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Midair Collision Involving US Army PAT25 and PSA Airlines Flight 5342 Washington, DC January 29, 2025

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Overview

- Safety data
  - Sources of midair collision risk data
  - Data availability and sharing
- Safety management systems (SMS)
  - PSA Airlines
  - FAA Air Traffic Organization (ATO)
  - US Army

Safety Data

- Aviation Safety Information Analysis and Sharing (ASIAS) program provided initial estimates of “close proximity events” near DCA
- Initial and subsequent estimates of proximity events conflicted
- Safety Data Group formed to document
  - Potential indicators of midair collision risk
  - Availability of data to various stakeholders
  - How data were used before the accident

Safety Occurrence Reporting Systems

Aviation Safety Action Program (ASAP)	Air Traffic Safety Action Program (ATSAP)	Mandatory Occurrence Reports (MORs)
Near Midair Collision System (NMACS)	Aviation Safety Reporting System (ASRS)	Army Safety Management Information System (ASMIS)

Systems varied in terms of reporting policies, whether those who report are deidentified, and which stakeholders had access to data

Safety Occurrence Reporting Systems

- More than 18 reports per year, on average, of close calls between airplanes and helicopters near DCA
- Reports described issues consistent with accident circumstances
  - Airspace complexity
  - Problems with ATC communications
  - Challenges with combining controller positions
  - Helicopters flying above recommended altitudes

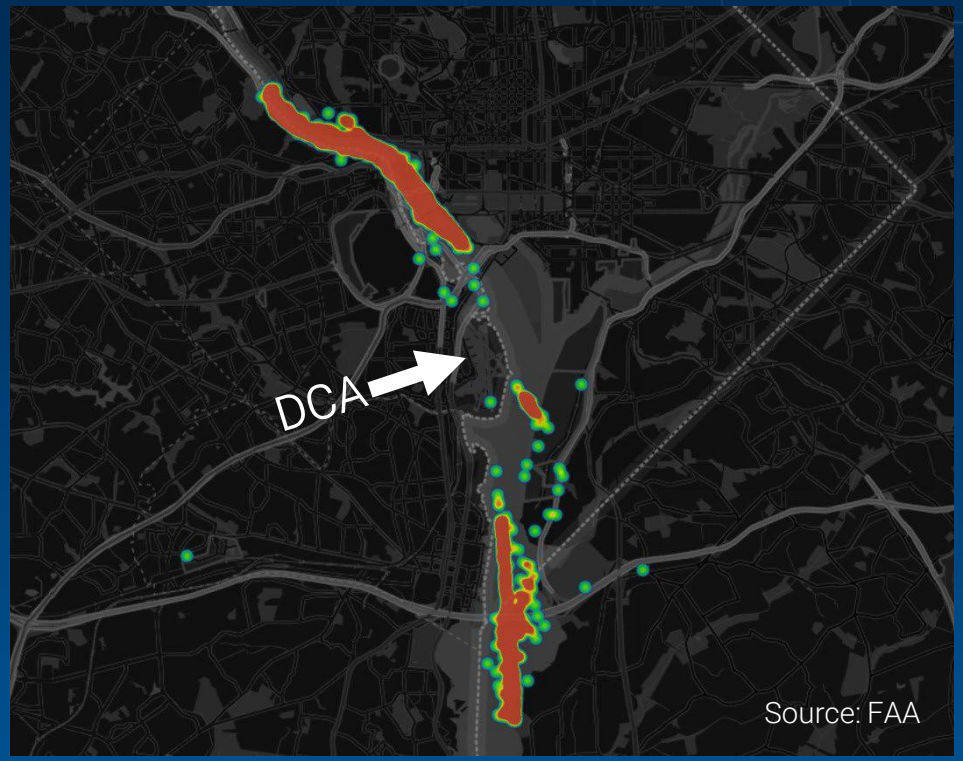
Position Data Systems

Flight Operations and Quality Assurance (FOQA)	Automatic Dependent Surveillance-Broadcast (ADS-B)	Aviation Risk Identification and Assessment (ARIA)	Performance Data and Analysis Reporting System (PDARS)

- Primary sources: aircraft data recorders, radar, and other surveillance data
- FOQA and ADS-B provided information about TCAS Resolution Advisories
- ARIA and PDARS provided objective aircraft proximities
- Data accessibility varied by source

Position Data Systems

- TCAS Resolution Advisories: 15 per month
- ARIA: 390 encounters per month of airplanes and helicopters within 1 nm laterally and 400 ft vertically
- PDARS:
  - 65.6 encounters per month of airplanes and helicopters within 1,000 ft separation; 5.6 per month within 500 ft
  - 49% of helicopters on Route 4 exceeded altitude limits at least once



PDARS encounters, January 2018 to February 2025

What We Found: Indicators of Midair Collision Risk

- Safety data showed evidence of midair collision risk between airplanes and helicopters near DCA
- Stakeholders had limited awareness of data
  - Some systems not used to track aircraft close proximity encounters before accident
  - No standard definition of close proximity encounter
  - Helicopter operators not aware of involvement in TCAS events

What we propose:

- Two recommendations to FAA

Safety Management Systems (SMS)

- International Civil Aviation Organization (ICAO) standards
  - Safety policy
  - Safety risk management
  - Safety assurance
  - Safety promotion
- Positive safety culture foundational to an effective SMS
- SMS at PSA and FAA based on this model
- Army had unique safety regulations and guidance

FAA Air Traffic Organization (ATO) SMS

- FAA had established SMS for ATO and facilities including DCA
- Policy described the four components of SMS
- Investigation revealed gaps in ATO safety risk management and safety assurance compared to other service providers

Source: FAA

What We Found: FAA ATO SMS

- Unlike its requirements for operators, FAA guidance for ATO SMS does not call for collecting and sharing safety hazard information with external stakeholders
- Helicopter working group efforts were largely informal and their proposals to address safety of helicopter Route 4 were not adopted
- ATO's application of SMS did not recognize and mitigate risk of midair collision at DCA nor effectively coordinate with external stakeholders

What we propose:

- Two recommendations to FAA

What We Found: FAA ATO Safety Culture

- ATO management did not foster positive safety culture
- Fear of retaliation for raising safety issues
- Low morale after facility downgrade due to lack of transparency
- External compliance verification at DCA indicated lack of staff support, poor communication and concerns about route conflicts
- DCA tower management personnel reassigned after accident

What we propose:

- One recommendation to the Department of Transportation

US Army Safety Assurance

- Required occupational hazard reporting and investigation program
  - Occupational Hazard Reports (OHR) submitted to safety officers and corrected at lowest level
    - OHRs involving FAA facilities/operations shared with FAA Flight Standards District Office and Army regional representative
  - Army Safety Management Information System (ASMIS) mishap and near miss reports

What We Found: US Army Safety Assurance

- Army helicopter involvement in safety occurrences near DCA not reflected in Army safety reporting systems
  - ASMIS reflected no mishaps, near misses, OHRs
- Limited participation in voluntary reporting
- No operational flight data monitoring program for helicopters resulted in lack of awareness of altitude exceedances

What we propose:

- Three recommendations to US Army

US Army Safety and Occupational Health Management System (ASOHMS)

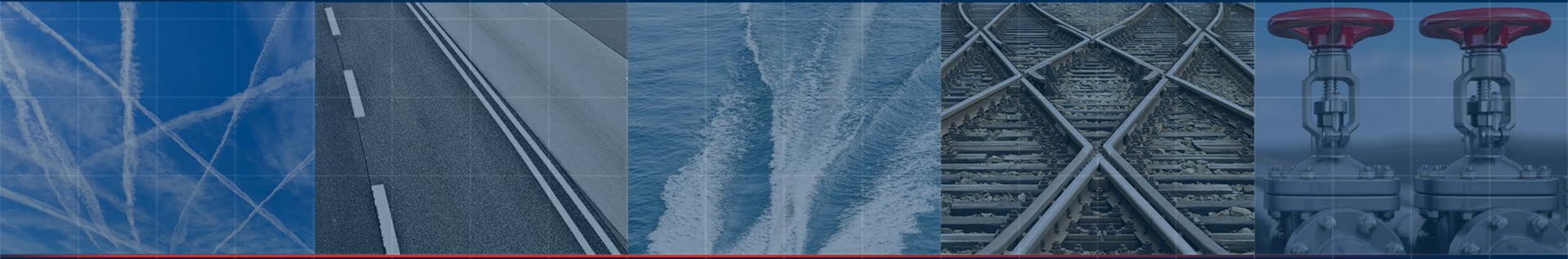
- 2024 US Army directive called for adoption of ASOHMS
- Elements of system similar to ICAO SMS components
- Directive required incorporating ASOHMS in regulations by September 2026 and full compliance by end of 2030

What We Found: US Army ASOHMS

- Some directive requirements incorporated in policy documents
- ASOHMS implementation slow due to resource and staffing issues and distribution of safety management responsibilities across Army organizations
- Lacked a positive safety culture
- Process for allocating resources to aviation safety management did not ensure a robust SMS for helicopter operations in the Washington DC area

What we propose:

- Two recommendations to US Army



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