

SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

Aircraft and Runway Deicing Operational and Regulatory Experiences (ICE35)

16:00

Room - Marbella

This session covers operational experience with grooved runways, new systems to provide more timely and accurate deicing information to flight crews and deicing personnel, and an update on the FAA's 2007-08 deicing program.

Organizer:

Warren M. Underwood, Federal Aviation Administration

Chairpersons:

Barry Myers, Transport Canada; Warren M. Underwood, Federal Aviation Administration

16:00

Experiences with Grooved Runways

Jostein Skjefstad, Oslo Lufthavn AS

(Oral Only)

16:30

FAA Aircraft Deicing Program Update 2007-2008

Jerry C. Ostronic, Federal Aviation Administration

(Oral Only)

17:00

Providing Timely and More Accurate Deicing Information to Flight Crews and Deicing Personnel

Peter Graversen, Dan-Ice A/S

(Oral Only)



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SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

Monday, 24 September

Icing Effects on Aircraft Performance

(ICE13)

14:00

Room - Malaga

This session will present current information on the effects airframe icing has on aircraft performance and handling characteristics. Topics will cover simulated ice shape development and aerodynamic accuracy, flight tests with simulated ice shapes, analyses from recent icing incidents, and overviews of aircraft certification and design considerations for flight in icing conditions.

Organizers:

Decio Pullin, EMBRAER; Thomas Ratvasky, NASA John Glenn Research Center

Chairperson:

Thomas Ratvasky, NASA John Glenn Research Center

14:00

ATR-72 Accident in Taiwan

(Oral Only)

Didier Cailhol, ATR Corp.

14:30

Intercycle Ice Effects on the Performance of a Turboprop Aircraft Equipped with Deicing Boots

(Oral Only)

Decio Pullin, EMBRAER

15:00

Ice Contamination Effects on Performance

(Oral Only)

Michael Bragg, University of Illinois at Urbana-Champaign; Mark G. Potapczuk, NASA John Glenn Research Center

15:30

Aerodynamic Fidelity of Ice Accretion Simulation on a Subscale Model

(2007-01-3285)

Andy Broeren, Greg Busch, Michael Bragg, University of Illinois at Urbana-Champaign

Aircraft Engine Icing - Design, Analysis, and Modeling Tools for Supercooled Liquid, Crystals & Hail

(ICE18)

16:30

Room - Malaga

Gas turbines can form ice inside the gas flowpath in specific atmospheric conditions which do not affect the aircraft external surfaces, typically mixed-phase or glaciated clouds. These conditions have only recently been identified as threats for aircraft gas turbine engines, thus modeling of these icing processes is still in its' infancy. This session aims to provide the audience with an insight on the progress towards a full understanding which can be incorporated into next-generation engine designs

Organizers:

Jean-Edmond Coutris, SNECMA; Leslie McVey, GE Aviation

Chairpersons:

Jean-Edmond Coutris, Snecma; Leslie McVey, GE Aviation

16:30

(2007-01-3288)

Modeling of Ice Accretion and Shedding in Turbofan Engines with Mixed Phase/Glaciated (Ice Crystal) Conditions

Robert S. Mazzawy, Trebor Systems Inc.

17:00

(Oral Only)

Ice Accretion on Aircraft Engine Components

Ramakrishna Mallina, GE Global Research; Satish Gupta, K. Venkataramani, GE Aviation; Martin S. Aubé, Crithian Aliaga, Guido S. Baruzzi, Wagdi G. Habashi, Newmerical Technologies International

17:30

(2007-01-3290)

Development of Ice Crystal Facilities for Engine Testing

James MacLeod, National Research Council Canada

18:00

(Oral Only)

Inclement Weather & Aircraft Engine Icing

Leslie McVey, GE Aviation; K. Venkataramani, GE Company; Michael Oliver, GE; Chuck Califf, GE Aviation

(2007-01-3291)

Liquid Water Content and Droplet Size Distribution Mass Fractions for Wind Milling Engine Fan Blade Ice Accretion Analysis (Written Only -- No Oral Presentation)

Rangasamy Elangovan, Marlin Breer, The Boeing Company

Tuesday, 25 September

Icing Physics (ICE20)

08:00

Room - Alanda

This session will present the latest advances in icing physics research. Topics will cover: the introduction of new surface water similarity parameters, swept wing icing experiments and physics, ice accretion scaling issues for surface water and swept wings, experimental methods and algorithms for laser speckle shift correlation measurements of surface water droplets.

Organizers:

Alejandro Feo, Instituto Nacional de Tecnica Aeroespacial; Alric Rothmayer, Iowa State University

Chairperson:

Alric Rothmayer, Iowa State University

08:00

(2007-01-3293)

Technique for Measurement of Droplet Profiles for use in Icing Physics Studies

Jason Schmucker, Case Western Reserve University; Edward B. White, Texas A&M University

08:30

(2007-01-3294)

Review of Role of Icing Feathers in Ice Accretion Formation

Mario Vargas, NASA; Jen-Ching Tsao, Ohio Aerospace Institute; Alric Rothmayer, Iowa State University

SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

09:00 (2007-01-3295)
The Water Film Weber Number in Glaze Icing Scaling

Alejandro Feo, Instituto Nacional de Tecnica Aeroespacial; Jen-Ching Tsao, Ohio Aerospace Institute

09:30 (2007-01-3296)
Experimental Study of the Scallop Formation on Swept Cylinder

Xuan Presteau, Emmanuel Montreuil, Alexandre Leroy, Didier Guffond, Robert Henry, ONERA; Pascal Personne, University Blaise Pascal

Rotorcraft In-flight Icing Part I (ICE16)

08:00

Room - Malaga

This session covers helicopter and tilt rotor aircraft ice protection system design and aircraft operations in icing conditions. The design characteristics for rotor electrothermal deicing systems are presented for four rotary wing aircraft. Icing flight test results and operational experience for flight in icing conditions are presented for several helicopters.

Organizers:

Robert J. Flemming, Sikorsky Aircraft Corp.; Roger W. Gent, AeroTex UK

Chairperson:

Roger W. Gent, AeroTex UK

08:00 (Oral Only)
Cougar's Helicopter Operations in Icing Conditions - 2007 Update

Kelly Jamieson, Cougar Helicopters Inc.

08:30 (2007-01-3299)
Sikorsky S-92A® and S-76D® Helicopter Rotor Ice Protection Systems

Robert J. Flemming, Philip J. Alldridge, Sikorsky Aircraft Corp.

09:00 (Oral Only)
BA609 Ice Protection System Certification - Proceeding to Flight Testing

Roger J. Aubert, Bell Helicopter Textron Inc.

09:30 (2007-01-3301)
US Army UH-60M Helicopter Main Rotor Ice Protection System

Robert J. Flemming, Sikorsky Aircraft Corporation; Kimberly W. Hanks, M. Lynn Hanks, US Army ATTC

Aircraft Performance in Icing (ICE34)

10:30

Room - Alanda

This session will examine different aspects of aircraft performance during flight in icing conditions. Topics covered will include the effects of ice accretion on aircraft handling and the monitoring of aerodynamic performance as well as the certification process undertaken for an anti-icing system.

Organizer:

Oliver McGregor, QinetiQ

Chairperson:

Oliver McGregor, QinetiQ and remove Mark Potapczuk, NASA Glenn Research Center

10:30 (Oral Only)
Falcon 7X Wing Anti-Ice Certification Process

Bianconi Raphael, Dassault Aviation

11:00 (Oral Only)
ATR-72 Aerodynamic Performance Monitor

Didier Cailhol, ATR Corp.

11:30 (Oral Only)
The Effects of Ice Accretion on Handling Qualities

Joe A. Brownlee, Federal Aviation Administration

Rotorcraft In-flight Icing - Part II (ICE17)

10:30

Room - Malaga

This session covers both testing of rotorcraft subsystems as well as modeling and analysis in support of rotorcraft in-flight icing. The performance of an engine inlet particle separator in icing conditions is presented. This session also describes three Computational Fluid Dynamics (CFD) codes that have been applied to rotary wing aircraft problems. The numerical simulation of icing on a helicopter fuselage as well as the ice accretion on a hovering rotor and ice accretion in unsteady conditions are the subject of the CFD papers in this session.

Organizers:

Robert J. Flemming, Sikorsky Aircraft Corp.; Roger W. Gent, AeroTex UK

Chairperson:

Robert J. Flemming, Sikorsky Aircraft Corp.

10:30 (Oral Only)
Performance in Icing Conditions of CentriseP® Engine Air Particle Separator (EAPS) Installations.

Althea Caroline De Souza, Pall Europe, Ltd.

11:00 (2007-01-3308)
Numerical Simulation of Ice Formation on a Helicopter Fuselage

Krzysztof Szilder, National Research Council Canada

11:30 (2007-01-3309)
Ice Accretion Prediction on Helicopter Rotor Blade in Hover Flight

Giorgio Zanazzi, Giuseppe Mingione, Antonio Visingardi, Antonio Pagano, CIRA; Robert Narducci, Boeing Helicopters

12:00 (2007-01-3310)
Application of FENSAP-ICE-Unsteady to Helicopter Icing

Martin S. Aubé, Guido S. Baruzzi, Wagdi G. Habashi, Newmerical Technologies International; Cristhian Aliaga, CFD Lab, McGill University

In-flight Ice Protection Systems - Part I (ICE15A1)

13:30

Room - Malaga

Due to aircraft power budget limitations, there is a constant effort to minimize the energy requirements of ice protection systems. Numerical tools can be used to optimize such systems but there is very little data available to validate the tools. This session will present innovative low energy ice protection systems as well as very valuable experimental data of a hot air ice protection system that can be used for the validation of numerical simulation tools.

Organizer:

Shinan Chang, Beijing University of Aeronautics & Astronautics

Chairperson:

Shinan Chang, Beijing University of Aeronautics & Astronautics

13:30 (2007-01-3312)
Loop Heat Pipe Technology for Aircraft Anti-Icing Applications

Carmen Gregori, Donatas Mishkinis, Paula Prado, Alejandro Torres, Iberespacio; Ramon Perez-Vara, EA International

14:00 (2007-01-3313)
Experimental Investigation of a Bleed Air Ice Protection System

Michael Papadakis, See Ho Wong, Hsiung-Wei Yeong, See-Cheuk Wong, Wichita State University; Giao T. Vu, Engineering Consultant

14:30 (Oral Only)
Cox Low Power Ice Protection and Evolution of Optimized Hybrid Systems

Kamel Al-Khalil, Cox & Co. Inc.

15:00 (Oral Only)
The Development and Application of QinetiQ PriMat Technology for Ice Protection Systems

Oliver McGregor, QinetiQ

In-flight Ice Protection Systems - Part II (ICE15A2)

16:00

Room - Alanda

This session will present current information on systems that keep atmospheric ice from accumulating on aircraft flight surfaces while in flight. Topics will cover description and performance of ice phobic materials and ice protection systems.

Organizer:

Mario Vargas, NASA

Chairperson:

Mario Vargas, NASA

16:00 (Oral Only)

A Silicone-Based Ice-Phobic Coating for Aircraft

William Riegler, Brian W. Burkitt, NuSil Technology LLC

16:30 (2007-01-3315)

A New Surface Coating for Prevention of Icing on Airfoils

Shigeo Kimura, Yoich Yamagishi, Kanagawa Institute of Technology; Atsuhiko Sakabe, Takafumi Adachi, Masakazu Shimanuki, Fuji Heavy Industries, Ltd.

17:00 (Oral Only)

Distributed Power and Implications for Electric In-flight Ice Protection and Detection Systems

Michael C. Smith, Moritz Aerospace

17:30 (Oral Only)

Development of an Electro-Thermal Inlet Ice Protection System

Erik Pederson, Kelly Aerospace Thermal Systems

In-flight Icing Simulation - CFD Part I (ICE12)

16:00

Room - Malaga

This session will deal with recent developments in using CFD to simulate all facets of in-flight icing, including flow, impingement, accretion and anti-icing. Particular emphasis will be on methods showing advances in physical modeling, in accounting for increased geometric complexity, in process integration and in the validation of the methodology.

Organizers:

Didier Guffond, ONERA; Mark G. Potapczuk, NASA John Glenn Research Center

Chairperson:

Mark G. Potapczuk, NASA John Glenn Research Center

16:00 (Oral Only)

Toward Real-time Aero-Icing Simulation Using Reduced Order Models

Wagdi G. Habashi, Kunio Nakakita, Sivakumaran Nadarajah, McGill University

SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

16:30 (Oral Only)
CFD Simulation of Icing for Internal Flows in Aircraft
Simon Weston, ICON

17:00 (2007-01-3323)
FENSAP-ICE Modeling of the Ice Particle Threat to Engines in Flight
Xavier Veillard, Wagdi G. Habashi, Cristhian Aliaga, McGill University

17:30 (2007-01-3324)
Icing Analysis of the NASA S3 Icing Research Aircraft Using LEWICE3D Version 2
Colin S. Bidwell, NASA Glenn Research Center

Wednesday, 26 September

In-flight Ice Detection Systems (ICE15B)
08:00

Room - Alanda

This session will present current information on systems that keep atmospheric ice from accumulating on aircraft flight surfaces while in flight. Topics will cover description and performance of ice phobic materials and ice protection systems.

Organizer:
Mario Vargas, NASA

Chairperson:
Mario Vargas, NASA

08:00 (2007-01-3325)
Ice Detection Systems - A Historical Perspective
Darren Jackson, Goodrich Sensor Systems; Joshua Goldberg, Retired, Hamilton Sundstrand Corporation

08:30 (Oral Only)
Design and Initial Wind Tunnel Testing of a Prototype Icing Detector Having the Ability to Detect and Discriminate Normal LWC Icing Threats, Ice Crystal Threats and SLD Condition Threats.
Lyle E. Lillie, Science Engineering Associates

09:00 (2007-01-3328)
Evaluation of Small Scale Icing Tunnel Test Results
Sarah Barley, Airbus

In-flight Icing Simulation - Facilities & Experiments (ICE10)
08:00

Room - Malaga

Current experimental studies of various aspects of aircraft icing will be presented. Discussions of additions and improvements to icing simulation facilities will also be covered in this session.

Organizers:
Gene Addy, NASA John Glenn Research Center; Wim Willemse, Saab AB

Chairpersons:
Gene Addy, NASA John Glenn Research Center; Wim Willemse, Saab AB

08:00 (2007-01-3332)
Swept Wing Icing Physics Studies at NASA Glenn Research Center 1990-2006
Mario Vargas, NASA

08:30 (2007-01-3333)
Preliminary Investigation of the Impact of Flight-Path Variability of Icing Conditions Upon the Critical Ice Shape
Robin A. Stanfield, David W. Hammond, Cranfield University

09:00 (2007-01-3334)
Methodology for Icing Tanker Spray Rig Design and Evaluation
See-Cheuk Wong, Michael Papadakis, Chiong S. Tan, Wichita State University

09:30 (2007-01-3335)
SONACA Icing Test Campaign on a 2D model at CIRA IWT
Matteo Bellucci, Paolo Vernillo, Antonio Auletta, Biagio Esposito, Marco Marrazzo, Francesco Ferrigno, CIRA; Jean Crepin, Sonaca SA

In-flight Icing Simulation - CFD Part II (ICE11)
10:30

Room - Alanda

This session will deal with recent developments in using CFD to simulate all facets of in-flight icing, including flow, impingement, accretion and anti-icing. Particular emphasis will be on methods showing advances in physical modeling, in accounting for increased geometric complexity, in process integration and in the validation of the methodology.

Organizers:
Wagdi G. Habashi, McGill University; Mark G. Potapczuk, NASA John Glenn Research Center; Kenji Togami, Mitsubishi Heavy Industries, Ltd.

Chairperson:
Wagdi G. Habashi, McGill University

10:30 (2007-01-3338)
A Comparison Exercise of Ice Accretion Simulations with 2D and 3D Solvers
Alberto Pueyo, Corentin Brette, Sherry Vafa, Iyad Akel, Bombardier

11:00 (2007-01-3341)
Validation Results of FENSAP-ICE at MHI
Kenji Togami, Masanori Tsujita, Mitsubishi Heavy Industries Ltd; Wagdi G. Habashi, Martin S. Aubé, Newmerical Technologies International

11:30 (Oral Only)
Enhancement of Prediction Capability in Icing Accretion and Related Performance Penalties
Emmanuel Montreuil, Didier Guffond, Angelo Murrone, Jean-Francois Leroy, Robert Houdeville, ONERA; Francois Caminade, Dassault Aviation; Stephane Catris, Eurocopter France

SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

12:00 (2007-01-3339)
A Third-generation In-flight Icing Code: FENSAP-ICE-Unsteady

Cristhian Aliaga, Martin S. Aubé, Guido Baruzzi, Newmerical Technologies International; Wagdi G. Habashi, Sivakumaran Nadarajah, McGill University

SLD Engineering Tools Development (ICE14)

11:00

Room - Malaga

This session presents the latest development and application of Supercooled Large Droplet (SLD) related issues, such as droplet splashing, rebound and re-impingement, and the effect they have on the resultant ice shapes. These may include numerical simulation, experimentation and concentration measurement involving large water droplets.

Organizers:

Richard J. Moser, Aerotex UK

Chairperson:

Richard J. Moser, Aerotex UK

11:00 (2007-01-3348)
A Database of Supercooled Large Droplet Ice Accretions

Judith Foss Van Zante, ASRC Aerospace

11:30 (2007-01-3345)
Parametric Study of Ice Accretion Formation on a Swept Wing at SLD Conditions

Mario Vargas, NASA; Jen-Ching Tsao, Ohio Aerospace Institute

12:00 (Oral Only)
Sensitivity of Ice Shape Parameters to SLD Icing Cloud Conditions

Mark G. Potapczuk, NASA John Glenn Research Center

(2007-01-3346)
Parametric Experiment of Large Droplet Dynamics (Written Only -- No Oral Presentation)

Jason Tan, Wichita State University

In-flight Ice Protection System Modeling (ICE15C)

13:30

Room - Malaga

Numerical modeling is of great interest in the design, optimization and certification processes of ice protection systems. The low cost compared to tunnel-tests and flight-tests, the possibility of quickly exploring a wide range of parameters and the fact of being non-intrusive make it very attractive. This session will present examples of how numerical tools were successfully used for the design and optimization of hot air and electro-thermal protection systems in wings and engine inlets.

Organizers:

Miguel Guerra, Instituto Nacional de Tecnica Aeroespacial; Alberto Pueyo, Bombardier

Chairperson:

Miguel Guerra, Instituto Nacional de Tecnica Aeroespacial

13:30 (Oral Only)
Design of a Bleed Air Anti-Icing System for an Asymmetric Aircraft Engine Inlet

Shinan Chang, Beijing University of Aeronautics & Astronautics

14:00 (2007-01-3355)
Development of an Engine Anti-ice Protection System using Experimental and Numerical Approaches

Luis C. Santos, Embraer-Empresa Brasileira Aero SA

14:30 (2007-01-3357)
Anti-Icing Simulation in Wet Air of a Piccolo System using FENSAP-ICE

Hongzhi Wang, Pascal Tran, Wagdi G. Habashi, Newmerical Technologies International; Yingchun Chen, Miao Zhang, Lijuan Feng, The First Aircraft Institute (AVIC I)

15:00 (Oral Only)
Anti-ice Modeling as it Relates to Electro-Thermal Ice Protection

Bola Oloyede Agbudeloye, GKN Aerospace

Ice and Hail Trajectory Modeling (ICE12A)

16:00

Room - Alanda

This session covers computational methods for predicting ice particle trajectories around aircraft. Two of the session papers discuss analytical tools for predicting shed ice trajectories. The third paper discusses methods for calculating hail trajectories through engine inlets.

Organizer:

Colin S. Bidwell, NASA John Glenn Research Center

Chairperson:

Colin S. Bidwell, NASA John Glenn Research Center

16:00 (2007-01-3359)
Parametric Investigation of Ice Shedding from a Business Jet Aircraft

Michael Papadakis, Wichita State University

16:30 (2007-01-3360)
Development of a Shed-Ice Trajectory Simulation in FENSAP-ICE

Guido S. Baruzzi, Patrick Lagacé, Martin S. Aubé, Wagdi G. Habashi, Newmerical Technologies International

SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

Monday, 24 September

Meteorological Studies of Icing Conditions - Part I (ICE21)

16:30

Room - Almenara

This session will focus on the observational studies and statistical analysis that led to the characterization of a new icing envelope covering supercooled large drops (SLD), and present an assessment of the state of the art of the diagnostic and forecast tools available to predict both SLD and small-drop icing conditions.

Organizer:

George A. Isaac, Environment Canada

Chairpersons:

George A. Isaac, Environment Canada

16:30 (Oral Only)

The State of the Art of Aircraft Icing Diagnosis and Forecasting

Ben C. Bernstein, Leading Edge Atmospheric; Thomas Hauf, University of Hanover

17:30 (Oral Only)

An Overview of Appendix X: A Characterization of Aircraft Icing Environments that have Supercooled Large Drops

Stewart G. Cober, George A. Isaac, Environment Canada

Tuesday, 25 September

Meteorological Studies of Icing Conditions - Part II (ICE21A)

08:00

Room - Almenara

This session will address meteorological aspects of in-flight icing, including observational and model-based studies of freezing precipitation and mixed phase clouds, as well as the detection and mitigation of the hazards associated with icing encounters. An overview of recent research on the icing of surface structures will serve to introduce the next session.

Organizer:

Ben C. Bernstein, Leading Edge Atmospheric

Chairperson:

Ben C. Bernstein, Leading Edge Atmospheric

08:00 (Oral Only)

Airborne Detection and Dissemination of Icing Encounters: Research, Operations, and Hazard Mitigation

Kevin Morgan Mattison, Federal Aviation Administration

08:30 (Oral Only)

Simulation of Freezing Drizzle with the New NCAR Bulk Microphysics: Comparison to IMPROVE II Case Studies

Roy Martin Rasmussen, Greg Thompson, Kyoko Ikeda, National Center for Atmospheric Research

09:00 (Oral Only)

High Resolution Aircraft Measurement of Mixed Phase Clouds

John Hallett, Desert Research Institute

09:30 (Oral Only)

European Research on Icing of Structures

Lasse Makkonen, VTT Technical Research Center of Finland

Icing of Structures (ICE33)

10:30

Room - Almenara

There is a significant common interest in icing of aircraft and ground-based structures. High resolution meteorological models can be used in nowcasting and forecasting in cloud-icing for both applications. Ground-based icing measurements in mountaneous regions and on tall structures provide long-term direct verification data for meteorological icing modeling. In this session preliminary results of such verification studies and future plans for them are presented.

Organizer:

Lasse Makkonen, VTT Technical Research Center of Finland

Chairperson:

Lasse Makkonen, VTT Technical Research Center of Finland

10:30 (Oral Only)

Using a Numerical Weather Prediction Model to Simulate In-cloud Atmospheric Icing Episodes

Bjorn Egil K. Nygaard, Norwegian Meteorological Institute

11:00 (2007-01-3305)

An Icing Index Comparison to Luosto Icing Measurements

Jarkko Hirvonen, Kristiina Sääntti, Sami Niemelä, Reijo Hyvönen, Kari Ahti, Kari Lehtinen, Finnish Meteorological Institute

11:30 (Oral Only)

Using Metar Data to Calculate In-cloud Icing on a Mountain Site Near by the Airport

Knut Harstveit, Norwegian Meteorological Institute

12:00 (Oral Only)

The Suitability of Puijo Measurement Site for In-Cloud Icing Studies

Jarkko Hirvonen, Ari Leskinen, Kristiina Sääntti, Kari Lehtinen, Finnish Meteorological Institute

SESSIONS TECHNICAL, BUSINESS & EXECUTIVE

High Ice Crystal Concentrations and Glaciated Conditions (ICE22)

13:30

Room - Almenara

An examination of of high ice water concentrations which are associated with ice formation inside some jet engines. The phenomenon, its history, current and upcoming studies and certification for flight in these conditions will be discussed.

Organizers:

J. Walter Strapp, Environment Canada; Matthew Grzych, The Boeing Company

Chairpersons:

J. Walter Strapp, Environment Canada; Matthew Grzych, The Boeing Company

13:30 (Oral Only)

Engine Powerloss and Damage Events Associated with Ice Crystal Ingestion

Jeanne G. Mason, Boeing Commercial Airplanes

14:00 (Oral Only)

Meteorological Case Studies of Engine Powerloss and Damage Events Associated with Convective Ice Crystals

Matthew Grzych, The Boeing Company

14:30 (Oral Only)

Current Hypotheses on the Properties of Deep Convective Clouds Associated with Jet-Engine Powerloss Events.

J. Walter Strapp, Environment Canada; Thomas Ratvasky, NASA John Glenn Research Center

15:00 (2007-01-3311)

Appendix D - An Interim Icing Envelope

Robert S. Mazzawy, Trebor Systems Inc.; J. Walter Strapp, Environment Canada

In-situ Measurements of Icing Conditions: Tools, Systems and Instrumentation (ICE23)

16:00

Room - Almenara

Measurement technologies used to assess icing environments will be explored. These include direct, in-situ measurements for both in-flight and in other environments, such as wind tunnels.

Organizer:

Lyle E. Lilie, Science Engineering Associates

Chairperson:

Lyle E. Lilie, Science Engineering Associates

16:00 (2007-01-3318)

Simulation of Freezing and Frozen Precipitation for the Evaluation of De/Anti-icing Systems

Arlene Beisswenger, Xiaofei Wang, Jean-Louis Laforte, Jean Perron, Anti-Icing Materials Intl. Laboratory

16:30 (Oral Only)

Icing Wind Tunnel Investigation on the Response Characteristics of Phase Doppler Particle Analyzer and PMS OAP-260X

Biagio Esposito, Marco Marrazzo, CIRA

17:00 (Oral Only)

The Effect of Shattering on the Measurements of Cloud Ice Particles

Alexei V. Korolev, J. Walter Strapp, George A. Isaac, Environment Canada

Wednesday, 26 September

Meteorological Studies of Icing Conditions - Part III (ICE21B)

08:00

Room - Almenara

The session covers various aspects of in-flight icing such as rotorcraft, escape strategies, freezing precipitation statistics and discusses the subject of aircraft related icing intensities.

Organizer:

Thomas Hauf, Universitat Hannover

Chairperson:

Thomas Hauf, Universitat Hannover

08:00 (Oral Only)

Relating Aircraft Icing Intensities (Trace, Light, Moderate, and Heavy) to 14 CFR 25, Appendix C, Icing Certification Envelopes

Richard K. Jeck, Federal Aviation Administration

08:30 (2007-01-3329)

Certification of the Sikorsky S-92A Helicopter Ice Protection System: Meteorological Aspects of Tanker Tests and Natural Icing Flights

Ben C. Bernstein, Leading Edge Atmospherics; Robert J. Flemming, Sikorsky Aircraft Corp.

09:00 (Oral Only)

Aircraft Escape Strategy from Supercooled Cloud Layers

Alexei V. Korolev, George A. Isaac, J. Walter Strapp, Stewart Cober, Environment Canada

09:30 (Oral Only)

Freezing Precipitation in Finland

Kari Ahti, Finnish Meteorological Institute

Remote Detection of Icing Conditions

(ICE24)

10:30

Room - Almenara

Methods used to assess icing environments remotely from the ground and in flight will be discussed, including those based on radars, radiometers and combinations of instruments.

Organizer:

Charles C. Ryerson, US Army Corps of Engineers

Chairperson:

Ben C. Bernstein, Leading Edge Atmospheric

10:30

(Oral Only)

Identification of Icing Regions Using Airborne W-band Polarimetric Measurements During AIRS II

Mengistu Wolde, Institute for Aerospace Research NRC

11:00

(Oral Only)

New Method of Probable Icing Zone Detection and Hazard Alert with Airborne Weather Radar System

Alexander A. Pitertsev

Icing Products: Diagnoses and Forecasts

(ICE25)

13:30

Room - Almenara

Products designed to diagnose and forecast icing at scales ranging from the terminal area to as large as regional and national will be discussed.

Organizers:

Christine LeBot, Météo-France; Ben C. Bernstein, Leading Edge Atmospheric

Chairpersons:

Christine LeBot, Météo-France; Ben C. Bernstein, Leading Edge Atmospheric

13:30

(Oral Only)

Sigma: Diagnosis and Nowcasting of In-flight Icing - Improving Aircrew Awareness Through Flysafe

Christine LeBot, Agathe Drouin, Christian Page, Météo-France

14:00

(Oral Only)

Canadian Airport Nowcasting Project: Winter Weather and Icing

George A. Isaac, Monika Bailey, Faisal Bou dala, Brian Clark, Stewart Cober, Serge Désormeaux, Norman Donaldson, Norbert Driedger, Sylvie Gravel, Ismail Gultepe, David Hudak, Paul Joe, Alistair Ling, Janti Reid, Peter Rodriguez, Zlatko Vukovic, Environment Canada

14:30

(Oral Only)

Calculating Icing Severity in the Current Icing Product

Cory Wolff, Frank McDonough, National Center for Atmospheric Research; Ben C. Bernstein, Leading Edge Atmospheric; Marcia K. Politovich, Gary M. Cuning, National Center for Atmospheric Research

15:00

(Oral Only)

Forecasting In-flight Icing Conditions Using the Upgraded Forecast Icing Product (FIP)

Frank McDonough, Cory Wolff, National Center for Atmospheric Research; Ben C. Bernstein, Leading Edge Atmospheric; Marcia K. Politovich, Gary M. Cuning, National Center for Atmospheric Research

Icing Products: Operational Use and Standards (ICE31)

16:00

Room - Almenara

The transition of icing products from in-house systems to "official" products that can be used on the ground and in the cockpit will be addressed. Topics include "operational" product standards, product assessments and the potential for uplink to the cockpit.

Organizer:

Paul Pellicano, Federal Aviation Administration

Chairperson:

Paul Pellicano, Federal Aviation Administration

16:00

(Oral Only)

Operational Approval of Graphical Weather Products

Robert M. Ruiz, Federal Aviation Administration

16:30

(Oral Only)

Current Icing Product Operational Suitability Evaluation

Starr McGettigan, David Metzbowler, Susanne Spincic, Federal Aviation Administration; Karen Peio, Raytheon

17:00

(2007-01-3362)

The Provision of In-flight Icing Information in the Cockpit - The FLYSAFE Concept

Thomas Hauf, Sonja Rosczyk, Jakob Tendel, University of Hannover, Germany

PARTICIPANT INDEX

A		G		Mattison, Kevin Morgan.....	36	Shimanuki, Masakazu.....	33
Adachi, Takafumi.....	33	Garuccio, Federico.....	26	Mazzawy, Robert S.....	31, 37	Skjefstad, Jostein.....	29, 30
Addy, Gene.....	34	Gent, Roger W.....	32	Mcdonough, Frank.....	38	Smith, Michael C.....	33
Agbudeloye, Bola Oloyede.....	35	Goldberg, Joshua.....	34	McGettigan, Starr.....	38	Souza, Althea Caroline De.....	32
Ahti, Kari.....	36, 37	Gravel, Sylvie.....	38	McGregor, Oliver.....	32, 33	Spincic, Susanne.....	38
Akel, Iyad.....	34	Graversen, Peter.....	28, 30	McKinnon, Laird.....	27	Stanfield, Robin A.....	34
Al-Khalil, Kamel.....	33	Green, David.....	25	McVey, Leslie.....	25, 31	Stimson, Don.....	26
Aliaga, Cristhian.....	31, 33, 34, 35	Green, Steven David.....	25	Metzbower, David.....	38	Strapp, J. Walter.....	37
Alldrige, Philip J.....	32	Gregori, Carmen.....	33	Mingione, Giuseppe.....	33	Suter, E. Thomas.....	27
Asselin, Mario.....	25	Gregoris, Dennis.....	28	Mishkinis, Donatas.....	33	Svanlund, Karl-Johan.....	29
Aubé, Martin S.....	31, 33, 34, 35	Grzych, Matthew.....	37	Montreuil, Emmanuel.....	32, 34	Szilder, Krzysztof.....	32
Aubert, Roger J.....	32	Guerra, Miguel.....	35	Moser, Richard J.....	35		
Auletta, Antonio.....	34	Guffond, Didier.....	32, 33, 34	Murrone, Angelo.....	34		
		Gultepe, Ismail.....	38	Myers, Barry.....	27, 28, 29, 30		
		Gupta, Satish.....	31				
B		H		N		T	
Bailey, Monika.....	38	Habashi, Wagdi G.....	31, 33, 34, 35	Nadarajah, Sivakumaran.....	33, 35	Tan, Jason.....	35
Barley, Sarah.....	34	Hallett, John.....	36	Nakakita, Kunio.....	33	Tanner, Clinton E.....	27
Barrow, Clifford C.....	25	Hammond, David W.....	34	Narducci, Robert.....	33	Tendel, Jakob.....	38
Baruzzi, Guido S.....	31, 33, 35	Hanks, Kimberly W.....	32	Niemelä, Sami.....	36	Thompson, Greg.....	36
Baumgardner, Darrel.....	25	Hanks, M. Lynn.....	32	Nilsson, Fredrik.....	29	Togami, Kenji.....	34
Beisswenger, Arlene.....	27, 37	Hannover, University of.....	38	Nygaard, Bjorn Egil K.....	36	Torres, Alejandro.....	33
Bellucci, Matteo.....	34	Harstveit, Knut.....	36			Tran, Pascal.....	35
Bergstroem, Thomas.....	29	Hauf, Thomas.....	36, 37, 38			Tsao, Jen-Ching.....	31, 32, 35
Bernstein, Ben C.....	36, 37, 38	Hem, Lars John.....	29			Tsujiata, Masanori.....	34
Bidwell, Colin S.....	34, 35	Henry, Robert.....	32	O			
Bragg, Michael.....	31	Hill, Eugene G.....	24	Oliver, Michael.....	25, 31	Underwood,	
Breer, Marlin.....	31	Hirvonen, Jarkko.....	36	Ostronic, Jerry C.....	30	Warren M.....	27, 28, 29, 30
Brette, Corentin.....	34	Holm, Ray.....	25	Ovstedal, Jarl.....	29		
Broeren, Andy.....	31	Hoppins, Jim R.....	25	P		V	
Brownlee, Joe A.....	32	Horn, Schuyler S.....	25	Pagano, Antonio.....	33	Vafa, Sherry.....	34
Burkitt, Brian W.....	33	Houdeville, Robert.....	34	Page, Christian.....	38	Vargas, Mario.....	31, 33, 34, 35
Busch, Greg.....	31	Hudak, David.....	38	Papadakis, Michael.....	33, 34, 35	Vellard, Xavier.....	34
		Humphreys, Bryan.....	25	Pederson, Erik.....	33	Venkataramani, K.....	31
C		Hyvönen, Reijo.....	36	Peio, Karen.....	38	Vernillo, Paolo.....	34
Cable, Tony.....	24	I		Pellicano, Paul.....	26, 38	Visingardi, Antonio.....	33
Cailhol, Didier.....	31, 32	Ikeda, Kyoko.....	36	Perez-Vara, Ramon.....	33	Vu, Giao T.....	33
Califf, Chuck.....	31	Ingold, Douglas.....	28	Perron, Jean.....	27, 37	Vukovic, Zlatko.....	38
Caminade, Francois.....	34	Isaac, George A.....	36, 37, 38	Personne, Pascal.....	32		
Catris, Stephane.....	34	Ishimaru, Kathi N.....	25, 26	Pigliacelli, Michael.....	27	W	
Chang, Shinan.....	33, 35	J		Pitertsev, Alexander A.....	38	Wang, Hongzhi.....	35
Chapin, Wayne.....	24	Jackson, Darren.....	34	Politovich, Marcia K.....	38	Wang, Xiaofei.....	37
Chaput, Michael D.....	27, 28, 29	Jamieson, Kelly.....	32	Potapczuk, Mark G.....	31, 32, 33, 34, 35	Weideborg, Mona.....	29
Chauhan, Satya.....	29	Jeck, Richard K.....	37	Prado, Paula.....	33	Weston, Simon.....	34
Chen, Yingchun.....	35	Joe, Paul.....	38	Presteau, Xuan.....	32	White, Alan.....	27
Clark, Brian.....	38	Johns, David.....	25	Pueschner, Hans-Joachim.....	29	White, Edward B.....	31
Cober, Stewart.....	36, 37, 38	Jordan, Jerry.....	25	Pueyo, Alberto.....	34, 35	Widing, Kathy.....	28
Conkle, H. Nick.....	29	K		Pugacz, Edward.....	28	Willemse, Wim.....	34
Coutris, Jean-Edmond.....	31	Kimura, Shigeo.....	33	Pullen, Chuck.....	25	Williams, Alun.....	28
Crepin, Jean.....	34	Korolev, Alexei V.....	37	Pullin, Decio.....	31	Wolde, Mengistu.....	38
Crocker, Brock R.....	28	L		Raphael, Bianconi.....	32	Wong, See-Cheuk.....	33, 34
Cunning, Gary M.....	38	Laforte, Jean-Louis.....	37	Rasmussen, Roy Martin.....	28, 36	Wong, See Ho.....	33
		Lagacé, Patrick.....	35	Ratvasky, Thomas.....	31, 37		
D		Landolt, Scott.....	28	Redgård, Catharina.....	29	Z	
Désormeaux, Serge.....	38	LeBot, Christine.....	38	Reid, Janti.....	38	Zanazzi, Giorgio.....	33
Devaris, Peter.....	24	Lehtinen, Kari.....	36	Retired.....	24, 34	Zante, Judith Foss Van.....	35
Donaldson, Norman.....	38	Leroux, Jacques.....	27, 28	Riegler, William.....	33	Zhang, Miao.....	35
Driedger, Norbert.....	38	Leroy, Alexandre.....	32	Rodriguez, Peter.....	38		
Drouin, Agathe.....	38	Leroy, Jean-Francois.....	34	Rosczyk, Sonja.....	38		
Duvivier, Eric.....	24, 25, 26	Leschi, Robert.....	26	Rothmayer, Alric.....	31		
Dyer, Kirsten P.....	27, 28	Leskinen, Ari.....	36	Ruggi, Marco.....	27		
		Lilie, Lyle E.....	34, 37	Ruiz, Robert M.....	38		
E		Lim, John.....	29	Rusten, Bjorn.....	29		
Elangovan, Rangasamy.....	31	Ling, Alister.....	38	Ryerson, Charles C.....	38		
Esposito, Biagio.....	34, 37	M					
Europe, Pall.....	32	MacLeod, James.....	31	Sadek, Hany.....	26		
Eyre, Frank W.....	28	Makkonen, Lasse.....	36	Sakabe, Atsuhiko.....	33		
		Mallina, Ramakrishna.....	31	Santos, Luis C.....	35		
F		Marrazzo, Marco.....	34, 37	Säntti, Kristiina.....	36		
Farha, Mahmoud.....	29	Martin, Jim.....	25	Sattar, Saleem.....	29		
Feng, Lijuan.....	35	Mason, Jeanne G.....	24, 37	Schmucker, Jason.....	31		
Feo, Alejandro.....	31, 32			Schuh, Gerhard.....	29		
Ferrigno, Francesco.....	34			Sharkey, Ian.....	28		
Fisher, John.....	26, 28						
Flemming, Robert J.....	32, 37						

Sunday, 23 September

Group	Location	Time
SAE Aircraft & Engine Icing International General Committee	La Perdiz	18:00-19:30

Friday, 28 September

Group	Location	Time
SAE AC-9C Committee Meeting	Marbella/Malaga Room	12:00 – 17:00

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