



# What is the National Transportation Safety Board?





# The National Transportation Safety Board

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

## Safety Board's Scope

The Safety Board's mission is to determine the probable cause of:

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

## Other Safety Board Responsibilities

The Independent Safety Board Act of 1974 gives the Board authority to:

- conduct special studies on safety problems;
- maintain official U.S. census of aviation accidents;
- evaluate the effectiveness of government agencies involved in transportation safety;
- evaluate the safeguards used in the transportation of hazardous materials;
- review appeals from airmen and merchant seamen whose certificates have been revoked or suspended;
- review appeals from airmen, mechanics, and repairmen who have been assessed civil penalties by the Federal Aviation Administration (FAA);
- lead U.S. teams on foreign airline accident

- investigations to assist foreign authorities under the provisions of the International Civil Aviation Organization (ICAO) agreements; and
- evaluate the effectiveness of emergency responses to hazardous material accidents.

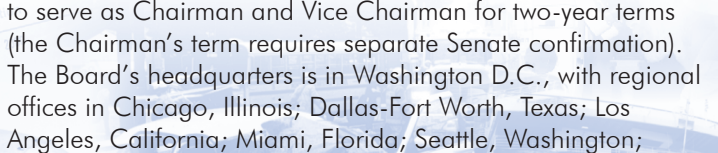
In 1996, the Aviation Disaster Family Assistance Act assigned to the Safety Board the responsibility of coordinating the resources of the federal government and other organizations in order to support the efforts of local and state authorities and the airlines in assisting aviation disaster victims and their families following accidents. In addition, a Presidential memorandum directed Federal agencies to support the Board when it assumes those same responsibilities for major surface transportation accidents.

## Safety Board Predecessors

In aviation's earliest years, the Air Commerce Act of 1926 gave the Commerce Department the authority to determine the cause of airplane accidents. A small unit within the Commerce Department, known as the Aeronautics Branch, performed this function. By 1933, the Aeronautics Branch became the Bureau of Air Commerce, which was replaced by the Independent Air Safety Board. In 1938, the Air Safety Board became the Civil Aeronautics Administration, which two years later became the Civil Aeronautics Board (CAB). The CAB's Bureau of Safety formed the nucleus of the NTSB, which was created in 1967 as an independent agency within the newly created U.S. Department of Transportation (DOT). Congress expanded the Safety Board's authority to include accident investigation in four other modes: rail, highway, marine, and pipeline. In 1974, Congress passed the Independent Safety Board Act, which severed the Board's ties to DOT and gave the Board increased authority in accident investigations, per the Aviation Disaster Family Assistance Act.

## Safety Board Composition

The Safety Board is composed of five Members who are nominated for five-year terms by the President and confirmed by the Senate. Two of the Members are designated by the President to serve as Chairman and Vice Chairman for two-year terms (the Chairman's term requires separate Senate confirmation). The Board's headquarters is in Washington D.C., with regional offices in Chicago, Illinois; Dallas-Fort Worth, Texas; Los Angeles, California; Miami, Florida; Seattle, Washington;



Parsippany, New Jersey; Anchorage, Alaska; Atlanta, Georgia; Denver, Colorado; and Ashburn, Virginia.

## Accident Investigation Go-Teams

One of the more publicly visible aspects of a major accident investigation is the Board's use of the "go-team" concept. On-call 24 hours a day, seven days a week, the go-team is a group of Board personnel who possess a wide range of accident investigation skills. In aviation, for example, a go-team includes an investigator-in-charge (IIC) and specialists trained in areas such as witness interviews, aircraft systems and structures, maintenance, operations, air traffic control, and meteorology.

In the case of a railroad accident, the go-team is similar, but its members will include specialists trained in track construction and maintenance, mechanical systems, signal systems, and operations. In the case of a marine accident, the go team members will include deck officers, marine engineers, naval architects, and specialists in marine lifesaving equipment and procedures. Similarly, the Safety Board will call upon the skills of its pipeline and highway staff when investigating accidents in those modes of transportation. Some go-team members have expertise that is completely "intermodal" in that it may be applicable to other modes. Human performance and survival specialists fall into this category, as do the Board's metallurgists, meteorologists, and hazardous materials specialists.

A Board Member usually accompanies the go-team to the scene of an accident to serve as spokesperson on scene along with a public affairs officer who is assigned to the team to coordinate media activities. In addition, members of the Board's Transportation Disaster Assistance staff will launch with the team to assist the families of accident victims and coordinate federal response efforts.

## Parties to the Investigation

DOT modal agencies that have day-to-day oversight of the transportation industry assist the NTSB during the course of an investigation. These agencies include the FAA, the Federal Railroad Administration (FRA), the Research and Special Programs Administration (RSPA), the U.S. Coast Guard (USCG), the National Highway Traffic Safety Administration (NHTSA),

the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Federal Motor Carrier Safety Administration (FMCSA). These agencies, as well as other federal and state agencies and/or law enforcement organizations, often conduct their own parallel investigations for enforcement purposes. However, determining the probable cause of NTSB-investigated transportation accidents is the responsibility solely of the Safety Board. It is important to note that the NTSB was established as an independent agency because, during the course of its investigations, it often must investigate the role that the appropriate DOT agency may have played in causing the accident.

During the investigation, the NTSB also enlists the support and oversees the participation of technically knowledgeable industry and labor representatives who have special information and/or capabilities. This relationship is known as the “party system.” It is through this system, under the direction of the NTSB, that much of the background technical information is gathered for use in the Board’s factual reports. NTSB staff supervises all investigative activities. Only the five Presidentially appointed Board Members determine probable cause and issue safety recommendations developed through the investigation.

## **On-Scene Investigative Activities**

The amount of time a go-team remains at an accident site varies, but generally a team completes its on-scene work in about seven to ten days. The NTSB takes its responsibility to keep the public informed very seriously. Often, when a major accident occurs and the probable cause is not readily apparent, there is considerable speculation by the press and public about what happened. To minimize this, the Safety Board’s policy is to provide factual information on the progress of the investigation by conducting press briefings, issuing periodic press statements, and/or having a Board Member meet directly with the press to brief them and to answer questions in the days following an accident. Only the known facts of the investigation are conveyed. The Board does not speculate about the possible causes of the accident.

## **Laboratory Capabilities**

The Board operates its own technical laboratories to provide NTSB investigators with unbiased analysis. For example, the

engineering services laboratory has the ability to “read out” aircraft cockpit voice recorders and flight data recorders. These so-called “black boxes” provide investigators with a profile of an aircraft during the crucial last minutes of the accident flight. The Board’s readout capability is not confined to aviation. Similar techniques are applied to ships’ voyage data recorders, locomotive event recorders, and highway vehicle data recorders.

In addition, materials laboratory engineers and metallurgists perform post-accident analysis of components involved in accidents in all modes of transportation, ranging from jet aircraft engines to railroad tankcars. The laboratory uses state-of-the-art investigative equipment, such as scanning electron microscopes and x-ray analyzers, to document anomalies found during accident investigations and to determine causes of materials failures.

## **The Public Docket**

Within six months after an accident, factual reports written by NTSB investigators are usually made available in a public docket at NTSB headquarters in Washington, D.C. If additional, relevant factual material is developed later, it will be added to the docket as it becomes available. All of this public information may be obtained, at the cost of reproduction of the documents, from the NTSB’s Public Inquiries Branch in Washington, D.C.

## **The Public Hearing**

In the months following an accident, the Board may decide to hold a public hearing to clarify accident information and to air significant safety issues in a public forum. A Board Member presides over the hearing, the parties are permitted to participate, and witnesses provide technical testimony under oath.

## **The Final Report**

With the completion of the fact-finding phase, the accident investigation process enters its final stage. The Board’s staff analyzes the factual findings and makes their recommendation(s) of an accident’s probable cause. Major investigations result in a draft accident report that is presented to the five Board Members for discussion and approval at a public meeting in Washington. Accidents investigated by the Board’s field investigators generally are written as briefs.

The entire process—from accident investigation to final report—normally takes about a year. However, some complex accident investigations have taken as long as four or more years to complete.

## Safety Recommendations

Safety recommendations are the Board's most important product. It is vital to the Board's basic role of accident prevention since it is the lever used to bring about safety changes to and improvements in the nation's transportation system.

Timeliness is an essential part of the recommendation process. As a result, the Board occasionally issues safety recommendations as soon as a problem is identified, without waiting for an accident investigation to be completed and the probable cause determined.

In its mandate to the Board, Congress emphasized the importance of safety recommendations, saying the Board will "advocate meaningful responses to reduce the likelihood of recurrence of transportation accidents." In each recommendation, the Board designates the person, or the party, expected to take action, describes the action the Board recommends, and clearly states the safety need to be satisfied. Although the Board's recommendations are not mandatory, to emphasize their importance, Congress requires DOT to respond to recommendations made to it and its agencies within 90 days.

The Safety Board established its "Most Wanted" safety recommendations program to highlight recommendations that would have the greatest impact on transportation safety at the national level. Although the NTSB actively advocates for the acceptance of all of its recommendations, follow-up efforts for those recommendations on the "Most Wanted" list are generally more aggressive.

## Aviation Safety

The Board investigates thousands of aviation accidents annually, including all air carrier, commuter and air taxi accidents, in-flight collisions, and fatal general aviation accidents. The Board also participates in the investigation of major airline crashes in other countries that involve U.S. carriers, U.S.-manufactured



or -designed equipment, or U.S. obligations under ICAO. The Board also conducts safety studies of aviation issues that allow it to go beyond single accident investigations to examine safety problems from a broader perspective. In the past, the Board has conducted safety studies on air traffic control, weather, crashworthiness, in-flight collisions, and commuter airlines. Most of the Board's air safety recommendations are directed to the FAA and have resulted in a wide range of safety improvements such as pilot training, aircraft maintenance and design, air traffic control procedures, and post-accident survival.

## Highway Safety

Selecting a manageable number of highway accidents for investigation requires careful screening of millions of traffic accidents every year. The Board generally investigates accidents involving issues with wide-ranging safety significance such as collapses of highway bridge structures, fatalities on public transportation vehicles (such as intercity buses), and collisions at grade crossings involving trains and public transportation or hazardous materials vehicles.

The investigative team is usually composed of an automotive engineer, a civil engineer, a motor carrier specialist, a crashworthiness engineer, and a human factors specialist. As part of the Board's responsibilities, it also examines the safety programs of the DOT modal agencies. In addition, the Board recently concluded a major highway safety initiative that examined federal and state oversight of the truck and bus industries, technological applications for heavy vehicle safety, safety issues related to the implementation of the North American Free Trade Agreement, and the effectiveness of the Commercial Driver's License program. The Board's recommendations in the highway mode are usually issued to DOT, NHTSA, FHWA, FMCSA, as well as state and local agencies, operators, manufacturers, and trade associations.

## Marine Safety

The Safety Board investigates major marine accidents on navigable waters of the United States, involving U.S. merchant vessels in international waters, as well as collisions involving U.S. public and nonpublic vessels. In addition, it investigates selected marine accidents that involve public transportation or those

of a recurring nature. Under joint regulations promulgated by the Safety Board and the USCG, the USCG conducts the preliminary investigations of all marine accidents and notifies the Board if an accident is a major marine accident (involves the loss of six or more lives); involves the loss of a self-propelled vessel of 100 or more gross tons or property damage estimated at more than \$500,000; or involves a serious threat from hazardous materials. The NTSB then responds by conducting an independent investigation, by participating in a joint Safety Board/USCG investigation, or by asking the USCG to conduct an investigation for the Board. As a result of its investigations, the Safety Board issues safety recommendations to agencies such as the Coast Guard, the U.S. Army Corps of Engineers, shipping firms, and other maritime organizations.

## **Railroad, Pipeline, and Hazardous Materials Safety**

The Safety Board investigates many railroad accidents, including freight train collisions and derailments; however, it places special emphasis on train accidents that involve the traveling public, such as passenger train and rail rapid transit accidents. The Board's criteria for investigating a railroad accident include accidents involving a fatality or substantial damage. As a result of railroad accident investigations, the Board issues safety recommendations to agencies such as the FRA, the FTA, the National Railroad Passenger Corporation (Amtrak), state regulatory agencies, rapid transit agencies, trade associations, and common carriers. Safety studies in the rail mode have examined areas such as the transportation of hazardous materials and rapid transit systems.

Under its Congressional mandate, the Safety Board investigates all pipeline accidents involving a fatality or substantial property damage. Additionally, the Board may investigate accidents of a recurring nature. Once notified of an accident, the Board dispatches to the site an investigator who takes charge of a team composed of investigative personnel from agencies such as the state public utility commission, local fire and police units, pipeline companies, and DOT. In recent years, the Board has conducted investigations of accidents on pipelines that transport natural gas, highly volatile liquids, and other petroleum products, some of which pass through highly populated urban areas. As a result of pipeline accident investigations, the Board

issues safety recommendations to agencies such as RSPA, state regulatory agencies and utilities, and pipeline companies. The Safety Board investigates selected accidents involving the release of hazardous materials in all modes of transportation, including fatal accidents or those causing major disruptions to a community. Safety Board investigations are especially concerned about the effects of materials released in public areas, emergency response by local authorities, and the adequacy of federal standards for the transportation of hazardous materials. When the accident is the result of the transport of a hazardous material, the investigation focuses on the performance of the containers, the preparation for and handling of the material during transport, the health and safety hazards of the material, the markings and hazard communications for the shipments, and the effectiveness of the emergency response. As a result of hazardous materials investigations, the Board issues safety recommendations to all DOT modal agencies and the transportation community.

## Regional Investigations

Most of the preceding information applies not only to major investigations, but also to those investigated in the aviation, highway, and railroad modes by the NTSB's ten regional and field offices. Although there is no team of NTSB investigators associated with a regional investigation, a limited "party system," under NTSB direction, is still used.

Unlike major investigations, the media and victims' family members receive information regarding a regional investigation from the IIC instead of the NTSB's headquarters staff. Regional accident investigations usually result in a two-page, computerized accident brief, rather than full Board-adopted reports.

## Transportation Disaster Assistance

Following a major transportation accident, the Board's Office of Transportation Disaster Assistance coordinates the provision of federal services to the survivors and the victims' families, including family counseling, victim identification and forensic services, communicating with foreign governments, and translation services. The office's staff also conducts family informational briefings at the accident scene, and provides periodic updates and answers families' questions during the ensuing investigation.

## NTSB Academy

The NTSB has a training academy in Ashburn, Virginia, aimed at improving the training and skills of its own employees, and making its safety expertise and know-how more widely available to the transportation community. The state-of-the-art, 72,000 square foot, two-level facility contains 5 classrooms, a large laboratory to house the three-dimensional 93-foot reconstruction of the forward portion of the TWA flight 800 aircraft's fuselage (and other transportation vehicles), ample laboratory space, an outside simulations court, meeting rooms, and student and teacher work areas and offices. Information on upcoming classes may be obtained on the Board's website.

## Public Inquiries

Records of NTSB investigations, safety recommendations, enforcement proceedings, and certain statistical information are available to the public for review or duplication at NTSB headquarters in Washington, D.C. Also available is a database of aviation accidents that have occurred since 1962, including the probable cause and contributing factors as determined by the Safety Board. Direct public access to much of this information is provided through the NTSB Web site at <<http://www.nts.gov>>. For more information, contact:

### Public Inquiries Branch

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Washington, D.C. 20594

(202) 314-6551 or  
(800) 877-6799  
Fax: (202) 314-6598

TDD Federal Information Relay Service:  
(800 ) 877-8339

Email:

- general inquiries: [pubinq@nts.gov](mailto:pubinq@nts.gov)  
- aviation data: [avdata@nts.gov](mailto:avdata@nts.gov)



Accident reports, safety studies, special investigation reports, statistical reviews, and safety recommendations may be downloaded from the NTSB Web site, or printed copies may be purchased from:

### **National Technical Information Service**

5285 Port Royal Road  
Springfield, Virginia 22161

(703) 487-4630 (Subscription Orders)

(703) 487-4650 (Single-Copy Orders)

*(Subscription rates apply to certain recurring publications)*

## **Media Inquiries**

A staff of public affairs officers is available to answer media inquiries about all aspects of NTSB operations. The Office of Public Affairs responds to press inquiries, addresses problems and concerns raised by the media, and provides support at major accident sites. Anyone may subscribe, via the NTSB Web site, to the NTSB Mailing List to receive emails of NTSB press releases, other notices, and safety recommendations.

Media inquiries should be directed to

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