Flight Ops Information Sharing Meeting Summary
September 22nd and 23rd 2009
Hosted by United Airlines, Chicago, Illinois

The fall 2009 Flight Ops InfoShare Meeting consisted of an afternoon session on September 22 and a morning session on September 23 at the Marriott Schaumburg in Schaumburg, Illinois, hosted by United Airlines. In the afternoon of September 23, the participants of the Flight Ops InfoShare and the Maintenance InfoShare, which were being held concurrently, met in a joint session.

Approximately 200 representatives were in attendance representing over 37 airlines, maintenance service organizations, labor unions, DOD, FAA and other organizations involved in aviation safety mission.

<u>**Summary of September 22nd afternoon and September 23rd Flight Ops sessions**</u>

Opening remarks were provided by Michael Quiello, United Airlines' Vice President of Corporate Safety, Security, Quality and Environment.

Review of safety issues and action status – Wally Feerrar, of MITRE Corporation, reviewed the "Rules of the Road" for InfoShare meetings (see Attachment A). Introductions were made by each participant.

Airlines presentations – Representatives from six airlines (Southwest Airlines, United Airlines, ExpressJet, Continental Airlines, US Airways, and UPS) presented during the afternoon session on September 22. An additional five airlines (American Airlines, Air Tran, Frontier, Delta/Northwest, and Alaska Airlines) presented during the morning session on Sept. 23. FlightOptions, which operates a fractional jet ownership company also presented on their challenges and ASAP reporting program.

At the request of the Infoshare organizers, the airlines presented on the airlines unstable approach data, take-off configuration errors and altitude deviations. Additionally, the airlines presented on other areas with safety implications that they wanted to share with the InfoShare community.

Unstable approach - At the request of the Infoshare organizers, the airlines presented unstable approach data and contributing factors including the rate of landings versus go-arounds and frequency and anecdotes regarding becoming unstable at or below 500 feet. The airline presentations included analysis strategies, causal and contributing factors along with anecdotal evidence, and mitigation strategies.

Some of the analysis strategies presented included:
- Targeting specific airports and developing airport specific mitigations;
- Looking out beyond 1000' to determine contributing factors;
- Analysis of the complete energy package and/or analysis of high-energy events separately;

- Analysis of when the approach became stable when unstable at 1000 feet;
- Analysis of when became unstable if stable at 1000 feet;
- Having gatekeepers call back on specific events (e.g. go-arounds) to obtain additional contributing factors to include in analysis;
- Analysis of specific airports and approaches and comparison of unstable flights to "non-events";
- Analysis of go-arounds broken out by ATC directed go-arounds and unstable approach – sometimes ATC go-arounds introduced a subsequent unstable approach.

Analysis results and anecdotal evidence presented included:
- Seasonal variations at specific airports;
- Challenging cold-weather airports where it is very difficult to achieve a stable approach ;
- Emphasis on fuel conservation resulting in pilot's misjudging ability to get slow and stable;
- Lack of understanding of stability criteria (500 vs. 1000);
- Little difference between being unstable at 500' rates versus 1000' rates;
- Low power approach events below 500 feet;
- Possible correlation between late barometer setting and unstable approach;
- ATC directed go-arounds resulted in unstable approaches, and
- Other contributing factors such as fast airspeed, slow airspeed, late flaps or high rate of descent.

An airline had also correlated the approach to airport with stable/unstable approach and directed pilots to request a specific approach which had a lower rate of unstable approaches. Another airline which had instituted a 1000 foot stable gate, several years ago has seen a decreasing rate of unstable approaches.

Rejected take-offs – At the request of the Infoshare organizers, the airlines presented data on rejected take-offs and configuration errors including frequency of aborts and events found without aborts. One airline presented on seasonal variations found. Aircraft issues were identified as the basis for most rejected take-offs, e.g. erroneous take-off warning horns. Other contributing factors identified included: malfunction, ATC and configuration warning. No fleet specific variation was identified.

Altitude excursion/deviations - At the request of the Infoshare organizers, the airlines presented their data on altitude deviations including causal and contributing factors. Factors identified in the presentations included: crew resource management, read back errors, monitoring automation issues, improper FMC programming, hand flying with distractions, language difficulties, fatigue, international non-digital ATIS issues, incorrect altimeter setting, misunderstood clearances, missed level-offs, failure to follow SOPs, and improper execution. One airline's analysis indicated that there was about 1 altitude deviation per day in their ASAP program and another analysis indicated that about 55% were in the descent phase of flight. Targeted training was the most mentioned mitigation strategy.

Crew Fatigue – ExpressJet presented on a fatigue risk management analysis. Data was collected by the airline's ERC and the data-based results analyzed by the ASAP ERC. Sleep,

wake and work schedules were input into the USAF's developed Fatigue Avoidance Scheduling Tool (FAST). If a crew calls in fatigue, the union ERC representative would follow up and recommend that they provide an ASAP report and also a detailed record of sleep history that is then input into the FAST system. Initial results of the analysis have been analyzed by "show times". FAST has been used to graphically illustrate to schedulers how "forward" moving rescheduling is better than backward rolling schedules. For results of the research, please see the presenter.

ASIAS Benchmarking – Southwest Airlines presented on their validation of ASIAS unstable approach benchmark. Validation of the benchmark by all airlines is nontrivial due to different data formats, data filtering and different vendors. The recommendation was that ASIAS needs to continue providing individual airline information as part of benchmarking until definition issues are resolved for each benchmark.

FAA Update – Jay Pardee from the FAA's Office of Aviation Safety Analytics presented an update on the Commercial Aviation Safety Team's (CAST's) safety enhancement strategy for Terrain Awareness and Warning System (TAWS) as a result of the ASIAS analysis. JetBlue is the lead carrier in the development of RNAV visual flight procedure for OAK. Other airports identified in the TAWS study that have implemented or are developing visual/and or instrument procedures are ABQ, LAS, SAN, and Guam. The FAA also presented on the CAST mitigation efforts for Terrain Collision Avoidance System (TCAS). The ASIAS TCAS analysis has been approved by the ASIAS Executive Board (AEB) and given to CAST and its analytical team (JIMDAT) for mitigation development. JIMDAT has formed a working group and an invitation was extended to the airlines to provide Subject Matter Experts to the TCAS working group.

PDC – The FAA also presented a status update on potential solutions of PDC (Pre-departure clearance) issues that had been initially raised at the September 2008 InfoShare meeting. The first solution requires the carrier to file the Host PDR in its flight plan. This solution has been tested satisfactorily by two carriers for a specific route and similar solutions for other routes are being coordinated and tested. However, this solution is labor intensive for the dispatchers, so the FAA is also working on modifying the IFR Preferred Route published in the Airport / Facility Directory (A/FD) to include the PDR. This solution still requires the identification of specific PDR and PDC incongruities. It is expected that the first route tested and modified would be published by the end of the year.

ASRS – Chuck Drew from Booze Allen Hamilton presented on the status of NASA's ASRS (Aviation Safety Report System). In 2008, they received over 50,000 reports. Roughly 61% of the ASRS reports are ASAP to ASRS reports and the other 39% of the reports are unique to ASRS. A new electronic analyst workbench to manage the large number of reports is being implemented this year. Also presented were results of analyses of the ASRS data base on Unstabilized Approaches, Air Carrier Takeoff Warning Incidents (requested by NTSB after the Madrid incident) and A320 Low Fuel State with no timely warning.

ASIAS Overview – Pat Massimini from the MITRE Corporation presented an overview of the current status of ASIAS. This presentation included the current ASIAS participant status (23 airlines), an overview of the types of analyses/studies within ASIAS and the status of specific

directed studies undertaken in the past year, airline benchmarks and CAST metrics for known risk monitoring and safety enhancement assessments.

ATSAP Presentation – Bob Mattmann from the FAA presented on the status of the ATSAP (Air Traffic Safety Action Program). In January 2009, ATSAP was only deployed in 30 facilities. Currently it has been deployed in all but two regions where it is expected to be deployed in early 2010. Multiple ERCs have been established and 121,000 employees are currently eligible to participate of which approximately 4000 have filed reports and over 7800 reports have been received in less than a year. Of these reports, a larger number than expected reported "unknown" events especially in the areas of surface event, pilot deviation and operational deviations. The proportion of unknown to known events was significantly less for events such as runway incursion and operational errors. Issues that have been identified through ATSAP and have been/are being mitigated include frequency issues, training, automation software issues, tower cab obstruction, confusing call signs from a regional airline, foreign carrier using incorrect RNAV procedures, and placement of speed restriction information on Jeppesen charts. There was a discussion of expanding the coordination between the ATSAP ERCs and airline ERCs.

Joint Flight Operations and Maintenance Session – A joint session with both the Flight Ops and Maintenance InfoShare communities participating was held on Wednesday afternoon, September 23. Jay Pardee of the FAA opened the session with remarks on ASIAS and the benefits of incorporating the maintenance community with ASIAS. Michelle Harper from the MITRE Corporation then presented on the results of an analysis of ASAP reports containing maintenance and flight ops concerns, including the top 5 maintenance issues reported through flight ops ASAP. A maintenance taxonomy working group is being formed and volunteers were solicited. Five airlines (Southwest Airlines, ExpressJet, Frontier, American Airlines, and United Airlines) presented on issues common to both flight ops and maintenance.

Review of "Takeaways" from InfoShare – In closing the Flight Ops Infoshare, Carol Branscome and Wally Feerrar, from the MITRE Corporation, presented "take-aways" as a result of the Flight Ops Infoshare presentations for discussion.

These "take-aways" summarized the discussions and presentations as follows:
- Unstable Approach
  - Focus on specific airports/runways
  - Compare to "non-event" approaches to airport
  - Analysis of ATC induced
- Altitude Deviations
  - Mixed success in reducing but still an issue
- Fatigue
  - Could ExpressJet study serve as model for other ERCs; ASIAS could aggregate results
  - Consider analytical tool such as FAST
- Take-off configuration issues
- Low-speed (automation related) on take-off
- Proposal for changes on approach charts

- Standardized location for speed restrictions
- Note on charts any Hold Short Lines
- Need standards for FOQA analysis tools (e.g. issues raised by benchmark validation)
- Cross correlation between FOQA and ASAP events for verification of FOQA event detection criteria (e.g. Takeoff Configuration Error)

A review of the "best practices" shared at this InfoShare included:
- Analyses techniques
  - Tactical use of crew call-backs on specific topics
  - Focus on individual airports and/or runways
  - Leverage "non-event" approaches to develop RNAV visual approaches
  - Fatigue analysis technique
- Flight and maintenance crew education on specific safety concerns (training, posters, bulletins, simulator changes)
- Coordination among safety organizations
  - Internal airline coordination (flight ops, maintenance, dispatch, cabin)
  - Airline coordination with ATC
- "InfoShare" approach implemented within airline among safety departments

The meeting was ended on September 23 with an announcement of the next InfoShare meeting in March in a southern US location, possibly Houston. [editor's note: next InfoShare will be held March 23-24 in Houston, TX at the Marriott North at Greenspoint].

Attachment A
Flight Ops Information Sharing Meetings
Rules of the Road

1. We will consider all information to be proprietary property of the presenting organization.

2. We will not use any information presented by another participating organization for commercial, competitive, punitive, or litigation purposes.

3. We will not share the proprietary information of participants with external parties without the written consent of the owner.

4. We will maximize the use of all available resources in information analysis.

5. We will treat all participants with equality, respecting all viewpoints as worthy of consideration.

6. The level and method of information sharing rests with the participant.

7. We will endeavor to inform other participants as quickly as possible of any significant safety issue arising from our data sources.

8. We will work to implement rational solutions to safety issues identified through information sharing.

9. We will hold each participant accountable for the Rules of the Road.

10. We will speak with candor and honesty.