General Aviation
Loss of Control Accidents

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NTSB 101

• Independent federal agency, investigate transportation mishaps, all modes

• Determine probable cause(s), make recommendations to prevent recurrences, advocate for safety improvements

• Primary product: Safety recommendations/MWL List
  • Favorable response > 80%

• SINGLE FOCUS IS SAFETY

• Independence
  • Political: Findings and recommendations based upon evidence rather than politics
  • Functional: No “dog in the fight”
“Sully” Depiction of NTSB?

• Facts regarding accident accurately portrayed
• Facts regarding investigation process not accurate
  • Movie needed a villain – but not the birds
  • NTSB’s objective is to determine cause, not blame
  • Investigations rely heavily upon cooperation by all of the “parties,” hence NTSB is not confrontational
• Query whether movie’s negative portrayal of investigation process may chill cooperation
NTSB 2017 Most Wanted List

- Eliminate Distractions
- End Alcohol and Other Drug Impairment in Transportation
- Ensure the Safe Shipment of Hazardous Materials
- Expand Recorder Use to Enhance Safety
- Improve Rail Transit Safety Oversight
- Increase Implementation of Collision Avoidance Technologies
- Prevent Loss of Control in Flight in General Aviation
- Reduce Fatigue-Related Accidents
- Require Medical Fitness
- Strengthen Occupant Protection

Backed by recommendations!
2017 MWL – Prevent Loss of Control in GA Flight
Loss of Control: Also Part 121 Issue
All GA Accidents

Fatal Accidents: 19%

* 2016 Preliminary numbers
**GA LOC Accidents**

![Bar chart showing Non-Fatal LOC In Flight and Fatal LOC In Flight accidents from 2000 to 2016.](image)

- **Fatal Accidents:** 42%
- *2016 Preliminary numbers*

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**Number of accidents**
Business Flying, 2008-2016

Number of Fatal Accidents

- Loss of Control In-Flight: 24
- Controlled Flight Into Terrain: 13
- System/Component Failure - Powerplant: 7
- Fuel Related: 5
- System/Component Failure - Non-powerplant: 3
- Unknown: 3
- Other: 2
- Fire - Non-Impact: 1
- Windshear/Thunderstorm: 1
- Low Altitude operation: 1
- Midair: 1
- Turbulence Encounter: 1

LOC: 39% of Fatal Accidents
Instructional Flying, 2008-2016

Number of Fatal Accidents

- Loss of Control In-Flight: 81
- System/Component Failure - Non-power: 14
- Midair: 12
- Controlled Flight Into Terrain: 7
- Other: 6
- Abrupt Maneuver: 6
- Low Altitude Operation: 4
- Collision on Takeoff or Landing: 3
- Fuel Related: 3
- Ground Handling: 3
- System/Component Failure - Powerplant: 3
- Unknown: 3
- Abnormal Runway Contact: 2
- Loss of control on Ground: 2
- Unintended Flight Into IMC: 2
- Security Related: 1

LOC: 53% of Fatal Accidents
Personal Flying, 2008-2016

Number of Fatal Accidents

- Loss of Control In-Flight: 736
- System/Component Failure - Powerplant: 184
- Controlled Flight Into Terrain: 141
- Other: 120
- Unintended Flight Into IMC: 80
- System/Component Failure - Non-powerplant: 75
- Unknown: 69
- Fuel Related: 47
- Low Altitude Operation: 41
- Midair: 34
- Collision on Takeoff or Landing: 28
- Abrupt Maneuver: 24
- Abnormal Runway Contact: 17
- Loss of Control on Ground: 13
- Windshear/Thunderstorm: 13

LOC: 45% of Fatal Accidents
Corporate Flying, 2008-2016

Number of Fatal Accidents

Loss of Control In-Flight: 6
Controlled Flight Into Terrain: 2
Other: 1
Runway Excursion: 1
Undershoot/Overshoot: 1
Unintended Flight Into IMC: 1
Unknown: 1

LOC: 46% of Fatal Accidents
Loss of Control In-Flight, 2008-2016

Number of Fatal Accidents

- Personal Flying: 736
- Instructional Flying: 81
- Business Flying: 24
- Corporate Flying: 6

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Worldwide Commercial Jets

Fatalities by CICTT Aviation Occurrence Categories

LOC: 23% of Fatal Accidents
GA LOC: Where It Happens

Fatal GA Loss of Control Accidents by Phase of Flight, 2008-2016

- Airport-Related: 49%
- Other: 51%
Airport-Related GA LOC

Fatal GA Airport-Related Loss of Control Accidents by Phase of Flight, 2008-2016

- Initial Climb: 17%
- Takeoff: 7%
- Missed Approach/Go Around: 5%
- VFR/IFR Approach: 7%
- Landing: 2%
- Base: 3%
- Downwind: 2%
- Final: 5%
- Crosswind: 1%
- Other: 51%
- Airport-related: 49%
Steering Committee
Co-chairs – Mike O'Donnell (FAA/AVP)
  Sean Elliott (EAA)
Government
  – FAA (AFS, AIR, ATO, AAM & ARP)
  – NASA (Research),
  – NTSB (Observer)
Industry
  – GAMA, EAA, NBAA, NATA,
    SAFE, LAMA & Insurance

GAJSC Who We Are...
- Strategic guidance
- Management/Approval of Safety Plan
- Provide direction
- Membership Outreach
- Provides linkage to ASIAS

Safety Analysis Team
Co-chairs: Corey Stephens (FAA)
  Jens Hennig (GAMA)
Members: FAA, AOPA, EAA, GAMA, UAA, MFGs, FAAST, NTSB, NAFI, Insurance, Academia, SAFE

Working Groups
(To include SMEs from various general aviation segments, depending on study)
- Data analyses
- Safety enhancement
- Mitigation development
GAJSC Loss of Control Working Group

- Government & Industry representation
- Focused on 24 Safety Enhancements, including:
  - Recommending use of AOA systems – new and current production, as well as existing fleet
  - Improving Aeronautical Decision Making, with emphasis on pre-flight planning
  - Addressing LOC due to overreliance on automation
  - Improving transition training
  - Increasing utilization of Type Clubs
  - Emphasizing training after period of inactivity
  - Promotion of stabilized approaches
  - Increased use of weather technologies
  - Enhanced use of engine monitoring technologies
Stall Recovery Training

- Reduce the angle of attack below stall AOA
- Push over to eliminate stall warning
- Level wings
- Adjust thrust appropriately
- Avoid overspeed and increased G levels
- Pitch back to level flight
- **Don’t try to “Power” out of the stall**
Conclusion

• Loss of control is still a major problem, especially for General Aviation

• Recovery training is very important, but

• Recovery is often not possible due to low altitude, so primary challenge, especially at low altitude, is how to maintain situational awareness to avoid LOC
Thank You!

Questions??
Last slide
with NTSB
Anniversary
50th
Anniversary
Commemorative
Emblem-
Making
Transportation
Safeter
Yesterday,
Today,
Tomorrow.

MAKING TRANSPORTATION SAFER
NATIONAL TRANSPORTATION
SAFETY BOARD
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