



NTSB National Transportation Safety Board

Office of Aviation Safety

Safety First: NTSB Strategies for Improving Aviation Safety

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NTSB



Mission and Authority



UNITED STATES CODE, TITLE 49

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SUBCHAPTER 5—GENERAL

§1181. Definitions

Section 40102(a) of this title applies to this chapter.

SUBCHAPTER 6—ORGANIZATION AND ADMINISTRATIVE

§1183. General organization

(a) ORGANIZATION.—The National Transportation Safety Board is an independent establishment of the Executive Branch of the Government.

(b) APPOINTMENT OF MEMBERS.—The Board is composed of 5 members appointed by the President, by and with the advice and consent of the Senate. Not more than 3 members may be appointed from the same political party. The members shall be appointed on the basis of technical qualification, professional standing, and demonstrated knowledge of accident reconstruction, safety engineering, human factors, transportation safety, or transportation regulation.

(c) TERMS OF OFFICE AND REMOVAL.—The term of office of each member is 5 years. The President may appoint a successor to fill a vacancy occurring before the expiration of the term for which the predecessor of that individual was appointed for the remainder of that term. When the term of office of a member ends, the member may be reappointed if a successor is appointed and qualified. The President may remove a member for inefficiency, neglect of duty, or other cause in office.

(d) CHAIRMAN AND VICE CHAIRMAN.—The President shall designate, by and with the advice and consent of the Senate, a Chairman of the Board. The President also shall designate a Vice Chairman of the Board. The terms of both the Chairman and Vice Chairman are 2 years. When the Chairman is absent or unable to perform the duties of the office, the Vice Chairman shall perform those duties.

Mission

The NTSB is an independent federal agency charged with determining the probable cause(s) of transportation accidents, conducting special studies and investigations, making recommendations to prevent their recurrence, and coordinating resources to assist victims and their families after an accident.



Independence

The NTSB

- **Separate from the DOT and FAA**
- **Reports directly to the President of the US**
- **Has no regulatory authority**



NTSB Leadership

The NTSB is composed of five Board Members nominated for five-year terms by the President of the United States and confirmed by the Senate.

Two members are designated to serve as Chair and Vice-Chair.



Jennifer Homendy
Chair



Bruce Landsberg
Vice Chair



Michael Graham
Member

Vacant



Thomas Chapman
Member



NTSB Modal Offices

- ◆ **Aviation Safety**
- ◆ **Highway Safety**
- ◆ **Marine Safety**
- ◆ **Railroad, Pipeline, and Hazardous Materials Safety**

Office of Aviation Safety

NTSB Regional Offices

ANC

Alaska Region
Anchorage, Alaska

WPR

Western Pacific Region
Federal Way, Washington

CEN

Central Region
Denver, Colorado

ERA

Eastern Region
Ashburn, Virginia



- ◆ **113 Employees**
- ◆ **54 HQ Specialists**
- ◆ **55 Regional Investigators**
- ◆ **4 Mission Support**



Statutory Authority

The National Transportation Safety Board shall investigate each accident involving a U.S. aircraft other than an aircraft operated by the Armed Forces or by an intelligence agency of the United States.





Application of Authority

This authority permits NTSB investigators to:

- ◆ **Access, secure, and retrieve wreckage;**
- ◆ **Obtain information through records and interviews.**



DEFINITIONS

Definitions – Part 830.2

Accident:

- Operation of the aircraft
 - *Intention of flight*

That results in:

- Death
- Serious injury
- Substantial damage

Definitions – Part 830.2

Serious Injury:

- Hospitalization for more than 48 hrs
- Fracture of any bone *
- Hemorrhages, nerve, muscle, tendon
- Internal organ injury
- Second or third degree burns & 5%

Definitions – Part 830.2

Substantial Damage:

Damage or failure that adversely effects

- *Structural strength*
- *Performance*
- *Flight characteristics*

AND

Requires replacement or major repair



photo courtesy VansAirForce.net

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AVIATION
←

←
LEARN TO
FLY HERE!
←







REPAIRS OF PROPELLERS

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INVESTIGATION OVERVIEW

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Reports

- Preliminary Report – 15 days
- Final Report (Factual, Analysis, and PC)
 - Data Collection – 90 days
 - Field/Limited – 6 to 18 months

Investigation Scaling

The investigation is scaled based on safety factors involved

4 No safety payback, no subject matter expert (SME), abbreviated work plan



3 Limited SMEs involved, possible safety payback, standardized work plan



2 Association with NTSB safety focus or possibility, multiple SMEs, standardized work plan



1 Multiple safety issue areas, approved by office director, numerous SMEs, standardized work plan



Note: Class 5 will be used for cases when we do not release a probable cause.

Limited Investigations



Field Investigations



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Major Investigations





Pillars of Responsibility

Pillars of Responsibility

- Determine the facts and circumstances surrounding an accident
- Establish the most Probable Cause
- Accident prevention

Facts and Circumstances

“The Board shall report on the facts and circumstances of each accident investigated by it... The Board shall make each report available to the public at a reasonable cost. “

Probable Cause

- Analysis of the relevant facts and circumstances
- Most “probable” based on that information
- Per statute, investigations are never closed

Accident Prevention

- Safety Results
- Safety Accomplishments
- Recommendations

- Most Wanted List



Common Safety Issues

Fatigue



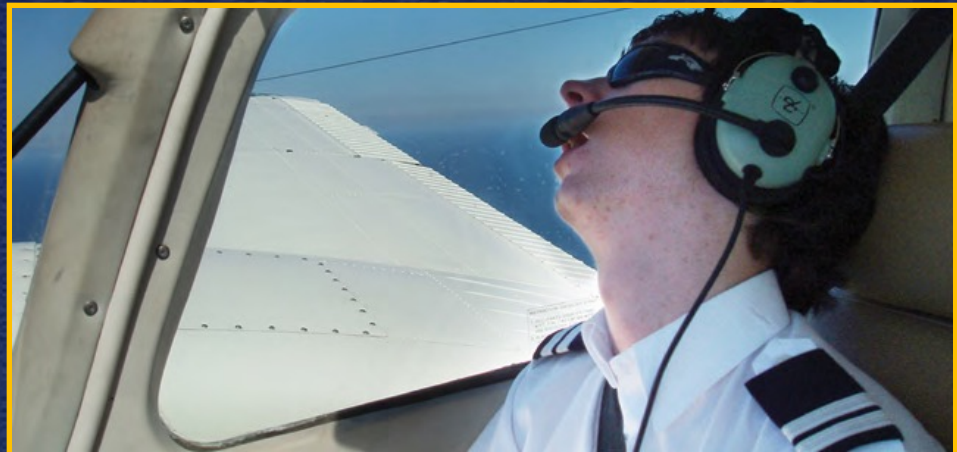
Consequences of Fatigue

- Impaired performance or alertness
- Increased response times
- Loss of SA and impaired memory
- 15 hours continuous wakefulness equivalent of intoxication



Mitigations for fatigue

- Get 8 hours of sleep
- *Take naps
- Short activity breaks
- *Caffeine



Distractions



Distractions

- Cellular Telephones
- Tablets
- GPS/Navigation Technology
- Nonessential conversations

Consequences of Distractions

- Situational Awareness
- Task Completion
- Fuel Exhaustion
- Mid-air Collisions
- Destination Overflight

Mitigation for Distractions

- Learn about technology on the ground
- Trouble shoot problems at altitude
- Eliminate unnecessary technology in the cockpit
- Practice “Sterile Cockpit”

NTSB Resources

- www.nts.gov
- www.youtube.com/user/NTSBgov
- www.Facebook.com/NTSBgov



NTSB Operations Center

844-373-9922

- **Available 24 hours / 7 days**
- **Accident or Reportable Event**
- **Connect to NTSB Duty Officer**



Contact information

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QUESTIONS?

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