



# Improving safety through accident investigation: An NTSB perspective

Robert Sumwalt

March 18, 2015

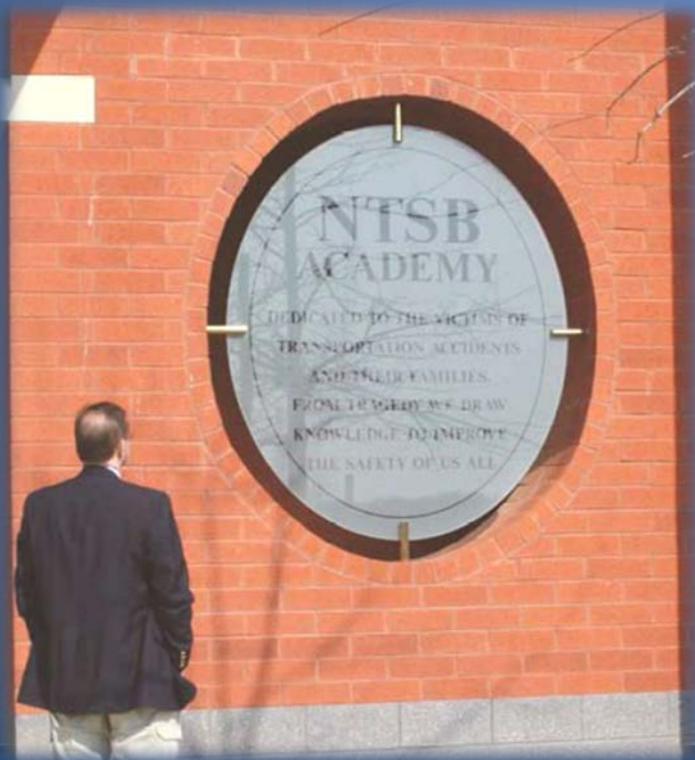


**“It was really great to see firsthand the professional work done by members of the airborne law enforcement community.”**



**NTSB**

*Airborne Law Enforcement Association*  
**FALLEN HERO MEMORIAL**  
*Dedicated to those above and beyond...*



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# Navigating through this presentation

- What is NTSB?
- NTSB Most Wanted List
- Interfacing with NTSB following an accident
- NTSB recommendations



NTSB



NTSB is an independent federal agency, charged by Congress to investigate transportation accidents, determine probable cause, and issue safety recommendations.



# Facilities

- Headquartered in Washington, DC
- 4 Regional Offices
- NTSB Training Center



# Pop Quiz

Select the most correct answer

NTSB has statutory authority to investigate aircraft accidents involving the following types of aircraft:

- a. aircraft operated under Part 91 and 121
- b. military aircraft
- c. civil aircraft
- d. all of the above
- e. none of the above



# Pop Quiz

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# 49 USC § 1132

## (a) GENERAL AUTHORITY.

### (1) The NTSB shall investigate:

(A) each accident involving civil aircraft;  
and

(B) with the participation of appropriate military authorities, each accident involving both military and civil aircraft.



# Pop Quiz

Select the most correct answer

NTSB investigations are for the purpose of:

- a. apportioning blame
- b. finding fault
- c. determining liability
- d. all of the above
- e. none of the above



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# The Board



Robert Sumwalt



Chris Hart



Earl Weener



# Experienced Staff



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# NTSB 2015 **MOST WANTED** LIST OF TRANSPORTATION SAFETY IMPROVEMENTS

Critical changes needed to reduce  
transportation accidents and save lives

Education

Legislation  
Regulation



[www.nts.gov/mostwanted](http://www.nts.gov/mostwanted)



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# NTSB 2015 Most Wanted List

- Disconnect from Deadly Distractions
- End Substance Impairment in Transportation
- Enhance Public Helicopter Safety
- Implement Positive Train Control
- Improve Rail Tank Car Safety
- Make Mass Transit Safer
- Prevent Loss of Control in GA
- Require Medical Fitness for Duty
- Strengthen Commercial Trucking Safety
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# Interfacing with NTSB following an accident



# The Party Process

- The NTSB designates parties to the investigation to those organizations that can provide technical expertise.
- Typically parties may include:
  - FAA (by law)
  - Operator
  - Airframe and engine manufacturers
  - Major component manufacturers
  - Pilot, ATC, maintenance, and flight attendant union representatives
  - Airport authorities
  - First responders



# Pop Quiz

Select the correct answer

Public operators are automatically granted party status for NTSB investigations.

True

False



NTSB

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Select the correct answer

Public operators are automatically granted party status for NTSB investigations.

True

False



NTSB

# Value of the Party System



- Parties provide technical expertise
- Parties provide checks and balances to the process of accident investigation
- Transparency
- Immediate corrective actions

# ISASI FORUM

APRIL-JUNE 1998

"AIR SAFETY THROUGH INVESTIGATION"



**“The discovery of human error should be considered the starting point of the investigation, and not the ending point.”**



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## NTSB News

NTSB Board Member Earl Weener joined by Tracy Murrell, Director of Marine Safety and Eric Stolzenberg, Investigator In Charge, view damage to bow of the M/V CONTI PERIDOT.



# NTSB

An Independent  
United States Federal

## NTSB Response Operations Center

To report an incident/accident or if you are a public safety agency, please call 1-844-373-9922 or 202-314-6290 to speak to a Watch Officer at the NTSB Response Operations Center (ROC) in Washington, DC (24/7).

News @ NTSB



### Tweets

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13 Mar

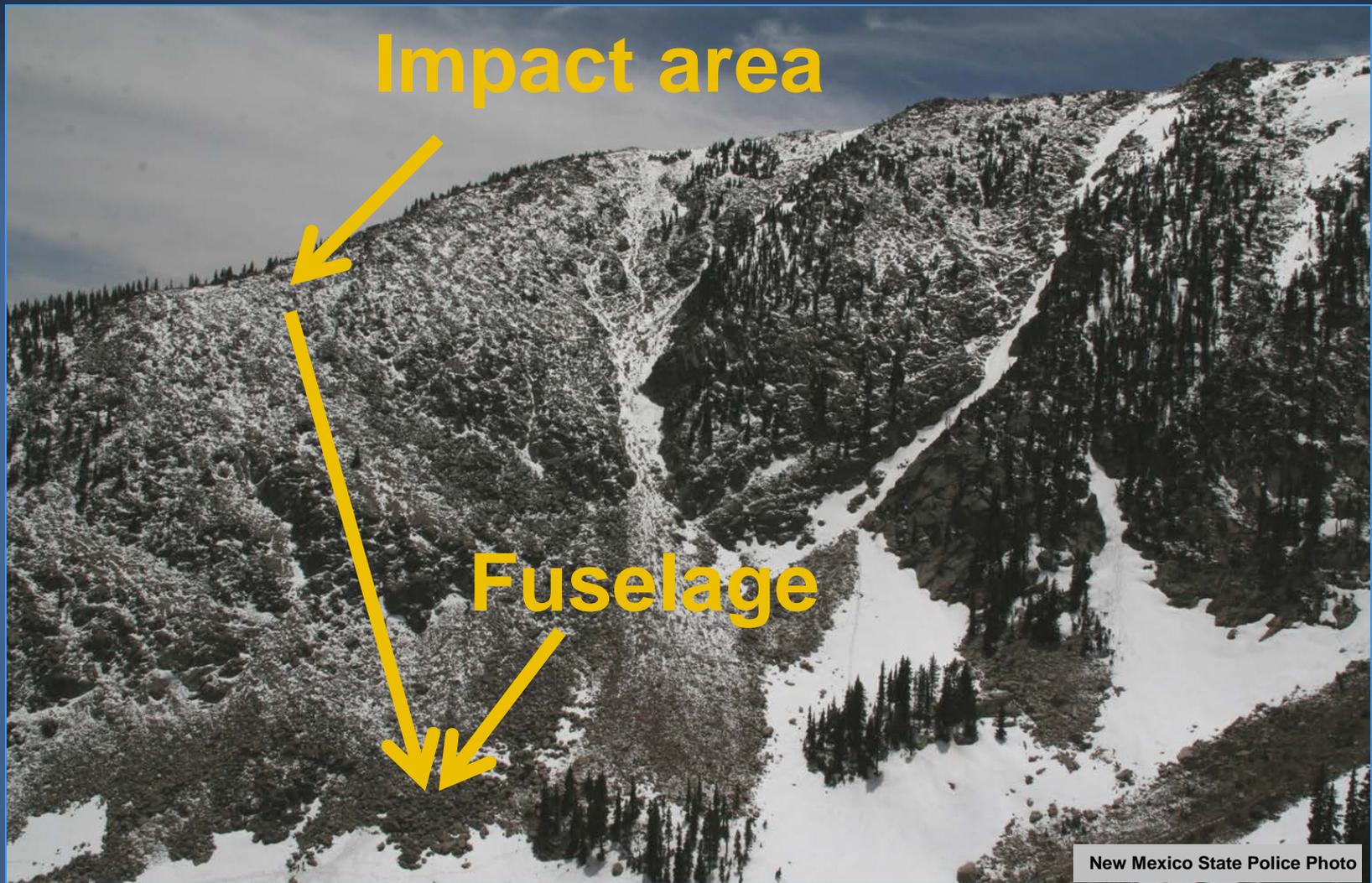


# New Mexico State Police



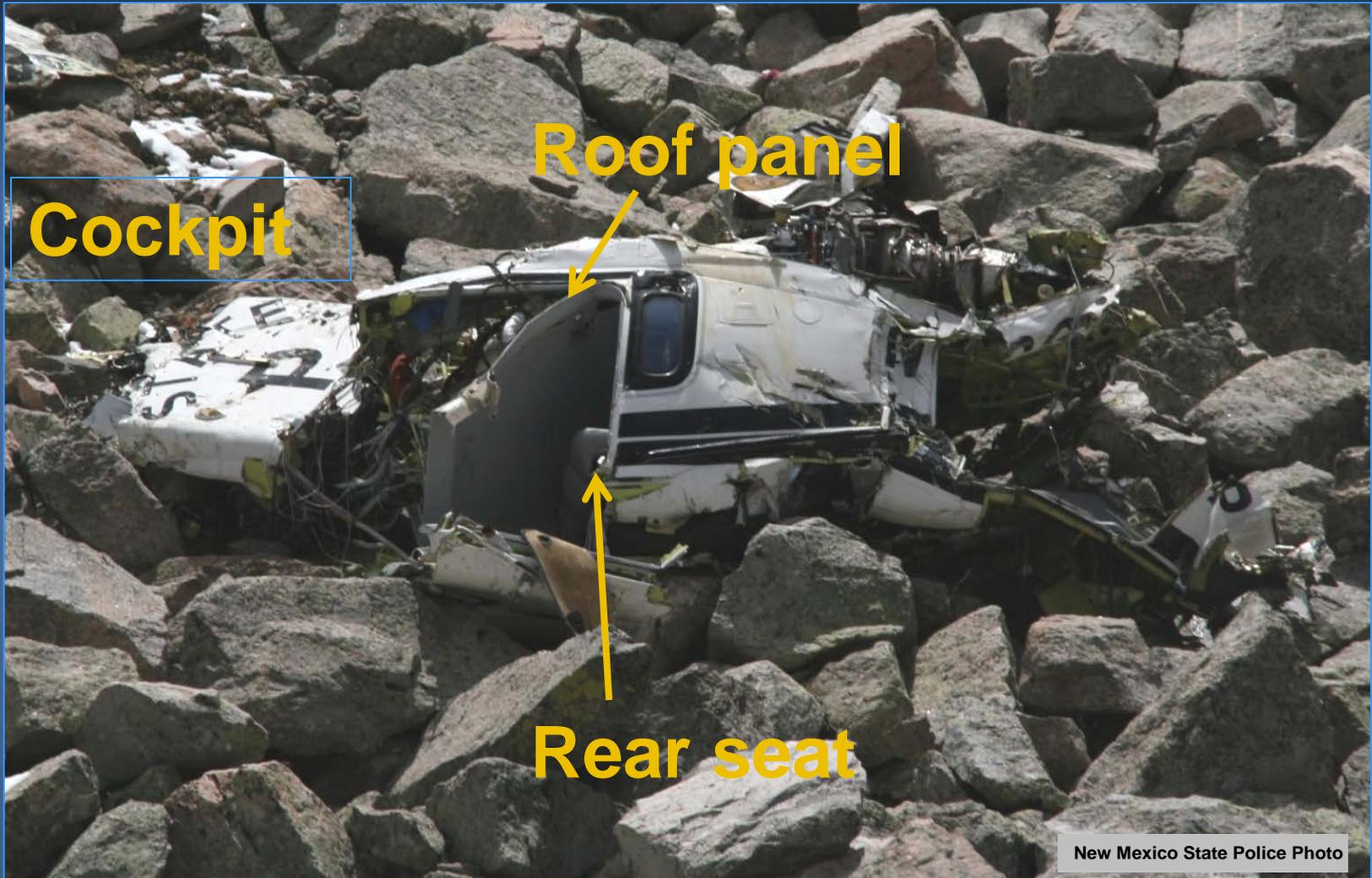
- June 9, 2009
- Agusta A-109E
- Search and rescue flight
- Near Santa Fe, New Mexico
- Pilot and passenger killed
  - spotter seriously injured

# History of Flight

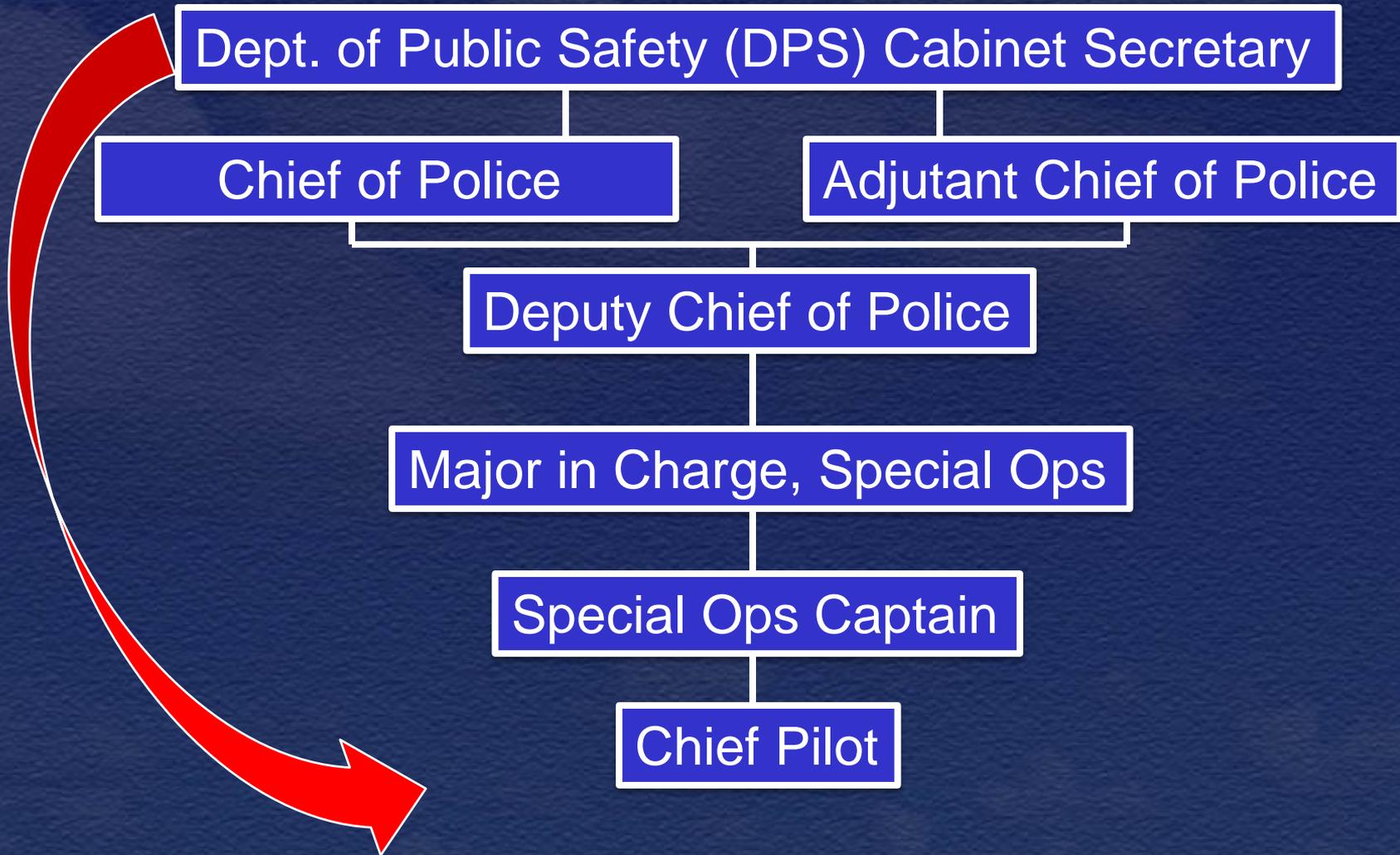


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# Fuselage



# NMSP Reporting Structure



# DPS Cabinet Secretary

- Had formerly been a NMSP chief pilot
- Liked to be involved with aviation section, but did not ensure it had an effective safety program
  - Wrote memo saying that accident pilot was authorized to operate the accident helicopter
- Took actions that were detrimental to safety
  - Dismissed former chief pilot for turning down missions
  - Demanded explanations whenever a pilot declined a flight
  - Complained vigorously when New Mexico National Guard pilots launched when NMSP declined
  - Would ask NMSP pilots to continue checking the weather when they had already declined mission due to weather



# NTSB Finding

“... there was evidence of management actions that emphasized accepting all missions, without adequate regard for conditions, which was not consistent with a safety-focused organizational safety culture...”



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# Probable Cause:

- The pilot's decision to take off from a remote, mountainous landing site in dark (moonless) night, windy, instrument meteorological conditions.
- Contributing to the accident was an organizational culture that prioritized mission execution over aviation safety, and
- the pilot's fatigue, self-induced pressure to conduct the flight, and situational stress.



# Safety Recommendations

NTSB

Aircraft Accident Report

## 4. Recommendations

As a result of this investigation, the National Transportation Safety Board makes the following recommendations to the governor of the state of New Mexico:

Require the New Mexico Department of Public Safety to bring its aviation section policies and operations into conformance with industry standards, such as those established by the Airborne Law Enforcement Association. (A-11-53)

Require the New Mexico Department of Public Safety to develop and implement a comprehensive fatigue management program for the New Mexico State Police (NMSP) aviation section pilots that, at a minimum, requires NMSP to provide its pilots with protected rest periods and defines pilot rest (in a manner consistent with 14 Code of Federal Regulations 91.1057) and ensures adequate pilot staffing levels and aircraft hours of availability consistent with the pilot rest requirements. (A-11-54)

Revise or reinforce New Mexico State Police (NMSP) search and rescue (SAR) policies to ensure direct communication between NMSP aviation units and SAR ground teams and field personnel during a SAR mission. (A-11-55)

As a result of this investigation, the National Transportation Safety Board makes the following recommendations to the Airborne Law Enforcement Association:

Revise your standards to define pilot rest and ensure that pilots receive protected rest periods that are sufficient to minimize the likelihood of pilot fatigue during aviation operations. (A-11-56)

Revise your accreditation standards to require that all pilots receive training in methods for safely exiting inadvertently encountered instrument meteorological conditions for all aircraft categories in which they operate. (A-11-57)

Encourage your members to install 406-megahertz emergency locator transmitters on all of their aircraft. (A-11-58)

Encourage your members to install flight-tracking equipment on all public aircraft that would allow for near-continuous flight tracking during missions. (A-11-59)

As a result of this investigation, the National Transportation Safety Board makes the following recommendations to the National Association of State Aviation Officials:

Encourage your members to conduct an independent review and evaluation of their policies and procedures and make changes as needed to align those policies and procedures with safety standards, procedures, and guidelines, such as those outlined in Airborne Law Enforcement Association guidance. (A-11-60)

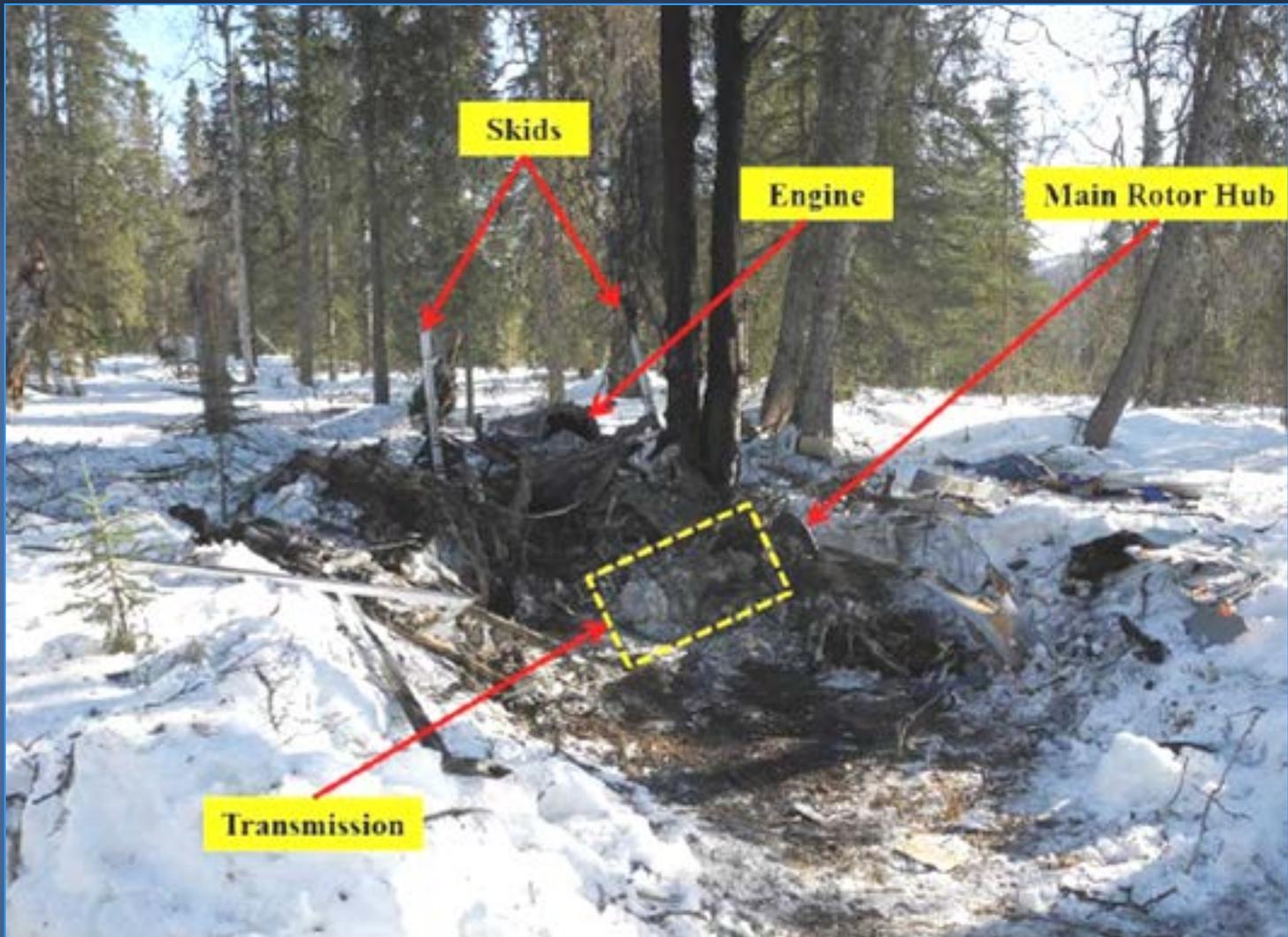


# Alaska DPS



- March 30, 2013
- Eurocopter AS350
- SAR flight
- Talkeetna, Alaska
- 3 fatalities





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# NTSB Finding

“The Alaska Department of Public Safety lacked organizational policies and procedures to ensure that operational risk was appropriately managed ... “



# NTSB Finding

“The Alaska Department of Public Safety’s reliance on nonaviation-trained dispatchers for dispatch and flight-following support does not ensure that flight crews have adequate access to up-to-date weather information and qualified assistance with flight risk assessment tasks.”

- .



# NTSB Finding

“The Alaska Department of Public Safety did not provide the pilot with training that could have helped him recognize the hazards that precipitation and low light conditions pose to night vision goggles operations.”



# Probable Cause

- The pilot's decision to continue flight under visual flight rules into deteriorating weather conditions, which resulted in the pilot's spatial disorientation and loss of control.
- Also causal was the Alaska Department of Public Safety's punitive culture and inadequate safety management, which prevented the organization from identifying and correcting latent deficiencies in risk management and pilot training.
- Contributing to the accident was the pilot's exceptionally high motivation to complete search and rescue missions, which increased his risk tolerance and adversely affected his decision-making.



# Safety Recommendations

NTSB

Aircraft Accident Report

## 4. Recommendations

As a result of this investigation, the National Transportation Safety Board makes the following recommendations:

To the state of Alaska, 44 additional states, the Commonwealth of Puerto Rico, and the District of Columbia:

Develop and implement a flight risk evaluation program that includes training for all employees involved in the operation and procedures that support the systematic evaluation of flight risks and consultation with others trained in flight operations if the risks reach a predefined level. (A-14-100)

Use formalized dispatch and flight-following procedures that include up-to-date weather information and assistance with flight risk assessment decisions. (A-14-101)

Provide all pilots who will perform night vision goggle (NVG) operations with formal NVG ground and flight training and require them to complete this training on an annual basis to remain on flight status. (A-14-102)

Require all pilots who perform state law enforcement search and rescue missions to receive, on an annual basis, scenario-based simulator training in inadvertent instrument meteorological conditions that includes strategies for recognizing, avoiding, and safely escaping the conditions. (A-14-103)

Create a formal tactical flight officer (TFO) training program that includes training on aeronautical decision-making, crew resource management, and operating aircraft navigational and communications equipment, and use TFOs during search and rescue operations. (A-14-104)

Develop and implement a comprehensive safety management system for aircraft operations that (1) holds senior state personnel accountable for the safety of state law enforcement aircraft operations, (2) is tailored to the department's missions, and (3) is based on industry best practices. (A-14-105)

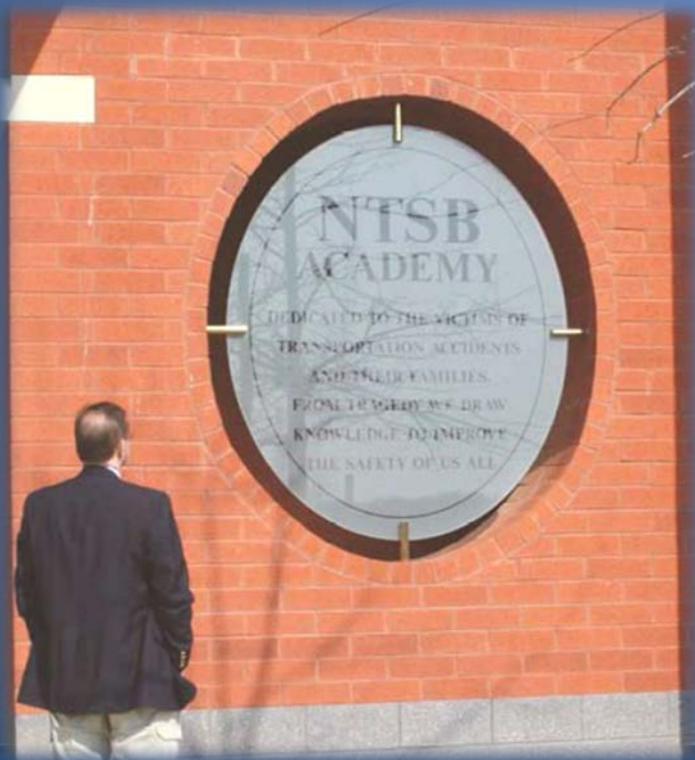
Arrange for an audit of the safety management system implemented in response to Safety Recommendation A-14-105 to be conducted every 3 years by an outside organization. (A-14-106)

To the Federal Aviation Administration:

Work with operators, training providers, and industry groups to evaluate the effectiveness of current training programs for helicopter pilots in inadvertent instrument meteorological conditions, and develop and publish best practices for such training. (A-14-107)



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# National Transportation Safety Board