



1. Transport Canada Publication No. <b>TP 14780E</b>		2. Project No.		3. Recipient's Catalogue No.	
4. Title and Subtitle <b>Evaluation of Tempered Steam Technology (TST) for Aircraft Deicing Applications</b>				5. Publication Date	
				6. Performing Organization Document No. <b>CM2020.002</b>	
7. Author(s) <b>David Youssef</b>		8. Transport Canada File No.			
9. Performing Organization Name and Address <b>APS Aviation Inc. 6700 Côte-de-Liesse, Suite 105 Montreal (St-Laurent), Quebec H4T 2B5 Canada</b>				10. PWGSC File No.	
				11. PWGSC or Transport Canada Contract No.	
12. Sponsoring Agency Name and Address <b>Transportation Development Centre (TDC) 800 René Lévesque Blvd. West, Suite 600 Montreal, Quebec H3B 1X9 Canada</b>				13. Type of Publication and Period Covered <b>Draft</b>	
				14. Project Officer <b>Barry Myers</b>	
15. Supplementary Notes (Funding programs, titles of related publications, etc.) <p>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). Nine reports (including this one) 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.</p>					
16. Abstract <p>Under contract to the Transportation Development Centre (TDC) of Transport Canada, with support from the Federal Aviation Administration (FAA), and several fluid manufacturers, APS Aviation Inc. (APS) has undertaken a testing and research program to further advance aircraft ground de/anti-icing technology. The program has a number of objectives, and work completed to address these objectives is documented in a series of related reports.</p> <p>The TEMPERED STEAM™ Technology (TST), developed by the Canadian company Chinook Mobile Heating and Deicing Corporation (Chinook), is a unique innovation that aims to reduce the cost and the environmental impact of deicing aircraft, using heated steam-infused air as a de-icing tool.</p> <p>Eight tests were completed in Smiths Falls, Ontario during March and April of 2007. The tests aimed to evaluate the effectiveness of using TST technology as a deicing tool in the following precipitation conditions:</p> <ul style="list-style-type: none"><li>• Natural Frost contamination; and (four tests)</li><li>• Simulated snow Contamination (two tests)</li><li>• Simulated ice contamination (two tests)</li></ul> <p>Natural Frost testing demonstrated that deicing and drying of the wing surface can be achieved by using by using both the Tempered Steam and hot air components of the TST system, or by using just hot air.</p> <p>The results from tests with snow and ice contamination indicate that the TST would be effective for deicing or as an all-weather pre-deicing tool to remove large quantities of accumulated contamination prior to deicing.</p>					
17. Key Words <b>Tempered steam, hot air, environment, deicing, frost, ice, snow, new technology, efficiency</b>			18. Distribution Statement <b>Limited number of copies available from the Transportation Development Centre</b>		
19. Security Classification (of this publication) <b>Unclassified</b>		20. Security Classification (of this page) <b>Unclassified</b>		21. Declassification (date) <b>—</b>	22. No. of Pages <b>xvi, .52 app.</b>
					23. Price <b>—</b>