This report documents the exploratory research and general activities completed by APS related to aircraft ground deicing research in the winter of 2005-06. The activities documented in this report were carried out in addition to the main research projects completed in the winter of 2005-06, which are documented in separate reports. The seven activities included in this report are described below.

1. Methodology to Re-Categorize Fluid Holdover Time Tables: A study was conducted to ascertain whether the number of holdover time guideline tables could be reduced by producing a set of generic tables for Type II/IV fluids that would not change from year to year. Keeping the existing system was recommended. An alternate approach was also provided.

2. Validity of 75/25 Endurance Time Test Protocol: Research was conducted to assess the accuracy of the current protocol for endurance time testing of fluid dilutions. Differences in viscosity were observed when fluids were put through simulated operational and endurance time testing processes. It was recommended that the lowest on-wing viscosity (LOWV) for dilutions be added to the HOT guidelines.

3. Endurance Times on Plates with Residual Ice: Previous testing has shown that in certain conditions deicing technicians may not detect residual ice under fluid. Preliminary tests were conducted and they suggest that endurance times of anti-icing fluids are reduced by the presence of residual ice.

4. Tactile Inspection of Ice with the Use of Gloves: APS conducted tests to ascertain if the type of glove worn during post deicing tactile checks impacts ability to detect ice. Candidates were able to detect ice using all five gloves tested.

5. Support for the Development of SAE AS 5681: APS is supporting the development of AS 5681 by providing expert opinion and clerical support for the development of the standard on remote on-ground ice detection systems.

6. Holdover Time Guidelines Website: APS developed and implemented a website for the official Transport Canada 2006-07 holdover time table guidelines.

7. Test Procedures, Presentations and Fluid Manufacturer Reports: An account of the test procedures, presentations and fluid manufacturer reports that were produced for the 2005-06 test program is included in this report.

17. Key Words
Deicing, SAE, Standards, Holdover Time, Endurance Times, Test Protocol, Residual Ice, ROGIDS, Gloves

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