



FOQA Data Privacy

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Flight Operational Quality Assurance





Why FOQA?





Why Airlines Want FOQA

- FOQA is designed to use de-identified flight data to detect technical flaws, unsafe practices, or conditions outside of desired operating tolerances early enough to allow timely intervention to avert accidents or incidents.



United Airline's Position

- United Airlines, with ALPA (Airline Pilot Association) and the FAA, established an approved FOQA program in February, 1995.
- Currently United is operating more FOQA equipped aircraft than any other US carrier.



Definition

- FOQA (Flight Operational Quality Assurance) a safety program to obtain and analyze data recorded in flight.
- To improve:
 - flight crew performance
 - air carrier training programs and operating procedures
 - air traffic control procedures
 - airport maintenance and design
 - aircraft operations and design



Purpose

. . . to discover unknown Safety Issues by:

- Data distribution analysis
- Information trending
- Risk evaluation



Objective

- Promote and facilitate the free flow of safety information
- Enhance safety in the following areas
 - Flight Safety / Operations
 - Engineering
 - ATC



The FOQA Process

- Analyzing and Reporting using a fully integrated system with:
 - A systematic review of de-identified *data* to identify trends and correlation
 - Current and past de-identified *data* available to support safety studies
 - *De-identified data* to study measurements, parameters and events to provide real world feedback for safety issues.



United Airlines FOQA System

Collecting & Using Data



FOQA

June 4, 2003

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FOQA Status

Current FOQA Fleet



356 Aircraft

- Airbus (153)
- 737-500 (57)
- 747-400 (32)
- 767 (54)
- 777 (60)



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FOQA Data Capture

- **Austin Digital Inc. (ADI)**
 - The UAL FOQA program is using the Austin Digital, Inc. analysis software to collect and process data
 - 75-80% of the flights on FOQA aircraft is processed
- **Continuous data capture of entire flight**
 - Effectively all parameters every second; 10-12 hours a day
 - Some parameters are captured every 1/8 second
 - Capture between 300 and 1400 parameters per flight



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FOQA Data Capture

- Data is collected, de-identified and downloaded to main FOQA server on a non real time basis
 - Pulled and downloaded every 40 – 100 flight hours
 - Every 4-10 days depending on media capacity & parameters



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Remote Data Stations

- Use Remote Data Stations (RDS)
 - Desk-mounted servers
 - Load data on hard drive
 - Uploads data to the main server located at WHQ
 - 12 Total RDS Stations now operational

- ADI software will prioritize and schedule the downloading of data from the 12 RDS throughout the network.





Austin Digital, Inc System

- **Event Measurement System (EMS)**
 - Software will take raw flight recorder data and convert it into useful engineering units for analysis and trending
- **Automated Parameter Measurement (APM)**
 - Uses Profiles to continuously look at and trend data
 - Identify technical pre-cursors to possible future mechanical failures or engineering flaws



FOQA Team

- Flight Safety analyst
 - Located at WHQ
 - Initial source for receipt, review, and classification of de-identified data
 - Validates data
 - Oversees the RDS operations
 - Sends data to the EGT for review
 - Works with Technical Team
 - Follow-up & reporting



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Technical Team

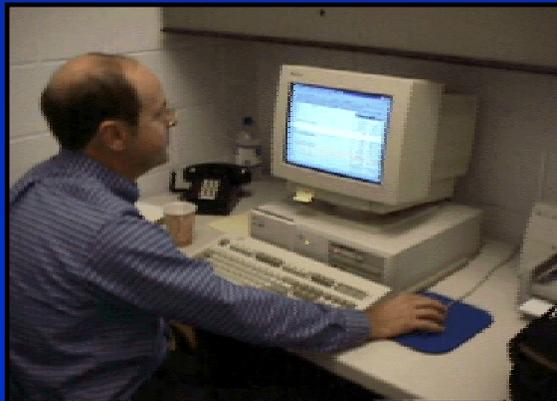
- Training Center
 - Fleet Captain and Standard Captain representative for each FOQA fleet
- Engineering
 - Engineer representative for each FOQA fleet





EGT – Exceedance Guidance Team

- ALPA Participation in FOQA program
- Resolve joint ALPA & UAL designated operational exceedances.
- EGT members are the ONLY people with the ability to interview the crew to gain additional safety information.



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A Successful FOQA Process

- **Distribution of safety related information to:**
 - Operations and Training
 - Management
 - Engineering
- **TRUST between Pilots and the Company**
 - Timely feedback to pilot group
 - Credibility and accessibility - a peer based system
 - Clear and concise communication of information
- **Protection of FOQA data integrity**
 - Security
 - Immediate De-Identification of data
 - 3rd Party Release & Non Disclosure Agreements



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Value of A FOQA Program

- Conserve/Protect Resources
 - People and Equipment
- Find Underlying Causes of SOP deviations
 - Use data to determine the where, why & how of safety issues
- Provide data to Improve Safety Procedures
 - Revise Policies and Training
- Reduce Operating Costs
 - Decreased equipment repair costs





The FOQA Program

helps ensure the safe operation of the
United Airlines Fleet

Questions?



Thank You !

