning prompts, review, and modifications of permissions and roles. Additionally, implemented a modern media services platform, Ravnur, to replace the retired Azure Media Services.
- NTSB.gov: Improved the public website experience through additional pages, such as Safety Issues and Safety Recommendations, and enhancements and updated styles in parts of the website. Completed a proof-of-concept for migrating critical internal applications to a Zero Trust-compliant authentication protocol. Assessing 508 compliance for the website.

Records Management Division

The Records Management Division posted 1,383 accident dockets to our public website through September 30, 2024, and we received 703 new and closed 561 FOIA requests. This included reviewing more than 34,879 pages of records, 23,633 pages of which were released by the office. The division implemented two initiatives to address the resource-intensive and time-consuming nature of our records redaction and FOIA processes. The first initiative will implement existing commercially available AI technology for document review. This approach aligns with recent federal AI mandates and efficiently handles traditional personally identifiable information redactions. By automating redaction using AI, we can significantly reduce manual labor. The second initiative will be a process improvement pilot to expand the use of our commercially available FOIA management tool for the entire FOIA process, eliminating manual re-entry, ensuring consistency, and enhancing request visibility. These initiatives will be implemented in FY 2025.

A revised NTSB capstone schedule was developed, submitted, and approved by the National Archives and Records Administration (NARA). The division is partnering with NARA to transfer permanent, noninvestigation paper records to NARA in accordance with federal requirements, and we are in the process of submitting a comprehensive, agencywide draft records schedule to NARA for formal review and approval. Division staff continued to help NTSB staff and the public obtain accident information from NTSB website investigative search tools and docket management systems.

Enterprise Architect Division

In FY 2024, the Enterprise Architect Division continued to analyze and visualize NTSB data to enhance informed decision-making. The division's support enabled the agency's data users to make better-informed decisions based on visualized data.

The division implemented the Scaled Agile Framework software development lifecycle to support IT operations (DevOps). The division standardized and implemented the DevOps procedures and processes, which is fully in production.

The division is leading the Technology Modernization Fund project and successfully digitized a fully automated NTSB 6120.1, Pilot/Operator Aircraft Accident/Incident Reporting, form. This capability ensures accurate data is collected and directly integrated with the SAFTI. The division also researched and procured an Enterprise Content Service Platform that will streamline the investigative artifact management process and improve NTSB data-sharing capabilities with its stakeholders. The division is currently working with investigators to identify and improve business processes and will continue to implement the to-be process in the Enterprise Content Service Platform.

The division continues to provide technical direction on enhancement requests and data integration for all line-of-business applications.

Chief Technology Officer Program

The chief technology officer leads the enterprise's technological vision. In FY 2024, the chief technology officer successfully championed several critical and transformative programs for the NTSB that improved our customers' experience, secured the NTSB digital ecosystem, and ensured full compliance with federal mandates: Technology Modernization Fund (TMF) and Zero Trust.

At the beginning of FY 2024, the NTSB launched the following three major activities in support of year-one program goals for the TMF project:

- First, the agency established an enterprise Scaled Agile Framework to deliver faster time-to-market functionality to our customers, emphasizing a shared responsibility model that increases productivity as well as improves quality and engagement throughout a system's lifecycle.
- Second, the agency developed a fully automated NTSB Form 6120.1, Pilot/Operator Aircraft Accident/Incident Reporting, which will eliminate input duplication, streamline internal and external processes, improve system interface, reduce unnecessary paperwork, and improve customer experience.
- Third, the agency is adopting an Enterprise Content Service Platform that will be used to standardize artifact management for all accident investigations at the NTSB. This will allow staff to manage all investigative and safety research artifacts in one cloud-based

platform that will securely ingest, organize, store, find, retrieve, and share digital content for all investigations and research projects. Additional features will include a redaction and annotation tool and a mobile-compatible platform, enhancing digital services for both internal and external customers.

In FY 2024, the NTSB completed phase 2 of the Zero Trust Implementation Plan in accordance with federal mandates. The agency implemented network segmentations and identified application workloads to be segmented in FY 2025. The agency piloted the Identity Credential and Access Management (ICAM) solution to manage the enterprise identity of all users and create the authoritative source for identity governance.

IT Security Program

During FY 2024, the IT security program continued to advise the chief information officer regarding FISMA compliance requirements and advocated for the expanded use of such external cybersecurity enhancement services as adopting targeted web application vulnerability scanning, enhancing mobile device management, and ensuring that professional cybersecurity assessment services are implemented on an annual basis through a multiyear blanket purchase agreement for independent third-party cybersecurity assessments, ensuring federal compliance and minimizing potential security breach risks.

The IT security program coordinated with our external cybersecurity oversight agencies and provided responses to several ongoing reporting directives, cybersecurity incident reports, and the annual FISMA report. Remediating known vulnerabilities is now part of the IT standard operating procedures and multiple FY 2023 audit findings were closed out, further improving IT security. The NTSB surpassed OMB targets for federal civilian agencies in three categories and met the targets in two. This signifies a considerable improvement in the NTSB's information security posture and a marked reduction in cyber risks based on OMB FISMA metrics. By meeting and exceeding OMB's target FISMA metrics, we removed the risk of the Department of Homeland Security (DHS) issuing our agency a corrective action plan and directly overseeing its implementation.

Building upon FY 2023 cybersecurity actions, including identifying and guiding the office through improving the system security plan documentation process, division staff expanded continuous monitoring and diagnostic agreements with the DHS and led teams to implement OMB's initial Zero Trust mandate in application software vulnerability scanning, comprehensive IT asset management, and automated incident reporting systems, and maturing identity and access management capabilities. The division also supplemented its annual security awareness training program by making additional advanced courses available for system administrators and owners.

HUMAN CAPITAL MANAGEMENT AND TRAINING

	($000s)	FTEs	Pos.
FY 2025 Estimate	$4,736	15	15
FY 2026 Request	$4,733	15	15
Increase/Decrease	($3)	0	0

Overview of the Request

The funding level for this program assumes no pay raise in FY 2026 and includes a minor reduction to operational costs to absorb the impacts of a 2.0 percent non-pay inflation increase.

Program Description

The Office of Human Capital Management and Training provides oversight, guidance, and support in setting the NTSB's workforce development strategy and aligns human resources policies with the agency's mission. The office develops goals and objectives and provides leadership in human capital planning and development, employment and staffing, compensation, benefits, executive resources, succession planning, labor and employee relations, agencywide training programs, career management, and other human capital and training functions. Two divisions carry out the office's work: Human Resources and Career Development and Training. Both divisions, along with the front office team, support the chief human capital officer (CHCO) in developing and administering policies to achieve program objectives and provide the full range of human resources and training services for the NTSB.

Human Resources Division

The Human Resources Division is responsible for the following:

- Human capital planning and management, program development and execution, recruitment, and hiring.
- Administering the following human resources programs: labor and employee relations, benefits, pay and leave, performance management and awards, the telework program, and the employee assistance program.

Career Development and Training Division

The Career Development and Training division oversees the development and implementation of career development programs and the

investigative/technical training curriculum for the NTSB workforce. The division curates educational offerings and training opportunities aimed at enhancing employees' skills and knowledge to ensure they are equipped for transportation accident investigations, future leadership challenges, and to meet our mission.

Accomplishments and Ongoing Efforts

From October 1, 2023, through September 30, 2024, the Office of Human Capital Management and Training focused on several key areas, including hiring and recruitment, employee engagement and recognition, career development and training, and process improvements.

Human Resources Division

In alignment with the chairman's vision to right-size the agency, the division continued to focus on hiring as a top priority by facilitating the hiring of 54 new employees. Overall, the agency grew by 1.4 percent in FY 2024 (from 434 on October 1, 2023, to 440 on September 30, 2024). This includes the addition of two new Board members and four new Board staff employees. Additionally, the modal offices and the Office of Research and Engineering increased by 4.5 percent (from 264 on October 1, 2023, to 276 on September 30, 2024).

The division also expanded the agency's internship program to host six students from three different institutions for the 2024 summer program. The students were assigned to various offices where they gained valuable work experience through assignments relevant to their studies. Additionally, the office developed and launched the agency's first ever legal externship for the Office of the Administrative Law Judges. The three students in the program supported cases under two administrative law judges by performing legal research; drafting research and legal opinion memoranda; preparing summaries of laws, regulations, and case authority; assisting in drafting orders and decisions; and assisting in the administration of adversarial hearings.

The division partnered with the Office of the Managing Director's CDS to establish a more advanced agency hiring dashboard. This enhanced dashboard provides real-time access to hiring metrics and improves the visibility and accessibility of hiring data. By partnering with the CDS, we aim to improve data integrity around the hiring process.

The division led and supported employee engagement and recognition activities throughout the agency and collaborated with the chairman, Board members, and several offices to administer the agency's 50th annual major awards program and ceremony. To increase in-person employee engagement,

this year's ceremony was held in person for the first time in 5 years and was live streamed to the regional offices. Over 300 employees were recognized for their contributions to the agency, representing a diverse cross-section of agency functions from both regional offices and headquarters. The office also established a regular cadence for distributing length-of-service pins and certificates and celebrated 74 employees who celebrated a milestone in federal service.

The division also supported the managing director's goal of increased engagement by meeting with office directors, deputy directors, and employees to encourage participation in the Federal Employee Viewpoint Survey (FEVS). To further support the 2024 FEVS effort, the Office worked with the Office of Safety Recommendations and Communications to create and launch the "I Take the FEVS" communications campaign that included a letter from the managing director, a timeline to complete this year's survey, updated definitions on FEVS terminology, and Microsoft Teams backgrounds to encourage the workforce to take the survey. The agency has seen improvements across all five FEVS indices: Global Satisfaction, Employee Engagement, Performance Confidence, and Employee Experience. These achievements demonstrate high employee engagement and the agency's commitment to continuous improvement.

The division worked with the Office of the Managing Director to improve the personnel security process, establishing a new workflow that enhanced candidate vetting and expedited the processes used to onboard employees. The outcome was a new process that reduced candidate vetting and onboarding from 6 weeks to 4 weeks.

Career Development and Training Division

The Career Development and Training Division facilitated a successful information session on the Partnership for Public Service's Excellence in Government Program, a key component in the agency's leadership development program and succession planning efforts. This information session led to an 83-percent increase in applications compared to previous years. As a result, four aspiring leaders from support and modal offices were selected to participate in the Spring 2024 program.

Based on user feedback, the division continued enhancing the Career Development Roadmap to make it more user-friendly and responsive to employees' needs. This included adding specialized development tracks curated to meet the core competencies for mission-critical positions and a specialized learning track on emerging transportation technologies, highlighting new developments within the aviation, rail, highway, transit, marine, and pipeline industries and the potential safety issues investigators

and analysts may face as they prepare for the investigative challenges of the future.

Through partnerships and associations with the Transportation Research Board, ICAO, the Association for Uncrewed Vehicle Systems International, the Transportation Safety Institute, and other industry organizations, the agency was able to augment the technical offerings at our employees' disposal, such as the Root Cause Analysis course. These educational resources are included in the online agency calendar and updated regularly.

The division also established processes in the agency's learning management system to automatically populate investigators' learning plans with required safety refresher training. This process eliminated the need for the Occupational Safety and Health Division to manually track and update training, which has helped the agency more accurately ensure that critical safety compliance training is completed as required.

APPENDIX A: FEDERAL DATA STRATEGY

Significant Activities in FY 2024

The NTSB is committed to implementing the Evidence Act and achieving the data management objectives defined by the Federal Data Strategy and Annual Action Plans. One of our strategic plan goals is to improve agency products and processes through data analysis. Further, we are developing metrics that will support Evidence Act requirements for all agencies to invest in and that focus on managing and using data and evidence linking spending to program outputs, executing mission, and better managing enterprise risks. We are prioritizing data as a strategic asset and taking significant actions to support data governance processes, establish plans for data assets and infrastructure, and expand public access to agency data. NTSB data analytics and governance activities are also expanding to include safe and effective use of AI.

Some notable actions during FY 2024 to date include the following:

- We hired a new full-time chief data officer. This is a new executive position that will lead the Office of the Chief Data Officer to grow the agency's data, strategic planning, and enterprise risk management programs. The office includes the agency's chief data scientist, who has also been designated as the NTSB chief AI officer.
- We expanded our data analytics library with dashboards to monitor investigation tasks, staff workloads, and agency performance metrics. These enhanced data analytics capabilities have led to measurable improvements in agency operations and helped reduce the backlog of investigations. Going forward, these tools will continue to support our strategic goals to increase agency efficiency and improve the timeliness of investigations.
- Beyond investigation data, we expanded our analytics capabilities to gain deeper insights into business operations, including tracking staffing levels, the hiring process, and budget information. With the data analytics platform launched in FY 2023, the NTSB now integrates and maintains personnel, mission, and cost data on a single, secure platform for comprehensive analysis.
- We have improved timely access to critical transportation safety information from investigations, studies, and safety recommendations for the public and external stakeholders. Key initiatives include launching dashboards on the agency website for pending publications, generating automated notifications for

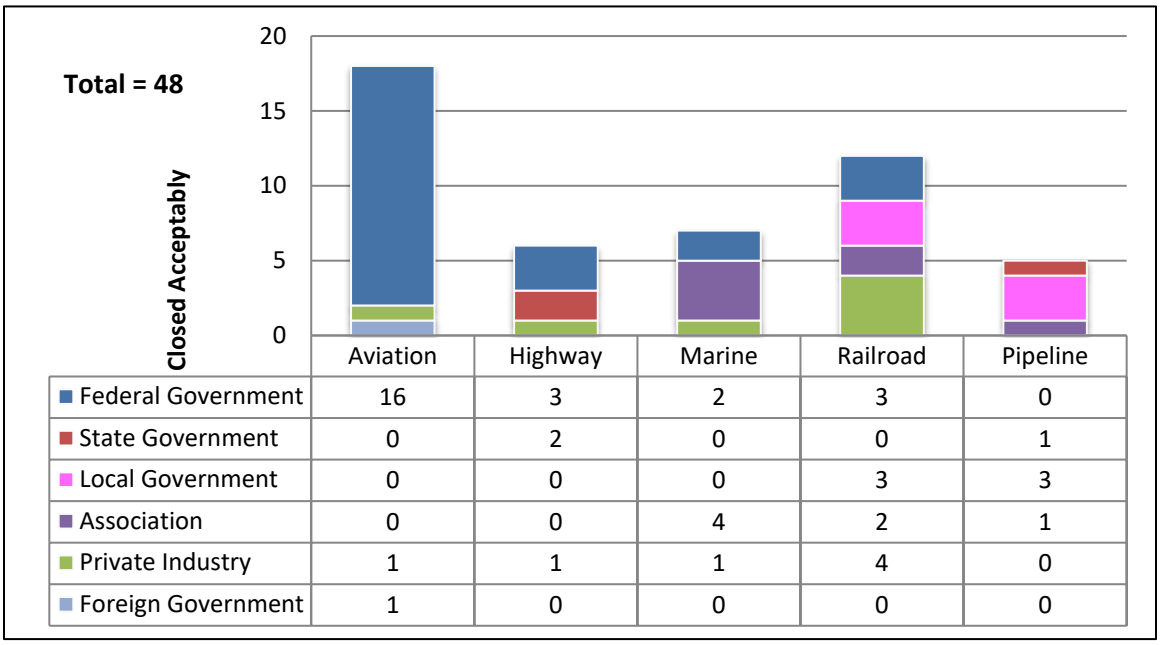
investigation parties and international representatives, and expanding tools for tracking and analyzing safety recommendations.

- We continue to seek external feedback to identify opportunities for improvement, including gaining approval to conduct website user surveys, monitoring public interest in NTSB content, and analyzing demand for reports, data, and press releases.
- We are developing innovative approaches to assess and monitor the impact of NTSB investigations and recommendations on transportation safety by analyzing safety practices and regulatory changes shaped by NTSB findings.
- Looking to the future, we are committed to the safe and effective use of emerging analysis tools and techniques, including AI applications, to improve access to the agency's library of investigations, studies, and recommendations. Additionally, we are implementing tools to manage the rapidly growing volume of information from new investigations more efficiently.

APPENDIX B: STATUS OF SAFETY RECOMMENDATIONS

Recommendations Closed

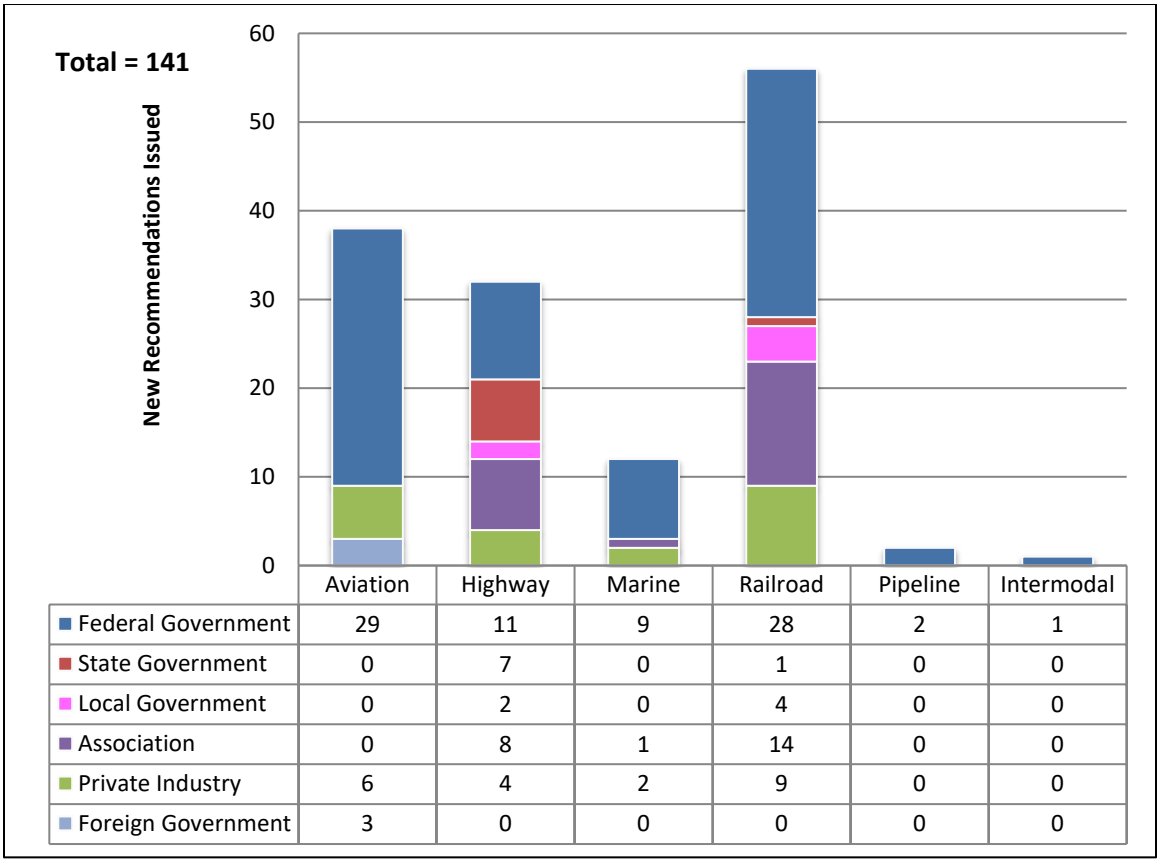
The chart below shows the distribution by transportation mode (aviation, highway, marine, railroad, pipeline) and recipient type (federal, state, or local government; association; private industry; or foreign government) of the 48 NTSB safety recommendations closed *Acceptable* from October 1, 2023, through September 30, 2024.



	Aviation	Highway	Marine	Railroad	Pipeline
Federal Government	16	3	2	3	0
State Government	0	2	0	0	1
Local Government	0	0	0	3	3
Association	0	0	4	2	1
Private Industry	1	1	1	4	0
Foreign Government	1	0	0	0	0

New Recommendations Issued

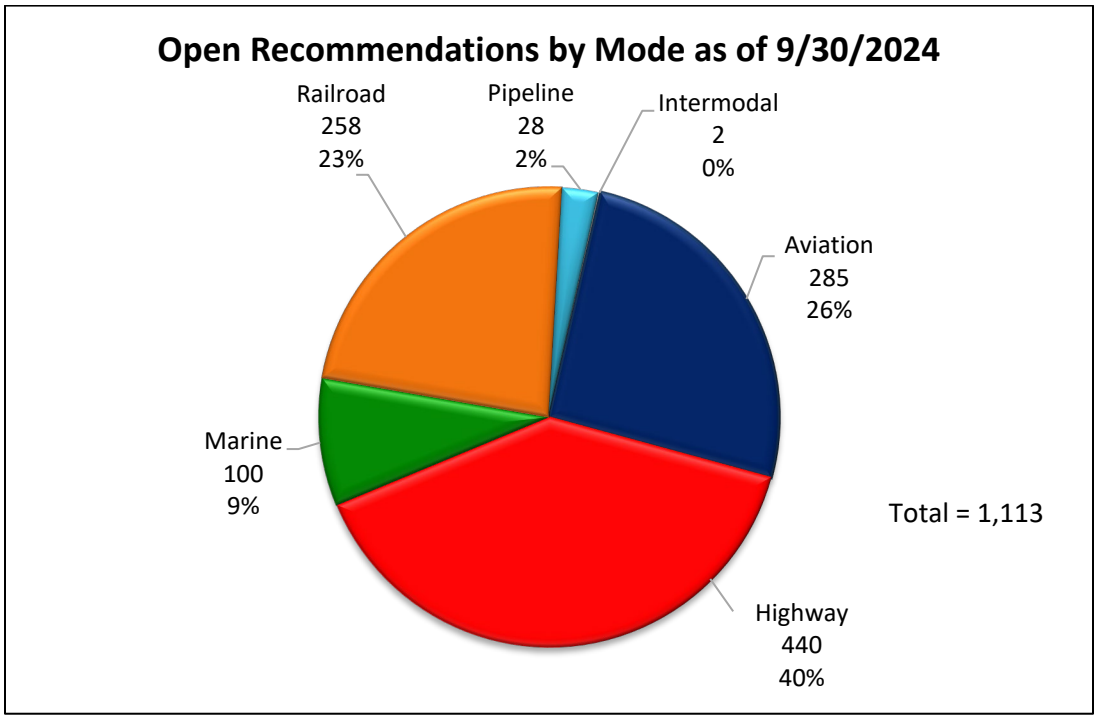
The chart below shows the distribution by transportation mode (aviation, highway, marine, railroad, pipeline) and recipient type (federal, state, or local government; association; private industry; or foreign government) of the 141 safety recommendations issued by the NTSB from October 1, 2023, through September 30, 2024.



	Aviation	Highway	Marine	Railroad	Pipeline	Intermodal
Federal Government	29	11	9	28	2	1
State Government	0	7	0	1	0	0
Local Government	0	2	0	4	0	0
Association	0	8	1	14	0	0
Private Industry	6	4	2	9	0	0
Foreign Government	3	0	0	0	0	0

Open Recommendations

The chart below displays the distribution by transportation mode of the 1,113 safety recommendations open as of September 30, 2024.



APPENDIX C: TRANSPORTATION DISASTER ASSISTANCE

Significant Activities in FY 2024

Transportation Disaster Assistance Support for Accident Investigations

The Transportation Disaster Assistance Division offered information and disaster assistance services to 3,574 accident survivors, family members, and family contacts associated with the following NTSB investigations from October 1, 2023, through September 30, 2024:

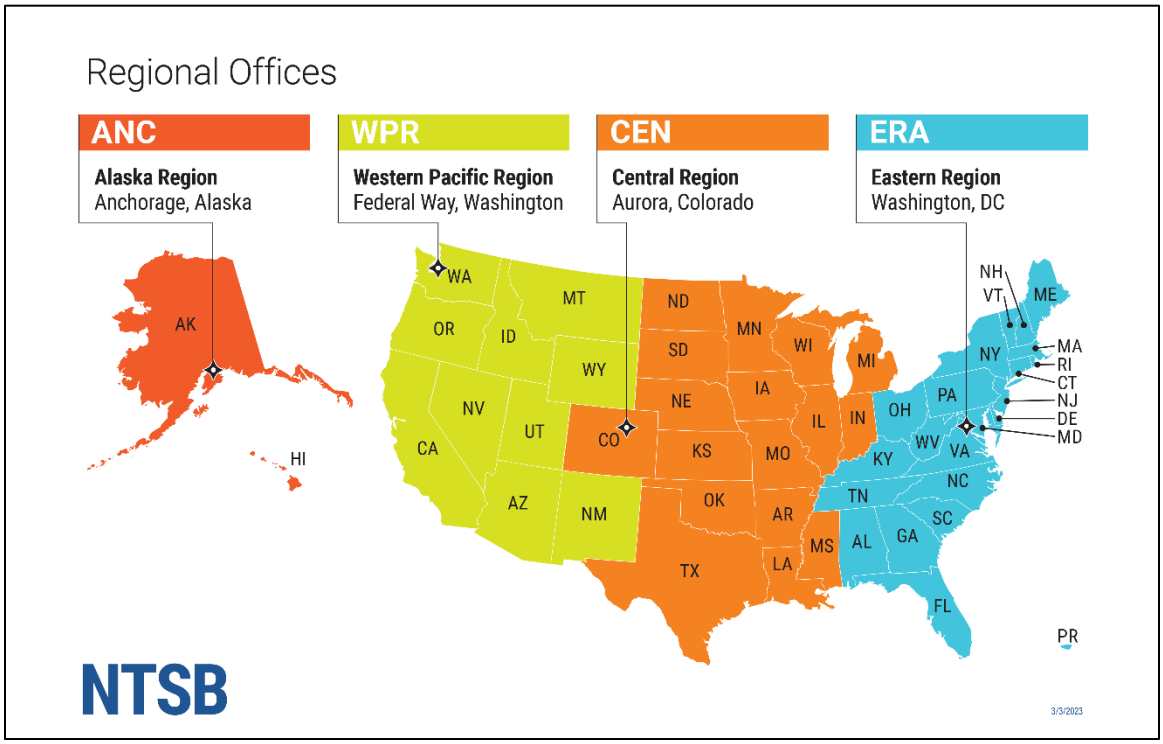
Launches	**13**
Aviation Safety	5
Marine Safety	1
Highway Safety	5
Rail Safety	1
Pipeline Safety	1
Other investigations	**794**
Domestic aviation accidents	662
International aviation accidents	17
Rail accidents	46
Highway accidents	55
Pipeline accidents	5
Marine accidents	8
Hazmat	1

Division Outreach and Training Activities

- Staff participated in 74 outreach events, resulting in direct contact with 4,476 participants; additionally, staff responded to inquiries from 451 agencies and organizations.
- Staff supported several ICAO initiatives to promote family assistance programs among contracting States. TDA staff collaborated with the ICAO Global Aviation Training Section to deliver a 4-day family assistance training course and is representing the United States on ICAO's Facilitation Panel Working Group on Assistance to Aircraft Accident Victims and their Families, which is focused on updating the facilitation manual and addressing recommendations issued following ICAO's 2021 Symposium on Assistance to Aircraft Accident Victims and Their Families. Staff also supported agency participation in ICAO's Universal Safety Oversight Audit Programme.

- Staff coordinated a 1-day family assistance workshop for the Chemical Safety Board to help investigators more effectively interact with family members of those involved in a chemical release event.
- Staff developed several training programs for NTSB Board members, aviation, rail, pipeline, highway, and marine investigators focused on enhancing the effectiveness of the agency's family assistance program and investigative support initiatives.
- Staff continues to engage in a collaborative effort to enhance the agency's Employee Assistance, Critical Incident Stress Awareness, and Peer Support Programs.

APPENDIX D: AVIATION SAFETY REGIONAL OFFICES



	Alaska Region	Western Pacific Region	Central Region	Eastern Region
Coverage Area	Alaska and Hawaii	Arizona, California, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming, as well as the territories of American Samoa, Guam, and the Northern Mariana Islands	Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, Texas, and Wisconsin	Alabama, Connecticut, Delaware, Florida, Georgia, Kentucky, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Washington, DC, as well as the territories of Puerto Rico and the US Virgin Islands

APPENDIX E: HISTORICAL INFORMATION

NTSB Salaries and Expenses Funding History (in millions)

FY	Amount
2000*	$56.8
2001*	$62.8
2002*	$67.9
2003*	$72.0
2004*	$73.1
2005*	$76.1
2006*	$75.9
2007	$79.3
2008	$84.4
2009	$91.0
2010	$98.0
2011*	$97.8
2012	$102.4
2013*	$97.0
2014	$103.0
2015	$104.0
2016	$105.2
2017	$106.0
2018	$110.4
2019	$110.4
2020	$110.4
2021	$118.4
2022	$121.4
2023	$129.3
2024	$140.0
2025	$145.0

*Includes across-the-board rescissions

Current Board Members

Name	Board Title	Appointment	Term Expiration
Jennifer Homendy	Chairman	August 11, 2021	August 10, 2027[1]
Michael Graham	Member	December 19, 2019	December 31, 2025
Thomas Chapman	Member	December 19, 2019	December 31, 2023
Todd Inman	Member	March 8, 2024	December 31, 2027

[1] Chairman Homendy's term as a Board member ends December 31, 2029.

Under Title 49 *U.S.C.* section 1111(d), when the term of office of a Board member ends, the member may continue to serve until a successor begins service as a Board member or until that Board member is reconfirmed for a new term.

Emergency Fund Activity

Fiscal Year	Appropriations (Rescissions)	Obligation Activity	Balance	Purpose/Source
2000			$2,000,000	No activity
2001			$2,000,000	No activity
2002		$491,687	$1,508,313	Extraordinary costs related to the crash of AAL flight 587 at Belle Harbor, New York
2003		$4,914	$1,503,399	Adjustment of FY 2002 obligations
2004		($138,000)	$1,641,399	Adjustment of FY 2002 obligations
2004	$358,601		$2,000,000	Appropriation (Public Law 108-199)
2004	($2,116)		$1,997,884	Rescission (Public Law 108-199)
2005			$1,997,884	No activity
2006			$1,997,884	No activity
2007			$1,997,884	No activity
2008			$1,997,884	No activity
2009			$1,997,884	No activity
2010			$1,997,884	No activity
2011			$1,997,884	No activity
2012			$1,997,884	No activity
2013			$1,997,884	No activity
2014			$1,997,884	No activity
2015			$1,997,884	No activity
2016			$1,997,884	No activity
2017			$1,997,884	No activity
2018			$1,997,884	No activity
2019			$1,997,884	No activity
2020			$1,997,884	No activity
2021			$1,997,884	No activity
2022			$1,997,884	No activity
2023			$1,997,884	No activity
2024			$1,997,884	No activity

International Investigations

Total International Accident Investigation Costs by Fiscal Year from 2012 through 2024*

FY	Costs
2012 (a)	$1,641,132
2013 (b)	$2,366,274
2014 (c)	$976,642
2015 (d)	$1,838,241
2016 (e)	$1,664,764
2017 (f)	$826,248
2018 (g)	$902,981
2019 (h)	$2,126,327
2020	$632,682
2021	$935,571
2022	$895,787
2023	$901,463
2024	$1,194,459

*Since the beginning of FY 2012, the agency has captured payroll and other direct costs (such as travel) through its cost accounting systems. The totals above reflect these costs.

(a) Includes $149,707 billed to the DOT under the Safe Skies for Africa (SSA) Program.
(b) Includes $42,727 billed to the DOT under the SSA Program.
(c) Includes $64,897 billed to the DOT under the SSA Program.
(d) Includes $120,026 billed to the DOT under the SSA Program.
(e) Includes $138,115 billed to the DOT under the SSA Program.
(f) Includes $35,146 billed to the DOT under the SSA Program.
(g) Includes $88,300 billed to the DOT under the SSA Program.
(h) Includes $22,785 billed to the DOT under the SSA Program.

FY 2024 International Investigation Costs by Accident*

Description	Location	Amount
A submersible vessel to view wreckage of Titanic lost communication.	Atlantic Ocean	$283,965
A Boeing 777 experienced a fatal injury turbulence encounter.	Payagyi, Burma	$155,864
A Boeing 767 experienced hydraulic issue with nose landing gear failing to deploy.	Istanbul, Turkey	$71,604
After departing, a Boeing 787 had a left engine failure with fire.	Addis Ababa, Ethiopia	$50,444
An Airbus A350 and a Coast Guard DHC-8 collided on a runway.	Tokyo, Japan	$34,353
A Raytheon aircraft experienced loss of control in flight during approach to land.	Elmina, Malaysia	$30,698
A Boeing 777FZB experienced uncontained engine failure.	Narita, Japan	$29,587
A Boeing 787 had uncontained engine failure during initial climb out of Singapore Changi Airport.	Singapore, Singapore	$27,307
A Sikorsky S92 crashed for unknown reasons.	Bergen, Norway	$26,637
An Airbus A320 lost partial engine power during approach.	Chihuahua, Mexico	$25,552
An Airbus A320 experienced a turbulence encounter.	Caribbean Sea, Jamaica	$24,888
An Airbus A320 experienced uncontained No. 2 engine failure.	Almaty, Kazakhstan	$24,519
A Boeing 737 sustained substantial damage during a runway excursion when the engine made contact with the ground.	Dakar, Senegal	$21,162
An American Mariner vessel sustained a fracture after departure.	Sault Ste. Marie, Canada	$21,119
During a parachute operation, while on the landing approach, a plane collided with the ground.	Piotrków Trybunalski, Poland	$20,330
A Bombardier CRJ200ER crashed immediately after takeoff.	Kathmandu, Nepal	$18,206
A Boeing 737 had an incident due to damaged tires.	Frankfurt am Main, Germany	$17,439
An Airbus A319 experienced dual integrated drive generator failure.	Schiphol, Netherlands	$15,160
An Airbus A321 experienced No. 1 engine failure during initial climb.	Islamabad, Pakistan	$14,665

Description	Location	Amount
A Sikorsky S61N collided with terrain.	Tongyeong-si, Kiribati	$14,049
A Bell 412 collided with terrain.	Arau, Guyana	$13,698
A Boeing 797 experienced No. 2 engine failure during startup on taxiway.	San Miguel de Cozumel, Mexico	$13,072
An Airbus A320 experienced #2 engine failure.	Delhi, India	$12,914
An Embraer 145 loss total engine power after takeoff.	Kumasi, Ghana	$12,856
An Airbus A330 encountered turbulence.	Grand Anse Village, St Kitts and Nevis	$11,972
Shortly after departure at approximately 20–25,000 ft, the crew noticed an electrical smell.	Kobenhavn, Denmark	$11,128
A Boeing 737 experienced temporary loss of radar contact.	Le Mans, France	$10,778
A Boeing 767 experienced a contained engine failure.	Prague, Czech Republic	$10,570
During the climb, a pilot lost control of a Cesena 650 and crashed in the water.	Veracruz, Mexico	$10,214
A Boeing 787 experienced abrupt maneuver during cruise.	Auckland, New Zealand	$9,803
Airbus A320 had a tire burst while preparing to take off.	Vilnius, Lithuania	$9,796
During takeoff, an Airbus A320-271 experienced a #2 engine, uncontained high pressure compressor rotor disk rupture.	Guadalajara, Mexico	$9,659
Supply vessel *Jack Edwards* experienced a loss of steering and sustained damage to its starboard midline.	Georgetown, Guyana	$9,289
A CenterPoint Aerospace S-58T collided with the terrain while in flight.	Yang Yang, Republic of Korea	$8,975
A Cessna 208B loss total engine power.	Spa, Belgium	$8,417
A Honda Jett overran the runway.	Montreal, Canada	$7,785
A Southwest Airlines Boeing 737-8 experienced a #2 engine bird strike after takeoff and initial climb.	Havana, Cuba	$7,525
A Boeing 747 encountered electrical system failure.	Schiphol, Netherlands	$7,484
An Airbus A320 encountered an electrical system malfunction while enroute.	Enroute Bogota - Barranquilla, Colombia	$7,003
A Socata TBM700 had a nose landing gear tire failure followed by propeller strike.	Kota Bharu, Malaysia	$6,573

Description	Location	Amount
An Airbus experienced no. 2 engine fire during rotation	Hong Kong, Hong Kong	$6,498
A Boeing 747 experienced no. 4 engine fire during takeoff roll.	Sulawesi, Indonesia	$6,206
A Gulfstream G-IVSP jet reported a hydraulic issue shortly after takeoff and crashed during an emergency landing attempt.	Santo Domingo, Dominican Republic	$6,072
During initial climb, the pilot of a Cessna 208 observed an engine malfunction and conducted a forced landing.	Barwon Heads Geelong, Australia	$5,949
A Tecnam P2008 experienced total loss of engine power.	Baramati, India	$5,727
An airplane crashed for unknown reasons.	St. Mary, Jamaica	$5,576
Reports received indicate missing/overdue aircraft after not arriving at intended destination.	Aboco, Bahamas	$5,444
While carrying out external cargo air work, a Bell UH-1D impacted the terrain for unknown reasons.	San Clemente, Chile	$5,425
A Blackshape airplane departed controlled flight 12 minutes after departure.	Kapar, Malaysia	$5,174
An Airbus A319 rejected takeoff caused by failure engine no. 2.	Mexico City, Mexico	$5,169
After takeoff, a R44 helicopter plunged into the water.	Lago Ranco, Chile	$5,097
A Boeing 737-800 performed an emergency descent to FL100 after an apparent loss of cabin pressure.	Surat Thani, Thailand	$5,066
Grand Total		**$1,194,459**

*Note: report includes accidents, whether occurring in the current year or previously, with more than $5,000 in FY 2024 expenses and is cumulative through September 30, 2024. Costs include payroll as well as travel and other direct costs.

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The National Transportation Safety Board is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in the other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.