Activities
of the
Meteorology Sub-committee
of the
FAA/Industry Aircraft Ground Deicing
Working Group

Co-chairs
Tom Fahey (Northwest Airlines)
Warren Underwood (FAA)
Roy Rasmussen (NCAR)

Friends and Partners of Aviation Weather meeting

NBAA Conference
October 9, 2008
Orlando, Florida
On 17 April 2007 members of the FAA and industry met to discuss ground deicing issues.

- FAA/Industry Aviation Ground Deicing Work Group &
  - Jerry Ostronic, FAA, AFS 200 [Co-Chair] and
  - Paul Railsback, Air Transport Association (ATA) [Co-Chair]
- Weather Subcommittee were formed.
  - Warren Underwood (FAA) [Co-Chair]
  - Tom Fahey (NW/Delta?) [Co-Chair]
  - Roy Rasmussen (NCAR) [Co-Chair]
- Over 30 Reps from Gov’t, Industry & Research Communities
  - DoD, Environment Canada, FAA, Nav Canada & NWS
  - Vendor rep, AAL, COA, DAL, NWA, SWA, UAL, UPS & USAir
  - NCAR
Weather Subcommittee
Charter

• Address outstanding weather issues related to Winter Weather Ops & more specifically, Ground Airline Deicing/Anti-Icing.

• Long Term Tasks
  • Transition to Liquid Water Equivalent Measurements for reporting intensity of Frozen/Freezing/Mixed Precip
  • Champion Wx Reporting & Automated Observing System Improvements
  • Address Industry Concerns related to De-icing/anti-icing holdover & allowance times.
Weather Subcommittee
Current Activities

• LWE Observation & Distribution
  - Coordinate thru OFCM to Introduce LWE Reporting Capability w/in US
  - Support FAA’s 2008-‘09 LWE Info Distribution Tests at 4 Airports
    + DEN
    + MSP
    + ORD
    + PIT
  - Working w/ R. Heuwinkel’s Requirements group on LWE reporting in METAR/SPECI.

• Industry Concerns re Holdover & Allowance Times
  - Increase FAA ATC & Contract Wx Observers’ Awareness of Need for Wx Obs
  - Address the missing Mixed Precipitation Allowance/Holdover Times
Accomplishments 2007

- Report Used by FAA for 2007-08 Winter Deicing Guidelines
  - Visibility and snow fall table final wording.
  - Pilot Assessment
  - Ice pellet conditions that are not continuous
- LWE Snow System Developed for 4 Airport test
  - Real time web display
# Accomplishments - 2007

## Snow Intensity Table Winter 2006/07

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>Temp.</th>
<th>Visibility (Statute Mile)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Degrees Celsius</td>
<td>Degrees Fahrenheit</td>
</tr>
<tr>
<td>Day</td>
<td>colder/equal -1</td>
<td>colder/equal 30</td>
</tr>
<tr>
<td></td>
<td>warmer than -1</td>
<td>warmer than 30</td>
</tr>
<tr>
<td>Night</td>
<td>colder/equal -1</td>
<td>colder/equal 30</td>
</tr>
<tr>
<td></td>
<td>warmer than -1</td>
<td>warmer than 30</td>
</tr>
</tbody>
</table>


**NOTE:** This table is for estimating snow intensities for use with Types I, II, III, and Type IV Fluids Holdover Time Guidelines.

HEAVY = Caution—No Holdover Time Guidelines Exist
## Snow Intensity Table Winter 2007/08

### Accomplishments - 2007

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>Temp.</th>
<th>Visibility (Statute Mile)</th>
<th>Snowfall Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Degrees Celsius</td>
<td>Degrees Fahrenheit</td>
<td>&gt; 2 1/2</td>
</tr>
<tr>
<td><strong>Day</strong></td>
<td>colder/equal -1</td>
<td>colder/equal 30</td>
<td>Very Light</td>
</tr>
<tr>
<td></td>
<td>warmer than -1</td>
<td>warmer than 30</td>
<td>Very Light</td>
</tr>
<tr>
<td><strong>Night</strong></td>
<td>colder/equal -1</td>
<td>colder/equal 30</td>
<td>Very Light</td>
</tr>
<tr>
<td></td>
<td>warmer than -1</td>
<td>warmer than 30</td>
<td>Very Light</td>
</tr>
</tbody>
</table>


Note 2: This table is to be used with Type I Fluid guidelines. It may also be used with Type II, III or IV fluid guidelines.

HEAVY = Caution—No Holdover Time Guidelines Exist
Precipitation Type sensor (HSS)

Snow Liquid Water Equivalent System

WXT temperature, humidity, and wind sensor (Vaisala)

Hotplate (Yankee)

Liquid Equivalent snowfall rate determination

Weighing Snowgauge (GEONOR)
### Liquid Equivalent Snow and Rain Rates and Intensities

<table>
<thead>
<tr>
<th>Site</th>
<th>Time (LOCAL)</th>
<th>Temp (F)</th>
<th>Dew pt (F)</th>
<th>RH (%)</th>
<th>Wind (deg)</th>
<th>Speed (kts)</th>
<th>Rate (mm/hr)</th>
<th>Precip Trend (10 min)</th>
<th>Temp Trend (30 min)</th>
<th>Visibility (Km)</th>
<th>Wx</th>
<th>Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIT1</td>
<td>11:44</td>
<td>25.0</td>
<td>23.0</td>
<td>92</td>
<td>335</td>
<td>3</td>
<td>0.9</td>
<td>STEADY</td>
<td>STEADY</td>
<td></td>
<td>SN</td>
<td>LIGHT</td>
</tr>
</tbody>
</table>

02/14/07 11:45:00 Local

- **Precip Rate**
- **SNOW**
- **LIGHT**
2008

- ATC & Contract Wx Observers’ Aware of Need for Wx Obs
  - FAA sent Notice to Controllers re Pilot Assessment of Precip process.
  - OPEN: Notice to CWO’s re SPECI’s for (Begin, End, Change Intnsty) pending

- Introduced LWE Reporting Capability within Int’l Community
  - ICAO Annex 3 will have specifications for LWE
    + A Study Note & 2 Info Papers Prepared to Support effort
  - OPEN: ICAO / WMO LWE Rates
Future Areas of Focus

LWE Observation & Distribution
1. Actively Support Adoption of LWE Based definitions of snow and freezing drizzle nationally (U.S., OFCM).
2. Continue to support the implementation of LWE reporting through ASOS or other means.
3. Enhance SPECIs to include changes in snow intensity based on LWE.
4. Provide input into the appropriate method for dissemination of the LWE message to pilots.

Industry Concerns re Holdover & Allowance Times
1. Address Missing Mixed Precip Holdover & Allowance Times
2. Any weather related deicing concerns as they develop.