

NTSB

National
Transportation
Safety Board

Annual Report to Congress 2025



ON THE COVER



NTSB staff member overseeing operations to recover the Sikorsky UH-60 Black Hawk involved in the January 29, 2025, midair collision near Ronald Reagan Washington National Airport (DCA) in Washington, DC. The Black Hawk was pulled from the Potomac River on February 6.

Who We Are and What We Do

The **National Transportation Safety Board (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 US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

Our Mission

Making transportation safer. We carry out our mission by—

- Maintaining our congressionally mandated independence.
- Conducting objective, thorough investigations and safety studies.
- Deciding fairly and objectively appeals of enforcement actions by the FAA and US Coast Guard and certificate denials by the FAA.
- Advocating for implementation of safety recommendations.
- Assisting victims and survivors of transportation disasters and their families.

Our Core Values

- » Integrity
- » Transparency
- » Independence
- » Excellence



Chairwoman's Message

The Honorable
Jennifer L. Homendy



I am honored to present the National Transportation Safety Board's *2025 Annual Report to Congress*, which details the agency's investigative accomplishments over the past year. As you will see, we did more than simply uphold our reputation as the world's leading accident investigation agency; we raised the bar even higher.

Thanks to the dedication and expertise of our highly skilled workforce, I am proud to report that we:

- » Adopted 1,436 investigative reports—up 18% over 2024—and issued 131 new safety recommendations, including 14 urgent safety recommendations, stemming from our investigations into several high-profile tragedies. These include:
 - The January 29, 2025, midair collision between a US Army helicopter and a CRJ700 operated by PSA Airlines as American Airlines flight 5342 near DCA in Washington, DC, which claimed the lives of all 67 people on board both aircraft. After finding that the design of the DCA airspace posed an intolerable risk to aviation safety, we issued urgent safety recommendations in March that the Secretary of Transportation acted on immediately. In the summer of 2025, we convened a 3-day, 33-hour investigative hearing to further examine the accident. We concluded our investigation in early 2026 with a public Board meeting that coincided with the first anniversary of this devastating tragedy.
 - The March 26, 2024, contact of the *Dali* containership with Baltimore's Francis Scott Key Bridge, which killed six construction workers who were on the bridge when it subsequently collapsed. This incredibly complex, multimodal investigation culminated in a public Board meeting in November 2025, where the Board voted on safety recommendations aimed at safeguarding bridges across the country from catastrophic vessel strikes.
 - The January 5, 2024, in-flight separation of the left mid exit door (MED) plug and rapid depressurization on Alaska Airlines Flight 1282, a Boeing 737-9, near Portland International Airport in Oregon.

Eight people—seven passengers and one flight attendant—received minor injuries and the aircraft sustained substantial damage. While we are grateful there were no serious injuries or fatalities, the accident endangered the lives of all 177 people on board. We completed our investigation in June 2025 and determined that four critical bolts designed to secure the left MED plug were missing when the airplane was delivered to Alaska Airlines—a catastrophic manufacturing quality escape our safety recommendations are designed to prevent from ever happening again.

- » Initiated 356 safety actions to stakeholders and industry within transportation safety, an increase of 84% over 2024; launched to 242 domestic investigations; supported three international aviation investigations as the US-accredited representative; and assisted with 15 international marine investigations.

At the same time, we remained relentlessly focused on our strategic goals: keeping pace with emerging transportation technologies and systems, improving processes and products, and optimizing organizational effectiveness and efficiency to meet our mission, which you can read all about in the pages that follow.

Because we measure success in what does **not** occur—injuries prevented and lives saved—it can be difficult to quantify our agency's full impact. And yet, this report can leave little doubt that the NTSB is positioned to protect the traveling public for years to come.

Thank you for your continued support.

Sincerely,

Jennifer L. Homendy
NTSB Chairwoman

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Abbreviations, Acronyms, and Initialisms

AASHTO	American Association of State Highway and Transportation Officials
ABS	American Bureau of Shipping
BPI	business process instruction
CCCEMA	Columbiana County Emergency Management Agency
CFR	<i>Code of Federal Regulations</i>
CVR	cockpit voice recorder
DCA	Ronald Reagan Washington National Airport
EAA	Experimental Aircraft Association
FAA	Federal Aviation Administration
FDR	flight data recorder
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IACS	International Association of Classification Societies
ICAO	International Civil Aviation Organization
IMO	International Maritime Organization
MAIB	Marine Accident Investigation Branch
MAIIF	Marine Accident Investigators' International Forum
MBTA	Massachusetts Bay Transportation Authority
MED	mid exit door
NHTSA	National Highway Traffic Safety Administration
NOAA	National Oceanic and Atmospheric Administration
NTSB	National Transportation Safety Board
PHMSA	Pipeline and Hazardous Materials Safety Administration
RMM	roadway maintenance machine
RWIC	roadway worker in charge
SMS	safety management system
SEPTA	Southeastern Pennsylvania Transportation Authority
TMF	Technology Modernization Fund
TRB	Transportation Research Board
TSI	Transportation Safety Institute
US	United States
U.S.C.	<i>United States Code</i>
US DOT	US Department of Transportation
Vne	velocity never exceed

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About the NTSB

History

The NTSB's origins can be traced to the Air Commerce Act of 1926, in which Congress charged the US Department of Commerce with investigating the causes of aircraft accidents. That responsibility was transferred to the Civil Aeronautics Board's Bureau of Aviation Safety when it was created in 1940.

In 1967, Congress consolidated all US transportation agencies into a new Department of Transportation (US DOT) and established the NTSB as an independent agency within the US DOT. In creating the NTSB, Congress envisioned that a single organization with a clearly defined mission could more effectively promote a higher level of safety in the transportation system than the individual modal agencies could working separately.

Since 1967, the NTSB has investigated accidents, crashes, and other events in the aviation, highway, marine, pipeline, and railroad transportation modes, as well as those related to the transportation of hazardous materials. In 2022, commercial space transportation accident investigations were added to our mission.

In 1974, Congress reestablished the NTSB as a separate entity outside the US DOT, reasoning that **"no federal agency can properly perform such [investigatory] functions unless it is totally separate and independent from any other...agency of the United States."**

Because the US DOT has broad operational and regulatory responsibilities that affect the safety and efficiency of the transportation system, and transportation accidents may suggest deficiencies in that system, the NTSB's independence was deemed necessary to provide objectivity in its investigations and recommendations.

Role in Transportation Safety

Since our inception in 1967, the NTSB has **investigated more than 154,000 aviation accidents and thousands of significant events in other modes of transportation**—railroad, transit, highway, marine, pipeline, hazardous materials, and commercial space. On call 24 hours a day, 365 days a year, our investigators travel throughout the country and to every corner of the world in response to transportation disasters.

The NTSB investigates accidents to **determine their probable cause, examine safety issues, and develop recommendations** to prevent the occurrence of similar accidents and events in the future. We have **issued more than 15,700 safety recommendations to more than 2,470 recipients** in all transportation modes. The recommended action has been implemented for **82% of the over 13,000 recommendations** we have closed. The agency also develops safety research studies focused on broader safety questions and topics, enabling us to better perform our mission.

Additionally, we serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the FAA and the US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.



FIGURE 1. In 1966, President Lyndon Johnson signed the US Department of Transportation Act that created the NTSB. SOURCE: US DOT

FY26–30 Strategic Goals and Objectives

1. Improve Transportation Safety Using a Data-Driven Approach (Impact)

OBJECTIVES:

- Modernize data and analytic systems
- Enhance stakeholder experience

2. Optimize Agency Resources to Better Serve the Traveling Public (Efficiency)

OBJECTIVES:

- Streamline investigations for greater impact
- Transform business processes for impact

3. Advance Transportation Safety Through a Resilient Workforce (Resilience)

OBJECTIVES:

- Strengthen our workforce pipeline
- Develop talent, drive excellence

Organization and Program Structure

Our organizational structure is designed around sound business and management principles. The NTSB has five Board members, each nominated by the president and confirmed by the Senate to serve 5-year terms. The president designates a Board member as chairman and another as vice chairman for 3-year terms. The chairman requires separate Senate confirmation. When there is no designated chairman, the vice chairman serves in an acting capacity.

NTSB Board members are pictured in figure 2. The agency currently has one vacant Board member seat. Figure 3 below shows our organizational structure. For more information about our offices and their functions, please visit the [Organization](#) page of our website.

FIGURE 2. NTSB Board members.



Honorable
Jennifer L. Homendy
Chairwoman



Honorable
Michael E. Graham
Vice Chairman

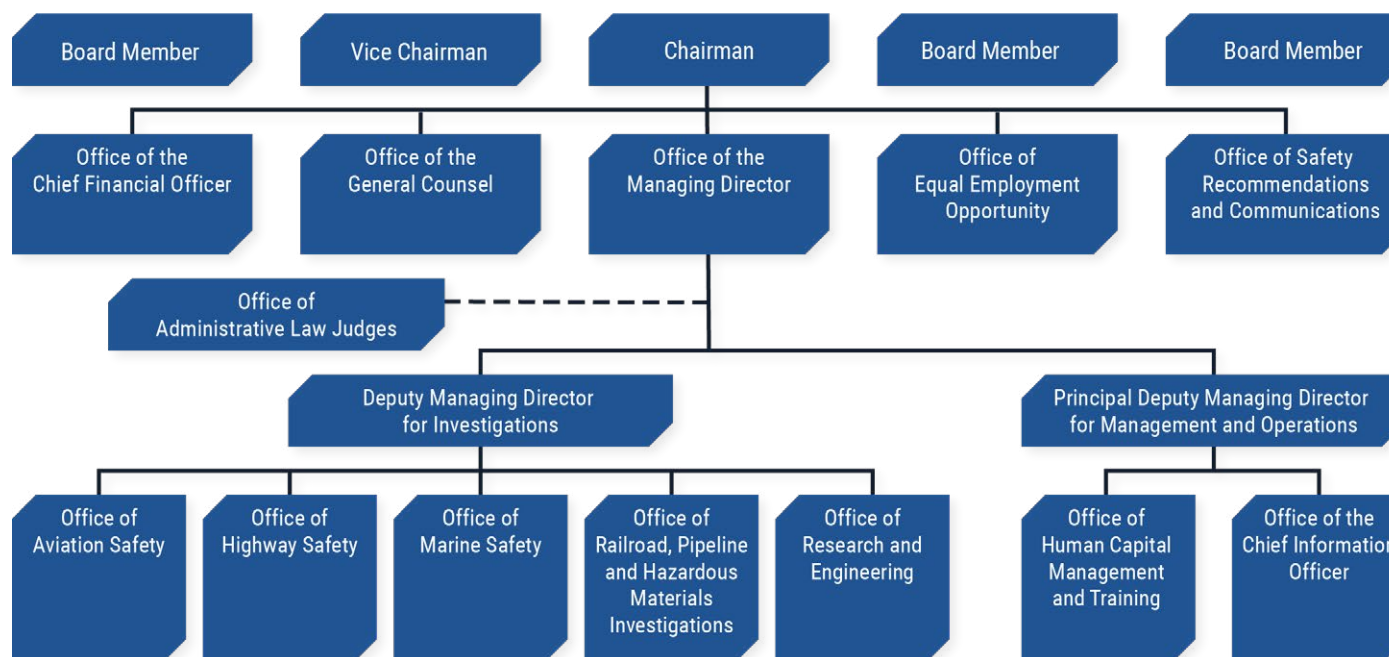


Honorable
Thomas B. Chapman
Board Member



Honorable
John DeLeeuw
Board Member

FIGURE 3. NTSB organization chart.

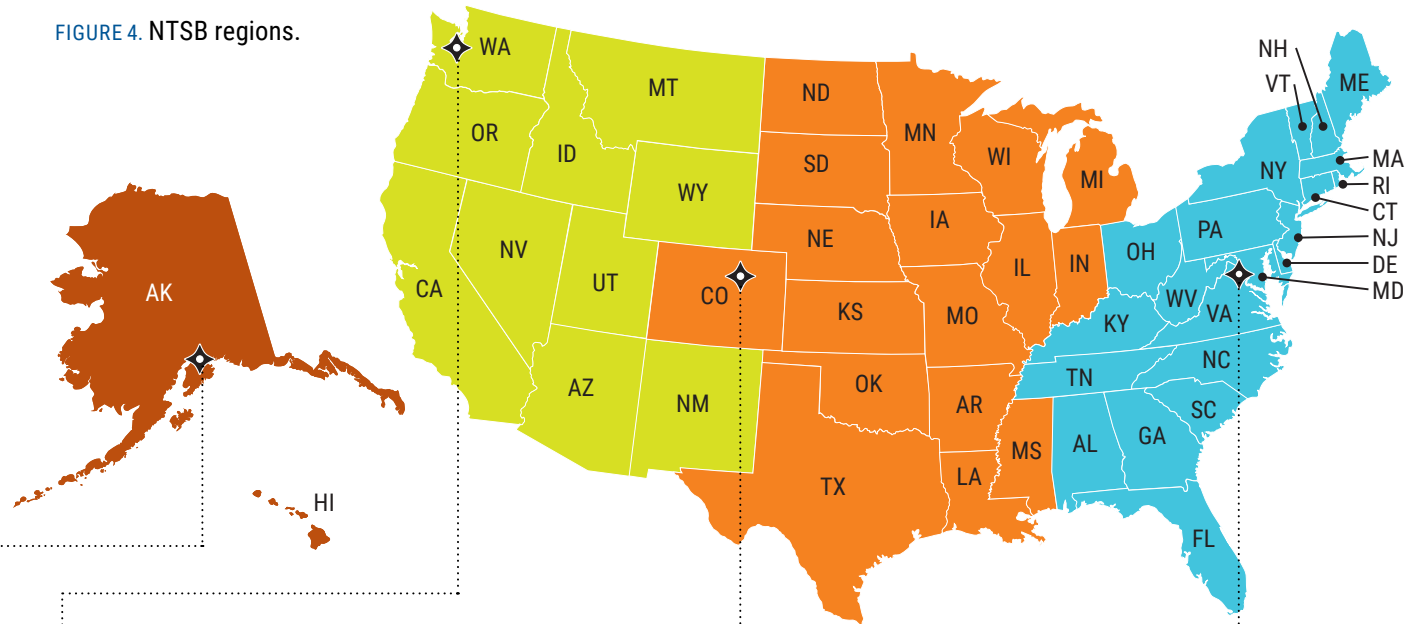


Organization and Program Structure (continued)

The NTSB is headquartered in Washington, DC, where most of our staff work, within the Eastern Region. Others work remotely throughout the country or are assigned to one of the regional offices in Anchorage, Alaska; Federal Way, Washington; or Aurora, Colorado.

The map in figure 4 depicts the four NTSB regions.

FIGURE 4. NTSB regions.



Alaska Region: Anchorage, Alaska

Alaska
Hawaii

Western Pacific Region: Federal Way, Washington

Arizona
California
Idaho
Montana
Nevada
New Mexico
Oregon
Utah
Washington
Wyoming

American Samoa
Guam
Northern Mariana Islands

Central Region: Aurora, Colorado

Arkansas
Colorado
Indiana
Illinois
Iowa
Kansas
Louisiana
Michigan

Minnesota
Missouri
Nebraska
North Dakota
Oklahoma
South Dakota
Texas
Wisconsin

Eastern Region: Washington, DC

Alabama
Connecticut
Delaware
Florida
Georgia
Kentucky
Maine
Maryland
Massachusetts
North Carolina
New Hampshire
New Jersey
New York

Ohio
Pennsylvania
Rhode Island
South Carolina
Tennessee
Vermont
Virginia
Washington, DC
West Virginia
Puerto Rico
US Virgin Islands

Organization and Program Structure (continued)

Table 1 below provides a snapshot of the agency's safety impact over the past year and highlights key office and division accomplishments across the NTSB from January 1 through December 31, 2025.

TABLE 1. 2025 NTSB Safety Impact at a Glance

Safety Recommendations¹

Issued	131
Closed in an Acceptable Status	113
Closed in an Unacceptable Status	12
Urgent Issued	14
Urgent Closed in an Acceptable Status	16

Reports and Products

Board-Adopted Investigation Reports	18
Delegated Investigation Reports	1,418
Public Hearings, Meetings, and Webinars	59
Safety Alerts ²	6
Safety Actions ³	356

Accident and Event Launches

Investigation Launches	242
International Accident Launches	18

Family Assistance

Family Members and Victims Assisted	3,891
-------------------------------------	-------

Research and Engineering/Laboratory

Safety Research Product Completed	1
Safety Data Analyses	204
Materials Laboratory Exam Reports Completed	210
Readouts of Vehicle Recorders and Other Electronic Devices Completed	529
Vehicle Performance Reports and Animations Completed	61
Medical Investigation Reports Completed	203
Rapid Reports Completed ⁴	11

Aviation Certificate Appeals

Total Cases Received	284
Total Cases Closed	295
Emergency Cases Received	68
Emergency Cases Closed	84
Hearings Scheduled	75
Hearings Held	16

Outreach⁵

Publications	2
Testimony or Legislative Support to State Legislative Committees	19
Board Member External Outreach Presentations and Events ⁶	55
Outreach Presentations and Events	296

¹ In this report, each recommendation issued is reported as one recommendation, regardless of the number of recipients (with the exception of Table 11, where each recommendation issued to a unique recipient is counted individually). Because some recommendations are issued to more than one recipient, however, closed recommendations are reported by the number of recipients for whom they were closed during the year. Recommendations closed in an acceptable status include those classified **Closed—Acceptable Action**, **Closed—Acceptable Alternate Action**, and **Closed—Exceeds Recommended Action**. Recommendations closed in an unacceptable status include those classified **Closed—Unacceptable Action** and **Closed—Unacceptable Action/No Response Received**. Please note that recommendations closed in 2025 may have been issued in previous calendar years. 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."

² Safety alerts are brief information sheets that pinpoint a particular safety issue. They contain information based on investigation findings and enhance the dissemination of safety information to the traveling public. They are primarily used to alert the transportation safety community, which may not otherwise be reached through safety recommendations, of safety issues identified during multiple investigations. Safety alerts provide information on the problem, examples of accidents, actions that personnel and organizations can take to avoid making the same mistakes, and references to find additional information. These alerts are posted on NTSB.gov, and brochures are distributed at outreach events that staff attends throughout the year.

³ A safety action is a positive change within the transportation environment brought about by an NTSB investigation or study without our issuing a formal safety recommendation. Safety actions may be initiated either because of an NTSB investigation or independent of one.

⁴ If the NTSB decides to launch a Board member with the investigation team to the accident site as the on-scene spokesperson, the Safety Research Division (of the Office of Research and Engineering) and the Safety Recommendations Division (of the Office of Safety Recommendations and Communications) provide a 1- to 2-page summary of background information to support the investigation team during the initial stages of the launch. These "rapid reports" typically include publicly available information related to relevant safety data and statistics on similar crashes and crash trends; a summary of relevant NTSB investigations, studies, or other products; and a summary of relevant safety recommendations.

⁵ See [Appendix B](#) for additional details about NTSB outreach.

⁶ This is an approximate total and may not reflect the total number conducted.



Office of **Aviation Safety**

TABLE 2. Office of Aviation Safety Statistics

Recommendations Issued	39
Recommendations Closed in an Acceptable Status	17
Recommendations Closed in an Unacceptable Status	8
Urgent Recommendations Issued	4
Urgent Recommendations Closed in an Acceptable Status	1
Board-Adopted Investigation Reports	7
Delegated Investigation Reports	1,350
Public Hearing	1
Safety Alert	1
Safety Actions	320
Investigation Launches	166
International Accident Launches	3
Outreach	53

The mission of the NTSB Office of Aviation Safety is to—

- » Investigate all air carrier, commuter, and air taxi accidents and certain serious incidents; fatal and nonfatal general aviation accidents and serious incidents; uncrewed aircraft systems, 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 International Civil Aviation Organization (ICAO) agreements.
- » 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 consisting of four regions (see Figure 4). Investigators are located throughout the country. International aviation activities are coordinated from the Washington, DC, office.



Investigation Reports

During 2025, the Office of Aviation Safety issued a total of 1,357 investigation reports; six of these reports involved safety issues that led to the issuance of 39 new safety recommendations, including four safety recommendations that were designated as urgent.

Below are summaries of some of the aviation investigation reports completed during this period.

In-Flight Separation of Left Mid Exit Door Plug Alaska Airlines Flight 1282 Boeing 737-9, N704AL Portland, Oregon, January 5, 2024

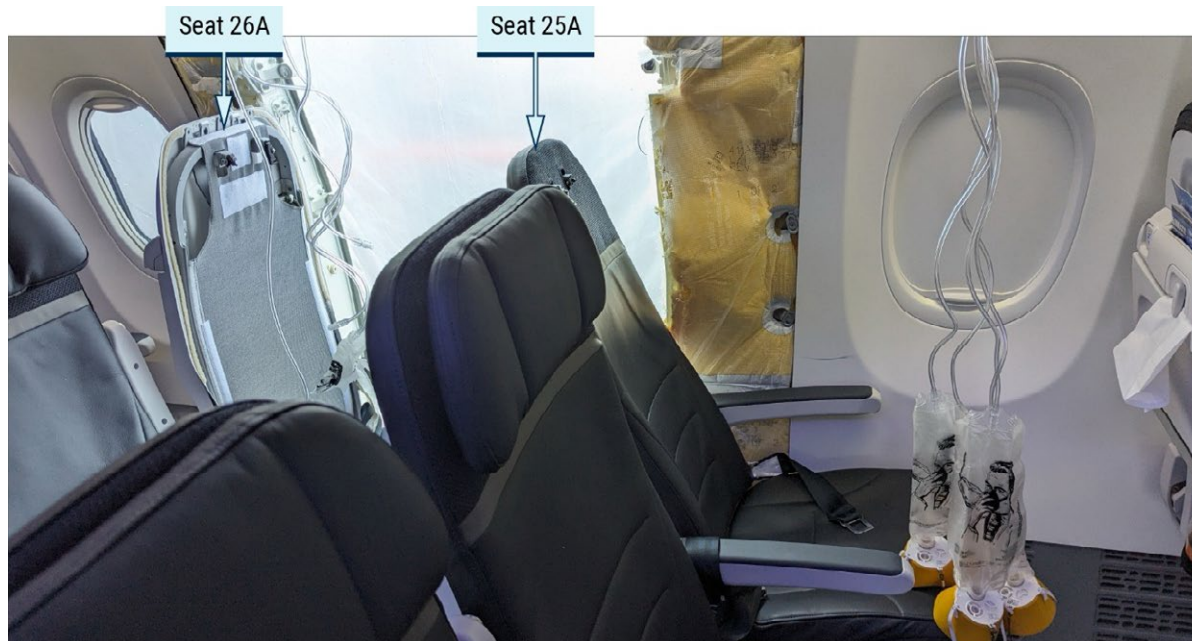


FIGURE 5. Interior view of Alaska Airlines Flight 1282 showing the hole in the fuselage at row 26.

On January 5, 2024, about 5:13 p.m., Alaska Airlines flight 1282, a Boeing 737-9 airplane, experienced an in-flight separation of the left mid exit door (MED) plug and rapid depressurization during climb after takeoff from Portland International Airport in Oregon.⁷ A flight attendant and 7 passengers received minor injuries; the captain, the first officer, 3 flight attendants, and 164 passengers were uninjured; and the airplane sustained substantial damage.

We determined that the probable cause of this accident was the in-flight separation of the left MED plug due to Boeing's failure to provide adequate training, guidance, and oversight necessary to ensure that manufacturing personnel could consistently and correctly comply with its parts removal process, which was intended to document and ensure that the securing bolts and hardware that were removed to facilitate rework during the manufacturing

process were properly reinstalled. Contributing to the accident was the FAA's ineffective compliance enforcement surveillance and audit planning activities, which failed to adequately identify and ensure that Boeing addressed the repetitive and systemic nonconformance issues associated with its parts removal process.

We identified the following safety issues during this investigation:

- The airplane's left MED plug being opened during manufacturing without the required removal record.
- The complexity of Boeing's business process instruction (BPI) for parts removals.
- Inadequate training of manufacturing personnel.
- The incomplete closure of the left MED plug without the required bolts and hardware.
- Boeing's ineffective change management related to workforce experience-level decreases.
- Boeing's ineffective corrective actions and the FAA's ineffective oversight processes that allowed issues with Boeing's BPI for parts removals to persist.
- Boeing's inadequate quality escape mitigation strategies and immature voluntary safety management system (SMS).
- The lack of hands-on, aircraft-specific training and procedures for flight crews' use of each type of oxygen system in an operator's fleet.
- The loss of cockpit voice recorder (CVR) audio.
- The potential for injury for lap-held children under age 2 during a rapid depressurization.

As a result of this investigation, we issued safety recommendations to the FAA and Boeing. We also reiterated previously issued safety recommendations to the FAA, the Airlines for America, the National Air Carrier Association, and the Regional Airline Association.

» Recommendations: 19 new, 5 reiterated
» Report date: June 24, 2025

⁷ All times stated are local time.



Deconflict Airplane and Helicopter Traffic in the Vicinity of Ronald Reagan Washington National Airport Washington, DC, January 29, 2025

On January 29, 2025, about 8:48 p.m., a Sikorsky UH-60L, operated by the US Army under the callsign PAT25, and PSA Airlines flight 5342, an MHI RJ Aviation CL-600-2C10, N709PS, collided in flight about 0.5 nautical miles southeast of runway 33 at Ronald Reagan Washington National Airport (DCA) in Arlington, Virginia, and impacted the Potomac River in southwest Washington, DC. The 2 pilots, 2 flight attendants, and 60 passengers aboard the airplane and all 3 crewmembers aboard the helicopter were fatally injured. Both aircraft were destroyed as a result of the accident.



FIGURE 6. Preliminary ADS-B flight track for flight 5342 (blue) and preliminary radar data for PAT25 (orange).

BACKGROUND SOURCE: GOOGLE EARTH.

Early in the investigation, **we identified a safety issue that required urgent action** by the FAA: at the time of the accident, the separation between helicopters operating on Route 4 and aircraft landing on runway 33 or departing runway 15 was insufficient.

As a result of this initial finding in the investigation, which concluded in early 2026, we issued urgent safety recommendations to the FAA.

- » Recommendations: 2 new (urgent)
- » Report Date: March 7, 2025

Ensure Learjet Main Landing Gear Are Securely Attached Scottsdale, Arizona, February 10, 2025

On February 10, 2025, about 2:38 p.m., a Learjet 35A, N81VN, was landing on runway 21 at Scottsdale Airport in Arizona when it departed the left side of the runway and impacted a parked Gulfstream G200. The Learjet's captain was fatally injured, the first officer and one passenger were seriously injured, and one passenger received minor injuries; additionally, an occupant inside the parked airplane, which was not operating at the time, sustained serious injuries. The Learjet was substantially damaged.

We identified the following safety issues during this ongoing investigation:

- Misassembly of the aft trunnion pin on Learjet main landing gear was not readily detectable during routine maintenance or preflight inspection.
- Learjet maintenance manuals do not provide procedural guidance to verify proper positioning and secure engagement of the aft trunnion pin and retaining bolt during main landing gear installation.

As a result, we issued safety recommendations to the FAA, one of which was urgent.

- » Recommendations: 2 new (1 urgent)
- » Report Date: October 27, 2025

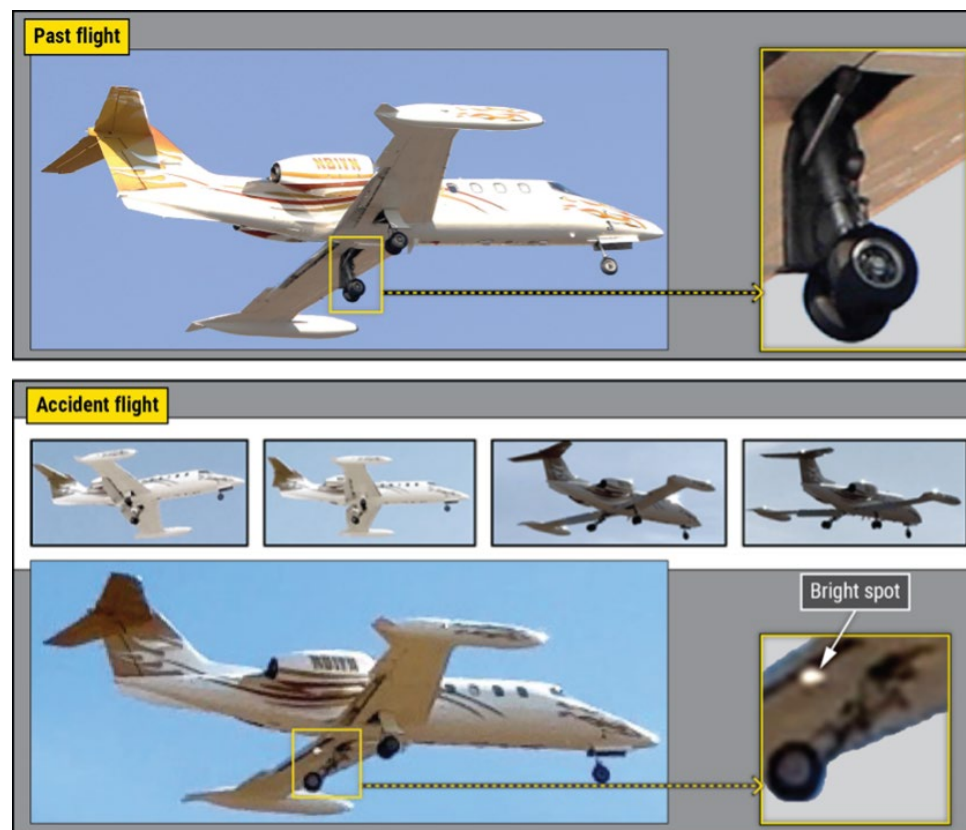


FIGURE 7. Still images from a witness video showing the left landing gear misaligned during approach, compared with a prior image of the accident airplane. PAST FLIGHT PHOTO SOURCE: WWW.JETPHOTOS.COM.



Ongoing Significant Aviation Investigations and Incidents

At the close of 2025, the Office of Aviation Safety had 20 open investigations involving significant safety issues. We are devoting significant resources to these investigations and anticipate producing a report upon completion of each one.

TABLE 3. Ongoing Significant Aviation Investigations and Incidents

Location	Event Date	Description	Fatalities	2026 Report Date
Statesville, North Carolina	12/18/2025	Landing area undershoot involving a Cessna 550	6	
Louisville, Kentucky	11/4/2025	Boeing MD-11F destroyed in accident	14	
Copake, New York	4/12/2025	Mitsubishi MU-2B-40 destroyed in accident	6	
Jersey City, New Jersey	4/10/2025	Structural failure involving a Bell 206L-4	6	
Canton, Mississippi	3/10/2025	Airbus EC-135 P2+ helicopter destroyed in accident	3	
Chicago, Illinois	2/25/2025	Runway incursion involving a Boeing 737-800 and a Bombardier CL-35	0	
Nome, Alaska	2/6/2025	Loss of control in flight of a Cessna 208B	10	
Philadelphia, Pennsylvania	1/31/2025	Learjet 55 destroyed in accident	7	
Washington, DC	1/30/2025	Midair collision involving a Sikorsky UH-60L and a MHI RJ Aviation CL-600-2C10	67	1/27/2026
Houston, Texas	10/20/2024	Robinson R44 destroyed in accident	4	
St. Mary's, Alaska	9/15/2024	Collision with a radio tower involving a Robinson R44 helicopter	4	5/21/2026
Nashville, Tennessee	9/12/2024	Runway incursion involving a Boeing 737-900 and a Boeing 737-700	0	
College Park, Georgia	9/10/2024	Ground collision involving an Airbus A350-941 and Bombardier CL-600 2D24-900	0	
Houston, Texas	5/3/2024	Landing gear collapse involving an Embraer EMB-145LR	0	
Queens, New York	4/17/2024	Runway incursion involving an Airbus A330-343 and a Boeing 767-432(ER)	0	
Houston, Texas	3/8/2024	Loss of control on the ground by a Boeing 737-8	0	
Newark, New Jersey	2/6/2024	Flight control system failure involving Boeing 737-8	0	
Kenner, Louisiana	12/20/2023	Birdstrike involving a Boeing 737-8	0	2/26/2026
St. Simons Island, Georgia	9/21/2023	Hard landing involving an Embraer SA EMB-525	0	2/19/2026



Investigative Hearing

During 2025, the Office of Aviation Safety held one investigative hearing; a summary is provided below.⁸

Midair Collision PSA Airlines Bombardier CRJ700 Airplane and Sikorsky UH-60 Military Helicopter July 30–August 1, 2025

The NTSB convened a 3-day investigative hearing from July 30 through August 1, 2025, to gather sworn testimony about the January 29, 2025, midair collision between PSA Airlines flight 5342, a Bombardier CRJ700 regional jetliner, and a US Army Sikorsky UH-60 Black Hawk helicopter. The accident occurred when the two aircraft collided over the Potomac River near DCA in Arlington, Virginia, about 8:48 p.m. Following the collision, both aircraft crashed into the river, killing all 67 people aboard—the 2 pilots, 2 flight attendants, and 60 passengers aboard the airplane—and the helicopter's 3 crew members. We used the information gathered at the hearing to complete our investigation, determine probable cause, and make recommendations to improve transportation safety.



FIGURE 8. Investigative hearing to gather testimony on the January 29, 2025, midair collision near DCA.

⁸ Investigative hearings are public hearings related to investigations in which the agency is authorized to obtain testimony under oath.

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

During 2025, the Office of Aviation Safety received notifications of 1,104 international accidents and incidents and assisted with 479 foreign investigations. Of these, investigators deployed to support three investigations. The following cases required significant US involvement.

Boeing 787-8 Crash Shortly After Takeoff Ahmedabad, Gujarat, India, June 12, 2025

On June 12, 2025, Air India flight AI-171, VT ANB, a Boeing 787-8, was involved in an accident about 0.8 nautical miles southwest of Sardar Vallabhbhai Patel International Airport (AMD) in Ahmedabad, Gujarat, India. The aircraft had just departed AMD when the flight crew declared an emergency. Soon after, the aircraft impacted the campus of a nearby medical college. The aircraft was destroyed. Of the 242 occupants on board (230 passengers and 12 crew members), all but one passenger were fatally injured, as were multiple people on the ground. The surviving passenger sustained serious injuries. As the US-accredited representative of the state of design and manufacture of the airframe and engines, NTSB staff traveled to India to assist the Aircraft Accident Investigation Bureau in its investigation. Since the accident, NTSB staff have traveled to support an examination of a systems component.

MHI RJ CL-600-2D24 Crash During Landing Toronto, Canada, February 17, 2025

On February 17, 2025, Endeavor Air flight EDV4819, an MHI RJ Aviation Group, CL-600-2D24, N932XJ, impacted the runway while landing at Lester B. Pearson International Airport in Toronto, Canada; the right wing detached, and the airplane overturned and slid down the runway inverted, coming to a rest near the intersection of two runways. A fire ensued. Aircraft rescue and firefighting personnel responded and all passengers and crew evacuated. Of the 80 occupants, 21 were injured (2 seriously). As the US-accredited representative of the state of the operator, NTSB staff traveled to Canada to assist the Transportation Safety Board of Canada in its investigation. Since the accident, NTSB staff have traveled to support systems examinations.





US Comments on Foreign Accident Reports

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

Boeing 737-809 and Embraer 190, Air Traffic Event Le Mans, France, July 21, 2023

On July 21, 2023, an Albastar Boeing 737-809 from London-Stansted Airport to Tarbes-Lourdes-Pyrenees Airport experienced a transponder failure while in cruise flight at 35,000 ft over France, resulting in loss of radar contact and disabling collision avoidance systems on nearby aircraft. Neither the flight crew nor air traffic controllers recognized system warnings indicating the transponder malfunction. About 20 minutes after the transponder failure, the Boeing 737 crossed the flightpath of an Embraer 190 at the same altitude with only 2.6 nautical miles of horizontal separation, below the required minimum of 5 nautical miles. A military air traffic controller subsequently detected the flight on primary radar and, following coordination between control sectors, radar contact was recovered and the Boeing 737 continued to its destination without further incident. The NTSB US-accredited representative provided comments on the draft final report in July 2025. The final report was issued in October 2025.

Boeing 787-9, In-Flight Turbulence Near Gamagori, Japan, February 1, 2024

On February 1, 2024, an All Nippon Airways Boeing 787-9 from Tokyo Haneda Airport to Suvarnabhumi Airport, Bangkok, Thailand, with 257 people on board encountered turbulence near Gamagori, Japan, while climbing from 26,000 ft to 28,000 ft, resulting in injuries to two flight attendants. The aircraft immediately descended to 26,000 ft and continued to its destination where it landed without further incident. The NTSB US-accredited representative provided comments on the draft final report in December 2025. The final report is pending.

Safety Alert

During 2025, the Office of Aviation Safety developed the following safety alert for issuance by the Board.⁹

Overspeeding Risks Flutter and In-Flight Breakup » SA-099

This safety alert was based on information from several accidents involving pilots of Van's Aircraft in which pilots exceeded the manufacturer's never-exceed speed (velocity never exceed, or Vne), triggering flutter that led to in-flight structural failure.

Flutter occurs when an aircraft's structural vibrations couple with aerodynamic forces, producing rapid oscillations that can escalate beyond the structure's ability to dampen them. If airspeed increases or the structure cannot counter these forces, flutter can cause the airplane to break apart in flight. The risk of overspeed—and the resulting hazard of flutter—is highest for pilots of high performance aircraft who perform aerobatic maneuvers or who enter instrument meteorological conditions, become disoriented, and lose control.

Explore more than 50 aviation
safety alerts sorted by topic at
[ntsb.gov/advocacy/safety-alerts](https://www.ntsb.gov/advocacy/safety-alerts).

⁹ Safety alerts are brief information sheets that pinpoint a particular safety issue. They contain information based on investigation findings and enhance the dissemination of safety information to the traveling public. They are primarily used to alert the transportation safety community, which may not otherwise be reached through safety recommendations, of safety issues identified during multiple investigations. Safety alerts provide information on the problem, examples of accidents, actions that personnel and organizations can take to avoid making the same mistakes, and references to find additional information. These alerts are posted on NTSB.gov, and brochures are distributed at outreach events that staff attends throughout the year.



Safety Actions

During 2025, the Office of Aviation Safety documented 320 safety actions.¹⁰ The following are summaries of a sampling of these actions.

■ Sandersville, Georgia

As a result of our investigation of a fatal accident involving a partial loss of power in the right engine of a twin-engine experimental amateur-built airplane, the kit manufacturer sent a bulletin to owners about chafed and severed wirings discovered in the vicinity of the main landing gear actuator piston track of the accident airplane in January 2025. The kit manufacturer is also including a warning in the build manual of the dangers of placing wiring in this section of the airplane.

■ Gainesville, Texas

As a result of our investigation of an accident involving a total loss of engine power due to a failure of the engine-driven fuel pump of a single-engine, fixed-wing airplane, the aviation safety inspector asked the flight school to check their fleet for fuel servo venturi contamination. Three of the four airplanes were positive for venturi contamination. The remaining aircraft in the fleet are currently undergoing inspection.

■ Palmer, Texas

Following our investigation of an accident involving a rudder cable failure in a Luscombe 8, we suggested that the FAA produce a safety video to address the potential causes, signs, and prevention strategies of control cable issues. The FAA Safety Team subsequently published [Flight Control Cable Failures](#) and posted the video on the main FAA YouTube page and on various FAA social media platforms.

¹⁰ A safety action is a positive change within the transportation environment brought about by an NTSB investigation or study without our issuing a formal safety recommendation.

Other Significant Achievements

■ Follow-up Activities from the 2024 ICAO Audit

During the first half of FY 2025, the office worked to address a finding from ICAO's July 2024 audit of the US civil aviation system by implementing modifications to our investigation management system that will automate ICAO notification submissions. We discovered issues with the newly developed application programming interfaces working between our different systems that are still being addressed. We are actively working to finalize procedures to ensure the forwarding of accident/incident notifications to other States and, when applicable, ICAO.

■ Ongoing Support of Agencywide Technology Upgrades

The office continues to support agencywide technology modernization through the Technology Modernization Fund (TMF), which aims to improve internal and external customer experiences through enhanced digital content—much of which the office produces. The office provides technical direction to the TMF team to strengthen how lessons learned from investigations are communicated to National Airspace System decision-makers. Key initiatives included launching a new web-based FAA Form 6120 for pilot and operator event reporting, developing application programming interfaces that give customers direct access to NTSB data, and supporting upgrades to NTSB.gov search functionality that will allow users to subscribe to specific information categories.



Office of Highway Safety

TABLE 4. Office of Highway Safety Statistics

Recommendations Issued	31
Recommendations Closed in an Acceptable Status	56
Recommendations Closed in an Unacceptable Status	3
Urgent Recommendations Issued ¹¹	7
Urgent Recommendations Closed in an Acceptable Status	13
Board-Adopted Investigation Reports	4
Delegated Investigation Reports	3
Safety Alert	1
Safety Actions	5
Investigation Launches	16
Outreach	14

¹¹ Four urgent Highway Safety recommendations were issued as part of the Marine investigation into the containership *Dali*'s contact with the Francis Scott Key Bridge and the subsequent bridge collapse in Baltimore, Maryland.

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 collapses of bridges spanning roadways or tunnel structures, mass casualties and injuries on public transportation vehicles (such as motorcoaches and school buses), and 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 the 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 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. The Investigations Division is further divided into the Multidisciplinary Branch East, the Multidisciplinary Branch West, and the Special Investigations Branch. The multidisciplinary investigation branches conduct major highway investigations through a multidisciplinary team comprising an investigator-in-charge 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.

Investigation Reports

During 2025, the Office of Highway Safety issued a total of seven investigation reports; four of these reports involved safety issues that led to the issuance of 31 new safety recommendations, including 7 safety recommendations that were designated urgent.

Below are summaries of three highway investigation reports completed during this period. The fourth report, *Safeguarding Bridges from Vessel Strikes: Need for Vulnerability Assessment and Risk Reduction Strategies*, is summarized in the Office of Marine Safety section of this report.

School Bus Roadway Departure and Rollover Leander, Texas, August 13, 2025

On August 13, 2025, about 3:14 p.m., a 2025 77-passenger Blue Bird school bus, operated by the Leander Independent School District, was traveling south on Nameless Road near Leander, Texas, when it crossed over the centerline, returned to the travel lane, and then departed the roadway to the right.¹² The bus subsequently rolled onto its right (loading door) side, continued onto its roof, and then came to rest on its left (driver's) side on the slope adjacent to the roadway. During the rollover sequence, the bus struck roadside vegetation, causing additional damage to the roof and intrusion into the right side of the passenger compartment. At the time of the crash, the bus was transporting 46 student passengers between ages 4 and 10 from Bagdad Elementary School to their residences. Sixteen passengers and the driver were injured in the crash.

We identified the following safety issue during this ongoing investigation: insufficient action to ensure the proper use of school bus passenger seat belts.

As a result of this investigation, we issued safety recommendations to the following:

- State of Texas
- Leander Independent School District
- National Association for Pupil Transportation
- National School Transportation Association
- National Association of State Directors of Pupil Transportation Services

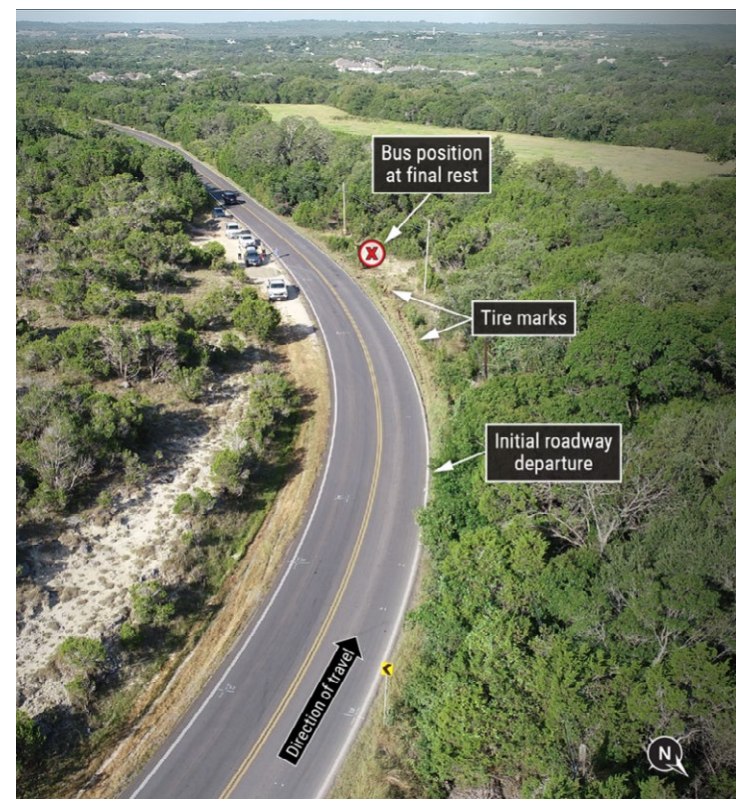


FIGURE 9. Overhead view of Nameless Road showing the location of the initial roadway departure and the final rest position of the bus.

- » Recommendations: 3 new (urgent)
- » Report Date: October 20, 2025

¹² All times stated are local time.



Multivehicle Collision and Postcrash Fire on Interstate 70

Etna, Ohio, November 14, 2023

On November 14, 2023, about 8:47 a.m., a combination vehicle was traveling west in the right lane of Interstate 70 (I-70) near Etna, Ohio. As the combination vehicle approached a traffic queue that had formed due to an earlier minor crash, the driver did not slow and crashed into the rear of the traffic queue. The resulting chain-reaction collision and postcrash fire involved five vehicles, including two passenger vehicles, a motorcoach, and a second combination vehicle. Immediately before the crash, the combination vehicle was traveling about 72 mph, and the other four vehicles were traveling between 3 and 15 mph. As a result of the crash, 6 occupants were fatally injured, 4 were seriously injured, and 37 sustained minor injuries. Fifteen occupants were uninjured.



FIGURE 10. Damage to right rear of motorcoach from crash and postcrash fire.

We determined that the probable cause of the crash was the combination vehicle driver's inattention and failure to respond, for unknown reasons, to the visibly slow-moving vehicles, including a motorcoach, at the end of the traffic queue. Contributing to the

crash was the lack of adequate strategies to monitor the development of the traffic queue on I-70 after a minor incident and to inform travelers of the traffic ahead. Also contributing to the crash was the lack of an in-vehicle driver monitoring system to return the combination vehicle driver's attention to the forward roadway. Contributing to the severity of the crash and occupant injuries were the speed differential between the combination vehicle and the slow-moving traffic queue and the postcrash fire.

We identified the following safety issues during this investigation:

- Inadequate guidance for traffic incident management to reduce the incidence of secondary crashes.
- Driver inattention and lack of standards for collision avoidance technology for heavy vehicles.
- Inadequate standards for postcrash fire protection on motorcoaches and insufficient school district processes for chartering motorcoach transportation.

As a result of this investigation, we issued safety recommendations to the following:

- Federal Highway Administration (FHWA)
- National Highway Traffic Safety Administration (NHTSA)
- Ohio Department of Transportation
- American Trucking Associations
- Owner-Operator Independent Drivers Association
- American Bus Association
- United Motorcoach Association
- Amalgamated Transit Union
- International Brotherhood of Teamsters
- Transport Workers Union of America
- Tuscarawas Valley Local School District

We also reiterated two previously issued safety recommendations to NHTSA and classified one of those safety recommendations.

- » **Recommendations:** 8 new, 1 reiterated, and 1 reiterated and classified
- » **Report Date:** September 3, 2025

Collision of Motorcoach with Combination Vehicles Parked Along Exit Ramp to Interstate 70 Rest Area

Highland, Illinois, July 12, 2023

On July 12, 2023, about 1:48 a.m., a motorcoach with 21 occupants was westbound on I-70 near Highland, Illinois. The motorcoach, owned and operated by Greyhound Lines, Inc., departed I-70 onto the rest area exit ramp, where it collided with three truck-tractor/semitrailer combination vehicles parked on the ramp's right shoulder. As a result, three motorcoach passengers were fatally injured. The driver and 11 passengers sustained injuries ranging from minor to serious. The three truck drivers, who were inside their vehicles at the time of the crash, were uninjured.

We determined that the probable cause of the crash was the motorcoach driver's departure from the travel lanes onto the shoulder of the exit ramp due to fatigue. Contributing to the motorcoach driver's fatigue was his irregular work-rest schedule and prolonged time awake. Contributing to the crash was the failure of Greyhound Lines, Inc., to mitigate the motorcoach driver's recurring unsafe driving behaviors. Also contributing to the crash were the three combination vehicles parked on the shoulder of the exit ramp due to the recurring lack of available truck parking. Contributing to the injury severity for some of the motorcoach passengers was their lack of seat belt use.

We identified the following safety issues during this investigation:

- Motorcoach driver fatigue.
- Deficient driver oversight by Greyhound Lines, Inc., including lack of a progressive discipline policy, lack of adequate record-keeping, and lack of policies for implementing driver monitoring systems.
- Insufficient federal guidance on safety management, driver coaching, and fatigue mitigation.
- Lack of seat belt use by the motorcoach passengers.
- Crash risk from lack of truck parking availability along the National Highway System.

As a result of this investigation, we issued safety recommendations to the following:

- US DOT
- Federal Motor Carrier Safety Administration (FMCSA)
- Greyhound Lines, Inc.
- National Coalition on Truck Parking
- American Bus Association
- United Motorcoach Association

We also reiterated a previously issued safety recommendation to the FMCSA, as well as reiterated and classified a previously issued safety recommendation to FMCSA.

- » Recommendations: 11 new, 1 reiterated, and 1 reiterated and classified
- » Report Date: May 20, 2025



FIGURE 11. Crash scene showing the motorcoach (Prevost) and three tractor-trailer combination vehicles (Mack, Kenworth, and Freightliner) positioned along the roadway following the collision.

BACKGROUND SOURCE: ILLINOIS STATE POLICE.



Ongoing Significant Highway Accident Investigations

At the close of 2025, the Office of Highway Safety had 21 open investigations involving significant safety issues. We are devoting significant resources to these investigations and anticipate producing a report upon the completion of each one.

TABLE 5. Ongoing Significant Highway Safety Investigations

Location	Event Date	Description	Fatalities	2026 Report Date
Standish, Maine	12/16/2025	Student fatally injured while boarding a school bus	1	
Alexandria, Virginia	12/15/2025	Multivehicle crash on US Route 1	1	
Rockland, Maine	11/21/2025	Student fatally injured while exiting a school bus	1	
Pembroke, New York	8/22/2025	Motorcoach rollover crash on Interstate 90	5	
Parrish, Florida	8/9/2025	Passenger car roadway departure and crash	2	
Charlotte, North Carolina	7/26/2025	Multivehicle crash on Interstate 485	6	
Terrell, Texas	6/28/2025	Multivehicle end-of-queue crash on Interstate 20	5	
Island Park, Idaho	5/1/2025	Pickup truck centerline crossover collision with 15-passenger van and postcrash fire	7	
Las Vegas, Nevada	4/28/2025	Collision between electric bicycle and pickup truck at intersection	1	
Eden, North Carolina	4/24/2025	Vehicle collision with workers in an intersection work zone	4	
Austin, Texas	3/13/2025	Multivehicle work zone collision on Interstate 35	5	
Green River, Wyoming	2/14/2025	Multivehicle crash and postcrash tunnel fire on Interstate 80	3	
Vicksburg, Mississippi	8/31/2024	Motorcoach roadway departure and overturn	7	
Swanton, Ohio	8/15/2024	Rear-end collision and subsequent multivehicle collisions near toll plaza on Interstate 80	2	
Belle Glade, Florida	8/5/2024	Sport utility vehicle roadway departure, overturn, and submersion	9	4/27/2026
Kenly, North Carolina	7/24/2024	Multivehicle work zone collision and postcrash fire on Interstate 95	5	
Rushville, Illinois	3/11/2024	School bus collision with combination vehicle and postcrash fire	5	3/6/2026
Millstone, West Virginia	3/4/2024	School bus roadway departure and overturn	0	4/6/2026
Philadelphia, Pennsylvania	3/3/2024	Rear-end collision between a sport utility vehicle operating with partial driving automation and two stationary passenger vehicles	2	3/31/2026
San Antonio, Texas	2/24/2024	Rear-end collision between a sport utility vehicle operating with partial driving automation and a stationary sport utility vehicle	1	3/31/2026



Safety Alert

During 2025, the Office of Highway Safety developed the following safety alert for issuance by the Board:

Cell Phone Use While Driving Kills » SA-100

This safety alert describes the problem of distracted driving as a result of cell phone use by citing crash statistics and research. It also highlights that texting while driving and handheld cell phone use while driving are prohibited in many states. The alert summarizes two NTSB crash investigations that highlight the dangers of using a cell phone while driving: a crash in Excelsior, Wisconsin, on May 12, 2023, and a crash in Belton, South Carolina, on December 17, 2019. In these crashes, the drivers received calls or text messages from family members, which led the drivers to use their phones and become distracted prior to the fatal crash.

We share information about what drivers, passengers, callers, texters, and others can do to prevent such tragedies. Finally, we provide a list of resources for additional information about the risks of distracted driving and state laws about cell phone use while driving.

Explore our highway safety alerts at
[nts.gov/advocacy/safety-alerts](https://www.nts.gov/advocacy/safety-alerts).

Safety Actions

During 2025, the Office of Highway Safety documented five safety actions. The following are summaries of select actions.

Baltimore, Maryland

As a result of our support of the investigation of the Francis Scott Key Bridge collapse near Baltimore, Maryland, we asked the FHWA's Office of Bridges and Structures to help identify bridges crossing waterways used by large oceangoing vessels and also to gather pertinent information on any navigation protection devices at each of those bridges. As a result, we identified bridges that lacked adequate protections and were thus at risk of a catastrophic collapse similar to that of the Francis Scott Key Bridge, and we issued urgent recommendations to the owners of those bridges in a joint report with the Office of Marine Safety on March 20, 2025.

Pembroke, New York

As a result of our investigation of a motorcoach crash in Pembroke, New York, we encouraged the state department of transportation's Commercial Vehicle Enforcement Bureau to require state police to inspect seat belts and seat belt accessibility during their roadside and terminal inspections. New York State has adopted a new policy to inspect seat belts and seat belt accessibility during roadside inspections for buses manufactured in the year 2016 and later.

Rushville, Illinois

As a result of our investigation into a school bus crash in Rushville, Illinois, we met with the director of the state board of education and encouraged the board to review its statewide training policies to clarify that cell phone use while driving is against the law. The school district also created a new driver handbook, which includes a cell phone use policy, that all school bus drivers must review and acknowledge before being permitted to drive.

Other Significant Achievements

Investigative Training

In September, selected investigators completed SAE International's Tire Forensics and Markings Course to enhance technical knowledge about tires, tire mark characteristics essential for crash investigation and reconstruction, and tire failure modes and their potential causes.

Technical Support for the Francis Scott Key Bridge Collapse Investigation

Our civil engineer provided technical support to Office of Marine Safety's reports (*Contact of Containership Dali with Francis Scott Key Bridge and Subsequent Bridge Collapse; Safeguarding Bridges from Vessel Strikes: Need for Vulnerability Assessment and Risk Reduction Strategies*) on the March 26, 2024, collapse of the Francis Scott Key Bridge near Baltimore, Maryland.

Bridge Collapses and Other Infrastructure Failures Page

In December, we released a safety issues page to highlight the NTSB's investigations of bridges and other infrastructure failures over the years, safety issues we identified, and the safety recommendations we issued. Notably, we highlighted the lessons learned from the NTSB's investigation into the Francis Scott Key Bridge collapse, the associated safety recommendations issued to safeguard bridges from vessel strikes, and a summary of bridge owners' responses to the urgent safety recommendations.



Office of Marine Safety

TABLE 6. Office of Marine Safety Statistics

Recommendations Issued	29
Recommendations Closed in an Acceptable Status	16
Recommendations Closed in an Unacceptable Status	1
Board-Adopted Investigation Reports	4
Delegated Investigation Reports	43
Safety Alert	1
Safety Actions	13
Investigation Launches	28
International Accident Launches	15
Outreach	8

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 events of a recurring nature.

The US Coast Guard conducts preliminary investigations of all marine accidents and notifies the NTSB when an event 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.¹³
- » A serious threat, as determined by the commandant of the US Coast Guard and concurred with by the NTSB chairman, to life, property, or the environment by hazardous materials.

The NTSB's investigation of accidents involving both domestic and foreign-registered vessels promotes marine safety worldwide. The office's international investigations include accidents 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

¹³ On October 1, 2025, the NTSB began operating under a \$2 million property damage threshold for major marine casualties, cited in [46 U.S.C. section 6101](#). The US Coast Guard is in the process of updating [49 CFR section 850.5](#).

Standards and Recommended Practices for a Safety Investigation Into a Marine Casualty or Marine Incident, the office also participates with the US Coast Guard as a substantially interested state in investigations of serious marine casualties involving foreign-flagged vessels in international waters. The office also reviews US administration position papers related to marine investigations and participates in select IMO subcommittee meetings.

As part of our international program, the office coordinates with other US and foreign agencies to stay aligned with IMO conventions. We also cooperate with marine accident investigation organizations worldwide through annual meetings held both virtually and in person, including the Marine Accident Investigators' International Forum (MAIIF), which has status as a nongovernmental organization with the IMO, European MAIIF, and MAIIF Americas. MAIIF monitors trends and developments in marine casualty investigations and prevention.

The NTSB is the only federal agency that conducts independent, transparent investigations of marine accidents to determine their probable cause. These investigations lead to safety recommendations that help prevent similar accidents in the future. The independence and thoroughness of these investigations build trust in marine transportation and provide policymakers with objective, unbiased information.

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

Investigation Reports

During 2025, the Office of Marine Safety issued a total of 47 investigation reports; 4 of these reports involved safety issues that led to the issuance of 29 new safety recommendations, including 4 safety recommendations (Highway Safety) that were designated urgent.

Below are summaries of some of the marine investigation reports and the urgent safety recommendation report completed during this period.

Contact of Containership *Dali* with the Francis Scott Key Bridge and Subsequent Bridge Collapse

Baltimore, Maryland, April 26, 2024

On March 26, 2024, about 1:30 a.m., the 984-foot-long Singapore-flagged cargo vessel (containership) *Dali* was transiting out of Baltimore Harbor in Baltimore, Maryland, when it experienced losses of electrical power, propulsion, and steering and struck Pier 17, the southern pier that supported the central span of the Francis Scott Key Bridge (Key Bridge).¹⁴ A substantial portion of the bridge subsequently collapsed into the river, and portions of the pier, deck, and truss spans collapsed onto the vessel's bow and forwardmost container bays. A seven-person road maintenance crew and one inspector were on the bridge when the vessel struck it. Six of the highway workers died as a result of the bridge collapse. One highway worker survived the collapse with serious injuries, and the inspector escaped unharmed. One of the 23 people aboard the *Dali* sustained a minor injury. Damage to the *Dali* exceeded \$18 million. Cargo damages were undetermined.

We determined that the probable cause of the contact of the containership *Dali* with the Francis Scott Key Bridge was a loss of electrical power (blackout), due to a loose signal wire connection to a terminal block stemming from the improper installation of wire-label banding, resulting in the vessel's loss of propulsion and steering close to the bridge. Contributing to the crew's inability to recover

propulsion from the loss of electrical power was the limited time available due to the *Dali*'s proximity to the bridge. Contributing to the collapse of the Key Bridge and the loss of life was the lack of countermeasures to reduce the bridge's vulnerability to collapse due to impact by oceangoing vessels, which could have been implemented if a vulnerability assessment had been conducted by the Maryland Transportation Authority as recommended by the American Association of State Highway and Transportation Officials (AASHTO). Also contributing to the loss of life was the lack of effective and immediate communications to notify the highway workers to evacuate the bridge.

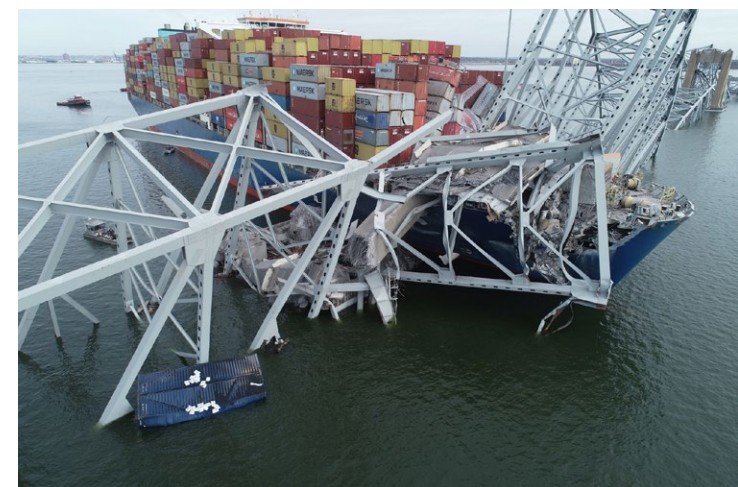


FIGURE 12. The containership *Dali* with portions of the collapsed Key Bridge across its forward deck.

¹⁴ All times stated are local time.



We identified the following safety issues during this investigation:

- Improper placement of wire-label banding on terminal connection wires, preventing their secure connection into terminal blocks.
- Lack of specific guidance for inspecting terminal connections.
- Configuration of machinery and electrical systems needed to prevent loss of propulsion and recover steering and vessel electrical power following a blackout.
- Lack of effective means of emergency communications to warn motorists and notify highway workers to evacuate a bridge during an emergency.
- Inadequate standards for marine safety management systems.
- Inadequate standards for manufacturer-provided voyage data recorder software.
- Increasing vessel sizes and traffic density in US ports.
- Vulnerability of bridges over navigable waterways to strikes by large oceangoing vessels.

As a result of this investigation, we issued safety recommendations to the following:

- US Coast Guard
- FHWA
- AASHTO
- Harbor Safety Committee National Steering Team
- Nippon Kaiji Kyokai
- American National Standards Institute
- American National Standards Institute Accredited Standards Committee on Safety in Construction and Demolitions Operations A10
- HD Hyundai Heavy Industries
- Synergy Marine Pte. Ltd
- WAGO Corporation
- Multiple bridge owners

» **Recommendations: 18 new (14 Marine Safety; 4 Highway Safety)**
 » **Report Date: November 18, 2025**

Hull Failure and Implosion of Submersible *Titan*

North Atlantic Ocean, near Cape Cod, Massachusetts, June 18, 2023

On June 18, 2023, about 10:47 a.m., while diving to the wreck of the ocean liner *Titanic* in the North Atlantic Ocean, about 372 miles southeast of St. John's, Newfoundland, and Labrador, Canada, the submersible *Titan*'s pressure hull failed and the vessel imploded. All five people on board the vessel died. The *Titan*, owned and manufactured by OceanGate, was a total loss; according to a 2023 customs declaration, the submersible's value, combined with its launch and recovery system, was estimated at CAD\$5.6 million (approximately USD\$4.2 million).



FIGURE 13. Submersible *Titan* descending on unknown date. SOURCE: OCEANGATE.

We determined that the probable cause of the hull failure and implosion of the submersible *Titan* was OceanGate's inadequate engineering process, which failed to establish the actual strength and durability of the pressure vessel. Contributing to the hull failure and implosion were US and international voluntary guidance and US small passenger vessel regulations that were insufficient to ensure OceanGate adhered to established industry standards. Also contributing was OceanGate's flawed analysis of its pressure vessel monitoring system data, which led to its continued operation of a damaged pressure vessel.

We identified the following safety issues during this investigation:

- OceanGate's inadequate engineering process for the *Titan*.
- OceanGate's flawed analysis of *Titan* strain gage and acoustic emission data as a measure of pressure hull integrity.
- OceanGate's failure to notify search-and-rescue assets about its planned expedition.
- Insufficient voluntary guidance and US regulations for pressure vessel for human occupancy.

As a result of this investigation, we issued safety recommendations to the US Coast Guard.

» **Recommendations: 4 new**
 » **Report Date: October 2, 2025**

Fire aboard Roll-on/Roll-off Container Vessel *Grande Costa D'Avorio*
Newark, New Jersey, July 5, 2023

On July 5, 2023, about 9:00 p.m., the roll-on/roll-off container vessel *Grande Costa D'Avorio* was docked at Port Newark, New Jersey, when a passenger vehicle being used to push nonrunning cargo vehicles onboard the vessel caught fire in an interior garage deck. Vessel crewmembers attempted to put out the fire using portable fire extinguishers and the ship's fixed gas (carbon dioxide) fire extinguishing system. The crew's attempts were unsuccessful and land-based firefighters were called to respond. While attempting to put out the fire, two of the land-based firefighters were trapped inside one of the burning garage spaces and died in the fire. Six additional emergency responders were injured during the firefighting and rescue operations. The damage to the vessel was estimated to be over \$23 million.

We determined that the probable cause of the fire aboard the *Grande Costa D'Avorio* was the use of a passenger vehicle as a pusher vehicle in an industrial application for which it was not intended, which led to the vehicle's transmission fluid overheating, boiling over, and igniting on a hot engine surface. Contributing

to the fire's duration and severity was the absence of operating controls on the outside of one of the vessel's fire boundary garage doors, which prevented the crew from safely closing the door and directly led to the ineffectiveness of the fixed gas fire extinguishing system. Also contributing to the severity of the fire was the Newark Fire Division's lack of marine vessel firefighting training, which resulted in an ineffective response and led to the firefighter casualties.



FIGURE 14. A fire boat directing water onto the *Grande Costa D'Avorio*.

SOURCE: BUREAU OF ALCOHOL, TOBACCO, FIREARMS AND EXPLOSIVES

We identified the following safety issues during this investigation:

- Inappropriate use of a passenger vehicle as a pusher vehicle.
- Absence of operating controls for the vessel's fire boundary garage doors outside of the burning space.
- Land-based firefighters' lack of training in how to safely fight shipboard fires.

As a result of this investigation, we issued safety recommendations to the following:

- US Coast Guard
- Occupational Safety and Health Administration
- Newark Fire Division
- Port Authority of New York and New Jersey
- RINA Services, S.p.A.
- American Association of Port Authorities
- International Association of Fire Fighters
- International Association of Fire Chiefs
- National Volunteer Fire Council
- Grimaldi Deep Sea
- Ports America
- American Maritime Services

» Recommendations: 11 new
» Report Date: April 15, 2025

Safeguarding Bridges from Vessel Strikes: Need for Vulnerability Assessment and Risk Reduction Strategies Baltimore, Maryland, March 26, 2024

On March 18, 2025, approximately 1 year into our investigation of the *Dali* collision with the Key Bridge, we issued an interim report addressing the urgent need for vulnerability assessments and risk-reduction strategies to safeguard bridges from vessel strikes. We provided information to urge owners of bridges over navigable waterways frequented by oceangoing vessels, the FHWA, the US Coast Guard, and the US Army Corps of Engineers to act on the safety recommendations in the report.

We completed a vulnerability assessment—a mathematical risk model calculated using data on bridge/span geometry and design, pier protection and lateral capacity, the characteristics of vessel traffic transiting the main navigation channel, waterway characteristics, and other factors—to determine how susceptible the Key Bridge was to collapse from a vessel collision and found that it was above the acceptable level of risk established by AASHTO for such a collision. We also identified 68 other bridges frequented by oceangoing vessels that

were constructed before the AASHTO guidance was issued in 1991 that have not undergone a vulnerability assessment based on recent vessel traffic, and, therefore, have an unknown level of risk of collapse from a vessel collision. In this interim report, we urged the FHWA, US Coast Guard, and US Army Corps of Engineers to form a dedicated, interdisciplinary team that provides bridge owners guidance and assistance on evaluating and reducing the risk of a bridge collapse from a vessel collision. We also urged the owners of the 68 identified bridges to calculate whether the probability of a bridge collapse from a vessel collision is above the acceptable risk threshold established by AASHTO. If so, we urged them to develop and implement a risk-reduction plan that includes input from the interdisciplinary team, identifies short- and long-term strategies to reduce risk, and considers the safety of the vessels and structures in the waterways.

As a result of this investigation, we issued urgent safety recommendations to the FHWA, US Coast Guard, US Army Corps of Engineers, and 30 owners of the 68 bridges over navigable waterways frequented by oceangoing vessels.



FIGURE 15. The Francis Scott Key Bridge in 2004 showing piers 16 through 19 and the physical features—dolphins and fendering system—designed to protect the bridge from vessel traffic.

BACKGROUND SOURCE: MARYLAND TRANSPORTATION AUTHORITY.

» Recommendations: 4 new (Highway Safety, urgent)
» Report Date: March 18, 2025



Ongoing Significant Marine Investigations

At the close of 2025, the Office of Marine Safety had five open investigations involving significant safety issues. We are devoting significant resources to these investigations and anticipate producing a report upon completion of each one.

TABLE 7. Ongoing Significant Marine Investigations

Location	Event Date	Description	Fatalities	2026 Report Date
Lake Tahoe, California	6/21/2025	Capsizing of recreational vessel <i>Over the Moon</i>	8	
New York, New York	5/17/2025	Contact of tall ship <i>ARM Cuauhtémoc BE 01</i> with the Brooklyn Bridge	2	
Port Said, Egypt	2/12/2025	Collision of US Navy aircraft carrier <i>USS Harry S Truman</i> and bulk carrier <i>Besiktas M</i>	0	
Juneau, Alaska	12/1/2024	Capsizing of fishing vessel <i>Wind Walker</i>	5	
Luna Pier, Michigan	8/10/2024	Collision between recreational vessel and uncrewed National Oceanic and Atmospheric Administration (NOAA) surface vessel	0	
Baytown, Texas	7/19/2024	Collision between cargo ship <i>Yangze 7</i> and towing vessel <i>Miss Peggy</i>	1	7/22/2026

International Investigations

During 2025, the Office of Marine Safety assisted with 15 international investigations. The following investigations involved US-flagged or public vessels in international and foreign waters, or those in which we participated with the US Coast Guard as a substantially interested state.

Collision of Containership *Solong* with Tanker *Stena Immaculate*
Withernsea, United Kingdom, March 10, 2025

On March 10, 2025, the 586-foot-long US-flagged tanker *Stena Immaculate*, with a cargo of A1 jet fuel, was anchored about 13 nautical miles off the coast of Withernsea, United Kingdom. About 9:48 a.m., the 461-foot-long Portugal-flagged containership *Solong* collided with the anchored tanker. Both the *Stena Immaculate* and the *Solong* caught fire, and after attempting to fight the fire, the crews of the two vessels abandoned ship. One crewmember of the *Stena Immaculate* sustained minor injuries. One crewmember of the *Solong* remains missing and is presumed fatally injured. No pollution was reported. Damages are expected to exceed \$500,000. The US Coast Guard has declared this incident a major

marine casualty. Under the IMO Code of International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code), the flag and coastal state have authority to investigate. As the coastal state where the casualty occurred, the United Kingdom’s Marine Accident Investigation Branch (MAIB) will produce a report of the investigation. Following the practices in the IMO Casualty Investigation Code, the NTSB and the US Coast Guard will have the opportunity to review and provide comments on the draft MAIB report. The MAIB will consider any suggested recommendations from the US Coast Guard and the NTSB. We will post the final MAIB report in our docket. For this investigation, the US Coast Guard is the lead investigative agency for the United States. We will produce an investigation close-out memorandum, which can be found in our docket.

Collision of US Navy Aircraft Carrier *USS Harry S. Truman* and Bulk Carrier *Besiktas M*
Port Said, Egypt, February 12, 2025

On February 12, 2025, about 11:46 p.m., the US Navy aircraft carrier *USS Harry S. Truman* and the Panama-flagged bulk carrier *Besiktas-M* collided near Port Said, Egypt, in the Mediterranean Sea. There were no injuries, and no pollution was reported. Both vessels sustained damages above the waterline. Damages are estimated to exceed \$75,000. The casualty was classified by the US Coast Guard as a public/nonpublic casualty. The US Coast Guard conducted the initial investigation aboard the vessels on behalf of the NTSB. The NTSB will continue to investigate and determine the probable cause.



Safety Alert

The Office of Marine Safety developed the following safety alert for issuance by the Board in 2025.

Land-Based Firefighters: Know the Risks and Challenges Posed by In-Port Vessel Fires » SA-101

As a result of our investigation into the 2023 fatal fire on the *Grande Costa D'Avorio* in Newark, New Jersey, we urged greater awareness about the risks posed by in-port vessel fires and training for land-based firefighters who may be called to fight fires aboard vessels in local ports.

Explore our marine safety alerts at
[ntsb.gov/advocacy/safety-alerts](https://www.ntsb.gov/advocacy/safety-alerts).

Safety Actions

During 2025, the Office of Marine Safety documented 13 safety actions. The following are summaries of a sampling of these actions.

Karluk, Alaska

As a result of our investigation into the August 7, 2022, grounding and capsizing of the *F/V Challenger* near Karluk, Alaska, we found that the vessel struck an uncharted rock that is visible only during extremely low tide. Leaving this hazard uncharted posed a continued risk to other fishing vessels operating in the area. Through NOAA's online ASSIST system—used to collect customer feedback on nautical charts—and continued coordination with NOAA's regional navigation manager, NOAA added the previously uncharted rock to its electronic nautical chart for the region.

Port Newark, New Jersey

As a result of our investigation into the July 5, 2023, fire aboard the roll-on/roll-off container vessel *Grande Costa D'Avorio* at Port Newark, New Jersey, we determined that the casualty began when a passenger "pusher vehicle" used to move nonrunning cargo vehicles caught fire inside an enclosed garage deck. The fire spread throughout the vessel, resulting in the deaths of two firefighters. Before the accident, used vehicle loading operations at the Ports of New York and New Jersey were being conducted without formal requirements from the Port Authority. Following the casualty and the safety issues identified during our investigation, the Port Authority of New York and New Jersey implemented new "Requirements for the Handling of Previously Owned Vehicles." Among these requirements, all nonrunning vehicles must now be loaded using equipment that is specifically designed or approved to lift or tow vehicles; equipped with a functional, properly maintained fire extinguisher; and in safe operating condition.

As a result of the investigation, the use of passenger pusher vehicles is no longer permitted.

Houston, Texas

As a result of our investigation into the July 23, 2022, accident involving the cargo ship *Thorco Basilisk* at the Greensport Terminal on the Houston Ship Channel, we determined that a shipboard crane's hoisting wire rope failed while off-loading a wind turbine component, causing the load to fall onto the vessel's tween deck. During the investigation, we found that the operating company, Blue Squared Ship Management, did not include a cargo crane hoisting wire replacement task in its planned maintenance system. After the casualty, the company added a maintenance requirement to replace the hoisting wire every 5 years—an interval more frequent than the vessel's classification society, which required replacement every 10 years.



Other Significant Achievements

Congressional and Interagency Briefings

On December 9, 2025, Chairwoman Jennifer Homendy, along with the Office of Marine Safety's investigator-in-charge, presented to the Maryland congressional delegation the findings and probable cause of the NTSB's investigation into the contact of the containership *Dali* with the Francis Scott Key Bridge, which resulted in the bridge's collapse and killed six highway workers.

Safety Recommendations Adopted

• **Safety Recommendations M-24-1, M-24-2 and M-24-3: US Coast Guard Reauthorization Act Requires Improvements**

In December 2025, in response to recommendations made in the NTSB's investigation into the October 2021 anchor strike of an underwater pipeline resulting in a crude oil release in San Pedro Bay, off the coast of Huntington Beach, California, legislators included provisions in the US Coast Guard reauthorization act, which has been combined with the National Defense Authorization Act, regarding improving vessel traffic service monitoring. Specifically, section 7323 requires the commandant, within 1 year of enactment, to implement the November 2021 proposed plan of the Vessel Traffic Service Los Angeles-Long Beach for restructuring the federal anchorages in San Pedro Bay, as described in our report, *Anchor Strike of Underwater Pipeline and Eventual Crude Oil Release*. The commandant must also consult with vessel monitoring system providers to add audible and visual alarms to vessel monitoring systems to alert the watchstander when an anchored vessel is encroaching on a pipeline. The reauthorization further requires the commandant to develop procedures for all vessel traffic services to notify pipeline and utility operators following potential incursions on submerged pipelines within the vessel traffic service area of responsibility.

• **Safety Recommendations M-24-8 and M-24-9: American Bureau of Shipping Takes Action**

In November 2025, in response to recommendations made following our investigation into the December 2022 engine room fire aboard the passenger ferry *Sandy Ground* in New York Harbor, New York, the American Bureau of Shipping (ABS) took action to update its fuel oil piping rules used to class vessels to prevent overpressurization of diesel engine fuel oil systems. Specifically, the ABS reported it was in the process of updating both its Rules for Building and Classing Marine Vessels (Marine Vessel Rules) and its Rules for Building and Classing Vessels on Rivers and Intracoastal Waterways (River Rules) to address Safety Recommendation M-24-8, and agreed to propose that the International Association of Classification Societies (IACS) advise its members to make similar revisions in its respective class rules. As a result, IACS has published Recommendation 188, "Engine Fuel Oil Systems Supplied by Positive Displacement Fuel Oil Pumps," which provides guidance to IACS members reviewing fuel systems.

• **Safety Recommendation M-24-10: Passenger Vessel Association Takes Action**

In April 2025, in response to recommendations made in the NTSB's investigation into the March 2023 fire on the passenger vessel *Spirit of Boston* in Boston Harbor, Massachusetts, the Passenger Vessel Association shared with its members the circumstances of the accident, including the importance of having at least one marine crewmember on board a vessel with hospitality staff or noncrew personnel, having procedures for properly handling open-flame devices, and implementing safety management systems.

Annual Publication:

2024 Safer Seas Digest

The 2024 *Safer Seas Digest* was released in May 2025. 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 2024 edition included the following:

- Implementing SMSs
- Maintaining alertness and vigilance
- Accounting for hydrodynamic forces
- Mitigating fire risks
- Installing and testing bilge alarms
- Ensuring watertight integrity
- Preventing hull corrosion
- Maintaining unimpeded return flow in diesel engine fuel oil return systems



FIGURE 16. 2024 *Safer Seas Digest* cover.



Office of Railroad, Pipeline and Hazardous Materials Investigations

TABLE 8. Office of Railroad, Pipeline and Hazardous Materials Investigations Safety Statistics

Recommendations Issued	32
Recommendations Closed in an Acceptable Status	24
Urgent Recommendations Issued	3
Urgent Recommendations Closed in an Acceptable Status	2
Board-Adopted Investigation Reports	3
Delegated Investigation Reports	18
Safety Alerts and Videos	3
Safety Actions	18
Pipeline Investigation Launches	7
Rail Investigation Launches	24
Hazardous Materials Investigation Launches	1
Outreach	21

The Office of Railroad, Pipeline and Hazardous Materials Investigations investigates accidents involving railroads, pipelines, and hazardous materials, and evaluates the associated emergency response. Based on the findings of these 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 NTSB may also issue safety alerts to industry.

The Office of Railroad, Pipeline and Hazardous Materials Investigations comprises four divisions: Railroad, Pipeline and Hazardous Materials, System Safety, and Report Development.



Investigation Reports

During 2025, the Office of Railroad, Pipeline and Hazardous Materials Investigations issued 21 investigation reports; 3 of these reports involved safety issues that led to the issuance of 29 new safety recommendations. The office issued three urgent safety recommendations as part of its ongoing investigation into the February 6, 2025, Southeastern Pennsylvania Transportation Authority (SEPTA) train fire and passenger evacuation.

Below are summaries of three investigation reports and the urgent safety recommendation report completed during this period.

Eliminate Fire Risk in the Southeastern Pennsylvania Transportation Authority Silverliner IV Fleet

Ridley Park, Pennsylvania, February 6, 2025

On February 6, 2025, about 5:56 p.m. the lead railcar of SEPTA train 3223 caught fire as the train departed Crum Lynne Station in Ridley Park, Pennsylvania. Four passengers reported minor injuries, and the railcar was destroyed.¹⁵ Preliminary findings indicate that the fire began with an electrical defect in one of the train's Silverliner IV railcars. Four additional fires have since occurred involving SEPTA's Silverliner IV fleet, including two after SEPTA's initial efforts at mitigating fire risks.

As a result of the collision, 12 loaded hopper railcars and 2 locomotives from the southbound train derailed, and 1 empty gondola railcar and 2 locomotives from

the parked train derailed. Two crewmembers from the southbound train were seriously injured. UP estimated damages to equipment and track infrastructure to be about \$4.9 million.

We identified the following safety issues during this ongoing investigation:

- Outdated Silverline IV railcar design.
- Unsafe SEPTA maintenance and operating practices.
- Unsuccessful identification of electrical faults and risk mitigation strategies.

As a result of this investigation, we issued urgent safety recommendations to SEPTA.

- » Recommendations: 3 new (urgent)
- » Report Date: September 30, 2025

Middlesex Corporation Employee Fatality on Housatonic Railroad Company-Operated Line

Great Barrington, Massachusetts, August 4, 2023

On August 4, 2023, about 10:05 a.m., the operator of a roadway maintenance machine (RMM) struck and killed a Middlesex Corporation employee performing track work on the Berkshire Line in Great Barrington, Massachusetts. The RMM involved in the accident was a tie drilling machine, which is commonly referred to as a driller. About an hour before the accident, the driller experienced a mechanical issue that required the driller operator to remove the driller from the work location for repairs. The driller operator was part of a four-member work group of Middlesex employees; one of those employees accompanied him when he departed the job location on the driller, while the other two employees continued working (on foot) at the job location. After repairs had been made to the driller, the driller operator traveled about 1.4 miles in reverse along the Berkshire Line back to the job location to resume work. While conducting this reverse movement, the driller operator did not see that his two fellow Middlesex employees, who had remained working at the job location, were on the same track as the RMM; subsequently, the driller struck and killed one of the employees.

We determined that the probable cause of the roadway maintenance worker fatality was the Middlesex Corporation driller operator's failure to actively observe that the driller's path of travel was clear.

Contributing to the accident were the following:

- The Housatonic Railroad Company roadway worker-in-charge's (RWIC's) lack of awareness of daily tasking, which prevented him from conducting an adequate job briefing for all tasks being performed.
- The RWIC's lack of awareness of on-track RMM movements without his knowledge or authorization.



FIGURE 17. From left: Exterior and interior views of fire damage to a SEPTA Silverliner IV railcar. SOURCE (LEFT): SEPTA.

¹⁵ All times stated are local time.



- The absence of a required second RWIC for work group 2.
- The lack of communication between the RWIC and work group 2 about their work activities prior to the accident, which resulted in his lack of awareness that a second work group or work site existed.

We identified the following safety issues during this investigation:

- The unsafe operation of the tie drilling machine.
- The need for RMMs to be equipped with new technologies such as collision warning and avoidance systems to further advance on-track safety and eliminate human error.
- The uncoordinated and inadequate communication between the Housatonic Railroad Company and Middlesex failed to identify repeated unsafe actions of Housatonic Railroad Company

and Middlesex employees.

- The Federal Railroad Administration's (FRA's) lack of annual evaluations to assess which railroads have inadequate safety performance and, therefore, are required to establish risk-reduction programs.

As a result of this investigation, we issued safety recommendations to the FRA, all Class I railroads, the Housatonic Railroad Company, Middlesex Corporation, the American Short Line and Regional Railroad Association, and the National Railroad Construction and Maintenance Association. We reiterated a safety recommendation to the FRA. We also classified a previously issued safety recommendation in this report.

- » Recommendations: 6 new, 1 reiterated, 1 classified
- » Report Date: August 4, 2025

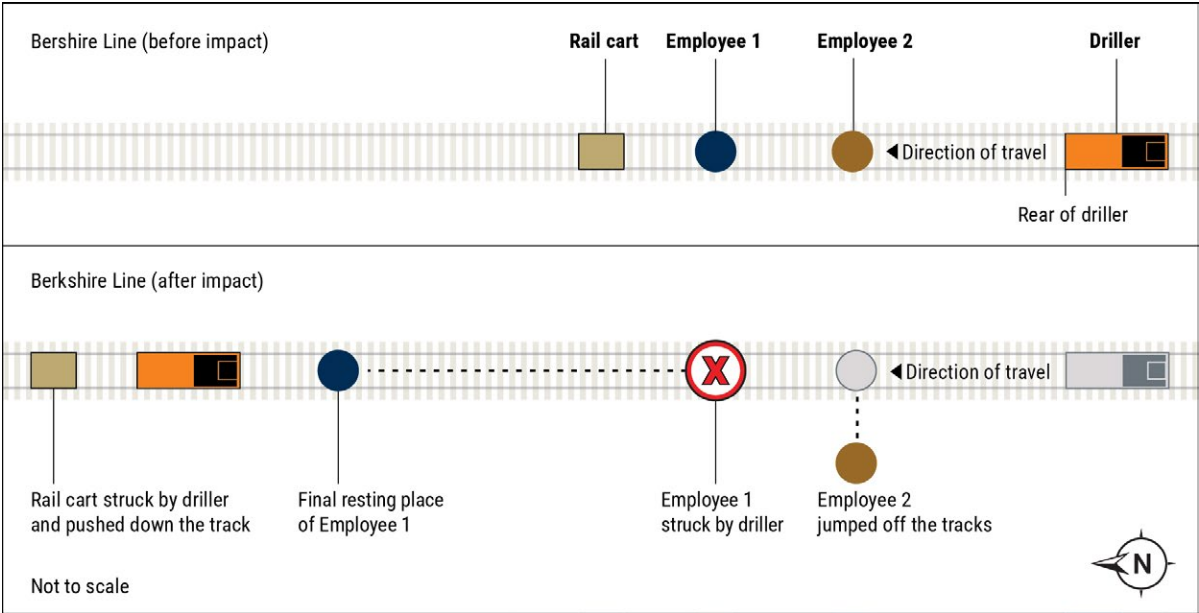


FIGURE 18. Diagram of the Great Barrington accident sequence.

**CSX Transportation Conductor Trainee Fatality
Baltimore, Maryland, June 26, 2023**

On June 26, 2023, about 8:06 p.m., a CSX Transportation conductor trainee in phase II of conductor training was killed when he fell from an intermodal railcar during a shoving movement and was struck by the train he was riding at Seagirt Marine Terminal in Baltimore, Maryland.

We determined that the probable cause of the accident was the conductor trainee, who CSX Transportation sent into the field without performance-based verification that he could safely ride an intermodal railcar, riding the intermodal railcar in an unstable position that left him vulnerable to slipping and falling into the train's path.



FIGURE 19. Investigators reenacting the crewmembers' riding stances on the accident railcar.

Contributing to the accident were the following:

- Deficient CSX Transportation operating rules, which did not provide adequate protection against the risk of slipping.
- Deficient CSX Transportation training, which did not provide sufficient training on how to ride intermodal railcars.
- The lack of research-based federal guidance for the safe use of railcar safety appliances when riding equipment.

We identified the following safety issues during this investigation:

- Deficient CSX Transportation operating rules for riding equipment, which did not provide adequate protection against the risk of slipping.
- Deficient CSX Transportation training on how to ride intermodal railcars.
- The lack of research-based federal standards for the safe use of railcar safety appliances when riding equipment.

As a result of this investigation, we issued safety recommendations to the FRA, CSX Transportation, and all Class I railroads.

- » Recommendations: 5 new
- » Report Date: June 25, 2025

UGI Corporation Natural Gas-Fueled Explosion and Fire

West Reading, Pennsylvania, March 23, 2023

On March 24, 2023, around 4:55 p.m., natural gas, which was being transported through a UGI Corporation-owned pipeline, leaked into and accumulated in the basement of an R.M. Palmer Company candy factory building in West Reading, Pennsylvania. The gas ignited, causing an explosion and fire that killed 7 Palmer employees, injured 10 people, and destroyed the building. Another Palmer building, as well as an adjacent apartment building, were severely damaged. Three families were displaced from the apartment building.

We determined that the probable cause of the explosion was degradation of a retired 1982 Aldyl A polyethylene service tee with a Delrin polyacetal insert that allowed natural gas to leak and migrate underground into the R.M. Palmer Company candy factory buildings, where it was ignited by an unknown source.

Contributing to the degradation of the service tee and insert were significantly elevated ground temperatures from steam escaping R.M. Palmer Company's corroded underground steam pipe, located near the service tee,

that had been unmarked and cracked. Contributing to the steam pipe crack was soil movement and R.M. Palmer Company's lack of awareness of the pipe's corroded state. Contributing to the natural gas leak was UGI Corporation's lack of awareness of the nearby steam pipe, which led to an incomplete integrity management program evaluation that did not consider or manage the risk posed by the steam pipe.

Contributing to the accident's severity was R.M. Palmer Company's insufficient emergency response procedures and training of its employees, who did not understand the hazard and did not evacuate the buildings before the explosion.

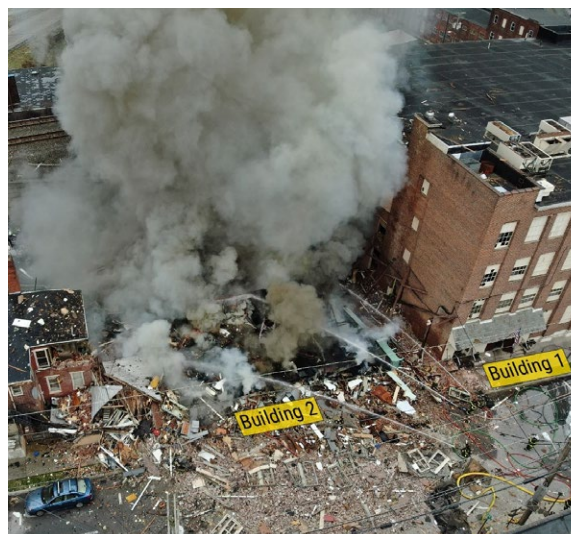


FIGURE 20. R.M. Palmer Company building and adjacent apartment building after the explosion.

BACKGROUND SOURCE: WESTERN BERKS FIRE DEPARTMENT.

We identified the following safety issues during this investigation:

- Degradation of a retired service tee.
- Insufficient consideration of threats to pipeline integrity.
- The risk associated with unmarked private pipeline assets crossing public rights-of-way (for example, a public street).
- Delayed evacuation of Building 2 despite detection

of natural gas.

- Natural gas safety messaging that may not reach certain members of the public.
- Insufficient guidance on gas leak emergency procedures.
- Absence of natural gas detection alarms in commercial buildings.
- Insufficient accessibility of gas distribution line valves.

As a result of this investigation, we issued safety recommendations to:

- Pipeline and Hazardous Materials Safety Administration (PHMSA)
- Occupational Safety and Health Administration
- 50 states, along with the Commonwealth of Puerto Rico and the District of Columbia
- Pennsylvania Public Utility Commission
- American Gas Association
- American Petroleum Institute
- Gas Piping Technology Committee
- Common Ground Alliance
- International Code Council
- National Fire Protection Association
- UGI Corporation
- R.M. Palmer Company

We reiterated a safety recommendation to PHMSA.

- » Recommendations: 18 new, 1 reiterated
- » Report Date: March 18, 2025



Ongoing Significant Railroad, Pipeline, or Hazardous Materials Investigations

At the close of 2025, the Office of Railroad, Pipeline and Hazardous Materials Investigations had 39 open investigations involving significant safety issues. We are devoting significant resources to these investigations and anticipate producing a report upon completion of each one.

TABLE 9. Ongoing Significant Railroad, Pipeline or Hazardous Materials Investigations

Location	Event Date	Description	Fatalities	2026 Report Date
Bristol, Pennsylvania (Pipeline)	12/23/2025	Explosion of natural gas resulting in destruction of nursing home	3	
Montclair, New Jersey (Transit)	12/19/2025	Collision of New Jersey Transit trains	0	
Calera, Alabama (Railroad)	12/13/2025	Derailment of train during a switching operation resulting in conductor fatality	1	
Hayward, California (Pipeline)	12/11/2025	Explosion of natural gas resulting in destruction of residence and fire	0	
Ontario, California (Railroad)	12/03/2025	Collision of train and motor vehicle at highway-railroad grade crossing resulting in conductor fatality during a shoving movement	1	
Weatherford, Oklahoma (Hazardous Materials)	11/12/2025	Leak of hazardous material from cargo tank	0	
Sidney, Nebraska (Pipeline)	11/11/2025	Release and ignition of natural gas from underground storage well	1	
Elgin, Illinois (Railroad)	10/23/2025	Collision involving a train and pickup truck and trailer at highway-railroad grade crossing	1	
Columbus, Montana (Railroad)	10/19/2025	Conductor struck by train and fatality injured	1	
Springfield, Pennsylvania (Commuter Rail)	9/25/2025	Separation of pantograph from trolley car	0	
Cheyenne, Wyoming (Pipeline)	9/20/2025	Explosion of natural gas and fire impacting a train	0	
Denver, Colorado (Railroad)	8/5/2025	Raking collision between moving train and standing railcars resulting in conductor serious injury	0	
Jersey City, New Jersey (Commuter Rail)	8/4/2025	Arcing incident and fire involving a train	0	
Dallas, Texas (Transit)	7/30/2025	Train contacting an overhead catenary wire, resulting in electrical arcing and fire	0	
Browns, Illinois (Railroad)	7/18/2025	Train derailment, collision, and subsequent hazardous materials release	0	
Sardis, Mississippi (Railroad)	7/6/2025	Train derailment and hazardous materials release	0	
Glendora, Mississippi (Railroad)	7/5/2025	Train derailment with hazardous materials release and subsequent fire	0	
Guthrie, Kentucky (Railroad)	6/26/2025	Conductor seriously injured during a railcar switching operation	0	4/2/2026
Lexington, Nebraska (Railroad)	6/25/2025	Conductor seriously injured while riding lead tank car during a shoving movement	0	6/22/2026
Fairfield, Alabama (Railroad)	6/16/2025	Employee (footboard yardmaster) fatally injured during switching operations	1	
Crestwood, Illinois (Pipeline)	6/12/2025	Explosion of natural gas resulting in destruction of residence and fire	1	
Nacogdoches, Texas (Railroad)	6/9/2025	Conductor fatally injured during switching operations	1	
Norristown, Pennsylvania (Commuter Rail)	5/11/2025	Collision of light rail vehicle with bumping post	0	4/22/2026



Location	Event Date	Description	Fatalities	2026 Report Date
Jersey City, New Jersey (Commuter Rail)	5/8/2025	Third rail fire	0	6/22/2026
Lexington, Missouri (Pipeline)	4/9/2025	Explosion of natural gas resulting in destruction of residence and fire	1	
Muscle Shoals, Alabama (Railroad)	4/9/2025	Conductor injury while performing switching operations	0	4/21/2026
Richmond, California (Railroad)	4/4/2025	Conductor fatality	1	6/9/2026
Stockton, California (Railroad)	3/11/2025	Employee injury during railcar rerailing operation	0	1/26/2026
Hutchinson, Kansas (Pipeline)	2/22/2025	Explosion of natural gas resulting in destruction of commercial building	0	
Somerville, Massachusetts (Transit)	2/9/2025	Collision of two light rail trains with derailment	0	
Ridley Park, Pennsylvania (Commuter Rail)	2/6/2025	Train fire and passenger evacuation	0	
Pecos, Texas (Railroad)	12/18/2024	Collision between train and tractor-trailer at a highway–railroad grade crossing	2	

Safety Alerts

During 2025, the Office of Railroad, Pipeline and Hazardous Materials Investigations developed the following safety alerts for issuance by the Board.

Unexpected Movement of Unsecured Equipment on Railroad Track: Know the Risk of Fouling the Track » SA-104

This safety alert derived from multiple investigations involving railroad employees who were seriously injured or killed when they entered the gauge of the track without first ensuring that all equipment on the track was stationary and properly secured against movement. The investigations described highlight the dangers posed by fouling the track near unsecured or inadequately secured equipment.

Shoving Movements: Avoid the Risks » SA-103

This safety alert derived from multiple investigations involving railroad conductors who were killed or injured when riding equipment during shoving movements. The investigations described highlight the dangers of riding trains during shoving movements, such as being struck by a highway motor vehicle at a grade crossing, falling into the path of a train, riding through a close clearance, or being caught between colliding trains.

Natural Gas Alarms Save Lives: Early Warning of Natural Gas Leaks Can Prevent Deaths and Injuries » SA-098

This safety alert was derived from a March 24, 2023, natural gas-fueled explosion and fire that occurred at an R.M. Palmer Company candy factory in West Reading, Pennsylvania. Our investigation found that pipeline safety would be enhanced by the installation of natural gas alarms in commercial and residential buildings. The safety alert describes additional accident scenarios in which the installation of natural gas alarms could have reduced the risk of natural gas explosions and fires.

Safety Actions

During 2025, the Office of Railroad, Pipeline and Hazardous Materials Investigations Safety documented 18 safety actions. The following are summaries of some of these actions.

Ridley Park, Pennsylvania

As a result of our investigation into the February 6, 2025, fire involving SEPTA train 3223, we found that the lead railcar caught fire shortly after departing Crum Lynne Station in Ridley Park, Pennsylvania. Four passengers sustained minor injuries, and the railcar was destroyed. Preliminary findings indicate the fire originated from an electrical defect in a Silverliner IV railcar. Following discussions with NTSB investigators about this safety gap, SEPTA issued an emergency operating procedure to its Railroad Operation Control Center, which covers the Mechanical desk, Railroad Operations, Rail Supervision, System Safety, and SEPTA Police. The procedure outlines dispatcher actions when smoke or fire is reported or confirmed on rail equipment and details the responsibilities of the supervisor of train operations and the chief dispatcher.



■ Somerville, Massachusetts

As a result of our investigation into this October 1, 2024, derailment, we determined that the streetcar operator passed a double-red signal and traveled 26 mph over the posted speed limit through a switch that had not been lined for the intended route. The Massachusetts Bay Transportation Authority (MBTA) did not have inward- or outward-facing image recorders installed on all streetcars systemwide. Because the involved streetcar lacked these recorders, we could not determine why the operator failed to safely operate the streetcar before the accident. NTSB investigators emphasized to the MBTA the safety benefits of installing inward/outward image recorders to help identify root and contributing causes of accidents and prevent recurrence. In response, the MBTA began installing these recorders on all streetcars on April 15, 2025. The installation includes forward- and rear-facing cameras, cab and operator cameras, passenger area cameras, and side view cameras positioned at the front and rear of the trailing cab to monitor the sides of the train during station departures.

■ Norristown, Pennsylvania

As a result of our investigation into the May 11, 2025, collision involving northbound SEPTA light rail vehicle 153 (LRV 153) on track 1 of the M Line, we determined that the vehicle failed to stop at the designated stopping point at the Norristown Transportation Center Station and struck the end of a track bumping post. At the time, the maximum authorized speed when approaching end-of-line stations was 15 mph. Working with NTSB investigators, SEPTA implemented several safety actions, including the following:

- Issued a systemwide safety alert reminding employees to follow safety protocols, stay focused, and remain vigilant for hazards.
- Installed portable train trip stops at Norristown Transportation Center to provide a last line of defense against trains overshooting the platform. These devices automatically trigger emergency braking through the onboard trip cock system.
- Reduced approach speeds into end-of-line stations from 15 mph to 5 mph.
- Installed larger, more prominent berthing stop signs on station platforms.
- Inspected all operator cab and passenger inward-facing cameras to confirm proper functionality.
- Implemented a 15-day inspection interval for event recorders to check fault indicators and ensure data recording integrity.

■ Jackson, Mississippi

As a result of our investigation of this January 24, 2024, hazard event, we found that natural gas leaked from a compression coupling into a home on Bristol Boulevard in Jackson, Mississippi, causing an explosion and fire that resulted in one fatality, one injury, and the destruction of the home. Three days later, on January 27, 2024, another compression coupling leak caused a second explosion and fire at a home on Shalimar Drive, about 0.7 miles away, destroying two homes. The hazards posed by open, belowground natural gas leaks can shift over time and are difficult to manage safely under certain environmental conditions. Following the accidents, Atmos Energy Corporation identified 2,206 belowground natural gas leaks within the Jackson city limits between January 29, 2024, and April 29, 2025, and reported that all have since been repaired.

■ Gulf of America, Louisiana

As a result of our investigation into the November 15, 2023, release, we determined that an 18-inch underwater crude oil pipeline released approximately 1.1 million gallons of oil into an unusually sensitive area in Main Pass 69 in the Gulf of America, southeast of Venice, Louisiana. Following the accident, Third Coast reported several safety improvements: it implemented leak detection software specifically for its main pass oil gathering pipeline system, added a leak detection alarm to its supervisory control and data acquisition system with thresholds based on historical flow patterns, and incorporated leak detection procedures and training into its control center operations.



Other Significant Achievements

■ Safety Recommendations Adopted

- ***Safety Recommendation P-19-17: Columbiana County Emergency Management Agency Takes Acceptable Action***

Following the February 2023 Norfolk Southern Railway train derailment and fire in East Palestine, Ohio, we recommended that the Columbiana County Emergency Management Agency (CCEMA) update its Emergency Operations Plan, Hazardous Materials Response Plan, and Hazard Mitigation Plan to incorporate lessons learned from the derailment and fire. These lessons include improving coordination and communication among response agencies, access to and distribution of train consist information, staging and availability of equipment and other resources, and emergency responder training.

In response, the CCEMA updated Annex N (hazardous materials response) of its Emergency Response Plan. Although the CCEMA lacks legal authority under Ohio Law to require compliance by response agencies, Annex N now recommends that any train consist obtained by the CCEMA be immediately provided to incident command. The update also incorporated broader lessons learned from the East Palestine derailment related to coordination, communications, resource management, and training for emergency responders. The CCEMA has fully implemented our recommendation.

- ***Safety Recommendation P-24-2: Pipeline and Hazardous Materials Safety Administration***

The NTSB has long advocated for the implementation of SMSs as an organization-wide approach to managing safety risk in the pipeline industry. An SMS builds on existing operator practices by emphasizing proactive identification safety gaps, nonpunitive reporting of safety issues, and timely corrective action. Following the October 1, 2021, anchor strike of an underwater pipeline and subsequent crude oil release in San Pedro Bay, California, we recommended that PHMSA issue an advisory bulletin to regulated pipeline owners and operators promoting the benefits of pipeline SMS and encouraging implementation consistent with American Petroleum Institute Recommended Practice 1173 (RP 1173). In March 2025, PHMSA issued an advisory bulletin promoting pipeline SMSs and encouraging all regulated operators to implement systems consistent with the intent of our recommendation.



Office of Research and Engineering

TABLE 10. Office of Research and Engineering
Safety Statistics

Safety Research Product Completed	1
Safety Data Analyses Completed	204
Materials Laboratory Exam Reports Completed	210
Readouts of Vehicle Recorders and Other Electronic Devices Completed	529
Vehicle Performance Reports and Animations Completed	61
Medical Investigation Reports Completed	203
Rapid Reports Completed	11
Laboratory Tours Completed	10
Publication	1
Outreach	74

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, conducts safety research, generates periodic statistical reviews of aviation accidents, conducts readouts of vehicle recorders and other electronic devices, conducts materials failure analysis and fire investigations, determines vehicle performance and develops animations, 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 includes transportation safety researchers, data analysts, and statisticians who conduct systematic examinations of the following:

- » Risks or hazards in the transportation environment that may influence accidents or injury.
- » Accident investigation techniques and methods.
- » The 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; assists in safety recommendation development; and publishes annual statistical reviews for the NTSB, Congress, and the public.

Safety Research Division 2025 Highlights

- Completed 204 products (reports, data analyses, statistical summaries, and geospatial studies).
- Supported 36 accident investigations.
- Responded to 155 agency requests for data and research assistance.
- Published the NTSB's annual review of US civil aviation accident statistics and interactive dashboard.
- Completed research on toxicology findings among fatally injured US pilots.

Investigation Highlight

Staff examined safety occurrence reporting system data and objective position data from aircraft- and radar-based systems to collect evidence of close encounters between airplanes and helicopters in the years leading up to the January 2025 midair collision near DCA involving a PSA Airlines Bombardier CRJ700 and a Sikorsky UH 60 military helicopter.

Materials Laboratory Division

The Materials Laboratory Division performs expert multidisciplinary engineering and scientific analyses to determine if material or structural performance is related to the cause or severity of an accident. Staff also analyze wreckage to determine the causes of fires and explosions. The division provides chemical and forensic science expertise, as well as technical advice and resources for experimental testing and research in the physical sciences.

Materials Laboratory Division 2025 Highlights

- Completed 210 reports in support of 125 investigations.
- Launched in support of three accident investigations.
- Conducted five field examinations.
- Attended five external laboratory examinations.
- Supported numerous NTSB reports and safety recommendations.

Investigation Highlights

- Examined left-engine pylon and wing attachment hardware on scene, selected wreckage for further analysis, and conducted immediate laboratory examinations (UPS Flight 2976 Crash During Takeoff, Louisville, Kentucky, November 2025).
- Conducted field examinations of the ruptured natural gas transmission pipeline, identifying the rupture origin and additional pipe sections of interest (Kinder Morgan Inc. Natural Gas-Fueled Explosion and Fire; Cheyenne, Wyoming, September 2025).
- Examined smoke and heat damage signatures from two separate SEPTA Regional Rail accidents (Train 3553 on July 22, 2025, and Train 3223 on February 6, 2025).



FIGURE 21. Materials Laboratory Division staff member photographing an MD-11 similar to the Louisville, Kentucky, accident aircraft.



Vehicle Recorder Division

The Vehicle Recorder Division extracts, formats, and analyzes data from aircraft flight data recorders (FDRs) and cockpit voice recorders (CVRs) and from recorders installed in locomotives, large ships, and some highway vehicles. The division possesses world-class forensic capabilities to recover critical data from severely damaged recorders. Only a small number of specialized laboratories worldwide have the expertise and technology to achieve this level of data retrieval. Engineers also examine recorded electronic audio and video information captured by aircraft, ship, train, and support communication systems; provide electronic engineering expertise for all accident investigation modes in examining communication and control systems; provide time synchronization to correlate voice, data, and video recorder outputs; use advanced digital and analog filtering and signal representation techniques to extract critical recorder information; and perform forensic examinations of personal electronic devices and other computer hardware.

Vehicle Recorder Division 2025 Highlights

- Received 478 recording devices (38 foreign, 3 US military/government agency).
- Completed reports, transcripts, and studies for 529 devices supporting aviation, railroad, marine, and highway investigations.
- Launched in support of six investigations.



FIGURE 22. Vehicle Recorder Division staff member examining a cockpit voice recorder recovered from the PSA Airlines Bombardier CRJ700 following the midair collision with a Sikorsky UH-60 military helicopter near DCA in Washington, DC.

Investigation Highlights

Staff downloaded and analyzed FDR and CVR data from the following investigations:

- UPS Flight 2976 Crash During Takeoff (Louisville, Kentucky, November 2025).
- Learjet 55 Medevac Crash (Philadelphia, Pennsylvania, January 2025).
- Midair Collision between PSA Airlines Bombardier CRJ700 Airplane and Sikorsky UH-60 Military Helicopter (Washington, DC, January 2025).

Launched to the following international investigations to provide FDR and CVR assistance:

- Boeing 747 Runway Excursion (Hong Kong, October 20, 2025).
- Boeing 787-8 Crash Shortly After Takeoff (Ahmedabad, Gujarat, India, June 12, 2025).

Vehicle Performance Division

The Vehicle Performance Division provides 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 transportation modes. Engineers use computational and visualization technology to provide accurate time-motion histories of the sequence of events and evaluate data from multiple sources to determine vehicle and occupant motion and the underlying causes of that motion. Engineers also develop video animations of accident scenarios, evaluate occupant injury mechanisms, and participate in and direct research into special projects as required.

Vehicle Performance Division 2025 Highlights

- Completed 61 investigative products, such as performance studies, visual analyses, sound spectrum studies, animations, and video compilations.

Investigation Highlights

Developed animations to support the following investigations:

- Midair Collision between PSA Airlines Bombardier CRJ700 Airplane and Sikorsky UH-60 Military Helicopter (Washington, DC, January 2025).
- Contact of Containership *Dali* with the Francis Scott Key Bridge and Subsequent Bridge Collapse (Baltimore, Maryland, March 2024).

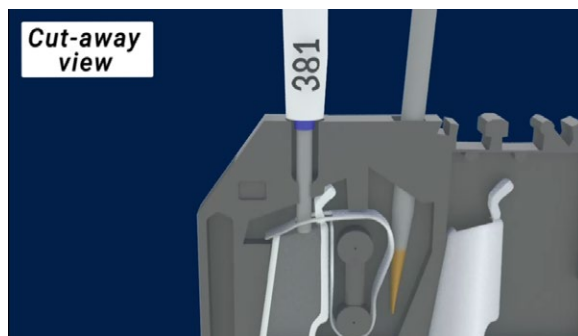


FIGURE 23. Still image from the animation developed by Vehicle Performance Division staff for the November 18, 2025, *Dali* Board meeting. Watch the animation on [YouTube](#).

Program Area – Medical Investigations

NTSB medical officers evaluate the medical aspects of investigations, including medical fitness, pathology, toxicology, and injury causation. Examples of medical issues addressed include operator incapacitation, injury prevention, vision deficiency, hypoxia, obstructive sleep apnea, carbon monoxide poisoning, mental health conditions, and impairment from the effects of medications and illicit drugs.

Program Area – Medical Investigations 2025 Highlights

- Participated in more than 150 investigations across all transportation modes.
- Completed 203 reports addressing medical issues.
- Developed safety recommendations and coordinated with other agencies.
- Presented findings to the Board and external audiences.

Other Significant Achievements

Laboratory Investments

- The Materials Laboratory began limited operations in a new high-bay facility in Upper Marlboro, Maryland. When fully operational, the facility will fill a capability gap left by the 2023 closure of the NTSB Training Center in Ashburn, Virginia. With over 6,000 ft² of high-bay space, investigators will be able to receive and examine wreckage too large or heavy for NTSB headquarters, including bridge sections, pipeline segments, tank car pieces, and helicopter main rotor blades. Efforts are underway to modify the space and install additional equipment to enable full on-site examinations. We look forward to the opportunity to report back to Congress on our ongoing progress.
- The Vehicle Recorder Division is collaborating with the US Air Force Research Laboratory to develop an on-site automated audio transcription capability. This system will streamline transcript production for long-duration recordings, such as 25-hour CVRs and 30-day voyage data recorders. Integration into the division's workflow is underway and currently in preliminary testing.

Regulatory Correspondence

We provided feedback and guidance on one regulatory effort related to the following rulemaking: FAA's Requirements to File Notice for Meteorological Towers and Other Wind Energy Systems.¹⁶

Publication

E. Mueller. Review of NTSB Investigations of Cessna 210 Hydraulic Actuator Failures from Fatigue. *Advanced Materials & Processes* (2025).

Award

At the 2025 International Society of Air Safety Investigators annual seminar in Denver, Colorado, Dr. Erik Mueller and Dr. Matthew Fox received the "Best Seminar Paper" award for "outstanding contribution to the advancement of technical methodology in aircraft accident investigation." Erik and Matt have earned this award multiple times, underscoring their continued impact in the field.

¹⁶ See [Congressional and Regulatory Correspondence](#) for more information on NTSB responses to regulatory actions and requests for comment.



Office of **Safety Recommendations and Communications**

TABLE 11. Office of Safety Recommendations and Communications Safety Statistics

Recommendations Issued ¹⁷	302
Recommendations Closed in an Acceptable Status	113
Recommendations Closed in an Unacceptable Status	12
Urgent Recommendations Issued	14
Urgent Recommendations Closed in an Acceptable Status	16
Testimony or Legislative Support to State Legislative Committees	19
Public Webinars and Virtual Meetings	58
Media Mentions (Print, Broadcast, and Online)	685,000+
News Releases and Media Advisories	66
Posts on X	800+
Safety Recommendation Recipient Outreach Meetings	60

¹⁷ See footnote 1.

The Office of Safety Recommendations and Communications 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.

The office comprises four divisions: Media Relations, Government and Industry Affairs, Safety Recommendations, and Investigative Support Services.

Media Relations Division

The Media Relations Division provides timely and accurate information on the NTSB’s activities to the public through the news media. The division deploys to the scene of major accidents to support investigators and Board members by managing the media and serving as the on-scene media relations contact. The division releases information about accident, crash, and incident investigations and coordinates the release of investigation reports, safety research reports, safety recommendations, safety alerts, and other agency investigative products. The division also provides counsel to senior leaders, responds to media inquiries, arranges media interviews of agency personnel, and provides training to investigators and senior leaders on successful media interactions.

Media Relations Division 2025 Highlights

- Provided remote media support for every NTSB investigation.
- Major investigations highlighted in 2025 media coverage included:
 - Midair collision between a passenger flight and a military helicopter near DCA in Washington, DC.
 - Crash of an air tour helicopter in Jersey City, New Jersey.

TABLE 12. 2025 Media Relations Division Activity Summary

Activity	2025 Results
News releases published	57
Media advisories issued	9
Page views on ntsb.gov	1.6+ million
Media mentions (print, broadcast, and online)	685,000+
Posts on X	800+
Views on X posts	34+ million



FIGURE 24. Media briefing following the December 18, 2025, crash of a Cessna Citation 550 business jet in Statesville, North Carolina, that resulted in seven fatalities.

TABLE 13. 2025 Training, Outreach, and Engagement

Engagement Type	Audience	Reach
Media relations and response communications training	NTSB staff	70 participants
Postaccident communications and media relations webinars	Air Arabia Group and JetBlue Airlines	100+ participants
Internal podcast interview on NTSB mission and processes	Singapore Airlines employees	1,000+ listeners



Government and Industry Affairs Division

The Government and Industry Affairs Division is responsible for informing Congress, other federal agencies, and state and local governments about NTSB activities and advising the Board members and staff on congressional and legislative matters. The division monitors federal and state legislative activity related to NTSB safety recommendations, coordinates the development of NTSB legislative proposals, and provides technical assistance to Congress and states drafting legislation. Division staff coordinate 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 and support Board members and staff with legislative testimony. Finally, the division develops and maintains contact with industry and stakeholder organizations and provides information on NTSB activities and safety recommendations as part of the division's outreach efforts.

Government and Industry Affairs Division 2025 Highlights

Investigative and Congressional Support

- Supported major accident launches and general aviation regional investigations as the primary point of contact for Congress and state and local officials, providing timely investigative updates and responding to outreach requests and inquiries.
- Prepared Chairwoman Homendy for two congressional hearings as well as multiple congressional briefings related to the January 29, 2025, midair collision near DCA, in Washington, DC, and other major NTSB investigations.

Legislative Testimony and Policy Outreach

- Supported Board member and staff testimony and legislative engagement on the following:
 - **Child passenger safety:** Montana
 - **Commercial vehicle passenger safety:** New York
 - **Distracted driving:** Montana, Pennsylvania
 - **Impairment:** California, Connecticut, Hawaii, North Carolina, Pennsylvania, Washington
 - **Motorcycle helmet use:** Maryland
 - **School bus safety:** Illinois, Maryland, Massachusetts, Texas, Vermont
 - **Speeding:** California, Nevada, New York, Washington

Outreach and Public Engagement

- Helped develop, execute, and promote outreach activities aligned with NTSB safety priorities and critical safety recommendations.
- Major initiatives included the following:
 - Promoted Bike-to-School Day DC event.
 - Supported Board member engagements at national conferences and industry meetings, including the annual meeting of the Transportation Research Board, the Consumer Electronics Show, and Drugged Driving Symposium.

Stakeholder Communications and Message Amplification

- Amplified NTSB safety recommendations, priorities, and investigative lessons learned to industry stakeholders.
- Distributed 37 email notifications, reaching more than 145,430 stakeholders.
- Developed hundreds of social and digital media products to promote agency safety messages.



FIGURE 25. Chairwoman Homendy provides testimony during the March 26, 2025, oversight hearing before the US House of Representatives Committee on Appropriations.

Safety Recommendations Division

The Safety Recommendations Division is responsible for working with the NTSB's modal offices to develop safety recommendations that are actionable, effective, and measurable, based on the findings of accident investigations and special studies. The division monitors safety recommendation implementation by evaluating responses from safety recommendation recipients and drafting classification response letters for Board member review and approval. The division also maintains the safety recommendations database, which includes information on recommendation recipients, status, adoption, and implementation, and generates summary reports analyzing safety recommendation status and implementation.



Safety Recommendations Division
2025 Highlights

TABLE 14. 2025 Safety Recommendations
Division Activity Summary

Activity	2025 Results
Responses reviewed and analyzed	132
Outreach meetings with stakeholders	62
Follow-up emails and phone calls	138
NTSB Board meetings supported	5

In 2025, we closed 113 open recommendations in an acceptable status; 36 of these had been issued to US DOT modal agencies or the US Coast Guard. In addition, we closed 12 safety recommendations in an unacceptable status, 7 of which were issued to US DOT modal agencies or the US Coast Guard.¹⁸ The number of open recommendations that are closed each year fluctuates for various reasons. Over the last 5 years (2021 through 2025), the number of safety recommendations closed in an acceptable status has averaged 188 per year.

As of December 31, 2025, a total of 197 safety recommendations issued to US DOT modal agencies and the US Coast Guard remained open in an unacceptable status. Table 15 summarizes the number of recommendations closed (acceptable and unacceptable) and those remaining open with unacceptable responses by agency in 2025.

Also in 2025, we referenced related open safety recommendations in our responses to several *Federal Register* notices issued by the US DOT and other federal agencies. These safety recommendations were discussed in the notices but not necessarily closed or classified as a result of them. Additionally, in 2025, we referenced two open safety recommendations in our response to one FAA *Federal Register* notice.

TABLE 15. Safety Recommendations Issued to the US DOT, Modal Agencies, and the US Coast Guard Closed and in Open–Unacceptable Response Status in 2025

Agency	Safety Recommendations Closed in an Acceptable Status	Safety Recommendations Closed in an Unacceptable Status	Safety Recommendations Classified Open–Unacceptable Response
US DOT (Office of the Secretary)	0	0	4
Federal Aviation Administration	9	6	60
Federal Highway Administration	0	0	0
Federal Motor Carrier Safety Administration	0	0	12
Federal Railroad Administration	5	0	38
Federal Transit Administration	5	0	4
National Highway Traffic Safety Administration	5	0	62
Pipeline and Hazardous Materials Safety Administration	3	0	6
US Coast Guard	9	1	11
Total	36	7	197

Investigation and Safety Recommendations Database Search

CAROL (Case Analysis and Reporting Online) allows you to search NTSB investigations and safety recommendations across all modes.

For more information on CAROL, including details on the data structure, visit the **CAROL help page** on our website at [ntsb.gov](https://www.ntsb.gov).

¹⁸ A summary of the recipient responses and our reasoning for closing each recommendation in an unacceptable status, as required by 49 *United States Code* (U.S.C.) section 1116(c)(3), can be found in [Appendix A](#).



Investigative Support Services Division

The Investigative Support Services Division supports the NTSB's internal and external strategic communications goals. The division provides 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. Division staff support in-person investigative Board meetings and hearings by developing graphics and providing videography and photography support, and support the broader agency by producing videos and animations, providing photography support, developing original graphics, and editing images related to accident launches, investigative product development, and recommendation outreach, among other activities.

The division uses digital strategies to highlight the NTSB's investigative messages and manages 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. Staff also provide leadership and guidance regarding digital technology adoption for agency communications programs.

Investigative Support Services Division 2025 Highlights

Investigation and Communications Support

- Launched on eight major investigations, including the midair collision near DCA in Washington, DC.
- Provided on-scene photography and videography to support agency communications related to investigations.
- Supported more than 150 investigations, updating information on the NTSB website and coordinating closely with investigative offices to ensure accurate and timely public releases.
- Managed the public release of more than 90 final investigation reports, coordinating the web posting process with internal stakeholders.

Board Meetings, Events, and Production Support

- Supported five NTSB Board meetings and three additional NTSB events, including the 3-day investigative hearing into the DCA midair collision.
- Completed more than 600 graphics and illustrations for investigative reports and related products.
- Developed eight major publications, including the 2024 *Safer Seas Digest*.
- Produced more than 60 videos and live video streams.
- Fulfilled more than 500 website update requests.

Digital Experience, Accessibility, and Compliance

- Continued to optimize the NTSB website and customer service operations in alignment with Executive Order 14338, *Improving Our Nation Through Better Design*; the 21st Century Integrated Digital Experience Act (Pub. L. 115-336); and other applicable federal directives.
- Improvements focused on accessibility compliance, content review and quality control, and usability and overall customer experience.



Office of Administrative Law Judges

**TABLE 16. Office of Administrative Law Judges
Safety Statistics**

Total Cases Received ¹⁹	284
Total Cases Closed	295
Emergency Cases Received	68
Emergency Cases Closed	84
Petitions Challenging the FAA's Emergency Determination Received	9
Petitions Challenging the FAA's Emergency Determination Granted	1
Hearings Scheduled	75
Hearings Held	16
Outreach	13

¹⁹ This total includes 49 cases filed in late 2025 that remained undocketed at year-end due to the federal government shutdown.

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 convene a hearing regarding the appeal of an emergency order or other 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 filing.



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.

In 2025, the NTSB had three judges and a vacant Chief Judge position, which was filled in 2026. Currently, the Chief Judge is based in Washington, DC; one judge is stationed in the circuit that includes Raleigh, North Carolina; one is stationed in the circuit that includes Aurora, Colorado; and one is stationed in the circuit that includes San Antonio, Texas.



FIGURE 26. Office of Administrative Law Judges staff present recent legal cases to FAA certificate holders during the Experimental Aircraft Association AirVenture event held in Oshkosh, Wisconsin.



Transportation Disaster Assistance Division

TABLE 17. Transportation Disaster Assistance Division Safety Statistics

Family Members and Victims Assisted	3,891
Outreach	53
Agencies/Organizations Supported	426

The Transportation Disaster Assistance Division coordinates federal government resources to support state and local governments, disaster relief organizations, and transportation carriers. The division serves as the primary source of investigative information for family members and survivors of NTSB-investigated accidents.²⁰ Staff also provide direct investigative support for all NTSB transportation modal offices by interfacing with medicolegal jurisdictions, healthcare systems, other response agencies, and family members to secure evidence.

To support both investigative and family assistance efforts, the division maintains formal agreements with the American Red Cross; the US Departments of Homeland Security, Defense, Health and Human Services, and State; and the Federal Bureau of Investigation.

²⁰ In 1996, Congress enacted the Aviation Disaster Family Assistance Act (49 U.S.C. sections 1136 and 41113), charging the NTSB with assisting victims of aviation disasters and their families, and coordinating with federal agencies, domestic air carriers, state and local authorities, the American Red Cross, and other nongovernmental organizations to ensure that families' fundamental concerns are addressed. In 1997, the Foreign Air Carrier Family Support Act (49 U.S.C. section 41313) required foreign air carriers operating flights to and from the United States to meet similar victim assistance standards as their US counterparts. The Rail Safety Improvement Act of 2008 (49 U.S.C. sections 1139 and 24316) gave similar responsibilities to the NTSB, rail passenger carriers, and the American Red Cross following rail passenger accidents. Finally, in 2018, Congress further expanded the Board's responsibilities to provide information regarding NTSB investigative processes and products to the families of individuals involved in any accident investigated by the NTSB to the maximum extent practicable in advance of the media (49 U.S.C. section 1140).



■ Transportation Disaster Assistance Division 2025 Highlights

- Participated in 22 launches and provided nonlaunch family assistance support for an additional 793 investigations in all modes of transportation, interacting with 3,891 accident survivors, family members, and family contacts.
- Provided direct investigative support for 134 cases.
- Engaged with family members associated with 63 different accidents, on average, each week.
- Hosted a listening session to collect feedback on the family assistance response following the January 29, 2025, midair collision near DCA over the Potomac River. The session was designed to improve the delivery of services to family members and provided an opportunity to hear directly from them about their experiences with family assistance activities organized by the NTSB, the American Red Cross, PSA Airlines, and American Airlines. Staff used artificial intelligence tools to analyze the qualitative feedback, identifying common themes, frequency of mentions, and sentiment patterns. These results will help the agency identify operational improvements and efficiencies for the family assistance program, as well as enhance training and best practices shared with the broader family assistance response community.
- Interfaced with 426 federal, state, and local agencies; transportation industry organizations; and other nongovernmental organizations to promote the agency's family assistance concept of operations. This effort resulted in approximately 27 engagements per week, conducted either through travel or remote interaction. In total, we supported 53 outreach events, directly engaging with approximately 2,946 stakeholders.

Appendix A:

Report of 2025 Recommendations Closed in an Unacceptable Status to the US DOT and the US Coast Guard

The NTSB classified seven recommendations to the US DOT and the US Coast Guard **Closed—Unacceptable Action** in calendar year 2025.²¹ We have provided a summary of the recipient response and our reasoning for closing each recommendation unacceptably. Full details of each recommendation can be found via the links provided.

TABLE 18. Recommendations to the US DOT and the US Coast Guard Classified Closed—Unacceptable Action in 2025

Recommendation	Recipient	Recommendation Text	Recipient Response	NTSB Response
A-19-29	FAA	Revise Title 14 <i>Code of Federal Regulations (CFR)</i> 1.1, "General Definitions," to include definitions for the terms "aerial work" and "aerial photography" that specify only business-like, work-related aerial operations, as originally intended.	The FAA reiterated that it believes the 2019 revision to FAA Order 8900.1, addresses this recommendation and it believes its approach to interpreting "aerial work" is in the best interest of aviation safety, as it allows the FAA to determine a wide variety of activities, such as "aerial photography or survey," as "aerial work." The FAA claims its current data for this type of operation supports the effectiveness of this process. The FAA will take no further action on this recommendation.	We previously informed the FAA that its guidance is not an acceptable alternative to defining "aerial work" and "aerial photography" in 14 <i>CFR</i> 1.1, as recommended. We continue to believe that, without regulatory language that defines the terms "aerial work" and "aerial photography" to include only business-like, work-related aerial operations, operators may continue to attempt to take advantage of the exception at 14 <i>CFR</i> 119.1(e)(4)(iii). However, because the FAA has made it clear that it does not intend to define these terms in 14 <i>CFR</i> 1.1, the Board has voted to classify Safety Recommendation A-19-29 CLOSED—UNACCEPTABLE ACTION.

²¹ As required by section 1209 of the FAA Reauthorization Act of 2024.

Recommendation	Recipient	Recommendation Text	Recipient Response	NTSB Response
A-19-30	FAA	Revise Order 8900.1, Flight Standards Information Management System, to include guidance for inspectors who oversee Title 14 <i>CFR</i> Part 91 operations conducted under any of the 14 <i>CFR</i> 119.1(e) exceptions to identify potential hazards and ensure that operators are appropriately managing the associated risks.	The FAA continues to believe its approach to interpreting “aerial work” is in the best interest of aviation safety, as it allows the FAA to determine a wide variety of activities, such as “aerial photography or survey,” as “aerial work.” The FAA published the Safety Management Systems (SMS) Final Rule on April 26, 2024 (89 <i>FR</i> 33068), which extended the requirement for an SMS in Part 5 to all Part 135 certificate holders operating under the rules for commuter and on-demand operations, commercial air tour operators, production certificate holders that are holders or licensees of a type certificate for the same product, and holders of a type certificate that license out that type certificate for production. The FAA is currently developing policy guidance in FAA Order 8900.1 for inspectors who oversee these types of operations to ensure these operators identify hazards and appropriately manage risks. The FAA believes it has effectively addressed Safety Recommendation A-19-30.	The FAA’s changes to Order 1800.56 do not include guidance for inspectors who oversee Part 91 operations conducted under any of the 14 <i>CFR</i> 119.1(e) exceptions on how to identify potential hazards and ensure that operators are appropriately managing the associated risks. We continue to believe it is important to provide FAA inspectors with the necessary resources to oversee flights that are currently conducted under the 14 <i>CFR</i> 119.1(e) exceptions; however, because the FAA does not intend to act, the Board has voted to classify Safety Recommendation A-19-30 CLOSED—UNACCEPTABLE ACTION.
A-19-31	FAA	Develop and implement national standards within Title 14 <i>CFR</i> Part 135, or equivalent regulations, for all air tour operations with powered airplanes and rotorcraft to bring them under one set of standards with operations specifications, and eliminate the exception currently contained in 14 <i>CFR</i> 135.1.	The FAA continues to believe its approach to interpreting “aerial work” is in the best interest of aviation safety, as it allows the FAA to determine a wide variety of activities, such as “aerial photography or survey,” as “aerial work.” The FAA published the SMS Final Rule on April 26, 2024 (89 <i>FR</i> 33068), which extended the requirement for an SMS in Part 5 to all Part 135 certificate holders operating under the rules for commuter and on-demand operations, commercial air tour operators, production certificate holders that are holders or licensees of a type certificate for the same product, and holders of a type certificate that license out that type certificate for production. The FAA is currently developing policy guidance in FAA Order 8900.1 for inspectors who oversee these types of operations to ensure these operators identify hazards and appropriately manage risks. The FAA believes it has effectively addressed Safety Recommendation A-19-31.	We do not believe an SMS is a substitute for implementing national standards for all commercial air tours, nor does it take any steps toward eliminating the exception currently contained in 14 <i>CFR</i> 135.1. We issued Safety Recommendation A-19-31 because we determined, once again, that the level of FAA oversight applied to Part 91 operations is insufficient to identify and correct safety deficiencies that could expose revenue passengers to unacceptable safety risks. We remain concerned that this longstanding safety issue has not been addressed; however, because the FAA does not intend to take any additional actions, the Board has voted to classify Safety Recommendation A-19-31 CLOSED—UNACCEPTABLE ACTION.

Recommendation	Recipient	Recommendation Text	Recipient Response	NTSB Response
A-21-47	FAA	Require the submission and consideration of system safety assessments addressing the landing gear antiskid system for the certification of future transport-category airplane designs. The certification should ensure that the system safety assessments are consistent with the intent of Advisory Circular 25.1309, System Design and Analysis, and that the assessments evaluate and mitigate the potential for human error that can lead to a cross-wiring error.	The FAA intends to address the Board's comments concerning the proposed rule as part of the final rule. We are unable to address these comments in this letter due to the restrictions in the Department of Transportation's ex parte communication guidance. In the 2023 Fall Unified Agenda, the FAA noted that it expects to publish the final rule in May 2024.	In our March 2, 2023, comments responding to the FAA's "System Safety Assessments" notice of proposed rulemaking (NPRM), we informed the FAA that the NPRM, as proposed, would not satisfy this recommendation. We are aware that, on August 27, 2024, the FAA published the SSA final rule and, on August 30, 2024, published AC 25.1309-1B. We note, however, that the final rule and AC do not address the concerns we raised in our NPRM comments. Because the FAA has not reported any additional plans to address this recommendation, the Board has classified Safety Recommendation A-21-47 CLOSED—UNACCEPTABLE ACTION.
A-21-49	FAA	Notify principal operations inspectors and frontline managers about the circumstances of this accident and emphasize the importance of existing FAA guidance for detecting and mitigating the safety risks that can result when certificate holders experience significant organizational change, such as high personnel turnover, a reduction to route structures or flight schedules, bankruptcy, acquisition, and merger.	The FAA employed the agency's FAA Daily Broadcast to notify all its employees, including principal operations inspectors (POIs) and frontline managers (FLMs), about the circumstances of this accident. FAA employees can access additional information about accidents and incidents through numerous agency portals, including, but not limited to, the FAA's Aviation Safety Information Analysis and Sharing system and the Safety Performance Analysis System. The FAA believes it has effectively addressed Safety Recommendation A-21-49 and considers its actions complete.	The FAA published a daily broadcast before this recommendation was issued. Although the daily broadcast was distributed to POIs and FLMs and included information about this accident, it did not emphasize the importance of existing FAA guidance for detecting and mitigating the safety risks that can result when certificate holders experience significant organizational change, such as high personnel turnover, a reduction to route structures or flight schedules, bankruptcy, acquisition, and merger. We continue to believe the FAA should notify POIs and FLMs about this specific safety issue. However, because the FAA has not taken or planned any actions to address this concern, the Board has classified Safety Recommendation A-21-49 CLOSED—UNACCEPTABLE ACTION.

Recommendation	Recipient	Recommendation Text	Recipient Response	NTSB Response
<u>A-21-50</u>	FAA	Revise Order 8900.1, Flight Standards Information Management System, to include a formalized transition procedure to be used during a changeover of certificate management team personnel responsible for overseeing a certificate holder that is undergoing significant organizational change (for a reason described in volume 6, chapter 2, section 18 of the order) to ensure that incoming personnel are fully aware of potential safety risks.	The FAA continues to believe that current practices, including the availability of its Safety Assurance System and guidance on the importance of constant communication between all involved personnel, robust documentation processes, and the use of SAS tools are sufficient. It believes the FAA has effectively addressed Safety Recommendation A-21-50 and considers its actions complete.	We do not believe SAS or the section of 8900.1 that the FAA referenced are responsive to this recommendation. We continue to believe that Order 8900.1 should include a formalized transition procedure that ensures any incoming FAA personnel are made aware of potential safety issues that a certificate holder might be experiencing as a result of the significant organizational changes. However, because the FAA has not taken or planned any actions to address this concern, the Board has classified Safety Recommendation A-21-50 CLOSED—UNACCEPTABLE ACTION.
<u>M-12-9</u>	US Coast Guard	Align your standards for postaccident toxicological testing of US Coast Guard civilian personnel, seeking appropriate legislative authority if necessary, with the requirements specified in 46 <i>CFR</i> 4.06-3.	The US Coast Guard has updated policy on post-accident toxicology testing of military personnel since our last correspondence in 2016. In May 2018, the US Coast Guard updated the Civilian Employee Drug-free Workplace Program implementing post-accident toxicology testing for civilian personnel. In February 2023, the US Coast Guard updated the Vessel Traffic Services (VTS) National Standards for Operating, which covers post-accident toxicology testing for both civilian and military personnel working in a VTS. Title 46 <i>CFR</i> Part 4 also has a provision that a law enforcement officer may determine that additional individuals are directly involved in a Serious Marine Incident (SMI) and direct them to also be chemically tested. The US Coast Guard believes these actions have fulfilled the intent of this recommendation and request that it be closed.	Our review of the US Coast Guard's revised policies showed that the US Coast Guard does not require postaccident alcohol testing for civilian employees. The VTS Standards for Operating Instruction explicitly states that US Coast Guard policy "authorizes testing of civilian VTS watchstanders for drugs only." The US Coast Guard's revised policies for US Coast Guard civilian personnel do not align with the key requirements specified in 46 <i>CFR</i> 4.06-3. Accordingly, the Board has classified Safety Recommendation M-12-9 CLOSED—UNACCEPTABLE ACTION.

Appendix B:

Outreach

Board Member External Outreach

Chairwoman **Jennifer Homendy** participated in over 30 events in 2025. The most significant of these events are highlighted below.

■ Testimony Before Congress

J. Homendy. Testimony before the US House of Representatives Committee on Appropriations Subcommittee on Transportation, Housing and Urban Development, and Related Agencies: "Oversight Hearing: National Transportation Safety Board." Washington, DC; March 26, 2025.

J. Homendy. Testimony before the US Senate Committee on Commerce, Science and Transportation Subcommittee on Aviation, Space, and Innovation Hearing: "NTSB Preliminary Report: DCA Midair Collision." Washington, DC; March 27, 2025.

■ Presentations and Briefings

J. Homendy. Keynote remarks. Presentation at the Georgia Governor's Office of Highway Safety's Region 4 Law Enforcement Liaison Conference. Savannah, Georgia; February 19, 2025.

J. Homendy. Keynote remarks. Presentation at the League of American Bicyclists' 2025 National Bike Summit. Washington, DC; March 13, 2025.

J. Homendy. Keynote remarks. Presentation at the American Association of Port Authorities' 2025 Legislative Summit. Washington, DC; March 19, 2025.

J. Homendy. Award presentation at the Flight Safety Foundation's Annual Networking and Awards Dinner. Washington, DC; June 24, 2025.

J. Homendy. Keynote remarks. Presentation at the American Great Lakes Ports Association's 2025 Annual Conference. Chicago, Illinois; August 15, 2025.

J. Homendy. Keynote remarks. Presentation at the National Air Traffic Controllers Association's 2025 Communicating for Safety Conference. Las Vegas, Nevada; September 15, 2025.

J. Homendy. Host of the International Transportation Safety Association's 2025 Annual Meeting. Virtual; September 24–25, 2025.

J. Homendy. Keynote remarks. Presentation at the Virginia Governor's 2025 Transportation Conference. Richmond, Virginia; October 16, 2025.

J. Homendy. Keynote remarks. Presentation at the American Pilots' Association's Board of Trustees Meeting. Washington, DC; October 21, 2025.

J. Homendy. Award presentation at the Aero Club of Washington's Annual Wright Memorial Dinner. Washington, DC; December 11, 2025.

■ Participation on Panels

J. Homendy. Participation in a fireside chat at Airlines for America's Annual Meeting. Atlanta, Georgia; January 22, 2025.

J. Homendy. Participation in a question-and-answer session at the National Business Aviation Association's Board Meeting. Washington, DC; March 19, 2025.

J. Homendy. Participation in a fireside chat with the Flight Safety Foundation. Virtual; April 30, 2025.

J. Homendy. Participation in a fireside chat at the Regional Airline Association's Board Meeting. Washington, DC; May 19, 2025.

J. Homendy. Participation in a question-and-answer session at the OneRail Coalition's Meeting. Virtual; June 20, 2025.

J. Homendy. Participation in panel discussion hosted by the Airline Pilots Owners Association on "the state of aviation safety" at the EAA's 2025 AirVenture. Oshkosh, Wisconsin; July 22, 2025.

J. Homendy. Participation in a question-and-answer session hosted by Women in Aviation International at the EAA's 2025 AirVenture. Oshkosh, Wisconsin; July 23, 2025.

J. Homendy. Participation in a question-and-answer session at Airlines for America's Combined Safety and Operations Council Meeting. Washington, DC; August 6, 2025.

J. Homendy. Participation in a question-and-answer session for Women in Aviation International's "On Air" Podcast. Washington, DC; September 8, 2025.

J. Homendy. Participation in a fireside chat at GE Aerospace's 2025 Leadership Forum. Washington, DC; September 9, 2025.

J. Homendy. Participation in a fireside chat at the Air Line Pilots Association International's 2025 Air Safety Forum. Chicago, Illinois; September 11, 2025.

J. Homendy. Participation in a question-and-answer session at the Coalition of Airline Pilots Associations' Board Meeting. Washington, DC; September 29, 2025.

■ Participation in/Attendance at Meetings and Conferences

J. Homendy. Attendance at ICAO's 42nd Assembly. Montréal, Canada; September 22–24, 2025.

■ Media Presentations

J. Homendy. Media briefing on the NTSB investigation into the January 29, 2025, midair collision over the Potomac River. Washington, DC; January 30, 2025.

J. Homendy. Media briefing on the NTSB investigation into the January 31, 2025, Learjet 55 Crash. Philadelphia, Pennsylvania; February 1, 2025.

J. Homendy. Media briefing on the NTSB investigation into the January 29, 2025, midair collision over the Potomac River. Washington, DC; February 14, 2025.

J. Homendy. Media briefing on the NTSB investigation into the January 29, 2025, midair collision over the Potomac River. Washington, DC; March 11, 2025.

J. Homendy. Media briefing on the NTSB investigation into the March 26, 2024, collapse of the Francis Scott Key Bridge in Baltimore, Maryland. Washington, DC; March 20, 2025.

J. Homendy. Media briefing on the NTSB investigation into the April 10, 2025, Bell 206 L-4 helicopter crash. Jersey City, New Jersey; April 11, 2025.

J. Homendy. Speaker. US DOT's press conference on air traffic control modernization. Washington, DC; May 8, 2025.

J. Homendy. Speaker. US Senate Commerce Committee chairman's press conference on New Aviation Safety Legislation. Washington, DC; July 29, 2025.

Vice Chairman **Michael Graham** participated in 14 events in 2025. These events are highlighted below.

■ Presentations and Briefings

M. Graham. Keynote Remarks. Presentation at the University Aviation Association Policy Seminar. Washington, DC; January 8, 2025.

M. Graham. Keynote remarks. "Vehicle to Everything (V2X)." Presentation at the 5G Automotive Association Conference. Washington, DC; February 6, 2025.

M. Graham. Keynote remarks. "Navigating Skies Safely – Building Resiliency." Presentation at the Air Charter Safety Foundation Safety Symposium. Daytona Beach, Florida; April 7, 2025.

M. Graham. Keynote remarks. "Respect the Unexpected." Presentation at Walmart Aviation Conference. Rogers, Arkansas; April 20, 2025.

M. Graham. Keynote remarks. "Vital Importance of Strong Hiring Practices as a Critical Component of Safety Management." Presentation at the National Air Transportation Association Air Charter Summit. Washington, DC; May 22, 2025.

M. Graham. Keynote remarks. "A Preventable Tragedy: Lessons Learned from the Wings over Dallas Airshow Disaster." Presentation at EAA AirVenture. Oshkosh, Wisconsin; July 22, 2025.

M. Graham. Keynote remarks. "Evidencing Safety." Presentation at the Lawyer-Pilots Bar Association's Summer Convention. Philadelphia, Pennsylvania; August 14, 2025.

M. Graham. Keynote remarks. "Every Flight, Every Time – Building a Safer More Resilient Aviation System." Presentation at the Wichita Aero Club. Wichita, Kansas; August 19, 2025.

M. Graham. Keynote remarks. "Respect the Unexpected." Presentation at the Mitsubishi Heavy Industries America, Inc. Pilot's Review of Proficiency Seminar. Dallas, Texas; September 5, 2025.

M. Graham. Keynote Remarks. "Following Through on Proper Use of Seat Belts: The Next Step in School Bus Safety." Presentation at the National Association of State Directors of Pupil Transportation Services Annual Conference. Pentagon City, Virginia; November 14, 2025.

■ Participation on Panels

M. Graham. Participation in panel discussion on vehicle connectivity and cybersecurity at the MOVE America Conference. Detroit, Michigan; September 25, 2025.

M. Graham. Participation in a question-and-answer session for Aviation News Talk Network's "NTSB News Talk" Podcast. Washington, DC; September 29, 2025.

■ Media Presentations

M. Graham. Media Briefing on the NTSB Investigation into the May 17, 2025, Contact of the *Cuauhtémoc* with the Brooklyn Bridge. New York, New York; May 19, 2025.

M. Graham. Media Briefing on the NTSB Investigation into the December 18, 2025, Cessna 550 Crash. Statesville, North Carolina; December 19, 2025.

Board Member **Thomas B. Chapman** participated in 11 events in 2025. These events are highlighted below.

■ Testimony Before State Legislators

T. Chapman. Testimony before the Washington State Legislature, Senate Law and Justice Committee regarding impaired driving. Virtual; January 14, 2025.

T. Chapman. Testimony before the Washington State Legislature, House Community Safety Committee regarding impaired driving. Virtual; January 21, 2025.

T. Chapman. Testimony before the Hawaii House of Representatives Committee on Transportation regarding the use of intoxicants while operating a vehicle. Virtual; February 11, 2025.

T. Chapman. Testimony before the Connecticut General Assembly, Transportation Committee regarding impaired driving. Virtual; February 26, 2025.

T. Chapman. Testimony before the New York Legislature regarding impaired driving. Virtual; February 28, 2025.

T. Chapman. Testimony before the Nevada State Senate, Committee on Growth and Infrastructure regarding automated speeding enforcement. Virtual; March 31, 2025.

T. Chapman. Testimony before the Michigan House of Representatives, Government Operations Committee regarding oral fluid testing. Virtual; May 22, 2025.

■ Presentations and Briefings

T. Chapman. Keynote remarks. "Current State of Aviation Safety." Presentation at the Chief Pilots Roundtable. Washington, DC; August 12, 2025.

T. Chapman. Keynote remarks. "Current State of Aviation Safety." Presentation at the American Bar Association's Forum on Air and Space Law, Philadelphia, Pennsylvania; September 19, 2025.

T. Chapman. Keynote remarks. "NTSB's Research on Impaired Driving." Presentation at the Suffolk County Legislative Symposium on Drugged Driving, Virtual. December 10, 2025.

■ Media Presentations

T. Chapman. Media Briefing on the NTSB Investigation into the August 22, 2025, Fatal Motorcoach Rollover Near Pembroke, New York; August 23, 2025.

Office of Aviation Safety

The Office of Aviation Safety participated in 53 events in 2025. The most significant of these events are highlighted below.

■ Testimony Before Congress

B. Banning. Testimony before the Senate Committee on Commerce, Science, and Transportation Subcommittee on Aviation regarding the NTSB's *Preliminary Report: The Midair Collision of a Passenger Jet and Military Helicopter at DCA*. Washington, DC; March 2025.

■ Presentations and Briefings

L. Ward. "Quarterly Overview of Investigations in AS10." Presentation at Airlines for America. Louisville, Kentucky; March 2025.

J. Aguilera. "A Preventable Tragedy: Lessons from the Wings Over Dallas Airshow Disaster." Presentation at EAA AirVenture. Oshkosh, Wisconsin; July 2025.

S. Woods. "Lessons Learned from the B-17 Accident." Presentation at EAA AirVenture. Oshkosh, Wisconsin; July 2025.

B. Koschig. "When Words Matter: An NTSB Look at Air Traffic Control Communication Failures." Presented at EAA AirVenture. Oshkosh, Wisconsin; July 2025.

D. Bower. "NTSB Air Carrier Investigations—On-Scene Activities and Investigation Structure." Presentation at Air Line Pilots Association Annual Air Safety Forum. Chicago, Illinois; September 2025.

L. Ward, D. Brazy. "Air Carrier Investigations Go Team Training." Presentation at the Independent Pilots Association. Louisville, Kentucky; September 2025.

K. Wilson. "Day in the life of a Human Performance Investigator." Presentation at Embry Riddle University and University of Central Florida. Orlando, Florida; September 2025.

A. Finne. "NTSB Investigations Overview and Maintenance Accidents." Presentation at the FAA Safety Team Annual Training. Mountain View, Alaska; September 2025.

B. Bramble. "International Guidelines for Human Performance Investigations." Presentation at the International Society of Air Safety Investigators. Denver, Colorado; October 2025.

J. Young. "Case Study: A Midair Collision Involving Two Instructional Flights." Presentation at the United Aviate Academy Flight Instructor InfoShare Event. Costa Mesa, California; October 2025.

D. Sevellian. "Lessons Learned From the S-76B Aircraft Accident in Calabasas, California." Presentation at the National Aeronautics and Space Administration Jet Propulsion Laboratory/Los Angeles Airport Tour. Pasadena, California; November 2025.

■ Instruction or Instructional Presentations

M. Hodges, J. Brannen. "NTSB Investigations," and "Overview and NTSB Case Studies – Safety Improvements." Presentation at the Transportation Safety Institute (TSI)

Reciprocating Engine Accident Investigation Course. Oklahoma City, Oklahoma; February 2025.

A. Finne. "NTSB Investigation Overview and Case Studies." Presentation at TSI Basic Accident Investigation Course (FAA/Industry). Oklahoma City, Oklahoma; February 2025.

M. Hodges. "In-Flight Fires Emergency Procedures," and "NTSB Case Studies – Safety Improvements." Presentation at TSI Basic Accident Investigation Course (FAA/Industry). Oklahoma City, Oklahoma; March 2025.

A. Sauer. "NTSB 2025 - TSI Experimental Aircraft Accident Investigation." Presentation at the TSI Experimental Aircraft Accident Investigation Course. Oshkosh, Wisconsin; April 2025.

M. Hodges. "NTSB Investigations" and "Overview and NTSB Case Studies—Safety Improvements." Presentation at the TSI Basic Aircraft Accident Investigation Course. Oklahoma City, Oklahoma; May 2025.

A. Sauer. "NTSB 2025 - TSI Experimental Aircraft Accident Investigation." Presentation at the TSI Experimental Aircraft Accident Investigation Course. Oshkosh, Wisconsin; June 2025.

B. Rutt. "NTSB Investigations—Overview." Presentation at the TSI Basic Accident Investigation Course (FAA/Industry). Oklahoma City, Oklahoma; June 2025.

M. Hodges. "In-Flight Fires Emergency Procedures." Presentation at the Lancair Owner and Builders Organization, Board of Directors July 2025 Meeting. Virtual; July 2025.

L. Abraham. "NTSB Overview—TSI Basic Accident Investigation Course." Presentation at the TSI Basic Accident Investigation Course (FAA/Industry). Oklahoma City, Oklahoma; July 2025.

B. Rutt. "Experimental Aircraft Accident Investigation." Presentation at the TSI Experimental Aircraft Accident Investigation Course. Oshkosh, Wisconsin; August 2025.

T. Sorenson. "Overview of NTSB Investigations." Presentation at the TSI Basic Accident Investigation Course (FAA/Industry). Oklahoma City, Oklahoma; August 2025.

J. Brannen. "NTSB Investigations, LSA, Experimental Act." Presentation at the TSI Reciprocating Engine Accident Investigation Course. Oklahoma City, Oklahoma; September 2025.

M. Hodges. "In-Flight Fires Emergency Procedures," and "NTSB Case Studies – Safety Improvements." Presentation at the TSI Basic Accident Investigation Course (FAA/industry). Oklahoma City, Oklahoma; September 2025.

■ Attendance at Meetings and Conferences

K. Wilson. Attendance at the Human Factors Task Force Aviation Rulemaking Committee Meeting. Washington, DC; January 2025.

T. LeBaron. Attendance at the General Aviation Manufacturers Association President's Reception. Washington, DC; February 2025.

K. Dunks. Attendance at the Montana Aviation Conference. Missoula, Montana; March 2025.

T. LeBaron. Attendance at the General Aviation Joint Safety Committee. Washington, DC; March 2025.

A. Sauer. Attendance at the EAA Emergency Exercise—2025 Planning; Oshkosh, Wisconsin; March 2025.

K. Wilson, D. Sevellian. Attendance at the FAA Aviation Rulemaking Advisory Committee Quarterly Meeting. Chicago, Illinois; April 2025.

K. Dunks, L. Schiada. Attendance at the General Aviation Manufacturers Association. Washington, DC; April 2025.

J. Lindberg. Attendance at the FAA Central Regional Operations Center Meeting. Fort Worth, Texas; April 2025.

D. Eick. Attendance at the FAA Safety Team Meeting. Daytona Beach, Florida; April 2025.

C. Deforge. Attendance at the RTX Product Safety Summit. Palm Beach, Florida; May 2025.

C. Johnson. Attendance at the Vertical Aviation International Safety Committee Meeting. Washington, DC; June 2025.

J. Rodi. Attendance at the Denver International Airport Part 139 Tabletop Exercise. Denver, Colorado; June 2025.

T. LeBaron. Attendance at the General Aviation Joint Safety Committee Meeting. Frederick, Maryland; June 2025.

K. Wilson, D. Sevellian. Attendance at the FAA Aviation Rulemaking Advisory Committee Quarterly Meeting. Denver, Colorado; June 2025.

Z. Brown, T. LeBaron, A. Sauer, Z. Keliher, A. Lam, J. Curran. Attendance at EAA AirVenture. Oshkosh, Wisconsin; July 2025.

S. Blum. Attendance at the North American Aviation Wildlife Conference. Portland, Oregon; August 2025.

K. Dunks. Attendance at the General Aviation Joint Safety Committee. Washington, DC; August 2025.

T. Sorenson. Attendance at the Chicago O'Hare International Airport Part 129 Tabletop Exercise. Chicago, Illinois; September 2025.

T. LeBaron. Attendance at the Airline Owners and Pilots Association. Frederick, Maryland; September 2025.

C. Crookshanks. Attendance at the International Society of Air Safety Investigators. Denver Colorado; October 2025.

T. LeBaron. Attendance at the General Aviation Joint Safety Committee. Frederick, Maryland; December 2025.

Office of Highway Safety

The Office of Highway Safety participated in 14 events in 2025. The most significant of these events are highlighted below.

Testimony Before State Legislators

K. Poland. Testimony before the Maryland Senate regarding seat belts for large school buses. Annapolis, Maryland; February 4, 2025.

D. Inman. Testimony at Montana House Transportation Committee regarding child passenger safety law HB586. Helena, Montana; February 26, 2025.

Presentations and Briefings

K. Poland. "NTSB Highway Safety Investigations." Presentation at the Transportation Research Board (TRB) Annual Meeting. Washington, DC; January 8, 2025.

R. Molloy. "NTSB TRB Truck and Bus Committee Update." Presentation at the TRB Annual Meeting. Washington, DC; January 8, 2025.

S. Currie. "Crash Investigations and the NTSB: Learning Best Practices for Safety from the Experts." Podcast for Scopelitis Transportation Consulting. Virtual; January 16, 2025.

M. Fox. "NTSB Highway Safety Investigations." Presentations to committees at the Commercial Vehicle Safety Alliance Annual Conference. Denver, Colorado; September 24, 2025.

Participation in/Attendance at Meetings and Conferences

M. Fox. Attendance with NTSB's Office of Safety Recommendations and Communications and New York Assemblyman Gray on proposed New York state seatbelt

laws and roadside inspection process for buses currently in rulemaking. Virtual; March 26, 2025.

J. Humm. Attendance at Lithium Battery Outreach Subgroup. Virtual; April 15, 2025.

D. Walsh. Participation at AASHTO'S Committee on Bridges and Structures annual meeting to discuss urgent NTSB safety recommendations with state DOT bridge owners. Dallas, Texas; June 4, 2025.

Media Interviews

K. Poland. "What Will It Take to Automatically Brick Drivers' Cell Phones Behind the Wheel?" *Streetsblog USA*. Virtual; July 24, 2025.

M. Sweeney. "5 Questions: NTSB's Meg Sweeney on School Bus Safety." *School Bus Fleet*. Virtual; August 19, 2025.

Office of Marine Safety

The Office of Marine Safety participated in 8 events in 2025, highlighted below.

Presentations and Briefings

R. Jones. "NTSB Processes and Marine Accidents." Presentation at the International Ship Masters Association Meeting. Virtual; Alpena, Michigan; January 2025.

S. Rainey. "NTSB 101." Presentation at the Great Lakes Pilotage Advisory Committee Meeting. Port Huron, Michigan; July 2025.

D. Johnston. "Towing Vessel Accidents and the NTSB Investigation Process." Presentation at the Marine Compliance Alliance Workshop. New Orleans, Louisiana; August 2025.

D. Flaherty. "NTSB 101: Marine Safety Investigations." Presentation at the US Coast Guard Investigator's Training. Yorktown, Virginia; September 2025.

Participation in/Attendance at Meetings and Conferences

D. Johnston. Participation at the IMO Human Element Training, and Watchkeeping Subcommittee Meeting. Virtual; February 2025.

D. Ehlers. Participation at the IMO Ship Systems and Equipment Subcommittee Meeting. London, England; March 2025.

M. Muise. Participation at the IMO Navigation Communications and Search and Rescue Subcommittee Meeting. London, England; March 2025.

L. Larue. Participation at the IMO Implementation of Instruments and Investigations Subcommittee Meeting. London, England; July 2025.

Office of Railroad, Pipeline and Hazardous Materials Investigations

The Office of Railroad, Pipeline and Hazardous Materials Investigations participated in 21 events in 2025. The most significant of these events are highlighted below.

Presentations and Briefings

B. Clatterbuck. "Standards for the Transportation of Battery Energy Storage Systems." Presentation to the Canadian Standards Association Group. Virtual; February 2025.

P. Warren, S. Lyons. "NTSB Pipeline Accident Investigations, Safety Priorities, and Implementation of Safety Actions." Presentation at the American Gas Association Pipeline Safety Regulatory Committee Meeting. Washington, DC; March 2025.

G. Scott, M. Bachmeier. "NTSB Rail Investigations 301." Presentation at the Outback Railroad Association Safety and Training Conference. Deadwood, South Dakota; May 2025.

K. West. "Findings and Lessons Learned from the NTSB West Reading, Pennsylvania, Accident and the Importance of Natural Gas Alarms to Improve Pipeline Safety." Presentation at the American Gas Association Operations Conference. Aurora, Colorado; May 2025.

P. Warren, S. Lyons, D. Spillers. "NTSB Safety Observations." Presentation at the AGA Executive Leadership Safety Summit. Washington, DC; July 2025.

R. Gunaratnam. "Recommendations for Natural Gas Alarms in Residential and Commercial Buildings from the NTSB West Reading, Pennsylvania, Accident." Presentation at the National Fire Protection Association Building Code Meetings. Baltimore, Maryland; July 2025.

B. Clatterbuck. "Safety of Testing Lithium Batteries, Risks to Lab Technicians, and the Dangers and Corresponding Personal Protective Equipment Specific to Test Involving Thermal Runaway Events." Presentation and panel discussion at the Battery Safety Council Forum. Lakeville, Minnesota; August 2025.

J. Gordon, T. Lloyd, R. Payan, S. Harley. "NTSB Rail Investigations 301." Presentation to the International Association of Sheet Metal, Air, Rail and Transportation Workers. Washington, DC; September 2025.

Participation in/Attendance at Meetings and Conferences

P. Warren, R. Payan. Panel participation at the National League of Cities Rail Roundtable. Washington, DC; March 2025.

B. Clatterbuck, C. Thomas. Panel participation at PHMSA's, International Association of Fire Chiefs, and US Fire Administration Hazmat Roundtable. Emmitsburg, Maryland; May 2025.

Office of Research and Engineering

The Office of Research and Engineering participated in 74 events in 2025. The most significant of these events are highlighted below.

Presentations and Briefings

T. Kayagil. "The Doctor is In: National Transportation Safety Board Medical Investigations." Presentation at the TRB Annual Meeting. Washington, DC; January 2025.

A. Lamm. "Fern Hollow Bridge Collapse, Pittsburgh, Pennsylvania." Presentation at the TRB Annual Meeting. Washington, DC; January 2025.

M. Moler. "Runway Incursion and Overflight, Austin, Texas." Presentation at the TRB Annual Meeting. Washington, DC; January 2025.

T. Kayagil. "Reviewing Medications in Context of a Pilot's Flying Activities." Presentation at the Aerospace Medical Association 2025 Annual Scientific Meeting. Atlanta, Georgia; May 2025.

R. Smith. "Is there an Opportunity for Alcohol Policies to Address Cannabis-Impaired Driving?" Presentation at the International Conference on Alcohol, Drugs, and Traffic Safety. Alcobaga, Portugal; June 2025.

E. Mueller. "NTSB Investigations of High-Strength Steel Landing Gear Components Fracturing from Fatigue Caused by Excessive Grinding." Presentation at the Federation of European Materials Society International Conference of Engineering Against Failure. Kalamata, Greece; June 2025.

O. Fowler, K. Garner. "Inside the Black Box: Unlocking Accident Secrets." Presentation at EAA AirVenture. Oshkosh, Wisconsin; July 2025.

T. Burtch. "One in a Million? NTSB Case Study." Presentation at EAA AirVenture. Oshkosh, Wisconsin; July 2025.

E. Mueller. "Challenges in applying Modern Fatigue Analysis Techniques to Fractured Structural Members in Aircraft Examined during NTSB Materials Laboratory Investigations." Presentation at the International Society of Air Safety Investigators. Denver, Colorado; September 2025.

A. Lamm. "Case Studies: Bridge Collapses Caused by Oversight Failures." Presentation at the Accident Investigations—Materials International Meeting. Canberra, Australia; September 2025.

M. Meadows. "EC-135 Fenestron Tail Rotor Blade Separation and Emergency Landing." Presentation at the Accident Investigations—Materials International Meeting. Canberra, Australia; September 2025.

Instruction or Instructional Presentations

E. Mueller. "Failure Analysis of Materials." Guest lecture for Failure Analysis of Materials Class, Ohio State University. Columbus, Ohio; January 2025.

S. Payne. "Can Data Lie to You? Flight Data Gotchas." Guest lecture for Advanced General Aviation Accident Investigation, Transportation Safety Institute, US DOT. Oklahoma City, Oklahoma; September 2025.

Participation in/Attendance at Meetings and Conferences

J. Price, B. Rawlinson, R. Smith, J. Tuttle. Attendance at the TRB Annual Meeting. Washington, DC; January 2025.

R. Smith. Attendance at the Traffic Records Forum. Boston, Massachusetts; July 2025.

T. Kayagil, J. Tuttle. Participants in Quad-Agency Working Group Medical Operations Readiness Review Meetings: National Aeronautics and Space Administration, US Air Force, FAA, and NTSB. Multiple meetings in 2025.

Office of Administrative Law Judges

The Office of Administrative Law Judges participated in 13 events in 2025; 2 are highlighted below.

Presentations and Briefings

V. Couch, D. Fun, C. Mayer. "A Discussion with the NTSB Judges: Significant Case Trends, Notable Decisions, and Standing Order 25-01." Presentation to the Legal Advisory Committee. EAA AirVenture 2025. Oshkosh, Wisconsin, July 2025.

V. Couch, D. Fun, C. Mayer. "NTSB Appeals Process: Lessons for FAA Certificate Holders." Presentation to the general public and FAA certificate holders. EAA AirVenture 2025. Oshkosh, Wisconsin, July 2025.

Appendix C:

Accident Investigations Not Completed²²

Aviation: None to Report.

Highway: None to Report.

Marine: None to Report.

Railroad, Pipeline and Hazardous Materials: Fatal and Nonfatal Accidents.

The following two sections—**Pipeline** and **Railroad**—list those accidents that the NTSB, under 49 *U.S.C.* section 1131, is required to investigate but that the agency was unable to investigate because of the reason specified. Section 1210 of the FAA Reauthorization Act of 2024 amended the NTSB rail investigative authority to provide that accidents occurring at railroad grade crossings, or those that involve rail trespassers, are not accidents for which NTSB investigation is mandatory unless selected by the Board. Trespassing on railroad property is the leading cause of rail-related fatalities; however, the NTSB is unable to investigate every trespasser fatality and, in fact, investigates such accidents extremely rarely because of limited resources and limited safety benefits. Excluding these accidents from the requirement under 49 *U.S.C.* section 1131(a)(1)(C) allows the NTSB to focus resources on investigating rail accidents for which there are safety benefits.

Pipeline

Staff has reviewed and included all the available information needed to comply with 49 *U.S.C.* section 1116(c)(6). Criteria used here are for reporting information only and do not represent NTSB launch criteria for investigating an accident.

TABLE 19. Required Pipeline Accident Investigations Not Completed

Month	Day	Location	Accident Circumstances	Reason Not Investigated
1	13	Villa Rica, Georgia	Release of 60 barrels of gasoline from Colonial Pipeline; no fatalities, injuries, or evacuations	Limited resources
1	26	Clarksburg, West Virginia	Natural gas home explosion with fatality	Limited resources
2	28	Newark, New Jersey	Natural gas leak and fire in a building in a public park, 1 person squatting in the building was injured	Limited resources
3	6	Greenwood, Texas	Natural gas release and fire from a Type C gathering line; 2 workers injured	Limited resources

²² Title 49 *U.S.C.* section 1116(c)(6) requires that the agency provide annually “a list of accidents, during the prior calendar year, that the Board was required to investigate under 49 *U.S.C.* section 1131 but did not investigate and an explanation of why they were not investigated.”

Month	Day	Location	Accident Circumstances	Reason Not Investigated
4	6	Arlington, Texas	Release of 20 barrels of crude oil; no fatalities, injuries, or evacuations	Limited resources
5	21	Goshen, Indiana	Traffic accident damaged natural gas regulator station, causing a fire; vehicle driver was fatally injured	Limited resources
6	25	Mineral City, Ohio	Traffic accident damaged natural gas regulator station causing a fire; the vehicle driver was injured	Limited resources
10	1	Inlet Beach, Florida	Contractor struck below ground Okaloosa Gas District distribution line while excavating, resulting in fire and release of natural gas; no injuries	Limited resources
10	28	Honolulu, Hawaii	A flash fire occurred at a meter on military base following the release of 500 cubic feet of natural gas; one employee injured	Limited resources
11	4	Wakefield, Michigan	A valve stuck open resulted in a significant natural gas release	Limited resources
11	11	Mill Creek, Washington	Gasoline and diesel were released from 16-inch and 20-inch hazardous liquid pipelines	Limited resources
11	14	Cascade, Wisconsin	A 10-inch natural gas transmission line was struck by a third party, causing a rupture and prompting a 3-mile radius evacuation	Limited resources
11	25	Dallas, Texas	A leak on an 8-inch natural gas main led to the evacuation of 300 people (four buildings); no National Response Center report, explosion, ignition, or injuries occurred	Limited resources
11	28	McLouth, Kansas	An 8-inch line ruptured and released about 3,900 barrels of propane, prompting the evacuation of 15 to 20 people within a ½-mile radius; no ignition or injuries occurred	Limited resources
12	17	Aston, Pennsylvania	Approximately 9,000 barrels of gasoline were released from a breakout tank facility due to a hole in the bottom of tank; no injuries, evacuations, or supply disruption occurred	Limited resources
12	17	Midland, Texas	660 barrels of crude oil were released at a terminal and contained within the facility boundaries; no injuries, evacuations, or residential well contamination were reported	Limited resources
12	18	McKenzie County, North Dakota	A well fire occurred after a leak on a flow line, prompting evacuation of five people within a ½-mile radius; no injuries were reported	Limited resources
12	24	Hamlin, Texas	A 22-inch hazardous liquid pipeline ruptured, releasing approximately 2,088 barrels	Limited resources
12	25	Beechwood, Wisconsin	A natural gas transmission compressor station experienced an emergency shutdown for unknown reasons, prompting a 1-mile evacuation	Limited resources
12	27	Castaic, California	A 34-inch natural gas transmission pipeline ruptured due to landslide, prompting a shelter-in-place order and the closure of highway I-5	Limited resources
12	30	Martins Ferry, Ohio	A residential duplex explosion and subsequent fire resulted in the release of natural gas from a damaged meter; 1 fatality	Limited resources

Railroad

The NTSB investigated 24 railroad accidents in 2025.²³ An additional 521 accidents that met the requirements of 49 U.S.C. section 1131 were identified but not investigated because of limited investigative resources. An accident with a limited safety benefit is an occurrence for which NTSB investigators determined that safety recommendations were unlikely to be issued or reiterated. Those accidents that were not investigated because of limited NTSB resources share some similarities with those of limited safety benefits; although the causes of these accidents may not have been immediately identifiable, the low level of severity of the accidents and other factors were weighed against those of ongoing investigations to make the best use of the resources available.

TABLE 20. Required Railroad Accident Investigations Not Completed

Qualifying Event (U.S.C. 1131)	Limited resources	Limited Safety Benefit	Not Notified
Railroad accident – fatality ²⁴		1	5
Railroad accident – damage over reporting limit, nonfatal (freight)	387		
Railroad accident – damage over reporting limit, nonfatal (passenger)	80		
Transit accident (passenger train)	46	1	1
Subtotal	513	2	6
Total of all railroad and transit accidents not investigated	521		

Federal Railroad Administration Railroad Accidents

TABLE 21. FRA Fatal Railroad Accidents

Month	Day	Location	Accident Circumstances	Reason Not Investigated
1	10	Kenedy, Texas	Nontrespassers on railroad property	Not reported to NTSB
4	10	Mercer County, New Jersey	Struck by falling object	Not reported to NTSB
5	3	Tarrant, Texas	Struck by on-track equipment	Not reported to NTSB
6	2	New York, New York	Passenger on train	Limited safety benefit
6	16	Montgomery, Texas	Struck by on-track equipment	Not reported to NTSB
6	19	Malheur County, Oregon	Struck by on-track equipment	Not reported to NTSB

²³ Data provided in this report are received from the FRA and the FTA. Criteria used here are for reporting information only and do not represent our launch criteria for investigating an accident. In addition, some information reported by the FTA does not provide details regarding agencies or locations. NTSB staff has reviewed and included all the available information needed to comply with 49 U.S.C. section 1116(c)(6).

²⁴ This data set excludes reported trespasser accidents.

TABLE 22. FRA Nonfatal Railroad Accidents with Damage Over Reporting Limit (Freight)

Month	Day	Location	Accident Circumstances	Reason Not Investigated
1	1	Baytown, Texas	Derailment	Limited resources
1	1	Lima, Ohio	Derailment	Limited resources
1	1	Ogden, Illinois	Derailment	Limited resources
1	1	Kearny, New Jersey	Derailment	Limited resources
1	2	North Little Rock, Arkansas	Obstruction	Limited resources
1	3	Barnesville, Georgia	Derailment	Limited resources
1	3	Stroud, Oklahoma	Derailment	Limited resources
1	3	Roanoke City, Virginia	Derailment	Limited resources
1	3	Magnolia, Alabama	Side collision	Limited resources
1	4	Corvallis, Oregon	Derailment	Limited resources
1	5	Kansas City, Missouri	Derailment	Limited resources
1	5	Alexandria, Louisiana	Derailment	Limited resources
1	6	North Platte, Nebraska	Obstruction	Limited resources
1	6	Carlton, Minnesota	Derailment	Limited resources
1	7	Bremo Bluff, Virginia	Derailment	Limited resources
1	7	Newburg, Missouri	Head-on collision	Limited resources
1	8	Aquadale, North Carolina	Derailment	Limited resources
1	9	Sadieville, Kentucky	Derailment	Limited resources
1	11	Purcell, Oklahoma	Derailment	Limited resources
1	13	Randolph, Arizona	Other	Limited resources
1	13	Allentown, Pennsylvania	Derailment	Limited resources
1	15	Enid, Oklahoma	Derailment	Limited resources
1	17	North Enid, Oklahoma	Derailment	Limited resources
1	18	Monon, Indiana	Derailment	Limited resources
1	20	Atchison, Kansas	Derailment	Limited resources
1	21	Ritzville, Washington	Derailment	Limited resources
1	21	Angleton, Texas	Derailment	Limited resources
1	23	North Charleston, South Carolina	Derailment	Limited resources
1	23	Stillwater, Minnesota	Derailment	Limited resources
1	25	North Baltimore, Ohio	Derailment	Limited resources
1	26	East St Louis, Illinois	Other impacts	Limited resources
1	28	Melbourne, Arkansas	Derailment	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
1	30	Lockhart, Texas	Derailment	Limited resources
1	30	Columbus, Kansas	Derailment	Limited resources
1	30	San Antonio, Texas	Obstruction	Limited resources
1	31	Crum, West Virginia	Derailment	Limited resources
2	1	Vaughn, New Mexico	Derailment	Limited resources
2	1	Norco, Louisiana	Fire/violent rupture	Limited resources
2	2	Concordia, Kansas	Derailment	Limited resources
2	4	Jerome, Idaho	Derailment	Limited resources
2	6	Riverbank, California	Derailment	Limited resources
2	6	Barstow, California	Derailment	Limited resources
2	7	Willmar, Minnesota	Derailment	Limited resources
2	9	North Platte, Nebraska	Derailment	Limited resources
2	9	Dix, Nebraska	Derailment	Limited resources
2	11	Attica, Ohio	Derailment	Limited resources
2	11	Wendell, Massachusetts	Derailment	Limited resources
2	13	La Joya, New Mexico	Derailment	Limited resources
2	14	Gary, Indiana	Derailment	Limited resources
2	15	San Antonio, Texas	Derailment	Limited resources
2	15	Portsmouth, Ohio	Other impacts	Limited resources
2	16	Poplar, Montana	Derailment	Limited resources
2	18	Union, New Jersey	Derailment	Limited resources
2	18	Caliente, California	Derailment	Limited resources
2	18	Memphis, Tennessee	Derailment	Limited resources
2	18	University Park, Illinois	Derailment	Limited resources
2	21	Waycross, Georgia	Side collision	Limited resources
2	24	Miles City, Montana	Derailment	Limited resources
2	24	Raceland, Louisiana	Derailment	Limited resources
2	24	Thompson, North Dakota	Derailment	Limited resources
2	25	Yuma, Arizona	Derailment	Limited resources
2	25	Camden, Arkansas	Raking collision	Limited resources
2	28	Parsons, Kansas	Derailment	Limited resources
2	28	Newberry, South Carolina	Derailment	Limited resources
3	1	Emporia, Kansas	Derailment	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
3	1	Ridgecrest, California	Obstruction	Limited resources
3	2	Madisonville, Kentucky	Derailment	Limited resources
3	2	Ashdown, Arkansas	Derailment	Limited resources
3	2	Elko, Nevada	Derailment	Limited resources
3	3	Kansas City, Kansas	Other	Limited resources
3	3	Bellevue, Ohio	Other impacts	Limited resources
3	8	Gorin, Missouri	Other	Limited resources
3	9	Westlake, Louisiana	Obstruction	Limited resources
3	9	Worcester, Massachusetts	Derailment	Limited resources
3	9	Springerville, Arizona	Derailment	Limited resources
3	9	Chattanooga, Tennessee	Derailment	Limited resources
3	10	Kansas City, Kansas	Derailment	Limited resources
3	10	Missouri Valley, Iowa	Derailment	Limited resources
3	10	Conway, Pennsylvania	Side collision	Limited resources
3	12	Livingston, Alabama	Derailment	Limited resources
3	14	Mount Shasta, California	Other	Limited resources
3	14	Curtis Bay, Maryland	Side collision	Limited resources
3	15	Dunsmuir, California	Derailment	Limited resources
3	16	Odem, Texas	Derailment	Limited resources
3	16	Tulsa, Oklahoma	Derailment	Limited resources
3	18	Minneapolis, Minnesota	Derailment	Limited resources
3	19	Kincaid, West Virginia	Derailment	Limited resources
3	19	Carson, California	Derailment	Limited resources
3	19	Downs, Kansas	Derailment	Limited resources
3	19	Marble Falls, Texas	Derailment	Limited resources
3	20	Boligee, Alabama	Derailment	Limited resources
3	20	Muncie, Indiana	Other	Limited resources
3	21	Van Horn, Texas	Derailment	Limited resources
3	21	Portland, Oregon	Other	Limited resources
3	24	Rock River, Wyoming	Derailment	Limited resources
3	25	Melrose Park, Illinois	Derailment	Limited resources
3	25	Tyrone, Georgia	Derailment	Limited resources
3	25	Stark, New Hampshire	Derailment	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
3	27	Memphis, Tennessee	Derailment	Limited resources
3	28	Onaga, Kansas	Derailment	Limited resources
3	28	Galesburg, Illinois	Other impacts	Limited resources
3	31	Mitchell, Nebraska	Derailment	Limited resources
4	2	Bay, Arkansas	Derailment	Limited resources
4	2	Scranton, Iowa	Obstruction	Limited resources
4	2	Dry Branch, Georgia	Derailment	Limited resources
4	3	Fostoria, Ohio	Derailment	Limited resources
4	4	Amarillo, Texas	Derailment	Limited resources
4	5	Kansas City, Kansas	Derailment	Limited resources
4	5	Bayard, Nebraska	Derailment	Limited resources
4	6	Indianapolis, Indiana	Derailment	Limited resources
4	6	Los Angeles, California	Derailment	Limited resources
4	11	Richmond Hill, New York	Derailment	Limited resources
4	12	Houston, Texas	Other impacts	Limited resources
4	13	Newark, New Jersey	Derailment	Limited resources
4	13	Denver, Colorado	Derailment	Limited resources
4	14	Shreveport, Louisiana	Derailment	Limited resources
4	15	Barstow, Texas	Derailment	Limited resources
4	16	Newark, New Jersey	Obstruction	Limited resources
4	23	Green River, Utah	Derailment	Limited resources
4	24	Saginaw, Michigan	Derailment	Limited resources
4	25	Topeka, Kansas	Fire/violent rupture	Limited resources
4	27	Bingham, Nebraska	Derailment	Limited resources
4	27	Plainview, Texas	Derailment	Limited resources
4	30	Hastings, Nebraska	Derailment	Limited resources
4	30	Denison, Texas	Other	Limited resources
5	1	Walbridge, Ohio	Derailment	Limited resources
5	2	Malverne, New York	Fire/violent rupture	Limited resources
5	3	Salt Lake City, Utah	Derailment	Limited resources
5	4	Mingo Junction, Ohio	Side collision	Limited resources
5	7	Moreauville, Louisiana	Obstruction	Limited resources
5	7	Churchs Ferry, North Dakota	Derailment	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
5	7	Selkirk, New York	Side collision	Limited resources
5	9	Smyrna, Georgia	Derailment	Limited resources
5	9	White Lake, South Dakota	Derailment	Limited resources
5	9	Waycross, Georgia	Derailment	Limited resources
5	9	Bedford Park, Illinois	Derailment	Limited resources
5	11	Blunt, South Dakota	Derailment	Limited resources
5	11	Fergus Falls, Minnesota	Derailment	Limited resources
5	12	Valley Brook, Oklahoma	Other impacts	Limited resources
5	18	Haviland, Kansas	Other	Limited resources
5	18	Edgar, Nebraska	Other	Limited resources
5	18	Darlington, South Carolina	Derailment	Limited resources
5	18	Sandusky, Ohio	Other	Limited resources
5	19	Macon, Georgia	Derailment	Limited resources
5	24	Oswego, Kansas	Derailment	Limited resources
5	26	Lingle, Wyoming	Derailment	Limited resources
5	27	Sylacauga, Alabama	Derailment	Limited resources
5	30	Caledonia, Ohio	Derailment	Limited resources
5	30	Quinn, South Dakota	Derailment	Limited resources
6	1	La Monte, Missouri	Derailment	Limited resources
6	1	Willard, Ohio	Derailment	Limited resources
6	1	Detroit, Michigan	Derailment	Limited resources
6	2	Brady Lake, Ohio	Derailment	Limited resources
6	2	Klamath Falls, Oregon	Derailment	Limited resources
6	3	Montrose, Iowa	Other	Limited resources
6	3	Houston, Texas	Derailment	Limited resources
6	3	Pensacola, Florida	Derailment	Limited resources
6	3	Eckman, West Virginia	Side collision	Limited resources
6	4	Toledo, Ohio	Other	Limited resources
6	4	Houston, Texas	Other impacts	Limited resources
6	4	Long Beach, California	Derailment	Limited resources
6	5	Toledo, Oregon	Derailment	Limited resources
6	5	Grafton, West Virginia	Derailment	Limited resources
6	6	Manville, Wyoming	Derailment	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
6	6	Hot Sulphur Springs, Colorado	Derailment	Limited resources
6	7	Belen, New Mexico	Derailment	Limited resources
6	7	Long Beach, California	Derailment	Limited resources
6	8	Decatur, Illinois	Derailment	Limited resources
6	8	Ontario, Oregon	Derailment	Limited resources
6	9	Hanna, Wyoming	Derailment	Limited resources
6	9	Waxahachie, Texas	Derailment	Limited resources
6	10	Connellsville, Pennsylvania	Derailment	Limited resources
6	10	Chester, Idaho	Derailment	Limited resources
6	11	Hesperia, California	Derailment	Limited resources
6	11	Waycross, Georgia	Other impacts	Limited resources
6	12	Duncan, Arizona	Derailment	Limited resources
6	13	Platte Center, Nebraska	Derailment	Limited resources
6	13	Lawtey, Florida	Derailment	Limited resources
6	13	Bear, Delaware	Derailment	Limited resources
6	14	Justin, Texas	Other impacts	Limited resources
6	15	Ogden, Utah	Other	Limited resources
6	15	Corona, California	Derailment	Limited resources
6	16	Savage, Mississippi	Derailment	Limited resources
6	16	Forsyth, Montana	Derailment	Limited resources
6	16	Bouse, Arizona	Derailment	Limited resources
6	17	Galesburg, Illinois	Derailment	Limited resources
6	17	Fort Worth, Texas	Derailment	Limited resources
6	18	Kansas City, Missouri	Other	Limited resources
6	18	Venice, Illinois	Derailment	Limited resources
6	18	Montgomery, Alabama	Side collision	Limited resources
6	18	Tulsa, Oklahoma	Derailment	Limited resources
6	19	Maumelle, Arkansas	Derailment	Limited resources
6	21	Valley City, North Dakota	Derailment	Limited resources
6	22	Madisonville, Kentucky	Derailment	Limited resources
6	23	Crimora, Virginia	Derailment	Limited resources
6	23	Sedgwick, Arkansas	Derailment	Limited resources
6	23	San Antonio, Texas	Derailment	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
6	23	Sugar Grove, Ohio	Derailment	Limited resources
6	23	Perryville, Maryland	Derailment	Limited resources
6	23	Avon, Indiana	Derailment	Limited resources
6	24	Albany, Georgia	Derailment	Limited resources
6	25	Indianapolis, Indiana	Other impacts	Limited resources
6	26	Russell, Kansas	Derailment	Limited resources
6	26	Industry, California	Derailment	Limited resources
6	28	Byron, Georgia	Derailment	Limited resources
6	30	Hartford, Wisconsin	Derailment	Limited resources
6	30	Fayetteville, Texas	Derailment	Limited resources
7	1	Des Moines, Iowa	Derailment	Limited resources
7	1	North Platte, Nebraska	Derailment	Limited resources
7	2	Oroville, California	Derailment	Limited resources
7	5	Louisville, Kentucky	Derailment	Limited resources
7	6	Iowa, Louisiana	Derailment	Limited resources
7	7	Tulsa, Oklahoma	Derailment	Limited resources
7	8	Hardin, Montana	Derailment	Limited resources
7	8	Greencastle, Indiana	Derailment	Limited resources
7	8	San Antonio, Texas	Derailment	Limited resources
7	8	Granite City, Illinois	Derailment	Limited resources
7	10	Granada, Colorado	Other	Limited resources
7	11	Denison, Texas	Derailment	Limited resources
7	11	Caliente, California	Derailment	Limited resources
7	12	Stockton, California	Derailment	Limited resources
7	13	Wamsutter, Wyoming	Derailment	Limited resources
7	13	Waycross, Georgia	Derailment	Limited resources
7	14	Lathrop, California	Obstruction	Limited resources
7	14	North Little Rock, Arkansas	Derailment	Limited resources
7	17	Longview, Texas	Derailment	Limited resources
7	18	Rural Hall, North Carolina	Derailment	Limited resources
7	19	Portland, Oregon	Derailment	Limited resources
7	19	Elton, Louisiana	Derailment	Limited resources
7	20	Stephens, Arkansas	Derailment	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
7	20	Pasadena, Texas	Other impacts	Limited resources
7	22	Kansas City, Kansas	Derailment	Limited resources
7	22	Huntsville, Alabama	Derailment	Limited resources
7	24	Anna, Texas	Derailment	Limited resources
7	24	Watkins, Minnesota	Derailment	Limited resources
7	25	Marathon, Texas	Derailment	Limited resources
7	25	Evansville, Illinois	Derailment	Limited resources
7	25	Bloomington, California	Obstruction	Limited resources
7	25	Kansas City, Kansas	Derailment	Limited resources
7	25	Ocala, Florida	Derailment	Limited resources
7	26	Memphis, Tennessee	Derailment	Limited resources
7	26	East St Louis, Illinois	Derailment	Limited resources
7	28	El Paso, Texas	Derailment	Limited resources
7	29	Byhalia, Mississippi	Derailment	Limited resources
7	29	Morris, Minnesota	Derailment	Limited resources
7	29	Roanoke, Texas	Derailment	Limited resources
8	1	Eola, Illinois	Derailment	Limited resources
8	1	Kansas City, Kansas	Other	Limited resources
8	1	Galesburg, Illinois	Derailment	Limited resources
8	2	St. Albans, West Virginia	Derailment	Limited resources
8	4	Elkhart, Indiana	Derailment	Limited resources
8	4	Kansas City, Kansas	Derailment	Limited resources
8	5	Denver, Colorado	Derailment	Limited resources
8	5	Carmel, Maine	Derailment	Limited resources
8	5	Joliet, Illinois	Derailment	Limited resources
8	6	Denver, Colorado	Derailment	Limited resources
8	8	Gillette, Wyoming	Derailment	Limited resources
8	8	Ashdown, Arkansas	Derailment	Limited resources
8	9	North Plains, Oregon	Derailment	Limited resources
8	10	Des Allemands, Louisiana	Derailment	Limited resources
8	10	Cherryvale, Kansas	Derailment	Limited resources
8	10	Laurens, South Carolina	Derailment	Limited resources
8	12	Gordon, Texas	Derailment	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
8	12	Heavener, Oklahoma	Derailment	Limited resources
8	13	Barnhart, Missouri	Derailment	Limited resources
8	13	Savannah, Georgia	Derailment	Limited resources
8	16	Harrisburg, Pennsylvania	Derailment	Limited resources
8	17	Enfield, North Carolina	Derailment	Limited resources
8	17	South St Paul, Minnesota	Other	Limited resources
8	20	Bosler, Wyoming	Derailment	Limited resources
8	20	Chivington, Colorado	Derailment	Limited resources
8	21	Los Angeles, California	Derailment	Limited resources
8	25	Barstow, California	Derailment	Limited resources
8	25	Geismar, Louisiana	Other impacts	Limited resources
8	26	Gary, Indiana	Other impacts	Limited resources
8	26	Houston, Texas	Derailment	Limited resources
8	27	Deer Park, Texas	Derailment	Limited resources
8	28	Mound Valley, Kansas	Derailment	Limited resources
8	28	Gary, Indiana	Derailment	Limited resources
8	29	Terrell, Texas	Derailment	Limited resources
8	30	Louisville, Kentucky	Derailment	Limited resources
8	30	Winslow, Arizona	Rear end collision	Limited resources
8	31	Fort Worth, Texas	Other impacts	Limited resources
9	2	Gila Bend, Arizona	Other	Limited resources
9	3	Nashville, Tennessee	Other impacts	Limited resources
9	4	Amarillo, Texas	Side collision	Limited resources
9	5	Akron, Ohio	Derailment	Limited resources
9	6	Essex, Montana	Derailment	Limited resources
9	9	Dayton, Indiana	Derailment	Limited resources
9	10	Mcgregor, Texas	Derailment	Limited resources
9	11	Silsbee, Texas	Derailment	Limited resources
9	11	Kansas City, Kansas	Derailment	Limited resources
9	11	Caliente, California	Derailment	Limited resources
9	13	Barstow, California	Derailment	Limited resources
9	15	Barstow, California	Derailment	Limited resources
9	15	Trussville, Alabama	Derailment	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
9	16	Jerome, Idaho	Derailment	Limited resources
9	17	Laurel, Montana	Derailment	Limited resources
9	17	Chattanooga, Tennessee	Other	Limited resources
9	18	Elkhart, Indiana	Other impacts	Limited resources
9	20	North Platte, Nebraska	Other impacts	Limited resources
9	22	Sophia, North Carolina	Derailment	Limited resources
9	22	Bedford Park, Illinois	Derailment	Limited resources
9	23	Newark, Ohio	Derailment	Limited resources
9	24	Newark, New Jersey	Derailment	Limited resources
9	24	Dilworth, Minnesota	Derailment	Limited resources
9	25	Midland, North Carolina	Derailment	Limited resources
9	27	Lewellen, Nebraska	Derailment	Limited resources
9	28	Cordova, Alabama	Derailment	Limited resources
9	29	Burbank, Washington	Derailment	Limited resources
9	29	Baytown, Texas	Raking collision	Limited resources
10	2	Fort Worth, Texas	Derailment	Limited resources
10	2	Deer Lodge, Montana	Other impacts	Limited resources
10	3	Melrose Park, Illinois	Derailment	Limited resources
10	4	Bryan, Texas	Derailment	Limited resources
10	4	Spring, Texas	Derailment	Limited resources
10	5	Joliet, Illinois	Other impacts	Limited resources
10	5	Cincinnati, Ohio	Other	Limited resources
10	9	Nora, Illinois	Derailment	Limited resources
10	9	Belva, West Virginia	Derailment	Limited resources
10	9	Gold Run, California	Derailment	Limited resources
10	10	St Louis, Missouri	Derailment	Limited resources
10	10	Bessemer, Alabama	Derailment	Limited resources
10	12	Rosedale, Maryland	Derailment	Limited resources
10	12	Summit Point, West Virginia	Derailment	Limited resources
10	14	Kaylor, South Dakota	Derailment	Limited resources
10	14	Brewton, Alabama	Derailment	Limited resources
10	15	Cape Girardeau, Missouri	Derailment	Limited resources
10	17	Selkirk, New York	Side collision	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
10	19	North Platte, Nebraska	Side collision	Limited resources
10	20	Waller, Texas	Derailment	Limited resources
10	21	Benson, Arizona	Derailment	Limited resources
10	22	Caliente, California	Obstruction	Limited resources
10	23	Von Ormy, Texas	Derailment	Limited resources
10	23	Joplin, Missouri	Derailment	Limited resources
10	23	Tehachapi, California	Derailment	Limited resources
10	25	Providence Forge, Virginia	Derailment	Limited resources
10	25	Pine Bluff, Arkansas	Obstruction	Limited resources
10	27	Louisville, Kentucky	Derailment	Limited resources
10	28	Jenks, Oklahoma	Derailment	Limited resources
11	3	Hutchinson, Kansas	Derailment	Limited resources
11	3	Streetman, Texas	Derailment	Limited resources
11	3	Garvin, Minnesota	Obstruction	Limited resources
11	3	Pasco, Washington	Derailment	Limited resources
11	3	Bellevue, Ohio	Side collision	Limited resources
11	6	Natural Bridge Station, Virginia	Derailment	Limited resources
11	8	Livonia, Louisiana	Obstruction	Limited resources
11	13	Cherryvale, Kansas	Derailment	Limited resources
11	14	Wichita, Kansas	Obstruction	Limited resources
11	15	Guernsey, Wyoming	Derailment	Limited resources
11	16	Hanover, Kansas	Derailment	Limited resources
11	16	Fairfield, Nebraska	Other	Limited resources
11	17	North Kansas City, Missouri	Derailment	Limited resources
11	19	Cumberland, Maryland	Derailment	Limited resources
11	21	Kansas City, Kansas	Derailment	Limited resources
11	21	Ogden, Utah	Obstruction	Limited resources
11	21	Elkhart, Indiana	Other impacts	Limited resources
11	22	Flagstaff, Arizona	Derailment	Limited resources
11	23	Elwood, Illinois	Other	Limited resources
11	24	Etter, Texas	Derailment	Limited resources
11	27	East Chicago, Indiana	Derailment	Limited resources
11	29	Perry, Kansas	Derailment	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
11	30	Pekin, Illinois	Derailment	Limited resources
12	2	Hastings, Nebraska	Derailment	Limited resources
12	2	Whitewater, Colorado	Obstruction	Limited resources
12	3	East St Louis, Illinois	Derailment	Limited resources
12	4	Markham, Illinois	Derailment	Limited resources
12	4	Murray, Utah	Other impacts	Limited resources
12	5	Texarkana, Texas	Derailment	Limited resources
12	5	Chicago, Illinois	Derailment	Limited resources
12	6	Decatur, Illinois	Other	Limited resources
12	7	Merrillan, Wisconsin	Derailment	Limited resources
12	9	Kearny, New Jersey	Side collision	Limited resources
12	9	Billings, Montana	Derailment	Limited resources
12	11	Rock River, Wyoming	Derailment	Limited resources
12	12	Blackfoot, Idaho	Derailment	Limited resources
12	13	Colfax, California	Derailment	Limited resources
12	17	Geismar, Louisiana	Derailment	Limited resources
12	18	Rockingham, North Carolina	Derailment	Limited resources
12	19	Cheyenne, Wyoming	Derailment	Limited resources
12	20	Topeka, Kansas	Derailment	Limited resources
12	20	Lottie, Louisiana	Other impacts	Limited resources
12	22	North Platte, Nebraska	Derailment	Limited resources
12	29	Dover, Oklahoma	Derailment	Limited resources
12	30	Trenton, Kentucky	Derailment	Limited resources
12	30	Industry, California	Derailment	Limited resources
12	30	Carson, California	Derailment	Limited resources

TABLE 23. FRA Nonfatal Railroad Accidents with Damage Over Reporting Limit (Passenger)

Month	Day	Location	Accident Circumstances	Reason Not Investigated
1	19	Hoboken, New Jersey	Fire/violent rupture	Limited resources
1	20	Philadelphia, Pennsylvania	Other	Limited resources
1	20	Chicago, Illinois	Other impacts	Limited resources
1	22	New York, New York	Fire/violent rupture	Limited resources
1	27	Norwalk, Connecticut	Other	Limited resources
1	28	Wasco, California	Other	Limited resources
1	30	New Haven, Connecticut	Derailment	Limited resources
2	8	Boston, Massachusetts	Derailment	Limited resources
2	9	Rutland, Vermont	Derailment	Limited resources
2	16	Lansdowne, Pennsylvania	Obstruction	Limited resources
2	17	Weston, Massachusetts	Other	Limited resources
2	25	Brooklyn, New York	Derailment	Limited resources
3	4	Morrison, Missouri	Obstruction	Limited resources
3	6	Germantown, New York	Obstruction	Limited resources
3	8	Manchester-by-the-Sea, Massachusetts	Other impacts	Limited resources
3	10	Fairfield, Connecticut	Other	Limited resources
3	22	Hyde Park, Massachusetts	Other	Limited resources
3	22	Patterson, New York	Obstruction	Limited resources
3	27	New Haven, Connecticut	Other	Limited resources
3	29	Stamford, Connecticut	Other impacts	Limited resources
4	2	Cornwells Heights, Pennsylvania	Other	Limited resources
4	5	Chicago, Illinois	Other	Limited resources
4	9	Hoboken, New Jersey	Obstruction	Limited resources
4	15	East Alton, Illinois	Obstruction	Limited resources
5	2	Somerville, Massachusetts	Other	Limited resources
5	4	Boston, Massachusetts	Derailment	Limited resources
5	8	Wellesley, Massachusetts	Obstruction	Limited resources
5	10	Mebane, North Carolina	Fire/violent rupture	Limited resources
5	15	Chicago, Illinois	Other impacts	Limited resources
5	16	Harmans, Maryland	Other	Limited resources
5	18	Monroe, Virginia	Obstruction	Limited resources
5	22	Beverly, Massachusetts	Obstruction	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
6	2	Sunnyside, New York	Other	Limited resources
6	3	New York, New York	Raking collision	Limited resources
6	5	Fairfield, Connecticut	Other	Limited resources
6	11	Harrison, New Jersey	Other impacts	Limited resources
6	11	Somerville, Massachusetts	Derailment	Limited resources
6	16	Patrick, South Carolina	Obstruction	Limited resources
6	21	Hempstead, New York	Obstruction	Limited resources
6	29	Dallas, Texas	Derailment	Limited resources
7	1	Darien, Connecticut	Other	Limited resources
7	3	Staatsburg, New York	Obstruction	Limited resources
7	3	Iselin, New Jersey	Other	Limited resources
7	6	Providence, Rhode Island	Other	Limited resources
7	7	Peapack and Gladstone, New Jersey	Derailment	Limited resources
7	8	Lyndon Station, Wisconsin	Fire/violent rupture	Limited resources
7	9	Salisbury, North Carolina	Obstruction	Limited resources
7	12	Hoboken, New Jersey	Derailment	Limited resources
7	18	Philadelphia, Pennsylvania	Obstruction	Limited resources
7	22	Paoli, Pennsylvania	Fire/violent rupture	Limited resources
7	28	Metuchen, New Jersey	Other	Limited resources
7	30	Hollis, New York	Other impacts	Limited resources
8	21	Walthourville, Georgia	Obstruction	Limited resources
8	24	Stamford, Connecticut	Derailment	Limited resources
9	2	Chambers, Arizona	Obstruction	Limited resources
9	3	Aurora, Colorado	Raking collision	Limited resources
9	14	Bay Head, New Jersey	Derailment	Limited resources
9	23	Bellevue, Nebraska	Obstruction	Limited resources
10	9	Philadelphia, Pennsylvania	Other	Limited resources
10	11	Chicago, Illinois	Derailment	Limited resources
10	13	Cortlandt, New York	Obstruction	Limited resources
10	23	Mount Prospect, Illinois	Other impacts	Limited resources
10	27	Stamford, Connecticut	Derailment	Limited resources
10	31	Wellesley, Massachusetts	Obstruction	Limited resources
11	5	Worcester, Massachusetts	Fire/violent rupture	Limited resources

Month	Day	Location	Accident Circumstances	Reason Not Investigated
11	14	Attleboro, Massachusetts	Obstruction	Limited resources
11	17	Washington, District of Columbia	Obstruction	Limited resources
11	25	Croton-on-Hudson, New York	Other impacts	Limited resources
11	30	Justice, Illinois	Derailment	Limited resources
12	9	Somerville, Massachusetts	Other impacts	Limited resources
12	12	Weston, Massachusetts	Obstruction	Limited resources
12	12	Philadelphia, Pennsylvania	Derailment	Limited resources
12	15	Stamford, Connecticut	Other impacts	Limited resources
12	19	Montclair, New Jersey	Rear end collision	Limited resources
12	24	New York, New York	Derailment	Limited resources
12	25	Ayer, Massachusetts	Other impacts	Limited resources
12	26	Poughkeepsie, New York	Obstruction	Limited resources
12	27	Jamaica Plain, Massachusetts	Other	Limited resources
12	28	Boston, Massachusetts	Other	Limited resources
12	31	Chicago, Illinois	Other	Limited resources

Federal Transit Administration Transit Accidents

TABLE 24. FTA Transit Fatal Accidents (Passenger, Customer, or Employee)

Month	Day	Transit Agency	Accident Circumstances	Reason Not Investigated
1	8	San Francisco Bay Area Rapid Transit District	Other	Limited safety benefit
1	17	Puerto Rico Alternativa de Transporte Integrado	Rail collision with person	Not reported

TABLE 25. FTA Transit Fatal Accidents (Not a Passenger, Customer, or Employee)

Month	Day	Transit Agency	Accident Circumstances	Reason Not Investigated
2	23	Santa Clara Valley Transportation Authority	Rail collision with person	Limited resources
3	4	North County Transit District	Rail collision with nontransit motor vehicle	Limited resources
3	5	Minnesota Metro Transit	Rail collision with person	Limited resources
4	8	Denver Regional Transportation District	Rail collision with nontransit motor vehicle	Limited resources
5	15	Dallas Area Rapid Transit	Rail collision with person	Limited resources
5	23	Los Angeles County Metropolitan Transportation Authority	Rail collision with nontransit motor vehicle	Limited resources

Month	Day	Transit Agency	Accident Circumstances	Reason Not Investigated
7	21	Sacramento Regional Transit District	Rail collision with nontransit motor vehicle	Limited resources
7	27	Arizona Valley Metro Rail, Inc.	Rail collision with person	Limited resources
8	4	San Diego Metropolitan Transit System	Rail collision with nontransit motor vehicle	Limited resources
9	3	Utah Transit Authority	Rail collision with person	Limited resources
9	7	Dallas Area Rapid Transit	Rail collision with person	Limited resources
11	12	Los Angeles County Metropolitan Transportation Authority	Rail collision with person	Limited resources
11	22	Los Angeles County Metropolitan Transportation Authority	Rail collision with person	Limited resources

TABLE 26. FTA Transit Nonfatal Accidents (Passenger Train)

Month	Day	Transit Agency	Accident Circumstances	Reason Not Investigated
1	3	Dallas Area Rapid Transit	Other	Limited resources
1	6	San Francisco Bay Area Rapid Transit District	Rail collision with a rail transit vehicle-rail transit maintenance or service vehicle on the rail fixed guideway.	Limited resources
1	20	Massachusetts Bay Transportation Authority	Rail collision with a rail transit vehicle/rail passenger train—revenue service	Limited resources
2	19	The Greater Cleveland Regional Transit Authority	Rail collision with a rail transit vehicle/rail passenger train—revenue service	Limited resources
2	25	MTA New York City Transit	Rail fire	Limited resources
3	12	Massachusetts Bay Transportation Authority	Rail collision with a rail transit vehicle/rail passenger train—revenue service	Limited resources
3	31	Massachusetts Bay Transportation Authority	Other	Limited resources
4	29	Minnesota Metro Transit	Rail collision with fixed object	Limited resources
5	3	Utah Transit Authority	Main line derailment	Limited resources
5	14	New Jersey Transit Corporation	Rail fire	Limited resources
5	14	Puerto Rico Alternativa de Transporte Integrado	Rail fire	Limited resources
5	16	County of Miami-Dade	Rail collision with a rail transit vehicle-rail transit maintenance or service vehicle on the rail fixed guideway	Limited resources
5	17	Arizona Valley Metro Rail, Inc.	Main line derailment	Limited resources
6	19	Southeastern Pennsylvania Transportation Authority	Other	Limited resources
7	9	Massachusetts Bay Transportation Authority	Rail collision with a rail transit vehicle/rail passenger train—not in revenue service	Limited resources
7	20	Massachusetts Bay Transportation Authority	Other	Limited resources
7	24	Southeastern Pennsylvania Transportation Authority	Other	Limited resources
7	26	New Jersey Transit Corporation	Other	Limited resources
7	28	Massachusetts Bay Transportation Authority	Other	Limited resources
8	12	Maryland Transit Administration	Other	Limited resources
8	13	San Francisco Bay Area Rapid Transit District	Rail collision with a rail transit vehicle-rail transit maintenance or service vehicle on the rail fixed guideway	Limited resources

Month	Day	Transit Agency	Accident Circumstances	Reason Not Investigated
8	16	City of Tucson	Rail collision with a rail transit vehicle/rail passenger train—revenue service	Limited resources
8	17	Utah Transit Authority	Other	Limited resources
8	17	Dallas Area Rapid Transit	Rail collision with a fixed object	Limited resources
8	25	Arizona Valley Metro Rail, Inc.	Main line derailment	Limited resources
9	8	Southeastern Pennsylvania Transportation Authority	Rail fire	Limited resources
9	24	City and County of San Francisco	Other	Limited resources
10	10	Massachusetts Bay Transportation Authority	Other	Limited resources
10	14	Southeastern Pennsylvania Transportation Authority	Other	Limited resources
10	15	Southeastern Pennsylvania Transportation Authority	Other	Limited resources
10	19	MTA New York City Transit	Other	Limited resources
11	9	Massachusetts Bay Transportation Authority	Rail fire	Limited resources
11	28	Maryland Transit Administration	Other	Limited resources

Appendix D:

Accident Investigations Taking Longer than 12 Months²⁵

TABLE 27. Ongoing Investigations that Have Exceeded the Expected Time Allotted for Completion

Mode	Event Date	Location	Reason Not Completed	2026 Report Date
Aviation	9/12/2024	Nashville, Tennessee	Technical complexity	
Aviation	9/16/2024	St. Mary's, Alaska	Technical complexity	May 21, 2026
Highway	2/24/2024	San Antonio, Texas	Prioritization of resources	March 31, 2026
Highway	3/3/2024	Philadelphia, Pennsylvania	Prioritization of resources	March 31, 2026
Highway	3/4/2024	Millstone, West Virginia	Prioritization of resources	April 6, 2026
Highway	3/11/2024	Rushville, Illinois	Prioritization of resources	March 6, 2026
Highway	7/24/2024	Kenly, North Carolina	Prioritization of resources	
Highway	8/5/2024	Belle Glade, Florida	Prioritization of resources	April 27, 2026
Highway	8/15/2024	Swanton, Ohio	Prioritization of resources	
Highway	8/31/2024	Vicksburg, Mississippi	Prioritization of resources	
Marine	7/19/2024	Baytown, Texas	Prioritization of resources	
Marine	8/10/2024	Luna Pier, Michigan	Prioritization of resources	
Marine	12/1/2024	Juneau, Alaska	Prioritization of resources, complexity	
Pipeline	1/24/2024	Jackson, Mississippi	Technical complexity	March 12, 2026
Railroad	12/18/2024	Pecos, Texas	Prioritization of resources	
Railroad	7/5/2024	Bordulac, North Dakota	Technical complexity	May 18, 2026

²⁵ Title 49 U.S.C. section 1116(c)(7) requires that the agency provide annually "a list of ongoing investigations that have exceeded the expected time allotted for completion by Board order and an explanation for the additional time required to complete each such investigation." The list above includes investigations not completed within 12 months of initiation and only those which have been submitted to the Board for consideration.