Improving Safety Through Collaboration

The ASIAS Program

asias

ASIAS Continuous Improvement in Aviation Safety

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Aviation Safety Information Analysis and Sharing (ASIAS)

A collaborative government and industry initiative on data sharing and analysis to proactively discover safety concerns before accidents or incidents occur, leading to timely mitigation and prevention

ASIAS is governed by formal principles

data used solely for
advancement of safety

voluntary submission
of safety-sensitive data

operator/OEM/MRO
data are de-identified

transparency for how data are managed and utilized

procedures & policies based on
collaborative governance

analyses **approved by** an
ASIAS Executive Board

General Aviation Stakeholders

Most up-to-date list can be found at https://portal.asias.aero/

General Aviation and On-demand Part 135 Air Carriers (141)

711 Cody, Inc.
Abbott Laboratories
ACI Jet
Aero Charter
Airshare
Albertsons
Ameriflight
BCH, LLC
Best Jets International
Blue Ridge Jet
Bombardier Flight Operations
Boston Scientific
Cape Air
The Coca-Cola Company
Cook Canyon Ranch Aviation
Costco Wholesale
Crew Aviation LLC
CTP Aviation
Eli Lilly
Embraer Executive Jets
Enterprise Holdings
Executive Fliteways
Executive Jet Management*
Fair Wind Air Charter
Flexjet
Flight Options
Gama Aviation Signature
Giostyle LLC*
Gulfstream Aerospace Flight Operations
Hanover Foods Flight Ops
International Jet Aviation Services
Jet Aviation
Jet Edge International
Jet Linx
Johnson & Johnson
JSX
Key Lime Air
Kroger Aviation
LECO Corporation
Luck Companies
Mayo Aviation
Milliken
N724DB, LLC
NetJets
Northeastern Aviation Corp.
Northern Jet
OnFlight, Inc.
Pacific Gas & Electric Co.
Priester Aviation
Qualcomm, Inc.
REVA
RTFlight
Sanford Health
SC Aviation
SC Johnson
SevenBar Aviation
Smithfield Foods Flight Department
Solairus Aviation
Stryker Corporation
Talon Air
Textron Aviation
Tradewind Aviation
Universal Flight Services
Valero Travel Services
Venture Jets
Vulcan, Inc.
Waltzing Matilda Aviation*
White Cloud Charter
Wing Aviation Charter Services
XOJET
71 Additional Operators*

Industry

ACSF—Air Charter Safety Foundation
AOPA—Aircraft Owners and Pilots Association
Embraer
GAMA—General Aviation Manufacturers Association
Gulfstream Aerospace
NBAA—National Business Aviation Association
NJASAP—NetJets Association of Shared Aircraft Pilots
Textron Aviation

Flight Training

California Aeronautical University
FlightSafety International, Inc.
L3Harris
Liberty University
University of North Dakota
Southern Utah University
8 Additional Stakeholders

Additional Participants

data

key challenges

Working with **big data** requires a **methodical approach** that comprehensively addresses data management

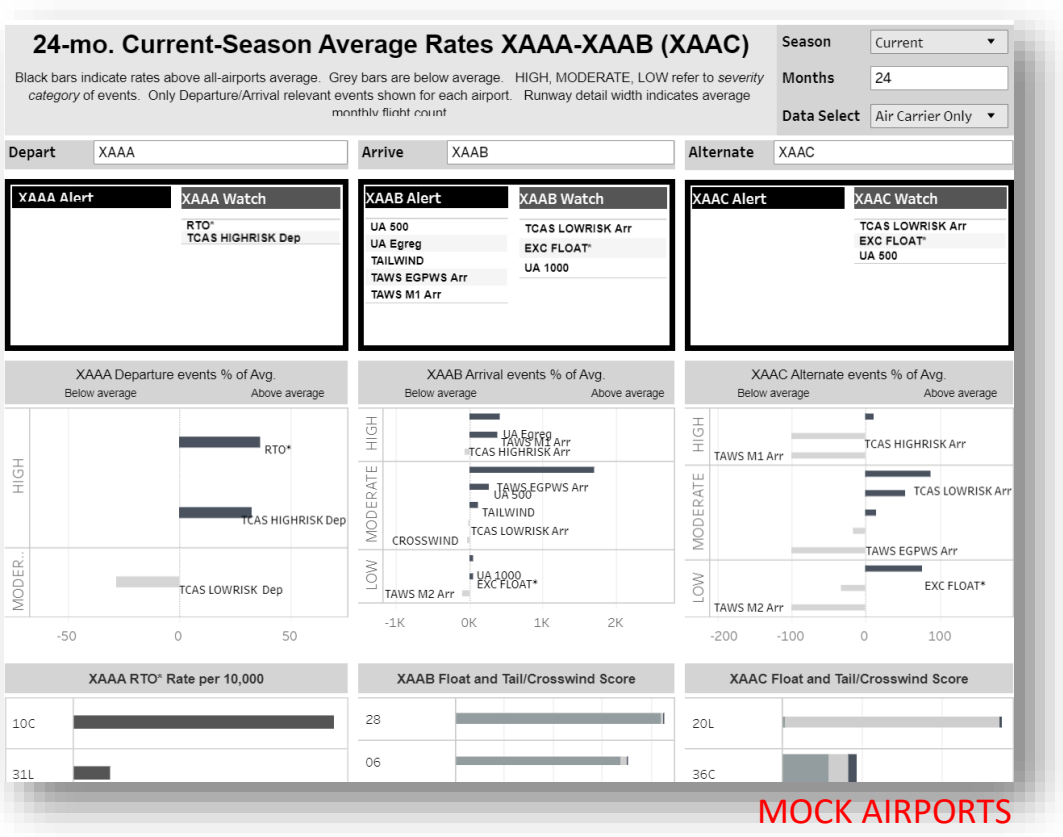
Data quality issues require multiple processes to make narrative data meaningful & useable

Wide **variety of data types and sources** requires complex processes for effective integration

So how does ASIAS help me, the operator?

Insight into systemic safety issues that may affect my operation

- Data is aggregated & de-identified into meaningful safety information
- Metrics provide visibility into the most common occurrence categories (e.g. unstable approach, Loss of Control, runway excursion, mid air collision risk)
- Customizable dispatch tools provide insight into systemic risk at airports where we operate or may operate in the future
- How does my operation compare to what is being identified in the National Airspace System?



March 2021

ASIAS General Aviation Stakeholders Newsletter

TOPICS / CONTENT

ASRS Reports: Recurring Themes

Circling Approaches Study

asias

March 2021

Potential Vulnerabilities

ALAR Baseline

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Are systemic vulnerabilities in my operation?

Quarterly newsletters allow my operation to stay informed of vulnerabilities being discussed and studied in the ASIAS program.

Benefits for Business Aviation Operators

- Insight into systemic safety issues that may affect your operation
- Access to National safety issue trends
  - Web Portal – 20+ dashboards
- Request & Access to Directed Studies
- Contribute to a national resource proactively analyzing systemic safety trends
- Benefit from systemic safety solutions through GA JSC Safety Enhancements

ASIAS makes improvements to the NAS which helps you as well.

How the results are used – proactively….

- ASIAS analyses are shared with government and industry safety teams (e.g. GA JSC, CAST)
  - The safety teams develop safety enhancements as needed to proactively mitigate risk within the National Airspace System.
- Change/design safer approach/departure procedures
- Improve procedures (e.g. pilot, air traffic control)
- Assess safety benefits of new technology
- Input to operator risk assessments

Bottom line—reduce accidents and serious incidents

General Aviation
Joint Steering Committee
Safety Enhancement Topic

FAA
Aviation Safety

Stabilized Approach

Focusing on establishing and maintaining a stabilized ap
ing a loss of control. A stabilized approach is one in which the pil
glidepath towards a predetermined point on the landing runway
clues, and depends on the maintenance of a constant final desce

Maintain a Stabilized Approach!

Have you heard these words before? Well, it's not just a buzz term in aviation safety. It's a critical lifesaving way to approach every flight. A pilot is flying a stabilized approach when he or she establishes and maintains a **constant angle glidepath** towards a predetermined point on the landing runway. Every runway is unique, but a commonly referenced optimum glidepath follows the "3:1" principle. The principle, also seen as a descent ratio, means that for every 3 nautical miles (nm) flown over the ground, the aircraft should descend 1,000 feet. This flightpath profile simulates a 3-degree glideslope.

Data Discourse

The Aviation Safety Information Analysis and Sharing (ASIAS) program, a collaborative government and industry initiative, recently completed a high-energy approach analysis by comparing actual stable and unstable approaches of

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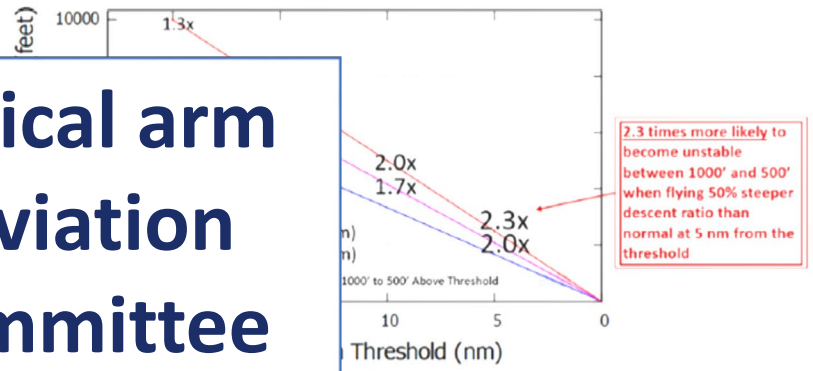
FAAST
Federal Aviation Administration
SAFETY TEAM

ASIAS is an analytical arm to the General Aviation Joint Steering Committee (www.gajsc.org).

Informed by an ASIAS analysis on approach energy, this FAASTeam-produced GA JSC FlySafe fact sheet has over 175,000 views.

Steep Descent Ratios Lead to Unstable Approaches



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a statistic is to GO AROUND if something's is not right at any time. If you choose to continue with an unstabilized approach, you risk landing too high, too fast, out of alignment with the runway centerline, or otherwise being unprepared for landing. These situations can result in loss of control of your aircraft or a runway excursion.

Tips for Staying Stable:

- The further from the runway that you establish a "3:1" flight path profile, the greater your probability of successfully flying a stable approach. *NOTE: Every runway is unique and the published glidepath should be flown when available.*
- A method to estimate the appropriate descent rate in feet/minute to maintain a 3-degree glidepath is to multiply the groundspeed in knots by 5.
- When available, use a visual approach system such as a VASI or PAPI, or precision instrument approach to help maintain glidepath.
- **Increase your knowledge on stabilized** approaches. Some resources include the GAJSC website and Advisory Circular 91-79A.

Remember—If not stabilized, GO AROUND!

FAAST
Federal Aviation Administration
SAFETY TEAM

General Aviation
Joint Steering Committee
Safety Enhancement Topic

FAA Aviation Safety

Stabilized Approach and Go-around

Focusing on establishing and maintaining a stabilized approach and landing is a great way to avoid experiencing a loss of control. A stabilized approach is one in which the pilot establishes and maintains a constant angle glidepath towards a predetermined point on the landing runway. It is based on the pilot's judgment of certain visual clues, and depends on the maintenance of a constant final descent airspeed and configuration.

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business aviation operators to the common "3:1" descent ratio. The study looked at this relationship from four distinct distances from the runway: 20, 15, 10 and 5 nm from touchdown. The study highlights the importance of being aware of how you manage the aircraft's total energy – kinetic (velocity) plus potential (altitude) – as you begin to fly the approach. Flights that were above the "3:1" descent ratio, and not stable, often had high rates of descent and high approach speeds.

A deeper look at the analysis shows that, even at 20 nm from touchdown, when a flight is above the optimum "3:1" descent ratio, the approach is more at risk of being unstable when closer to the runway (i.e., 500 feet to 1000 feet height above touchdown (HAT)).

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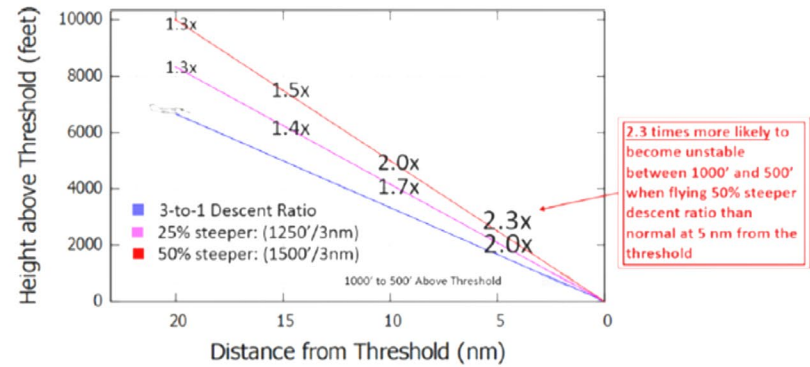
FAAST Federal Aviation Administration SAFETY TEAM

Steep Descent Ratios Lead to Unstable Approaches



Moreover, the **probability of being unstable can DOUBLE as you increasingly fly above a "3:1"** flight path profile.

In addition, the data shows that at each of the distances (20, 15, 10, 5) when flying a "3:1" descent ratio, there is generally a 50/50 chance of being stable when reaching 500 to 1,000 HAT. Why 50/50? This is because your descent ratio is only one of many factors (such as aircraft configuration) that determine whether your approach will be stable or not.

Similarly, it's important to recognize high kinetic energy states close-in to airports or near a final approach fix. Similar to descent ratios, the data demonstrates an increased risk potential if speeds during final vectors or approaches are not managed appropriately.

Bottom line: Be mindful of how you are flying an approach before you commence the approach, not just when you are close to the runway. Remember, one of the most effective ways to prevent becoming a statistic is to GO AROUND if something's is not right at any time. If you choose to continue with an unstabilized approach, you risk landing too high, too fast, out of alignment with the runway centerline, or otherwise being unprepared for landing. These situations can result in loss of control of your aircraft or a runway excursion.

Tips for Staying Stable:

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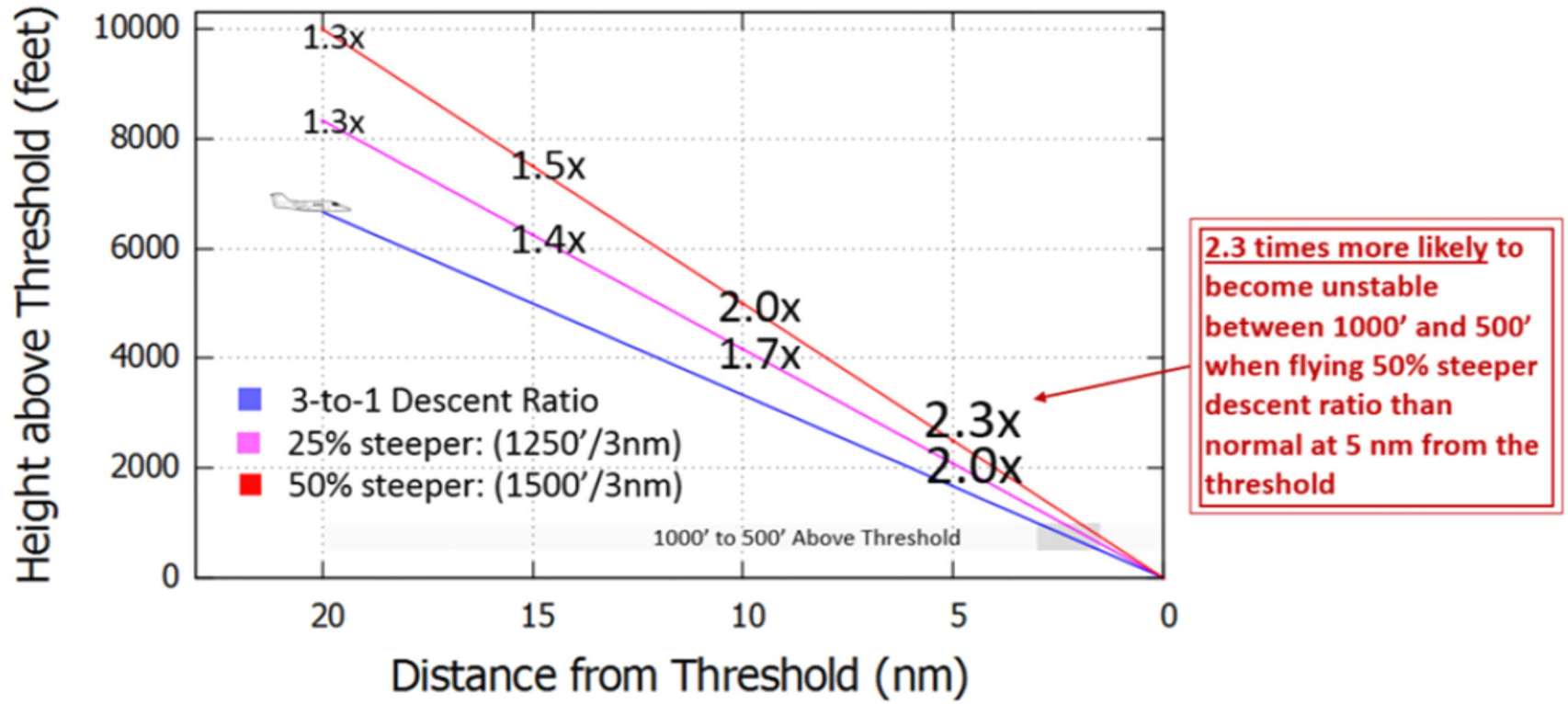

2.3 times more likely to become unstable between 1000' and 500' when flying 50% steeper descent ratio than normal at 5 nm from the threshold

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www.FAASafety.gov

Produced by *FAA Safety Briefing* | Download at 1.usa.gov/SPANS

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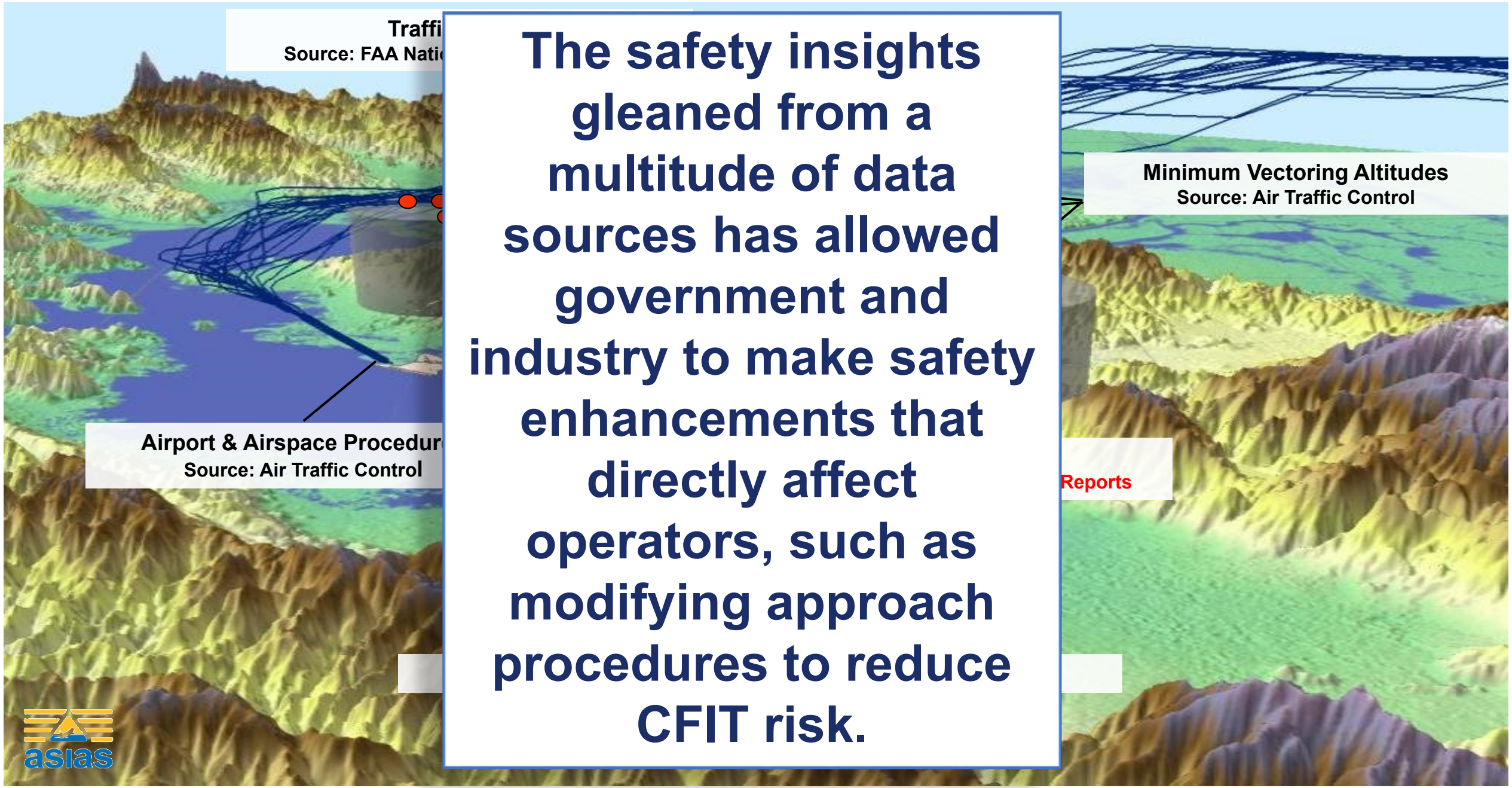
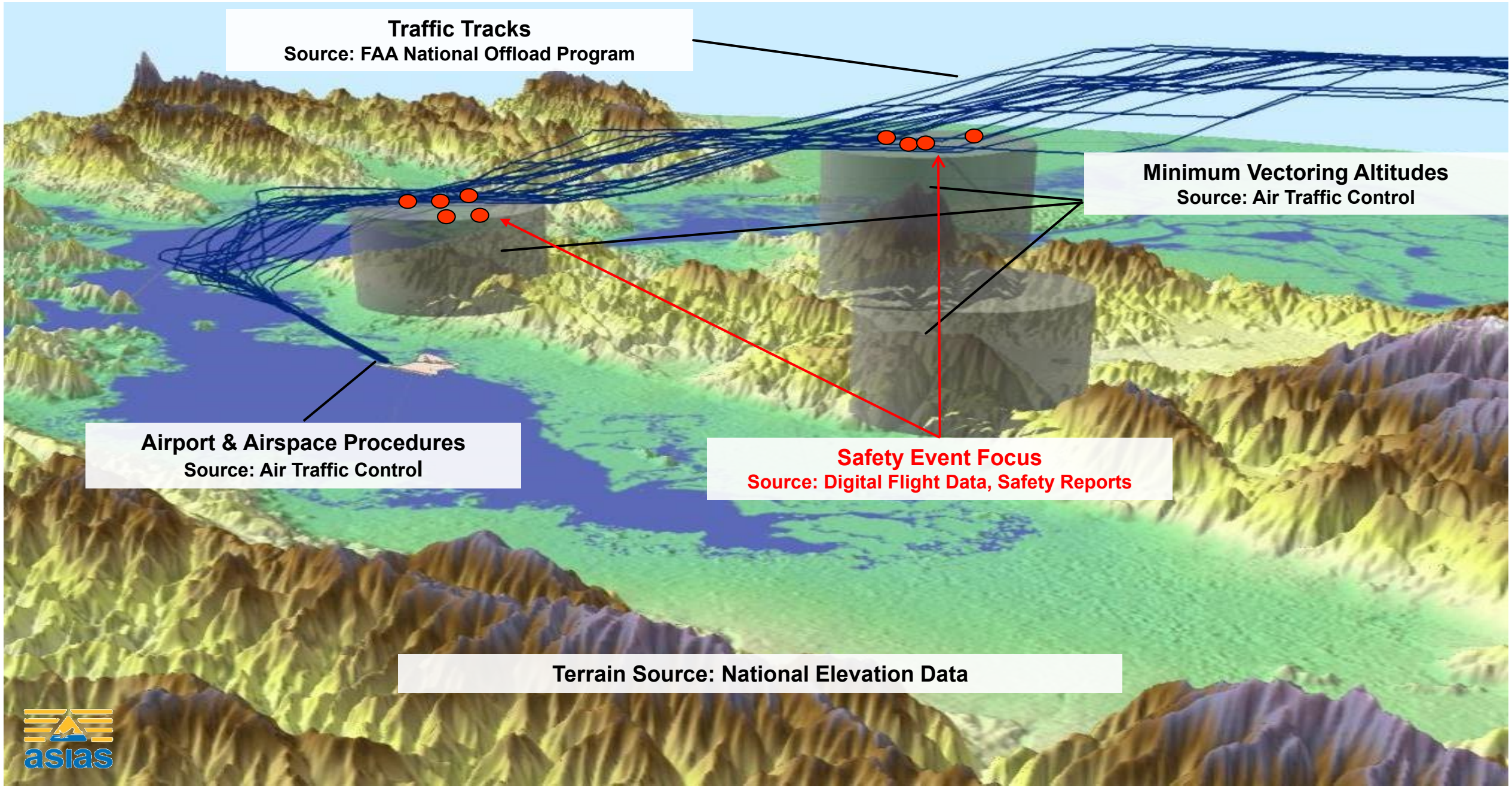
Leveraging Data from Across the Industry Provides Valuable Insights



The safety insights gleaned from a multitude of data sources has allowed government and industry to make safety enhancements that directly affect operators, such as modifying approach procedures to reduce CFIT risk.

Leveraging Data from Across the Industry Provides Valuable Insights



From an actual Business Aviation operator:

MIDWEST AVIATION

"How do we use the ASIAS program?" Three Methods

Airport Drill Down

1. We use metrics, identify trends, and look for hotspots that are specific to the airport environment

Bench Marking

1. Using the metrics on the portal, we are able to identify issue areas at the airports where we operate.
   - We're currently exploring to see if there are potential problems areas at these airports or others.

ASIAS GA IAT Member

1. Active member on the GA Issue Analysis Team by providing operational expertise to analyses
2. Help make decisions on studies and provide direct input on areas of improvement to the program
3. Even more direct insight into the vulnerabilities being discovered by the program

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I’ve been cleared direct, how do I sign up?

Path to Participation

- **Voluntary submission of one or more:**
  - Safety narrative reports (e.g., ASAP or internal safety reports)
  - FOQA Data
  - Other FDM Data (e.g. Avionics, GAARD)

- **Execute Cooperative Agreement with ASIAS or Private Operator Agreement with your SMS vendor**
  - No cost to participate (It's **FREE**!)
  - Can leave the program at any time for any reason

  OR

- **Accept the *User Agreement* if submitting data via the NGAFID**
  - No cost to participate
  - Can leave the program at any time for any reason

Thank You!

GA IAT Tri-chairs

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