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	Stephanie Bendickson and Benjamin Bernier			
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				Project Officer
				Antoine Lacroix
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15. Supplementary Notes (Funding programs, titles of related publications, etc.)

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.

16. Abstract

The primary objective of the 2015-16 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 frost, natural snow, artificial snow, simulated freezing fog, simulated freezing drizzle, simulated light freezing rain, and simulated rain on a cold-soaked wing. A total of 896 tests were conducted with seven fluids.

Changes to the holdover time guidelines for the winter of 2016-17 include:

- Fluid-specific HOT guidelines were added for four new fluids: Beijing Yadilite Aviation YD-102 Type II (Type II), Clariant Max Flight AVIA (Type IV), Clariant Safewing EG IV NORTH (Type IV) and Shaanxi Cleanway Aviation Cleansurface IV (Type IV).
- AllClear AeroClear MAX (Type III) and Deicing Solutions ECO-SHIELD® (Type IV) holdover times were updated as a result of supplemental testing with new samples.
- LNT Solutions P250 (Type II), Cryotech Polar Guard[®] (Type IV) and Dow Chemical UCAR[™] FlightGuard AD-480 (Type IV) were removed from the guidelines as per the protocol for removal of obsolete data.
- The holdover times for snow in the "below -14°C to LOUT" row were reduced for all Type II and Type IV fluids. Some of the reductions were later retracted in supplemental guidance materials.
- Changes were made to the Type II and Type IV generic HOT guidelines as a result of the new and removed fluids. The Type IV generic HOT table was expanded to include holdover times for three snowfall intensities; very light, light and moderate.
- Several changes have been made to the allowance time tables. These include: reordering of the rows, the addition of new precipitation type rows, minor changes to some existing allowance times, and minor changes to the existing Type IV temperature bands.
- Transport Canada published special holdover time tables for use when flaps/slats are deployed prior to de/anti-icing. The new tables contain holdover times that are 90 percent of the standard table 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 guidelines, that further frost testing be conducted with existing fluids and that research to mitigate the reductions to the Type II/IV very cold snow HOTs be considered.

17. Key Words	18. Distribution	n Statement						
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