



GE Aerospace

— Introduction to FDM/FOQA

— Luke Bowman, Sr. Director of Product
April 8th, 2025

My Why



A post office might not be open.
 CAP FORM 14
 NAME: MCKINLEY, FLD
 CITY: FORTSMALL
 COUNTY: 1180
 STATE: TX
 STATE: TX
 STATE: TX



NTSB | National Transportation Safety Board

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NTSB Identification: FTH07FA030
 14 CFR Part 135 Nonscheduled operation of AIR LOGISTICS
 Aircraft: BELL 212, registration: N140AL

FILE	DATE	LOCATION	AIRCRAFT DATA	ENQUIRIES F 5 P/N	FLIGHT PURPOSE	PILOT DATA
3-8495	78/4/4	NR, GALVESTON, TX	BELL 212	CR- 0 0 2	COMMERCIAL	ATP, FLIGHT INSTR., AGE
	TIME - 2328		NR	PR- 3 0 1	AIR TAXI-PASSG	49, 15374 TOTAL HOURS,
				DT- 0 0 8		1212 IN TYPE, INCREMENT
						RATED.

NAME OF AIRPORT - GLOMAR JAWA SHIP
 DEPARTURE POINT - GALVESTON, TX
 INTENDED DESTINATION - GALVESTON, TX
 TYPE OF ACCIDENT - UNKNOWN
 PHASE OF OPERATION - LANDING: FINAL APPROACH
 COLLISION WITH GROUND/WATER: CONTROLLED
 LANDING: LEVEL OFF/TOUCHDOWN
 PROBABLE CAUSE(S) - COLLISION WITH GROUND/WATER: CONTROLLED
 PILOT IN COMMAND - INADEQUATE SUPERVISION OF FLIGHT
 FACTOR(S) - COLLISION WITH GROUND/WATER: CONTROLLED
 TERRAIN - GLASSY WATER
 RECALLING ACTS/CONDITIONS - AIRCRAFT CAME TO REST IN WATER
 REMARKS - CO-PILOT STATED ACFT APPEARED HIGHER THAN 280FT INDICATED ON ALT WHILE VSI READ APPROX 1800FT/MDN.

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



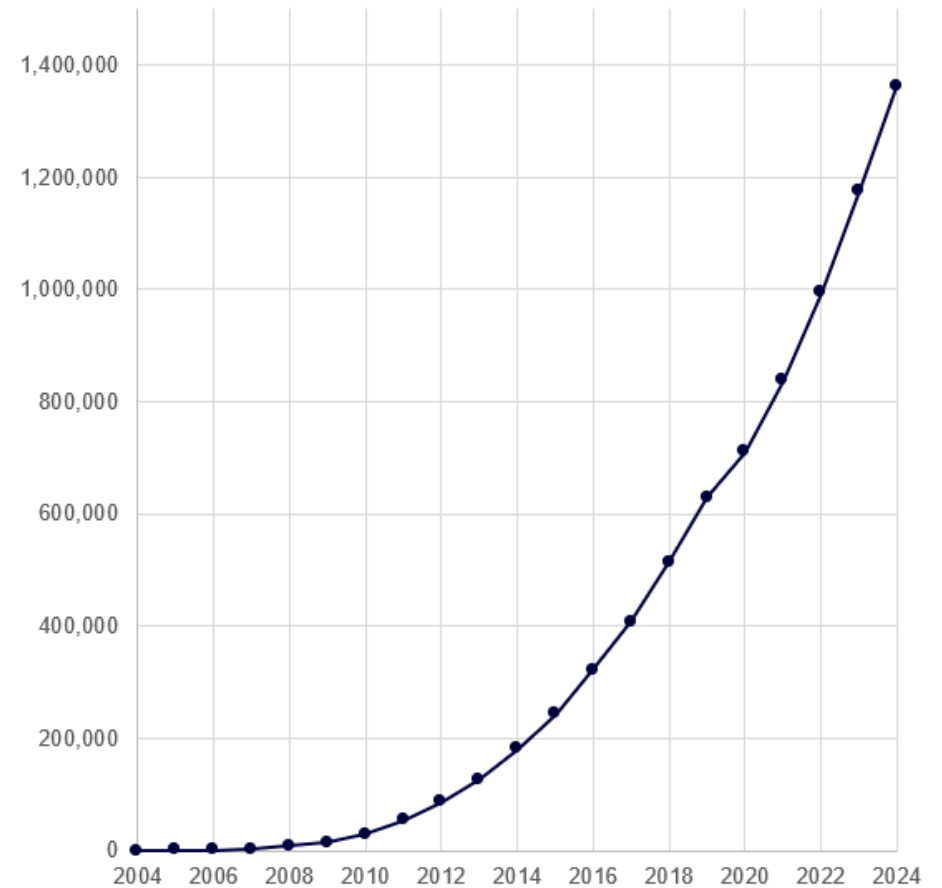
C-FOQA Program Overview and Participants

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%

Cumulative Flights Analyzed

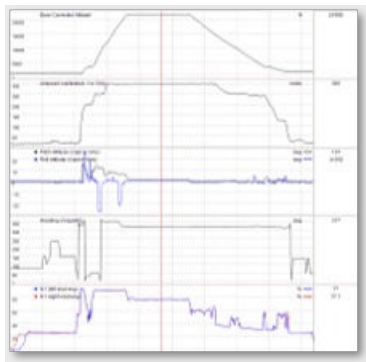


Technology: How to get started

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

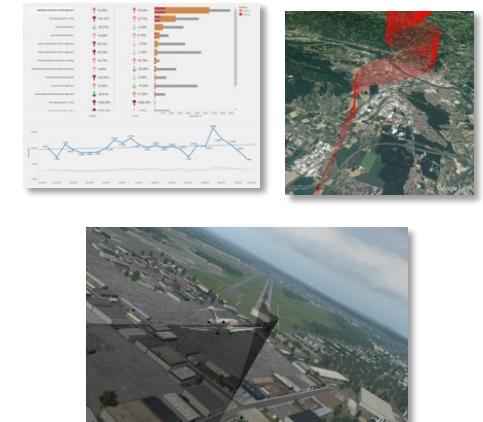


Data Fusion & Processing

Raw flight data is processed & fused with external data sources



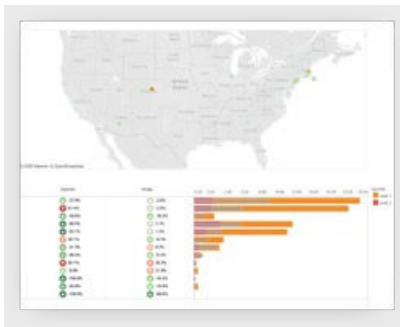
Results Published



Outputs of FDM/FOQA



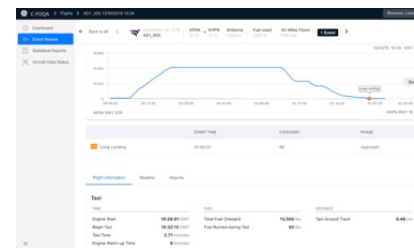
Dashboards



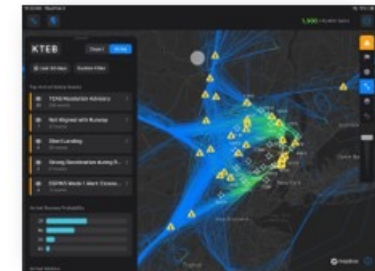
Statistical Reports – Monthly/Quarterly



Event Review & Single Flight Reports



FlightPulse for Pilots or Gatekeepers



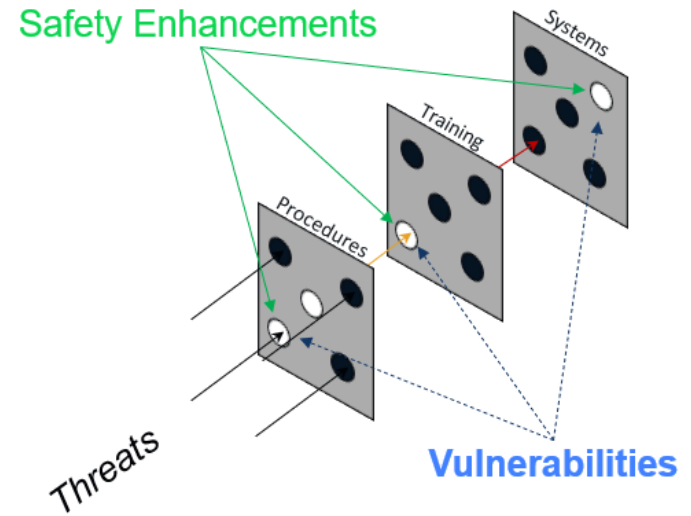
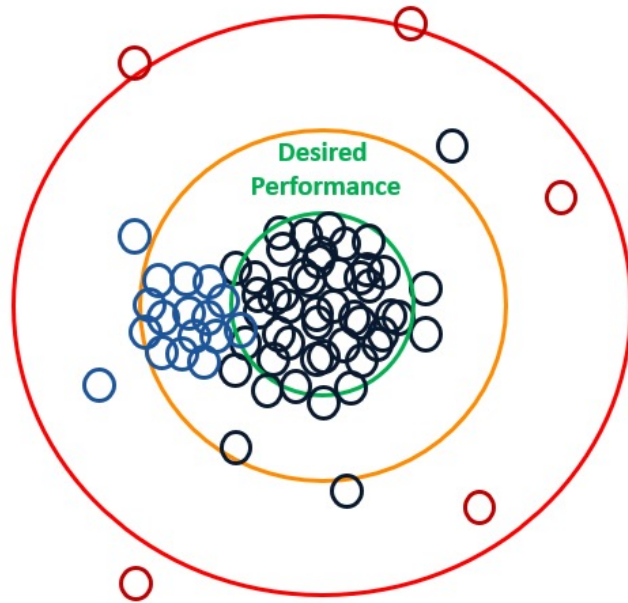
Measure, Identify, Act

C-FOQA | Safety Performance Monitoring

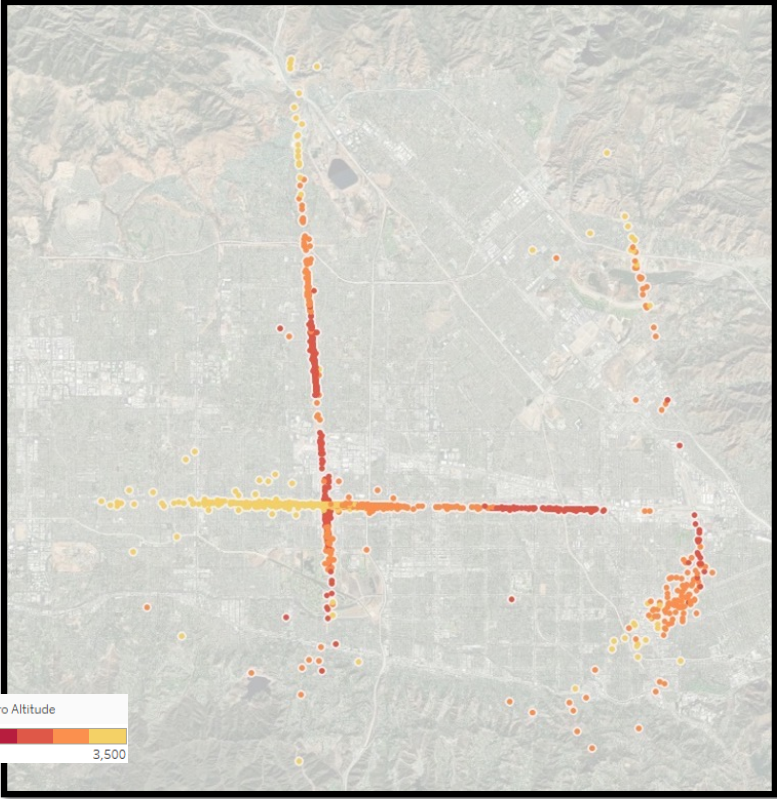
Expected Performance

Actual Performance

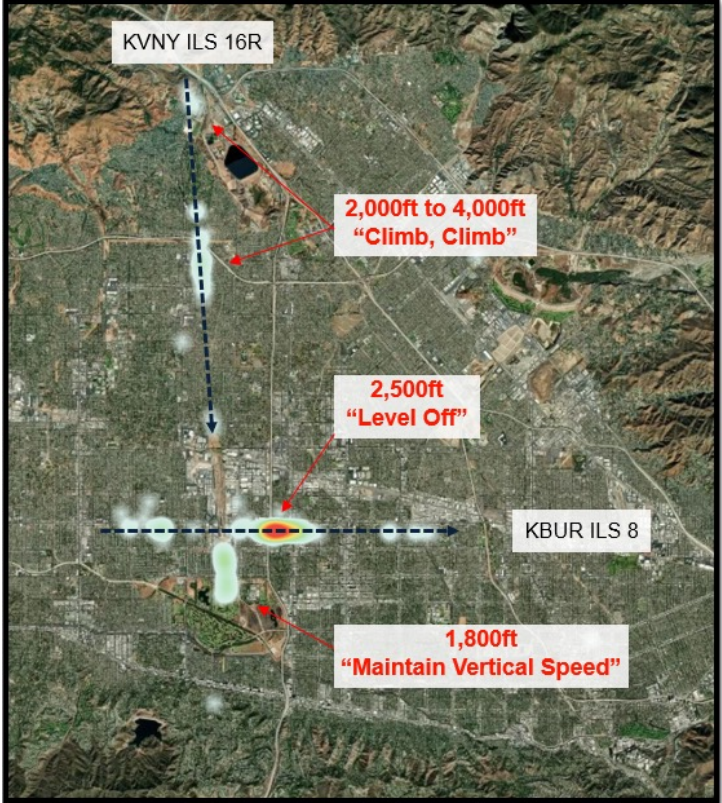
Accidents / Incidents



Burbank and Van Nuys, California



TA and RA Alerts



RA Alerts

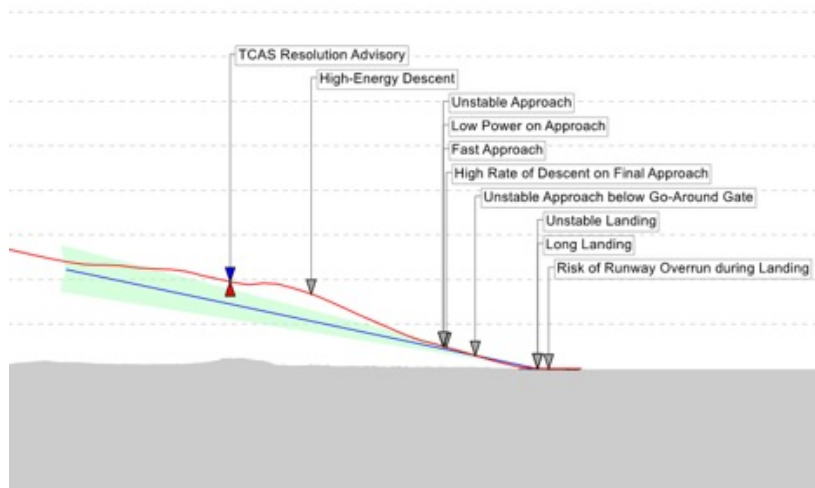
Burbank and Van Nuys, California

Follows TCAS RA Guidance

93%

Unstable Approach Rate

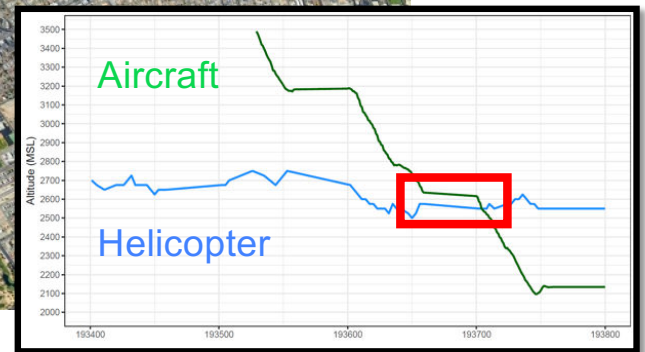
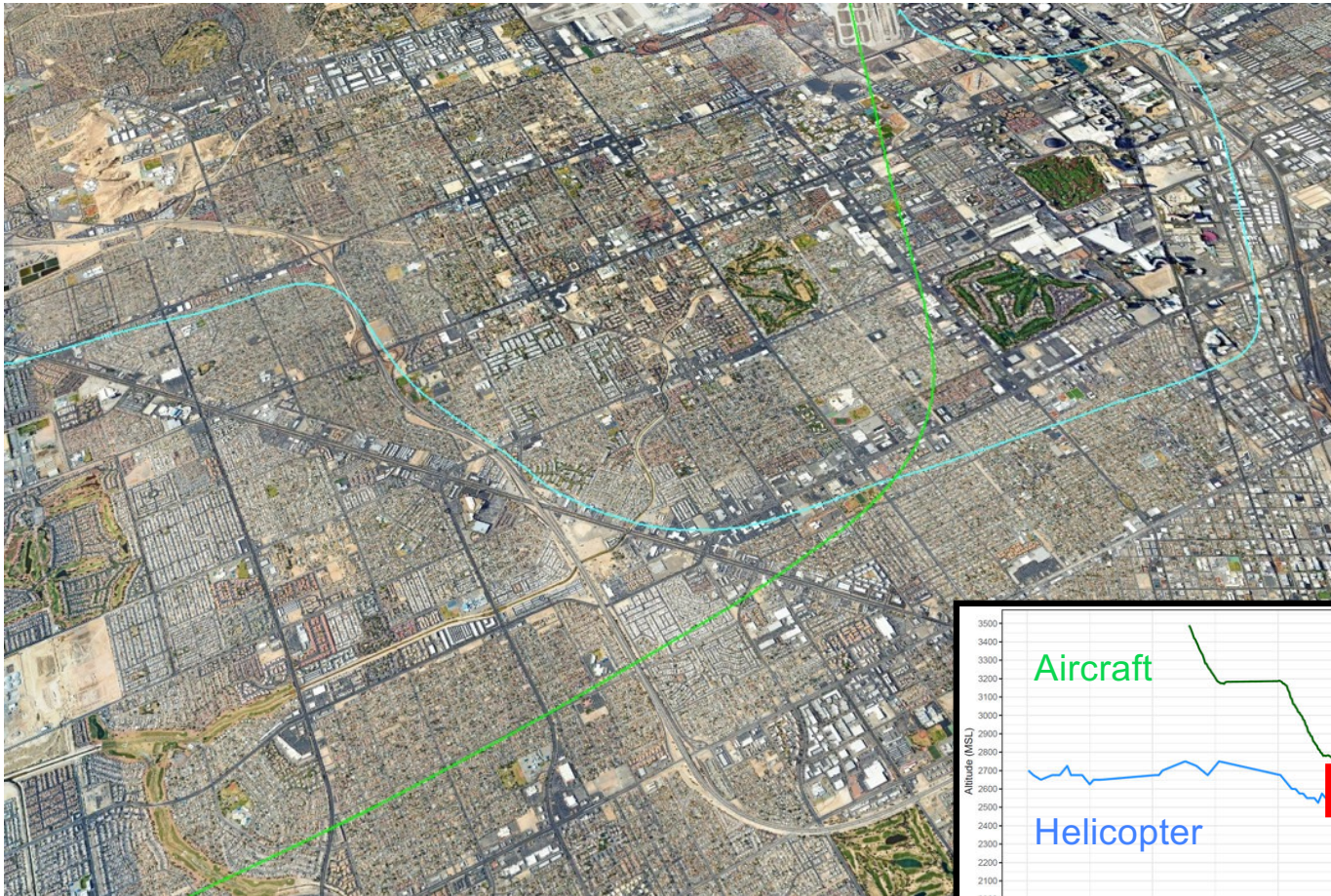
3.2% of Approaches



Unstable Approach Rate with Climb

RA

↑ 110%



FOQA Event Reduction – First 5 Years

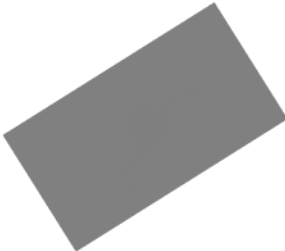
-37%

Runway Excursion



-38%

Loss of Control Inflight

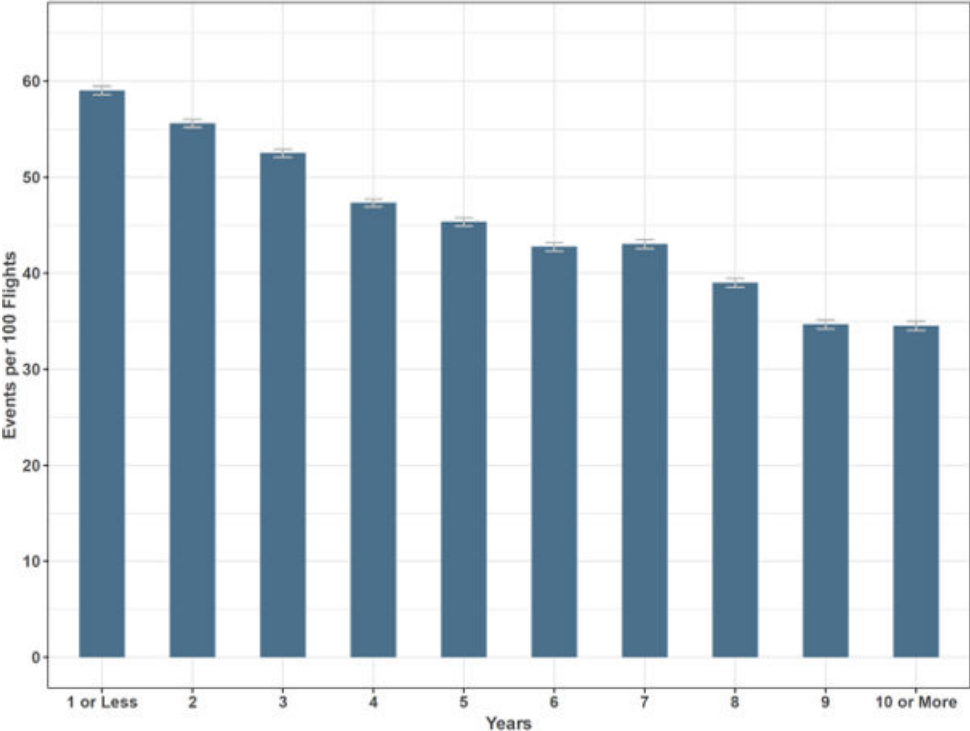


-49%

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

Loss of Control Inflight



Runway Safety



Safety Risk Management

Stabilized Approaches



Systems / Component Failures



Safety Promotion

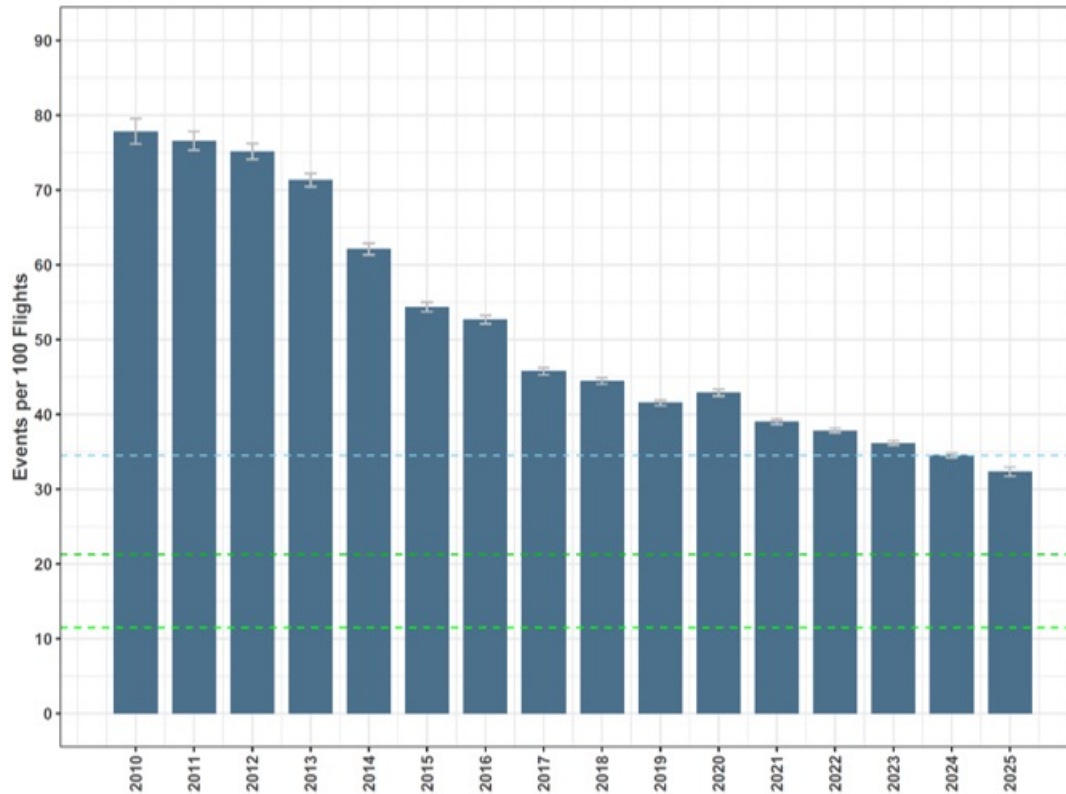
Loss of Safe Separation Between Aircraft



Controlled Flight into Terrain



Operator Event Rate (SPI Targets/Goals)



Percent Change in Event Rate

10 Year Trend: ↓44%

5 Year Trend: ↓17%

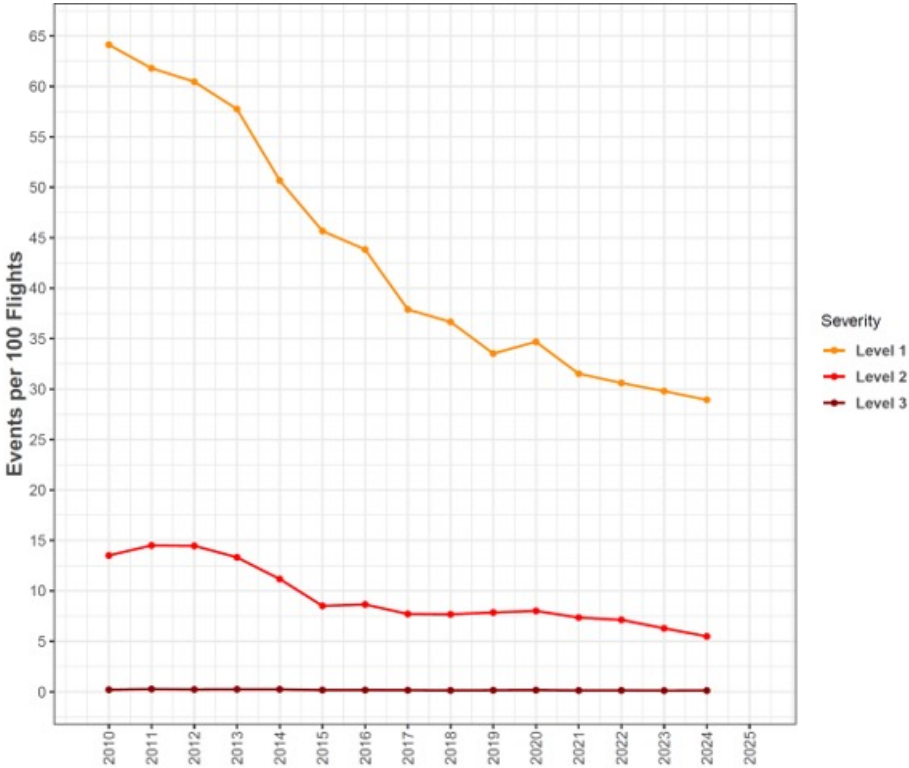
2023 vs. 2024: ↓5%

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%