

Advances in Aviation Safety

Technical Session Schedule

As of 09/14/2003 08:00 pm

Tuesday September, 9

New Airplane Design Standards, ARP 4754 and ARP 4761

Session Code: SAFETY3

Room 512G

Session Time: 1:00 p.m.

This session will present information about the SAE Airplane Safety Committee (S-18) plan to revise ARP 4754 "Certification Considerations for Highly-Integrated or Complex Aircraft Systems" and ARP 4761 "Guidelines and Methods for Conducting the Safety Assessment Process on Civil Airborne Systems and Equipment". The presentations will lay out the plan to accomplish this task and go into some detail of the considerations being reviewed for updating these documents.

Organizers - John C. Dalton, Boeing Commercial Airplanes

Time	Paper No.	Title
1:00 p.m.	ORAL ONLY	ARP 4754 and ARP 4761 - Updating the Industry Standards for Development of Requirements and Safety Assessment in Airplane Design <i>John C. Dalton, Boeing Commercial Airplanes</i>
1:30 p.m.	ORAL ONLY	ARP 4754 Revision - Strategies and Implementation <i>Steve Wilson, Rockwell Collins Inc.</i>
2:00 p.m.	ORAL ONLY	Eurocae WG 63 - Developing a European Standard for Safety Assessment <i>Christian Bougnol, Airbus Industrie</i>
2:30 p.m.	ORAL ONLY	ARP 4761 - Strategies and Implementation <i>John D. Applegate, Boeing Co.</i>

Tuesday September, 9

ARP 5150 Safety Assessment of Transport Airplanes in Commercial Service

Session Code: SAFETY4

Room 512G

Session Time: 3:30 p.m.

Members of the SAE S-18 Aircraft Safety Committee will hold a panel discussion on the development, process and tools of ARP5150, Safety Assessment of Transport Airplanes in Commercial Service. The new aerospace recommended practice document describes a compendium of best safety assessment practices gathered together as a reference. Guidelines, methods and tools used to perform the ongoing safety assessment process for document organization, risk assessment processes and tool highlights will be featured.

Organizers - Eric M. Peterson, Honeywell International

Panelists - Mike Burkett, Rolls-Royce Corporation; Robert A. Mattern, Pratt & Whitney; Eric M. Peterson, Honeywell, International; Tilak C. Sharma, Boeing Commercial Airplanes

Tuesday September, 9

National Airspace Performance & Measurement

Session Code: SAFETY1

Room 512H

Session Time: 1:00 p.m.

This session focuses on proof-of-concept and system-wide infrastructure to aid in the projection of effects of decision-support when Courses-of-Action (CoA) and assessments in the National Airspace System are needed by the Federal Aviation Administration (FAA). The objective is to significantly augment FAA decision services by making information accessible for fast-time distributed advanced analysis to be utilized for decision making across the U.S. continental FAA centers and Air Route Traffic Control Centers.

Organizers - Dave Maluf, NASA Ames Research Center

Time	Paper No.	Title
1:00 p.m.	2003-01-2975	NasaS Aviation System Monitoring and Modeling Project <i>Irving C. Statler, Dave Maluf, NASA</i>
1:30 p.m.	ORAL ONLY	Performance Measurement for Air Traffic Services <i>Rich Nehl, Federal Aviation Administration</i>
2:00 p.m.	2003-01-2976	Concept and Operation of the Performance Data Analysis and Reporting System (Pdars) <i>Wim den Braven, John Schade, ATAC Corp.</i>
2:30 p.m.	ORAL ONLY	Facility Based Air Traffic Services Performance Measurement and Analysis <i>Rich Nehl, Federal Aviation Administration</i>

Tuesday September, 9

Crashworthiness & Injury Analysis

Session Code: SAFETY2

Room 512H

Session Time: 3:30 p.m.

Organizers - Joseph A. Pellettiere, US Air Force

Time	Paper No.	Title
3:30 p.m.	ORAL ONLY	Fixed Aircrew Seat Standardization (FASS) Program <i>Robert D. Lee, Douglas Ferrata, Edward W. Garland, Richard Urrutia, Guy Banta, US Air Force</i>
4:00 p.m.	2003-01-3001	Computation Analysis of Ejection Seat Cushions for Optimal Control of Spinal Injuries <i>Zhiqing Cheng, Veridian Engineering Inc.; Joseph A. Pellettiere, US Air Force</i>
4:30 p.m.	2003-01-2977	Enhanced FAA-Hybrid li Numerical Dummy Moel in Madymo for Aircraft Occupant Safety Assessment <i>Hugues Joffray Boucher, TNO Madymo North America Office; C.D. Waagmeester, TNO Automotive Safety</i>
5:00 p.m.	ORAL ONLY	Geometric and Inertial Properties of Human Heads for Test Manikin Development <i>John A. Plaga, Wright-Patterson Air Force Base; Christopher B. Albery, Veridian; Mark Boehmer, Chartwell Electronics Inc.</i>

Wednesday September, 10

Electrical Design Safety

Session Code: SAFETY8

Room 511C

Session Time: 3:30 p.m.

Recent advances in design and analysis that enable enhanced safety of systems design and installation, particularly with respect to fuel system ignition sources.

Organizers - Ann Elizabeth Berner, Reliable Complex Systems LLC

Time	Paper No.	Title
3:30 p.m.	2003-01-2989	Installation Challenges and Beyond for Smart Circuit Breakers <i>Mark Shander, Boeing Commercial Airplanes</i>
4:00 p.m.	2003-01-2990	Rules for Automating Failure Modes and Effects Analysis of Electrical Connectors and Wiring <i>Nathaniel Ozarin, The Omnicon Group Inc.</i>
4:30 p.m.	2003-01-2991	Aircraft Systems Design: Lessons Learned From Sfar 88 <i>John A. Malley, RCS</i>
5:00 p.m.	2003-01-2992	Update on Non-Electrically Invasive Liquid Level Measurement <i>Charles W. Beck, International Avionics Inc.</i>

Wednesday September, 10

Maintenance Safety I

Session Code: SAFETY5

Room 512G

Session Time: 1:00 p.m.

Organizers - Michael S. Bartron, Pratt & Whitney

Time	Paper No.	Title
1:00 p.m.	2003-01-2978	An Efficiency Analysis of Aircraft Maintenance Programs <i>Leonard C. MacLean, Stig O. Larsson, Dalhousie Univ.; Alex Richman, Algoplus Consulting Limited</i>
1:30 p.m.	2003-01-2979	The Predictability of Aircraft Failures With Age <i>Leonard C. MacLean, Dalhousie Univ.</i>
2:00 p.m.	2003-01-2981	Ground Based Vehicle Health Monitoring for Lifecycle Cost Reduction <i>Lloyd Schaefer, Honeywell Engines & Systems</i>
2:30 p.m.	2003-01-2984	Maintenance Action Based on the Time Dependent Failure Rate for Safety-Critical Components <i>Zdzislaw H. Klim, Bombardier Aerospace; Czarnecki Hanna, Goodrich Avionics</i>

Wednesday September, 10

Maintenance Safety II

Session Code: SAFETY5

Room 512G

Session Time: 3:30 p.m.

Organizers - Michael S. Bartron, Pratt & Whitney

Time	Paper No.	Title
3:30 p.m.	2003-01-2982	Improved Life Prediction and Material Characterization of Aerospace Components and Legacy Systems <i>Curt Rideout, Doug Akers, Positron Systems Inc.</i>

4:00 p.m.	2003-01-2980	Tire Monitoring Systems Design: a Novel Approach <i>Giovanni Barbanti, Marcello Pellicciari, Angelo Andrisano, University of Modena & Reggio Emilia</i>
4:30 p.m.	2003-01-3000	Condensation - Why It Needs to Be Addressed in Every Aircraft <i>Torbjorn Johansson, CTT Systems AB</i>
	2003-01-2983 CANCELLED	Low Heat Input Flat Wire Laser Deposition for Repair of Thin Walled Aircraft and Gas Turbine Engine Structures <i>Joshua Rabinovich, H R Tech. Inc.</i>

Wednesday September, 10

Safety Analysis

Session Code: SAFETY6

Room 512H

Session Time: 1:00 p.m.

This is a focus on analysis techniques. Topics include establishing safety priorities from published accident data, predicting safety performance in complex flight situations using modeling and simulation, understanding implications of DO-178B and ARINC 653, and performing failure analysis on safety-critical computer software.

Organizers - Nathaniel Ozarin, Omnicon Group Inc.

Time	Paper No.	Title
1:00 p.m.	2003-01-2985 ORAL ONLY	Use of Accident and Incident Data in Establishing Aviation Safety Priorities <i>Vahid Motevallii, George Washington Univ.</i>
1:30 p.m.	2003-01-2986 ORAL ONLY	Meeting the Demands of DO-178B/12B and ARINC 653 for Safety Systems <i>Joe Wlad, Wind River</i>
2:00 p.m.	2003-01-2987	Developing Rules for Failure Modes and Effects Analysis of Computer Software <i>Nathaniel Ozarin, The Omnicon Group Inc.</i>
	2003-01-2988	Prediction of Aircraft Safety Performance in Complex Flight Situations (Written Only -- No Oral Presentation) <i>Ivan Y. Burdun, Siberian Aeronautical Research Inst.</i>

Wednesday September, 10

Safety Management

Session Code: SAFETY7

Room 512H

Session Time: 3:30 p.m.

Organizers - Mike Doiron, Moncton Flight College

Time	Paper No.	Title
3:30 p.m.	2003-01-2993 ORAL ONLY	Aircraft Aging And Schedule Reliability <i>Leonard C. MacLean, Dalhousie Univ.</i>

4:00 p.m.	2003-01-2994 ORAL ONLY	Safety Management Systems From Concepts to Concrete Action <i>Mike Doiron, Moncton Flight College</i>
4:30 p.m.	2003-01-2995 ORAL ONLY	IATA Operational Safety Audit (IOSA) <i>Mike O'Brien, IATA</i>

Thursday September, 11

Report on Transportation Safety Board of Canada's Investigation of Swissair Flight 111

Session Code: SAFETY11

Room 512G

Session Time: 10:30 a.m.

Time	Paper No.	Title
10:30 a.m.	ORAL ONLY	Report on Transportation Safety Board of Canada's Investigation of Swissair Flight 111 <i>Vic Gerden, Transportation Safety Board of Canada</i>

Thursday September, 11

Operations Safety

Session Code: SAFETY9

Room 512G

Session Time: 1:00 p.m.

This session deals with operations safety in air as well as on airport runways, and involves free-flight safety on the one hand, and airport and human pilot simulation on the other. The first paper copes with collision avoidance in the context of free-flight, based on navigating along pre-specified waypoints, while the second paper redefines the philosophy of free-flight from a human factors perspective tackling among other things the effectiveness of higher level of automation such as predictive aids. The third paper deals with simulating pilot errors for safety enhancement, describing an application of activity tracking for pilot error detection from flight data and how the model is adapted for use by simulated pilot agents. The last paper copes with using simulation to develop effective runway incursion prevention strategies.

Organizers - Kouamana Bousson, Univ. of Beira Interior; Ashley Nunes, Univ. of Illinois at Urbana-Champaign

Time	Paper No.	Title
1:00 p.m.	2003-01-2996	Waypoint-Constrained Free-Flight Collision Avoidance <i>Kouamana Bousson, University of Beira Interior</i>
1:30 p.m.	2003-01-2997 ORAL ONLY	Redefining the Philosophy of Free Flight from a Human Factors Perspective <i>Ashley Nunes, Univ. of Illinois at Urbana-Champaign</i>
2:00 p.m.	2003-01-2998	Detecting and Simulating Pilot Errors for Safety Enhancement <i>Todd J. Callantine, San Jose State Univ / NASA Ames Research</i>
2:30 p.m.	2003-01-2999	Using Simulation as An Effective Runway Incursion Prevention Strategy <i>Lesley De Repentigny, Adacel</i>

Thursday September, 11

Continuing Airworthiness - Technical Issues

Session Code: SAFETY10

1:00 p.m.

Room 512H

Session Time:

Continuing Airworthiness is a highly interactive subject involving all disciplines in the aviation industry from design to front line operations including equipment suppliers. This technical session will have four papers concerning important aspects of regulatory, manufacturer and operations control of this safety critical process.

Organizers - John W. Saull, International Federation of Airworthiness (IFA)

Time	Paper No.	Title
1:00 p.m.	ORAL ONLY	Events Analysis, Human Factors and its Application to Safety Management <i>John W. Saull, International Federation of Airworthiness (IFA)</i>
1:30 p.m.	ORAL ONLY	Simple Ways to Measure Fleet Health <i>Keith Barnett, Bombardier Inc, Aerospace Group</i>
2:00 p.m.	ORAL ONLY	Airworthiness Decision Process <i>Frank C Fickeisen, International Federation of Airworthiness (IFA)</i>
2:30 p.m.	ORAL ONLY	Continuing Airworthiness - A Transport Canada Perspective <i>Frederick J. B. Wright, Transport Canada</i>