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15. Supplementary Notes (Funding programs, titles of related publications, etc.) <b>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. The work described in this report was, in part, co-sponsored by the Federal Aviation Administration (FAA).</b>					
16. Abstract This report documents the general activities completed by APS related to aircraft ground deicing research in the winter of 2009-10. The activities documented in this report were carried out in addition to the main research projects completed in the winter of 2009-10, which are documented in separate reports. The twelve activities included in this report are described below. <ol style="list-style-type: none"> <li>Preliminary Evaluation of Endurance Time Performance on Vertical Surfaces: APS conducted a series of tests to evaluate the endurance time performance of de/anti-icing fluid applied to vertical surfaces and potentially develop guidance material for anti-icing aircraft vertical stabilizers. The results are provided in this report.</li> <li>Evaluation of Sensor for NowCasting Active Frost: A sensor was tested that can nowcast frost and the preliminary results indicate that there could be potential for using this type of technology in operations.</li> <li>Evaluation of Holdover Time Guidelines for Cold Soak Wing during Natural Frost Conditions: When a cold soak wing is subject to natural frost conditions, current holdover times are not appropriate. Guidance was added within the holdover time guidelines to account for this.</li> <li>Holdover Times in Conditions of Heavy Snow: Due to extensive heavy snow conditions present during deicing operations, research is ongoing in an attempt to develop holdover times using snowmakers.</li> <li>Development and Evaluation of New Protocol Using Snowmaker: a new protocol for snowmakers to better simulate natural snow conditions is being considered and tests have been conducted that indicate that the new protocol maybe appropriate. Preliminary results based on limited testing indicate that this new provided endurance times that closely matched those of natural snow.</li> <li>Support for the Development of Use of Ice Detection Cameras at End-of-Runway: The development of ice detection technology has been on-going for a number of years. This work has been supported by TC and the FAA. In 2009-10, meetings were held that focused on a flight crew survey, accident/incident reports, and the development of a project timeline, action plan and problem definition.</li> <li>Fluid Endurance Time Testing in Snow Pellet Conditions. Research was conducted that lead to the integration of the snow pellet condition within the snow column of the holdover time tables.</li> <li>Development of LOUT Table for Holdover Time Guidelines: Based on industry requests the regulators have developed and published an LOUT table as part of the holdover time guidelines; a revised version is in development.</li> <li>Differences in HOT Guidelines (TC, FAA, AEA): Formatting discrepancies existed between the Transport Canada (TC), the Federal Aviation Administration (FAA), and the Association of European Airlines (AEA) holdover time guidelines. Industry members were informed of the differences that exist between the TC/FAA/AEA guidelines and proposed remedies were implemented.</li> <li>Provisions of Support for the Development of the FAA Advisory Circular on Liquid Water Equivalent Rate Systems: APS was contracted by the FAA to provide support in the development and implementation of an advisory circular on liquid water equivalent rate systems (LWES) for US operations.</li> <li>Holdover Time Guidelines Website: APS developed and implemented a website for the Official Transport Canada 2010-11 holdover time table guidelines.</li> <li>Test Procedures, Presentations and Fluid Manufacturer Reports: An account of the test procedures, presentations, and fluid manufacturer reports that were produced for the 2009-10 test program is included in this report.</li> </ol>					
17. Key Words <b>Deicing, Hangar, End-of-Runway, Sensor, Nowcasting, Cold Soak Wing, Heavy Snow, Snowmaker, ROGIDS, Snow Pellet, HOT Guidelines, Frost, Ice Detection, Vertical Stabilizer</b>			18. Distribution Statement <b>Limited number of copies available from the Transportation Development Centre</b>		
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