Runway Surface Condition Reporting and RCAM

ACI airports@work Austin, Tx

April 19, 2016

International Airport Authority Ottawa

Administration de l'aéroport international

Runway Condition Reporting

- Meeting Held in Ottawa August 2015
- FAA and Air Canada presented to:
  - Transport Canada, Nav Canada, YOW, YYT and YHZ present
- Goal
  - Global Methodology
  - Improve system overall

FAA

- FAA going ahead with recommendations from the Takeoff and Landing Performance Assessment (TALPA) Aviation Rulemaking Committee (ARC)
- Airport Operators will have to include the Runway Condition Code (RCC) in the Notams
- Performance Requirements for Manufacturers tailored to support TALPA
- Airbus - Corsair
  - B787&B747-800
  - Now B737-800

FAA (con't)

- Aircraft can no longer land on a 7000ft runway with braking action reported as less than good
- Advisory Circulars about to come out from FAA (Draft AC 150/5200-30D – Airport Field Condition Assessments and Winter Operations Safety)
- Cornerstone is Runway Condition Assessment Matrix (RCAM)

RCAM

Runway Condition Assessment Matrix (RCAM)				
Assessment Criteria		**Downgrade Assessment Criteria**		
Code	Runway Condition Description	**Mu (μ) [1]**	**Vehicle Deceleration Or Directional Control Observation**	**PIREP**
6	• Dry	40 or Higher	—	—
5	• Frost • Wet (Includes Damp) ***1/8" or less depth of:*** • Water • Slush • Dry Snow • Wet Snow	40 or Higher	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	Good
4	***-15°C and Colder outside air temperature:*** • Compacted Snow	39 to 30	Braking deceleration OR directional control is between Good and Medium.	Good to Medium
3	• Wet ("Slippery when wet" runway) • Dry Snow or Wet Snow (Any depth) over Compacted Snow ***Greater than 1/8" depth of:*** • Dry Snow • Wet Snow ***Warmer than -15°C outside air temperature:*** • Compacted Snow	39 to 30	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	Medium
2	***Greater than 1/8" depth of:*** • Water • Slush	29 to 21	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
1	• Ice [2]	29 to 21	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
0	• Wet Ice [2] • Water on top of Compacted Snow [2] • Dry Snow or Wet Snow over Ice [2]	20 or Lower	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

International Airport Authority Ottawa
Administration de l'aéroport international

Background (ACA)

- **Contaminate and depth is the only fully international standard for reporting runway condition:**
  - Friction reports are not standard worldwide
  - Pilot braking action reports are considered unreliable
  - Will continue to be used for Airplane Flight Manual (AFM) Takeoff Performance
- **Based on a recent document review, Air Canada runway performance plan is as follows:**
  - Landing and Take-off performance is based on manufacturer recommended procedures for Dry, Wet, and Contaminated runway
  - Baseline runway reporting standard used for computation:
    - Contaminate
    - Depth (if applicable)
  - Landing performance will support runway condition codes
  - Pilots will be required to convert Runway Condition Report to Runway Condition Code in order to use new AFM tables

Multiple Contaminants (ACA)

- Air Canada developed the 10% Rule based on the TALPA ARC Airport/Part 139 Working Group Recommendation April 9, 2009
- When multiple contaminants are reported, use the 2nd most restrictive greater than 10%
- To be applied for both Takeoff and Landing at Air Canada

Anticipated Outcomes (ACA)

- It will be much more predicable when runways will become unusable
- More than 20% ICE or SLUSH can stop operations
- Reminder:
  - CRFI cannot be used to upgrade the AFM calculated landing distance
  - Pilot Braking Action Report cannot be used to upgrade the AFM calculated landing distance
  - It doesn't matter how good the CRFI value is or the Braking Action Report, Air Canada will not be able to land

Airport Surface Condition Reporting

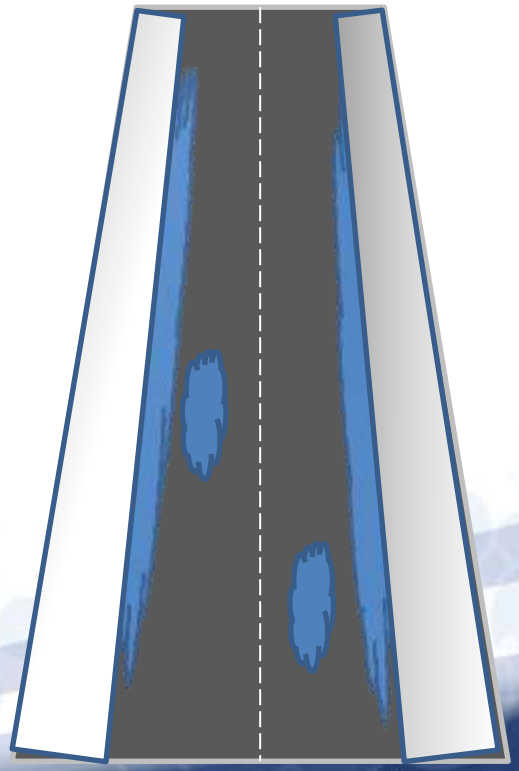
- 2015
- Report would show runway 140ft, center cleared with 30% ice. Runway sand applied and no reported CRFI.
- Airport operations would report that Airbus and Embraer aircraft from Air Canada were diverting while other operators still landing and departing.

International Airport Authority Ottawa
Administration de l'aéroport international

Runway Width

- 2015
- Report would show runway 140ft center cleared with 30% ice. Runway sand applied and no reported CRFI.
- Get call from operations saying that Airbus and Embraer aircraft from Air Canada were diverting
- What was happening?

- 140ft Cleared, 30% ice

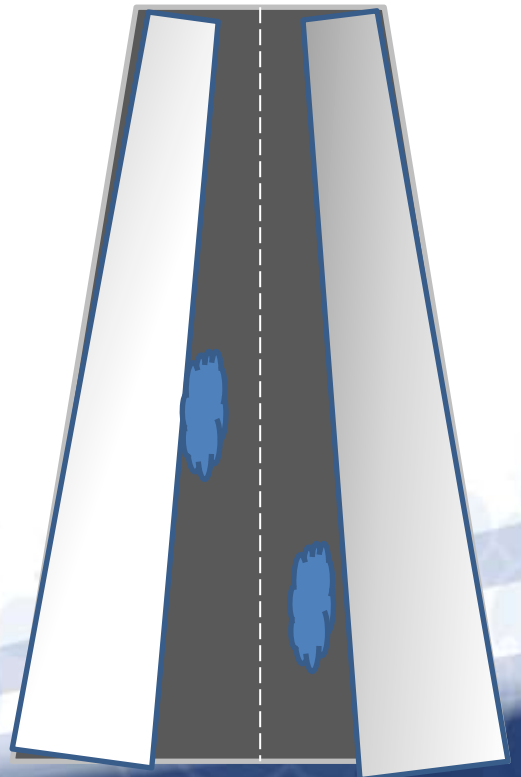


International Airport Authority
Ottawa
Administration de l'aéroport international

Runway Width

- Met with airline
- Require 100ft wide to operate
- Narrow the Runway to give better picture of usable runway.
- Now 100ft center cleared with only 10% ice.
- Aircraft can operate

- 100ft cleared, 10% ice



International Airport Authority
Administration de l'aéroport international
Ottawa

Airport Impact

- Need to have runway contaminate removed, not just covered with runway sand
- Anticipated increased use of chemical
  - Sodium Formate (Solid)
  - Potassium Acetate (Liquid)

International Airport Authority Ottawa Administration de l'aéroport international

Regulatory Challenges

- Changes to Canadian Aviation Regulations or an Advisory Circular (A/C) from Transport Canada is not in the works yet.
  - An A/C is necessary for the implementation of TALPA.
- Airports involvement unclear:
  - Shift in liability is not fully understood nor endorsed by the airports for the time being

Challenges in the reporting format

- This is a change from NOTAMJ to ICAO SNOWTAM
  - The move includes measurement in RWY thirds which is not supported today and will increase training needs.
  - ICAO reports in Metric vs Canada is using Imperial measurement.
- External third party solution suppliers need to be considered
  - Some of them have 50+ clients. Time is needed for their adaptation.

Questions?

International Airport Authority Ottawa
Administration de l'aéroport international