Aircraft Ground De/Anti-Icing Fluid Holdover Time Development Program for the 2013-14 Winter

The primary objective of the 2013-14 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 780 tests were conducted with seven fluids.

Changes to the holdover time guidelines for the winter of 2014-15 include:

- Fluid-specific HOT guidelines were added for four new fluids: LNT Solutions P250 (Type II), Clariant Max Flight Sneg (Type IV), LNT Solutions E450 (Type IV) and Newave Aerochemical FCY 9311 (Type IV);
- Kilfrost ABC 2000 (Type II) and Lyondell Arctic Shield (Type IV) were removed from the guidelines as per the protocol for removal of obsolete data;
- Six decreases were made to the Type IV generic HOT guidelines as a result of the addition of new fluids;
- The allowance time for Type IV propylene glycol (PG) fluid in moderate ice pellets at temperatures below -16°C was removed;
- A new allowance time of 7 minutes was added for Type IV fluids in light ice pellets mixed with moderate snow at below -5 to -10°C; and
- As a result of preliminary research on endurance times on flaps and slats, the FAA published special holdover time tables (containing holdover times that are 90% of the standard holdover time table values) for use when flaps/slats are deployed prior to de/anti-icing.

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. It is also recommended that if a new Type III fluid is submitted for heated application testing, further research be conducted to evaluate endurance times of Type III fluids applied heated to composite surfaces.