

AIRA Research Priorities

AIRA Research Implementation Forum (RIF)

Dave Marcotte, NRC
January 11 2006



AIRA Mission

*“...to coordinate ... the conduct of **collaborative aircraft icing research** activities that improve the safety of aircraft operations in icing conditions.”*

Where to start?

Priority AIRA Research Focus Area

- 87 'topics' for icing research
- *To influence the member organizations regarding the most appropriate areas for research focus over the next 3-5 years,*
- AIRA members identify top 'n' RFA's for to focus collaborative efforts in icing research

Priority AIRA RFA's - Structure

- A – In-Flight Icing
- B – Aircraft Icing While on the Ground
- C – Runway Winter Contamination
- D – Human Factors and Knowledge Communications and Transfer
- E – Safety and Economic Analysis
- F – Emerging Technologies

Priority AIRA RFA's - Structure

A – In-Flight Icing

- Aerodynamic Performance and Handling Qualities
- Aircraft System Performance
- Atmospheric Characterization
- Weather and Forecasting
- Operations
- Facilities, Simulators and Instrumentation Systems
- Fundamental Ice Physics
- Ice Shedding
- Propulsion and Powerplant Icing

Priority AIRA Research Focus Area

Criteria for selection of Priority RFAs

- ...RFAs that members, are addressing or have a strong desire to do so '*soon*'
- Suitable for collaboration
- Priority RFA's reviewed, redefined approximately every 3 years

Priority RFA's (14)

- Aircraft performance and handling qualities...
- High ice water content
- Nowcasting development and validation
- Dissemination of weather information
- Forecasting Development and validation
- Remote sensing systems for icing detection

Priority RFA's (14)

- Comparison of tools, techniques and facilities and the establishment of standards
- Ice formation mechanics
- Scaling
- Ice shedding mechanisms
- High ice water ingestion
- Fluid integrity detection system
- Performance effects of limited contamination
- Flight crew training module for operations in icing conditions