

Joint Safety Implementation Team

Research Implementation Plan For

ICE DETECTION

DRAFT

Statement of Work:

To prevent fatal accidents and incidents due to operations in hazardous icing conditions, research organizations/regulators/manufacturers/operators should perform research to provide a means of accurate, reliable, and timely in-flight ice detection in all conditions. This enhancement will initially focus on turboprop aircraft equipped with non-evaporative ice protection systems and unpowered flight controls and hard-wing turbojet aircraft with super critical airfoils (non-high lift leading edge device). (Note: SE 139, along with SE 140, supersedes the research tasks associated with SE 119.)

Lead Organization for Overall Safety Enhancement Coordination (LOOSEC):

Federal Aviation Administration (FAA)

Safety Enhancement (SE 139):

Perform research to improve in-flight detection and monitoring of ice contamination for all possible conditions.

Score: 2007-(x.x) 2020-(x.x) 100%-(x.x)

Outputs:

Output 1

- Improve current ice detection probes such that ice is detected throughout the entire icing envelope (i.e., the Ludlam limit).

Resources: FAA and National Aeronautics and Space Administration (NASA)

Total government/industry resources: \$1,500,000

Timeline: 5 years

Actions:

1. Coordinate with manufacturers to develop and demonstrate improved ice detection (detector functional for entire icing envelope)
2. Report the results of this research to the Commercial Aviation Safety Team (CAST) to determine if research/development should continue

Output 2

- Develop systems that detect in-flight ice contamination directly on critical flight surfaces (as opposed to probe ice detectors).

Resources: FAA and NASA

Total government/industry resources: \$3,000,000

Timeline: 5 years

Actions:

1. Develop and demonstrate wide-area ice detection (e.g., airborne optical system)
2. Report the results of this research to CAST to determine if research/development should continue

Potential Barriers:

TBD

Possible Mitigation Strategies:

TBD

Relationship to Current Aviation Community Initiatives:

TBD

Impact on Non-Part 121 or International Applications:

TBD