### Aircraft Ground De/Anti-Icing Fluid Holdover Time Development Program for the 2007-08 Winter

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**Supplementary Notes:**
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. This project was co-sponsored by the Federal Aviation Administration.

**Abstract:**
The primary objective of the 2007-08 holdover time test program was to evaluate the performance of new deicing and anti-icing fluids over the entire range of conditions encompassed by the holdover time guidelines.

The objective was met by conducting endurance time tests. The procedure for these tests consisted of pouring fluids onto clean aluminum test surfaces inclined at 10°. The onset of failure was recorded as a function of time in natural snow and artificial conditions including simulated freezing fog, freezing drizzle, light freezing rain, and rain on a cold-soaked wing. APS conducted a total of 520 endurance time tests with four fluids, including two Type II fluids, one Type III fluid and one Type IV fluid.

Changes to the holdover time guidelines for the winter of 2008-09 include: the introduction of a fluid-specific tables for Kilfrost ABC-K Plus (Type II) and Dow Chemical UCAR™ FlightGuard AD-480 (Type IV); increases to the upper values in the Type IV generic guidelines for rain on cold soaked wing; and the addition of a note to the Type II and Type IV fluid-specific and generic HOT tables which advises users that radiational cooling during active frost conditions may reduce holdover time when operating close to the lower end of the temperature range. No changes were made to the Type I, II or III generic holdover time guideline values.

It is recommended that any new Type I, Type II, Type III or Type IV fluids be evaluated over the entire range of conditions in the holdover time tables.

**Key Words:**
Anti-icing, deicing, deicing fluid, holdover times, precipitation, endurance times, Type I, Type II, Type III, Type IV, aircraft, ground, test, winter

**Distribution Statement:**
Limited number of copies available from the Transportation Development Centre.

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