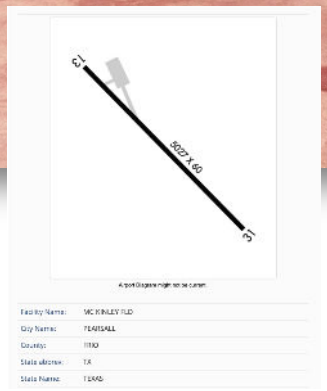
GE Aerospace

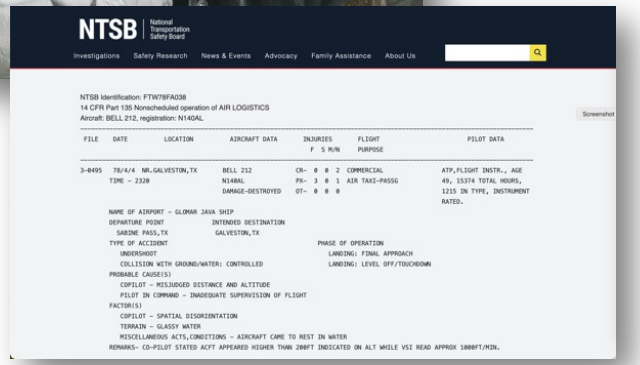
Introduction to FDM/FOQA

Luke Bowman, Sr. Director of Product

April 8th, 2025

My Why



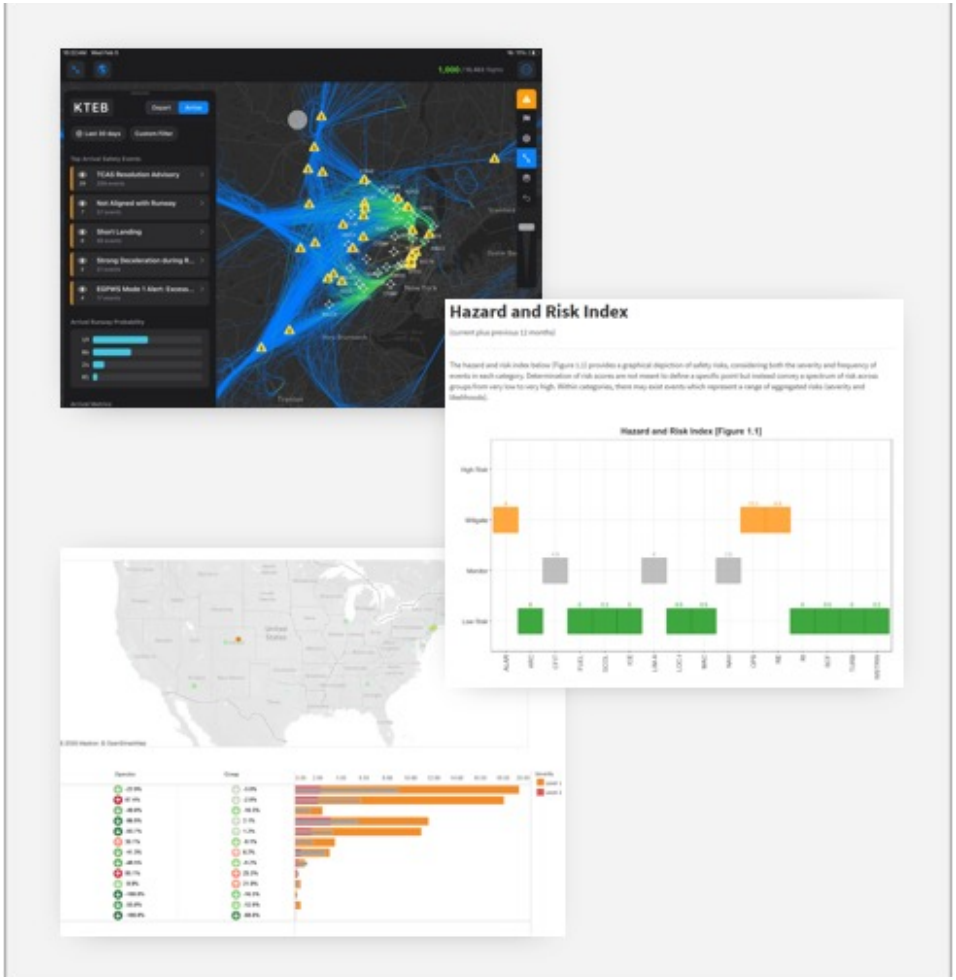


C-FOQA Program Overview

FOQA/FDM program designed to improve aviation safety by allowing operators and pilots to share de-identified and aggregate information to address operational hazards and risks.

Objectives:

- Promote a culture of safety
- Provide data driven recommendations to enhance safety
- Discover unknown hazards, risks, and contributing factors
- Identify opportunities for continuous improvement
- Enable internal safety assessments and investigations



C-FOQA Program Overview and Participants

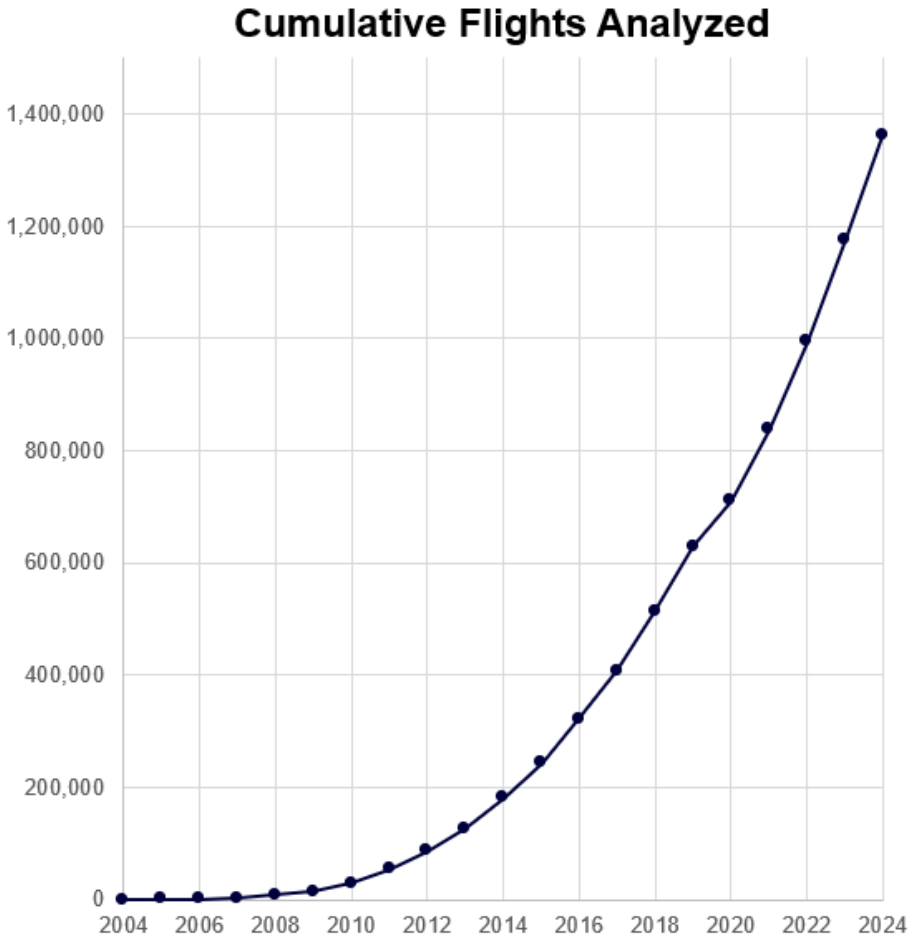
Operators

600 Total / 400 Active

Aircraft

2000 Total / 1100 Active

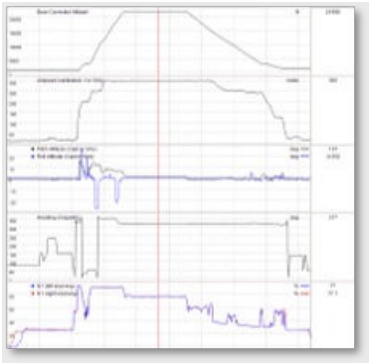
Cabin Class	Percent of Flights
Large Jet	52.9%
Mid/Super-mid-size Jet	18.8%
Regional Jet	15.0%
Narrow Body	11.7%
Turboprop	0.8%
Light / Very Light Jet	0.4%
Wide Body	0.4%



Technology: How to get started
Corporate – Flight Operations Quality Assurance & Flight Data Monitoring

Flight Data Recorder (FDR)

Routine flight data is captured



Secure Data Transmission

Encrypted transfer of Flight Data

Data Fusion & Processing

Raw flight data is processed & fused with external data sources

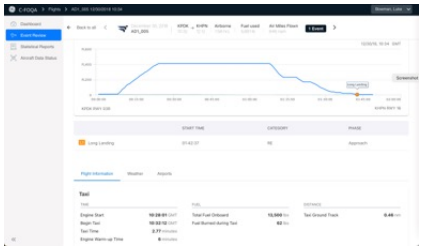
Results Published

Outputs of FDM/FOQA

Dashboards

Statistical Reports – Monthly/Quarterly

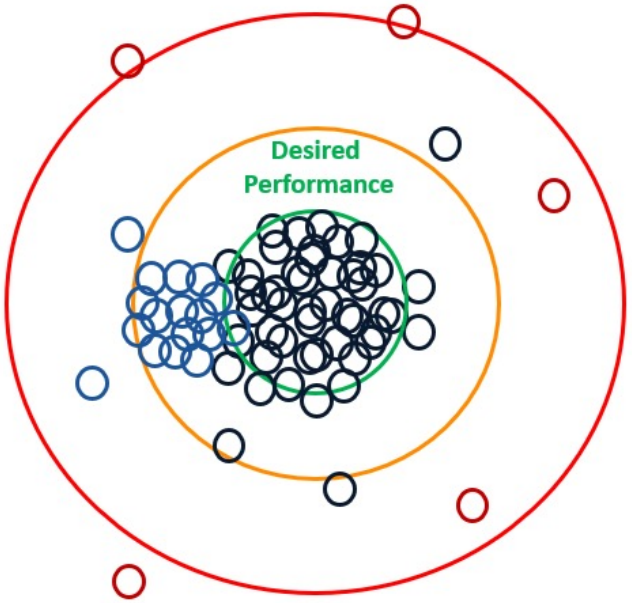
Event Review & Single Flight Reports

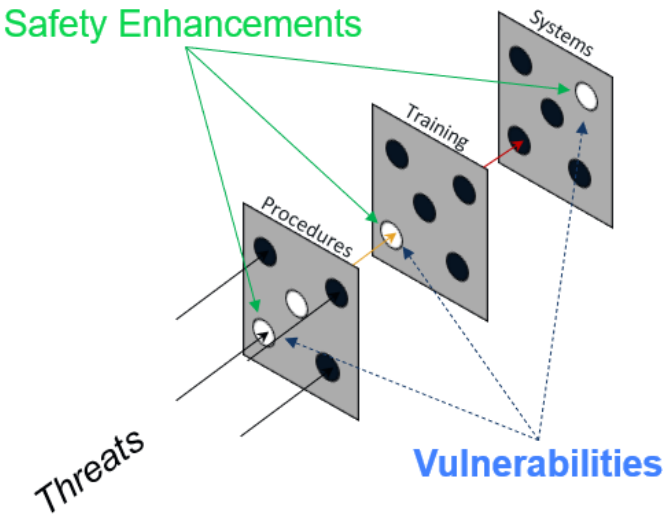


FlightPulse for Pilots or Gatekeepers

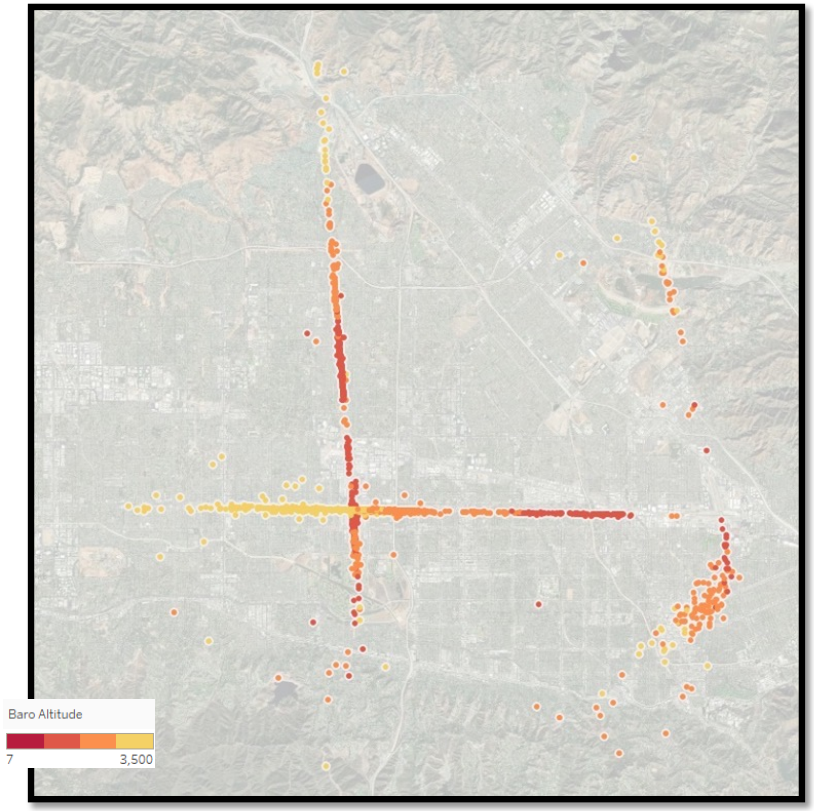
Measure, Identify, Act
C-FOQA | Safety Performance Monitoring

Expected Performance **Actual Performance** **Accidents / Incidents**

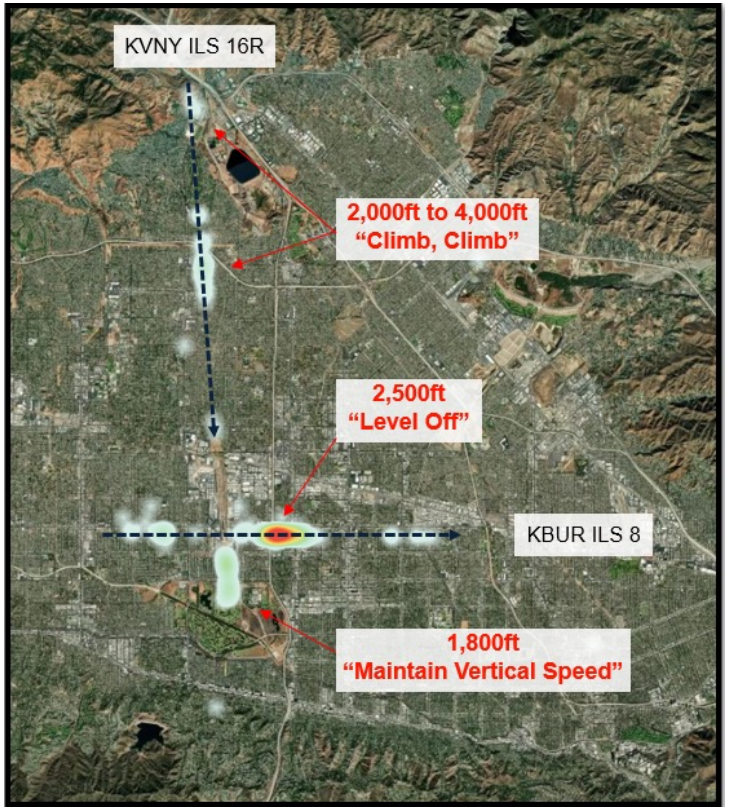




Burbank and Van Nuys, California



TA and RA Alerts



RA Alerts

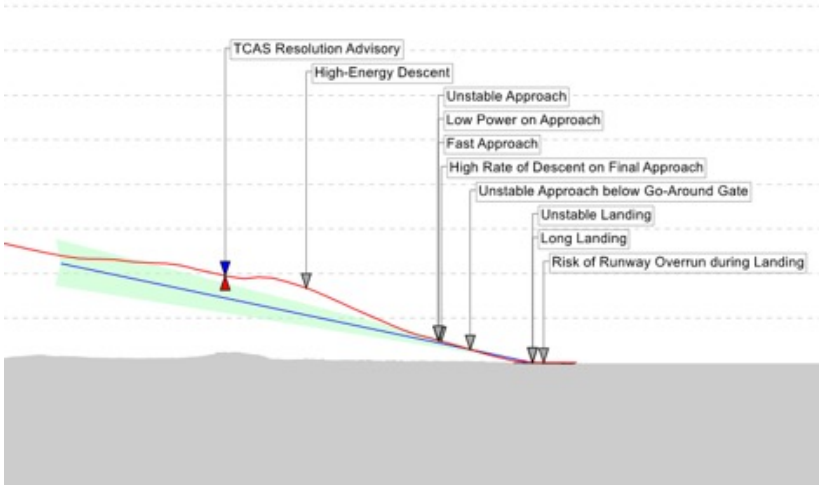
Burbank and Van Nuys, California

Follows TCAS RA Guidance

93%

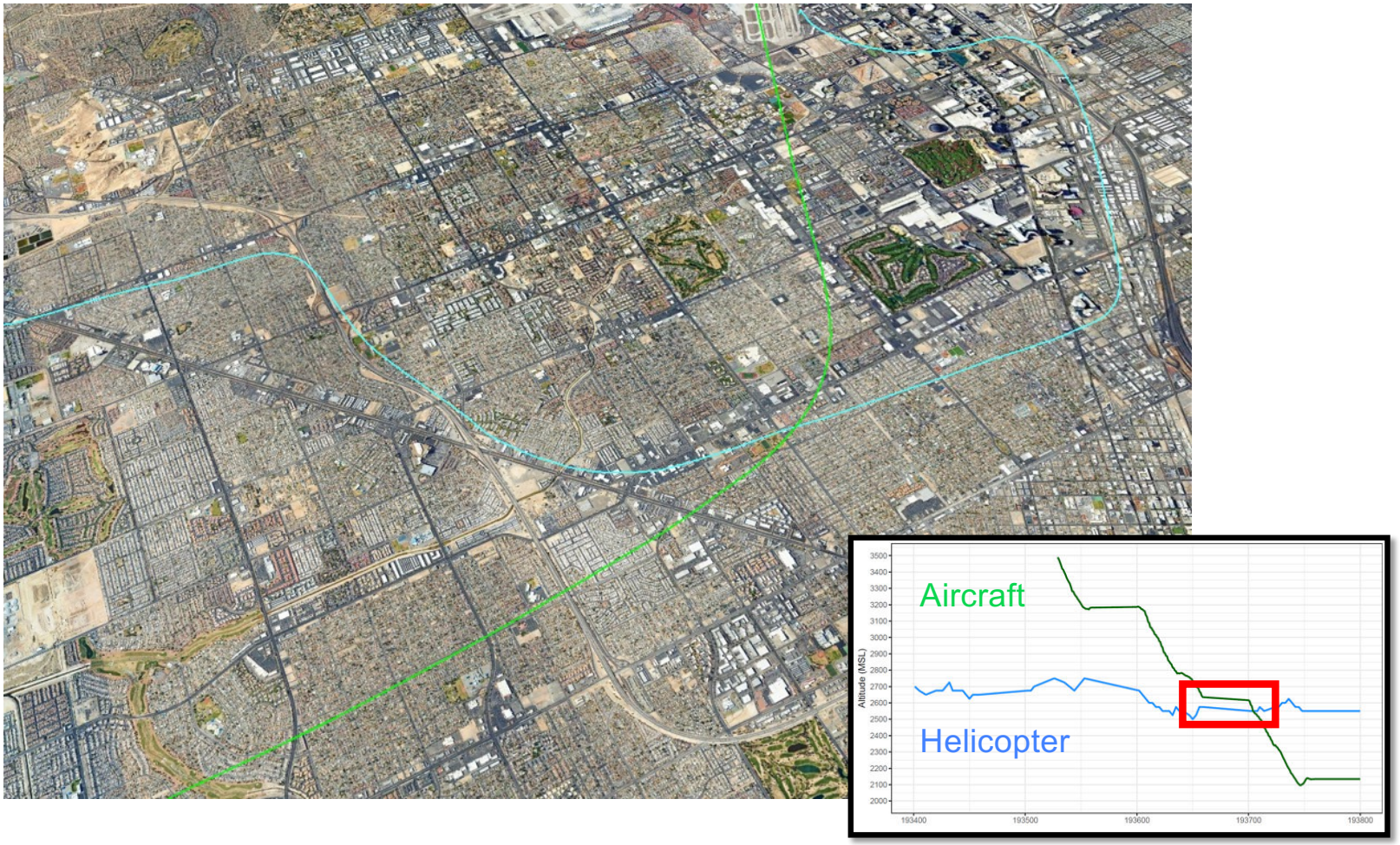
Unstable Approach Rate

3.2% of Approaches



Unstable Approach Rate with Climb RA

↑110%


Aircraft
Helicopter
Altitude (MSL)
3500
3400
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
2300
2200
2100
2000
193400
193500
193600
193700
193800

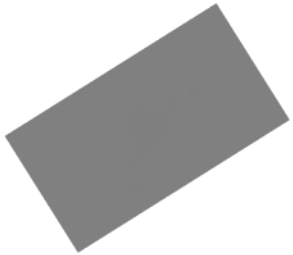
FOQA Event Reduction – First 5 Years

-37%

Runway Excursion

-38%

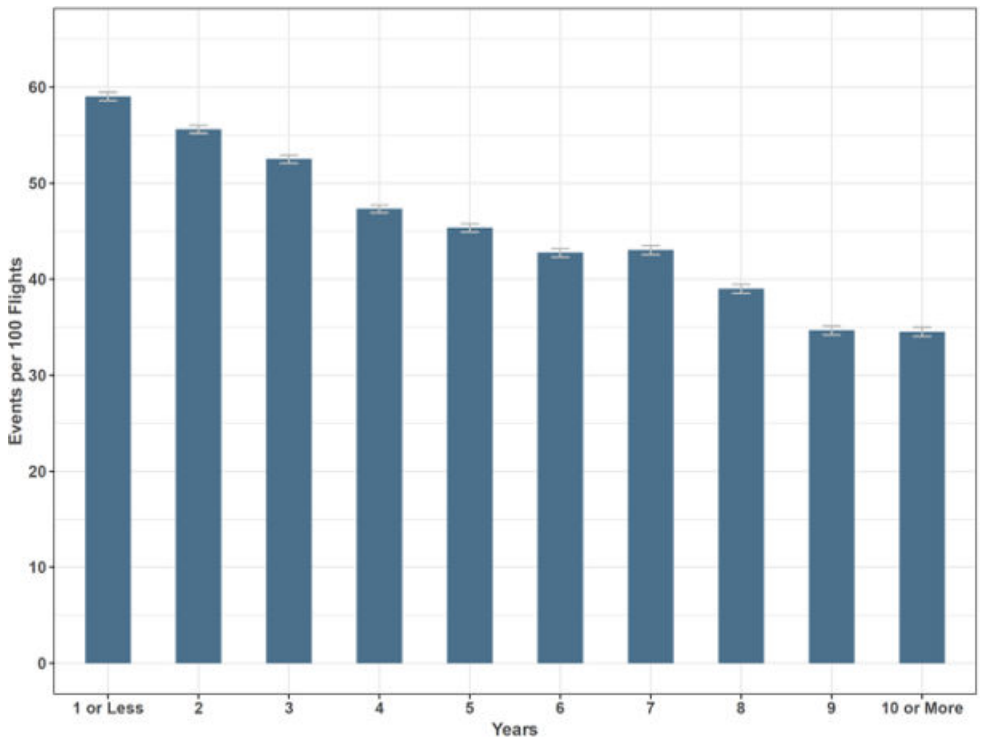
Loss of Control Inflight



-49%

Controlled Flight Into Terrain

Operator Event Rates by years of participation in C-FOQA



Comparison to Year 1

Year 3: ↓11%

Year 5: ↓23%

Years 10 or more: ↓41%


GE Aerospace

– Backup

Steering Committee

Corporate – Flight Operations Quality Assurance & Flight Data Monitoring

Committee Members

Morgan Bonde

Sean Cannon

Sean Mooney

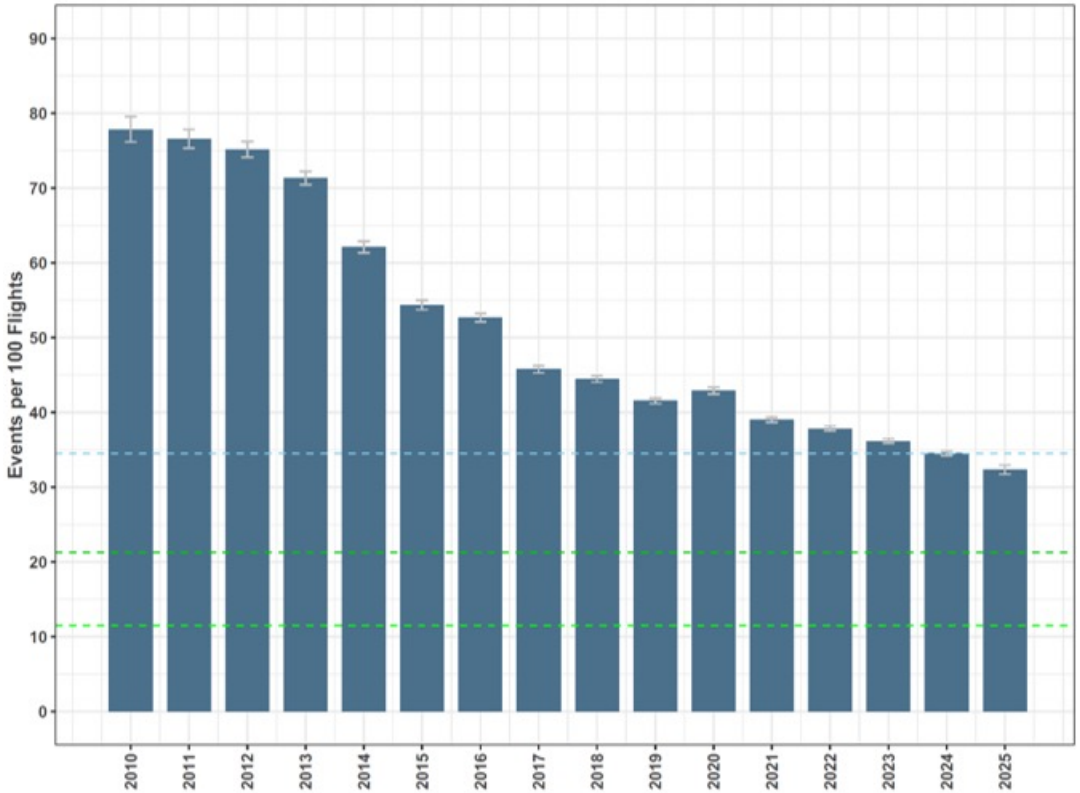
Chris Malo

James Cook

David Little

Safety Assurance	Safety Risk Management	Safety Promotion
Loss of Control Inflight	Stabilized Approaches	Loss of Safe Separation Between Aircraft
		
Runway Safety	Systems / Component Failures	Controlled Flight into Terrain
		

Operator Event Rate (SPI Targets/Goals)



Percent Change in Event Rate

10 Year Trend: ↓ 44%

5 Year Trend: ↓ 17%

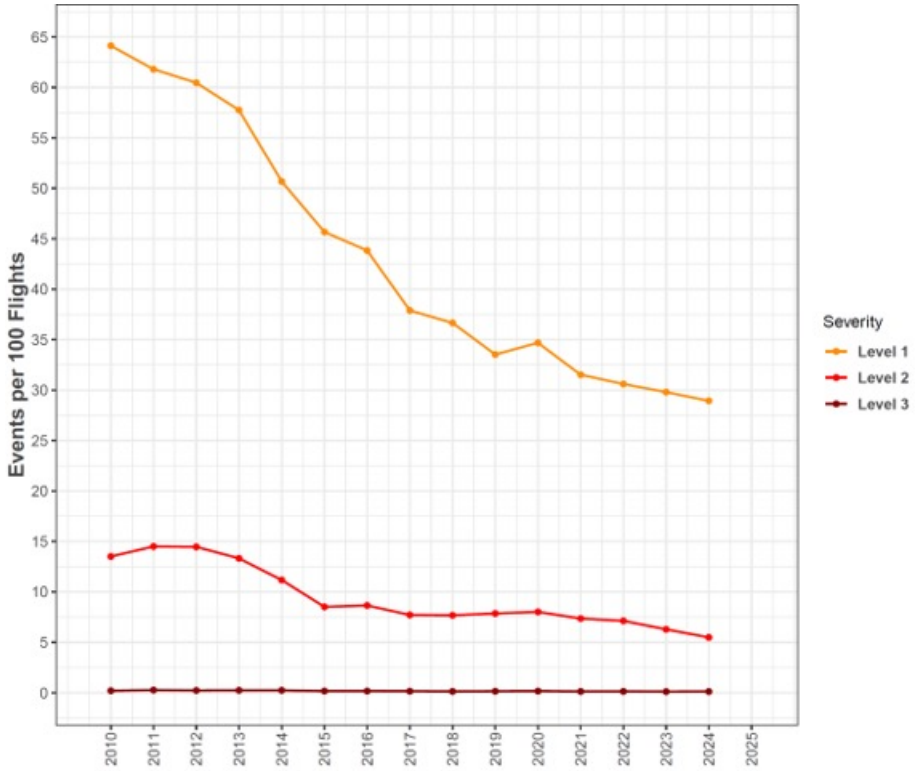
2023 vs. 2024: ↓ 5%

Average [24.5 Events per 100 Flights]

Lowest 25% [21.3 Events per 100 Flights]

Lowest 5% [11.5 Events per 100 Flights]

Operator Event Rates by years of participation in C-FOQA



2024 Event Rates by Severity

Level 1: 29 Events per 100 Flights

Level 2: 6 Events per 100 Flights

Level 3: 1 per 1,000 Flights

Level 1 [5 Year Trend]

↓ 13.7%

Level 2 [5 Year Trend]

↓ 29.5%

Level 3 [5 Year Trend]

↓ 20.0%