Aircraft Ground Icing Research General Activities During the 2015-16 Winter

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Several research reports for testing of de/anti-icing technologies were produced for previous winters on behalf of Transport Canada. These are available from the Transportation Development Centre (TDC). Several reports were produced as part of this winter’s research program. Their subject matter is outlined in the preface. The work described in this report was, in part, co-sponsored by the Federal Aviation Administration (FAA).

This report documents the general activities completed by APS related to aircraft ground deicing research in the winter of 2015-16. The activities documented in this report were carried out in addition to the main research projects completed in the winter of 2015-16, which are documented in separate reports. The ten activities described in this report are listed below.

1) Investigation of Residual Fluid Freezing In-Flight
2) Frost at Lowest Operational Use Temperature (LOUT): Flat Plate Testing and Radiation Cooling During Taxi
3) Evaluation of Fluid Effectiveness and Characterization of Contamination on High Angle Surfaces: Vertical Stabilizer HOTs
4) Publication of Holdover Time Guidance Materials
5) Preliminary Investigation of Historical METAR Reports to Determine Frequency of Weather Occurrences
6) Investigation of the Worldwide Use of De/Anti-icing Fluids
7) Fluid Application Guidance for SAE De/Anti-icing Fluids
8) Support for the Use of Ice Detection Technology
9) Activities with Limited Scope
   i. Evaluation of Endurance Times on Full-Sized Test Plates vs. Half Plates
   ii. Development of Highest Usable Precipitation Rates for Heavy Snow Conditions
   iii. Forced Air Literature and Guidance Review
   iv. Support Revision of Transport Canada Publication TP 14052
   v. Viscosity Re-testing of Fluids with New AS 9968 Requirements
   vi. Expansion of Test Pad Area to Accommodate Large Model Testing
   vii. Keyword Search for Historical Reports
   viii. Listing of Type I Dilutions in HOT Guidelines
10) Presentations, Fluid Manufacturer Reports and Test Procedures for 2015-16

Fluid, Frost, LOUT, Vertical Stabilizer, HOT, METAR, Ice Detection, Test Plate, Heavy Snow, Forced Air, Viscosity, Keyword

Limited number of copies available from the Transportation Development Centre