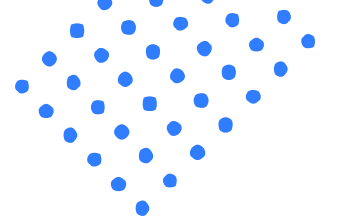




# Truth Data

Evolving Trends in **FOQA Management**:  
Shaping the Future of Aviation Operations

# About Truth Data:



Founded in 2015 - with the goal of creating a modern, user-friendly, affordable flight data analysis service.



24/7 FDA Services – 2000+ flights daily, serving 100+ operators worldwide, including airlines, business jets, helicopters, cargo operators, manufacturers, and MROs.



Customer-Centric Philosophy: Prioritizing customer satisfaction over profits and share price, ensuring tailored solutions for each client's unique needs.



Focused on providing data-driven insights that generate cost savings through enhanced efficiency & operational improvements.





# FOQA - Today



- **Safety Enhancement:** Proactively identify and mitigate safety risks by analyzing flight data for deviations and trends.
- **Operational Efficiency:** Use data-driven insights to optimize flight paths, reduce fuel consumption, and improve overall efficiency.
- **Maintenance Predictability:** Monitor aircraft performance to predict maintenance needs, reducing unplanned downtime and repair costs.
- **Training Programs:** Provide objective data to tailor pilot training, focusing on areas needing improvement and reinforcing best practices.
- **Regulatory Compliance:** Ensure adherence to aviation regulations by using FOQA data to demonstrate safe operational practices.

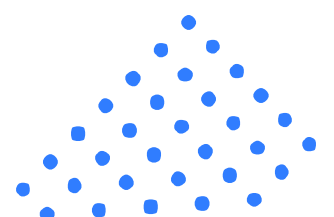
***While these contemporary uses have revolutionized flight operations, FOQA is evolving rapidly.***





# Emerging Trend #1

## **Strategic Fuel Management:**

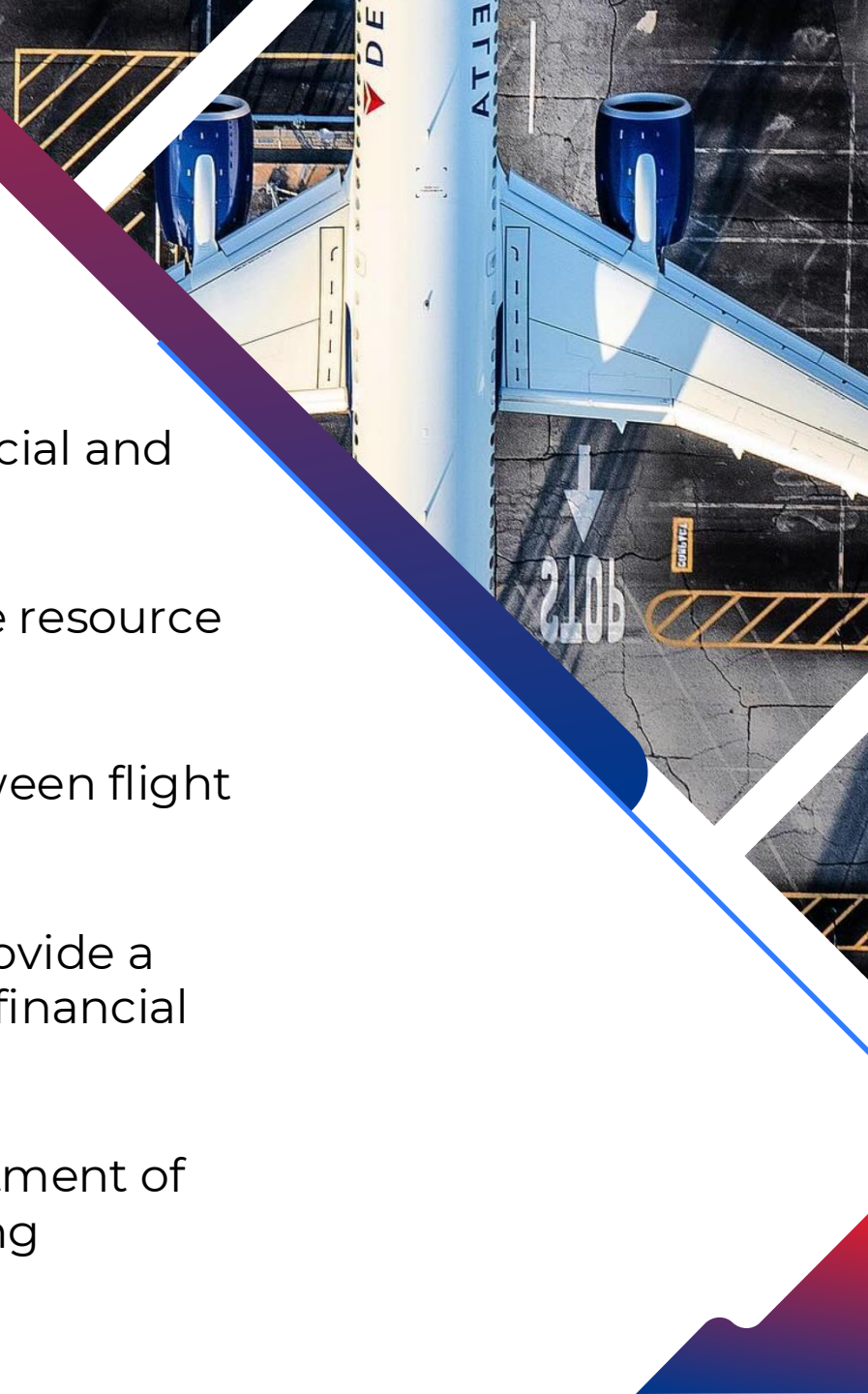
- Demand for FOQA-driven insights to minimize fuel costs and maximize route efficiency.
  - Emphasis on sustainability and meeting environmental targets without sacrificing profitability.
  - Flight Operational Quality Assurance (FOQA) programs are pivotal in optimizing fuel planning by systematically analyzing flight data to enhance operational efficiency.
    - ✓ Data-Driven Insights: detect suboptimal climb profiles or excessive use of thrust during takeoff.
    - ✓ FOQA facilitates ongoing monitoring and feedback, allowing airlines to implement corrective actions and refine fuel-saving strategies.
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# Emerging Trend #2

## Alignment with Business Objectives:

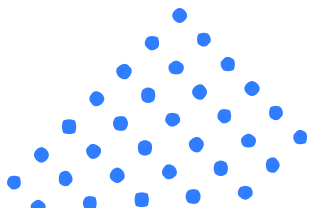
- Need for FOQA-derived KPIs that correlate directly with financial and operational success.
- Focus on creating KPIs that drive strategic decisions, improve resource allocation, and enhance bottom-line results.
- Preference for dashboards that clearly illustrate the link between flight operations and financial outcomes.
- Connection of FOQA data with financial reporting tools to provide a comprehensive review of how operational metrics influence financial performance.
- Establishing processes for the periodic evaluation and adjustment of FOQA-derived KPIs to ensure they remain relevant to evolving business goals.

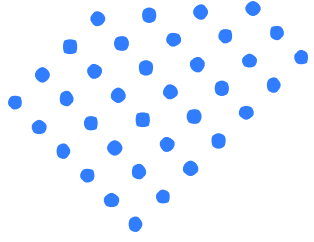


# Emerging Trend #3

## **Customised Executive-Level Dashboards:**

- Growing expectation for simplified, visually appealing data presentations tailored for C-Suite understanding.
- Dashboards must translate complex data into clear, actionable insights to inform strategic planning.
- Value in data visualization that highlights performance metrics and financial impacts in real time.
- Interactive elements that allow executives to drill down into specific data points, providing a deeper understanding of underlying factors & trends.
- Embedded predictive analytics capabilities to forecast future performance and potential challenges, enabling proactive strategic planning and decision-making.

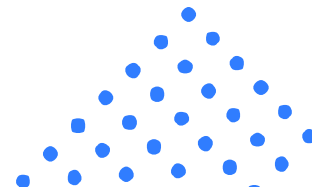




# Emerging Trend #4

## **Efficacy and Impact Measurement:**

- CFOs and Flight Operations Heads are interested in quantifiable measures of FOQA program success.
- Regular assessment of program effectiveness through defined metrics, showing continuous improvement and cost efficiency.
- Examples of FOQA-driven initiatives that have demonstrated tangible financial and operational benefits.
- Compare FOQA-derived metrics with industry benchmarks to assess performance relative to peers.
  - ✓ Better Align FOQA metrics with the organization's SMS to ensure a cohesive approach to safety and operational efficiency.



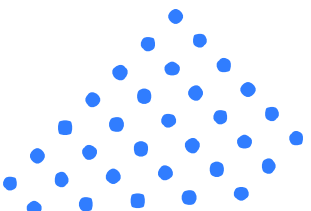


# Emerging Trend #5



## **Predictive Weather Guidance:**

- Interest in leveraging weather data to anticipate and mitigate disruptions, improving punctuality and fuel efficiency.
- Demonstrated cost reduction through minimized weather-related delays and optimized flight routes.
- Importance of integrating this capability into FOQA to enhance overall operational reliability.
- Incorporate live weather feeds and satellite data to provide up-to-the-minute information, enabling dynamic adjustments to flight plans and improving responsiveness to changing conditions.
- Real-time data algorithms to analyze historical weather patterns alongside real-time data, facilitating more accurate predictions and proactive decision-making to mitigate potential disruptions.








# Emerging Trend #6

## **Advanced Analytics Tools:**

- High demand for sophisticated analytics platforms that provide comprehensive, strategic insights.
  - Movement from basic event detection to advanced trend analysis, aiding in proactive decision-making - (Event versus KPV)
  - Value in using tools like Power BI & Tableau to turn flight data into strategic intelligence for the organization.
  - Implement machine learning techniques to identify complex patterns and anomalies in flight data, enabling predictive maintenance and proactive safety measures.
  - Adopt analytics platforms capable of processing and analyzing data in real-time, allowing for immediate insights and timely decision-making during flight operations.
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# Emerging Trend #7

## **Real-Time Analysis for Crew Debriefs:**

- Immediate Performance Feedback: Provides crews with prompt evaluations to enhance their skills.
- Enhanced Learning and Retention: Facilitates better understanding and memory of lessons by reviewing data shortly after flights.
- Objective Performance Assessment: Offers unbiased evaluations, leading to constructive feedback and targeted training.
- Identification of Systemic Issues: Detects recurring problems across flights, allowing for improvements in operational procedures.
- Promotion of a Safety Culture: Encourages open communication and continuous improvement, fostering a culture of safety and accountability.
- Regulatory Compliance and Reporting: Supports adherence to aviation regulations and streamlines incident reporting and audits.



# Emerging Trend #8

Embedding Flight Operational Quality Assurance (FOQA) programs to support an airline's marketing, commercial, financial, and executive functions:

- **Demonstrated Commitment to Safety:** A robust FOQA program showcases the airline's dedication to maintaining high safety standards, fostering trust among passengers.
  - **Operational Excellence:** Continuous monitoring and improvement of flight operations through FOQA lead to increased reliability and punctuality, enhancing the overall customer experience.
    - ✓ **Competitive Differentiation:** An effective FOQA program sets the airline apart in a crowded market by highlighting its proactive approach to safety and efficiency.
    - ✓ **Positive Brand Perception:** Consistent safety and operational performance contribute to a strong, positive brand image, encouraging customer loyalty and advocacy.
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# Emerging Trend #9

Flight Operational Quality Assurance (FOQA) programs are becoming essential in supporting Biomathematical Fatigue Models (BFMs):

- **Accurate Data Provision:** FOQA supplies precise flight data, enabling BFMs to better predict crew fatigue levels effectively.
- **Optimized Scheduling:** By integrating FOQA data, BFMs can assess operational factors impacting crew alertness, leading to improved scheduling decisions.
- **Proactive Fatigue Management:** The collaboration between FOQA and BFMs facilitates early identification and mitigation of fatigue risks.
- **Enhanced Operational Efficiency:** The synergy between FOQA and BFMs promotes data-driven decisions, improving overall operational performance.

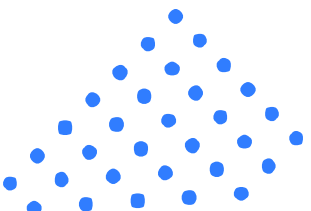


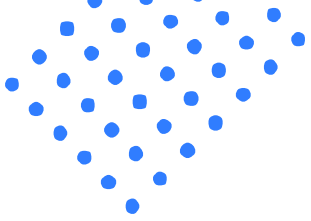


# Emerging Trend #10

Developing stronger data collaborations between airlines and regulatory bodies through de-identified Flight Operational Quality Assurance (FOQA) programs:

- **Regulatory Development Through Collaboration:** By sharing de-identified FOQA data, airlines contribute to evolving safety regulations, ensuring real-world operational insights inform them.
- **Data-Driven Industry Support:** The use of aggregated, anonymized data allows regulators to identify industry-wide trends and address systemic issues, leading to more effective safety interventions.
- **Enhanced Trust and Confidence:** Transparent data sharing fosters mutual trust, encouraging open communication and a unified approach to safety management between airlines and regulators.





# In Summary:

**Enhanced Fuel Management:** By integrating predictive weather modeling and advanced data analytics, FOQA systems can enable precise fuel planning, reducing operational costs and supporting environmental sustainability.

**Strategic Alignment:** Aligning FOQA-derived Key Performance Indicators (KPIs) with business objectives ensures that flight data insights inform strategic decisions, enhancing financial performance and operational efficiency.

**User-Centric Dashboards:** FOQA platforms are developing customized dashboards that translate complex flight data into actionable intelligence, facilitating informed decision-making across all organizational levels.

**Continuous Improvement Metrics:** Implementing robust efficacy measures allows organizations to regularly assess the impact of FOQA programs, ensuring continuous improvement and tangible benefits, including cost savings and enhanced safety.

**Regulatory Integration and Data Privacy:** Strengthening collaboration with regulatory bodies ensures compliance and opens avenues for potential incentives, while maintaining a commitment to data privacy and safeguarding sensitive information.







Thank you.

เรามีพิธีชนต์ฉบับภาษาไทย

*"Data is the new oil."*

*Clive Humby*