

Takeoff and Landing Performance Assessment (TALPA)

Status Briefing

Presented to: **ACI-NA – Austin, TX**
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Federal Aviation
Administration

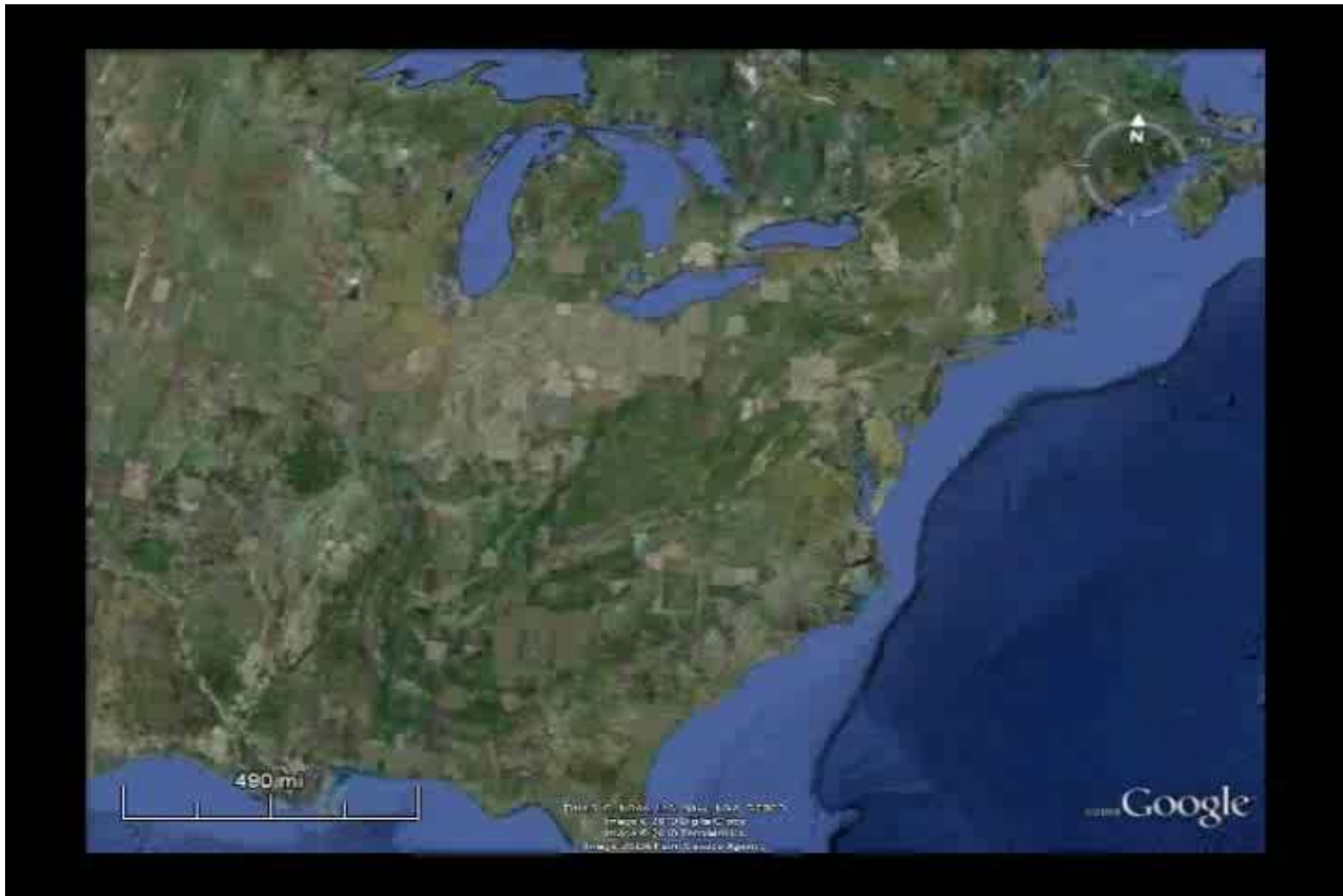


TALPA History

- **The Beginning**
- **Background**
- **Concepts**
- **Recommendations**
- **Actions already in effect**
- **Implementation steps by LOBs**
- **RCAM integration**
- **Future Requirements**



SWA 1248, Dec. 8, 2005



TALPA Beginning

- **Excursion at Midway Dec 2005**
- **What is TALPA**
 - Landing distance assessment at time of arrival
 - Accounting for contaminated runways at the time of takeoff
 - Requirement needed to support those goals
- **FAA formed Aviation Rulemaking Committee**
 - Airplane Manufacturers - Airplane Operators
 - Regulatory Authorities - Airport Operators
 - Other Organizations
- **Recommendations provided to FAA in 2009**



NTSB TALPA Recommendations

Safety Recommendation A-07-063 - Establish a minimum standard for 14 Code of Federal Regulations Part 121 and 135 operators to use in correlating an airplane's braking ability to braking action reports and runway contaminant type and depth reports for runway surface conditions worse than bare and dry.

Safety Recommendation A-08-041 - As part of the Takeoff/Landing Performance Assessment Aviation Rulemaking Committee, address the need for initial training on the rationale for and criticality of conducting landing distance assessments before landing on contaminated runways.

Safety Recommendation A-07-062 - Develop and issue formal guidance regarding standards and guidelines for the development, delivery, and interpretation of runway surface condition reports. (RCAM)



Background

TALPA ARC Participants

Regulatory Authorities

- FAA (Airports, Flight Standards, Certification, NOTAMS, Rulemaking, Legal)
- Transport Canada
- Brazilian Certification Authority
- EASA (Limited Participation)



Other Organizations

- Air Transport Association
- Airline Pilots Association
- Airports Council International
- Allied Pilots Association
- National Air Carrier Association
- National Business Aviation Association
- National Transportation Safety Board
- Neubert Aero Corporation
- Regional Airline Association
- Southwest Airlines Pilot Association
- Allied Pilots Association



Airplane Operators

Part 121

- ABX Air
- Alaska
- American Eagle
- American
- Continental
- Delta
- Express Jet
- Federal Express
- Northwest
- Pinnacle
- Southwest
- United
- UPS
- US Airways



Airports

- Cherry Capital
- Chicago Airport System
- Chicago O'Hare
- Grand Rapids Regional
- Minneapolis/St. Paul Airport System



Airplane Operators

Part 91-K/125/135

- Alpha Flying, Inc
- Bombardier Flexjet
- Chantilly Air
- Flight Works
- Jet Solutions
- Conoco Phillips Alaska
- Net Jets
- Pogo Jet, Inc



Airplane Manufacturers

- Airbus
- Boeing
- Bombardier
- Cessna
- Eclipse
- Embraer
- Gulfstream
- Hawker



Background

- **TALPA ARC First Meeting – March 2008**
- **Separate workgroups established to address:**
 - Airports
 - Part 121 Aircraft Operations
 - Part 91-K/125/135 Aircraft Operations
 - Part 23/25 Aircraft Type Certification



TALPA Concepts are to Standardize

- Methods for assessing runway conditions
- Reporting of braking action by pilots
- Reporting of runway conditions through airport operators, the NOTAM system, and ATC agencies
- Airplane performance data
- Before landing performance assessments
- Terms used in runway condition reports and performance data



TALPA ARC Recommendations

- **Final recommendations provided on July 2009**
- **ARC Charter expired October 2009**
- **Rulemaking project suspended Sept. 2010**
- **Numerous rulemaking projects mandated by Congress**
- **Projected rulemaking back-log out to 8+ years**



TALPA Charter – December, 2012

- Due to the delay in TALPA Rulemaking, the FAA is going forward with the TALPA **ARC recommendations in a non-regulatory approach**. This will be a temporary situation until such time as TALPA is reintroduced into the rulemaking process.



TALPA Charter – December, 2012

- Develop and execute a plan for the non-rulemaking implementation of TALPA recommendations.
- Implementation is expected to include:
 - Developing standards for performing before-landing performance assessments, taking into account the effects of contaminated runways when applicable. Implementation of these standards by Part 121, 135, and 91K operators would be **optional**.
 - Developing standards for taking into account the effects of contaminated runways on takeoff performance. Implementation of these standards by Part 121, 135, and 91K operators would be **optional**.



TALPA Status as of 4/18/16

- **TALPA Elements Available**
- **TALPA Full Implementation Date:**
 - **October 1, 2016**



CAST SE 215 OPs 1 and 7

- **Chuck Enders**
- **AFS develops guidance for TALPA**
 - AC 91-79B, Mitigating the Risks of a Runway Overrun Upon Landing
 - Guidance for operators of non-turbojet airplanes
 - Internal revision complete; publication imminent
 - SAFO TALPA Trng
 - Anticipated publication date: May 30, 2016
 - Guidance to operators on TALPA related documents
- **Air carriers implement TALPA (landing assessment at time of arrival)**
 - Anticipated voluntary participation: October 1, 2016



CAST SE 215 – OPs 3 & 6 - AIR

- **Paul Giesman**
- **AIR develops guidance for TALPA**
 - (AC 25-31 and AC 25-32 issued. Output complete.)
- **Manufacturers provide landing distance data per AC 25-31 and AC 25-32**
 - Manufacturer provided TALPA data described in ACs 25-31 and 25-32 is in the process of voluntarily being developed.
 - There is no timeline. TALPA is voluntary; operators and manufacturers are not required to comply.



CAST SE 215 – OPs 2 and 5

- **Susan Gardner**
- **ARP revises guidance to incorporate TALPA**
 - AC 150/5200-30D—Airport Field Condition Assessments and Winter Operations Safety
 - Scheduled Jul 2016 release or earlier
 - AC 150/5200-28F—Notices to Airmen (NOTAMs) for Airport Operators
 - Scheduled Jul 2016 or later to synch with NOTAM Order 7930.2 release
 - Training product for the airport operator/stakeholders
 - Scheduled May 2016 release
- Airport operators report runway conditions per the updated guidance and TALPA terminology
 - Effective October 1, 2016



ARP Implementation Actions

- **Publish/update Advisory Circulars**
 - Winter Ops AC to include new TALPA & RCAM language
 - NOTAMs AC with contaminant reporting instructions
- **Develop Training**
 - For Airports' inspector cadre
 - For airport operators and other stakeholders
- **Collaborate with ATO NOTAM Office**
 - On system software changes to produce Rwy Condition Codes (RwyCC)
 - On a Beta test site for contaminant data input and output confirmation
- **Industry Outreach**
 - Partner with Airports' alphabet groups for TALPA implementation
 - Update international stakeholders at available conferences and forums



NOTAMS and TALPA

- **Lynette Jamison**

- US NOTAM Policy and Operations
- We have replaced Section 5-1-4 of the 7930.2Q with the new TALPA FICON rules
- The examples have been placed in the Appendix along with all other examples
- That will be published in the 7930.2R



Notice to Airmen (NOTAM) TALPA Updates: Policy

- **FAAO 7930.2, *NOTAMs*, being updated to encompass TALPA initiatives**
 - Final document for publication by May 27, 2016.
 - Effective October 1, 2016 (TALPA Effective Date).



Federal NOTAM System (FNS) and TALPA

- **Trish Gay**
 - Program Manager, Federal NOTAM System, AJM-336



Federal NOTAM System (FNS) TALPA Updates: System Enhancements



NOTAM Manager will be updated to support all of the requested TALPA enhancements

- Scenarios
- Updated user interface
- One-time use Feature Manager



ENII will be updated to support the creation of runway field condition NOTAMs

- Same runway field condition functionality as NOTAM Manager



NOTAM Manager and ENII (Airports and FSS users) will be the only accepted methods of submitting runway field condition NOTAMs

- All other methods of entry will be automatically rejected



Federal NOTAM System (FNS) TALPA Updates: Schedule



TALPA requirements and scenario documentation updates

- Completed and approved December 2015



Development

- In progress, prototype/demo application completed March 31, 2016



User acceptance testing (UAT)

- UAT Internal planned for April 12-14, 2016.
- UAT External planned for April 25 to May 6, 2016



Release to production

- Scheduled for October 1, 2016 (to coincide with policy)



Summary

- **Chuck Enders**
- **Runway Condition Assessment Matrix (RCAM) – Pilot and Dispatcher**
- **Runway Condition Assessment Matrix (RCAM) – Airports**



RCAM AC 91-79B; RCAM Airports

AC 91-79A
Appendix 1

9/17/14

NOTE: The braking action term "FAIR" will be replaced with "MEDIUM," effective October 1, 2016. Until October 1, 2016, the current use of the term "FAIR" applies.

TABLE 1-1. OPERATIONAL RUNWAY CONDITION ASSESSMENT MATRIX (RCAM) BRAKING ACTION CODES AND DEFINITIONS

Assessment Criteria		Downgrade Assessment Criteria	
Runway Condition Description	Code	Vehicle Deceleration or Directional Control Observation	Pilot Reported Braking Action
• Dry	6	—	—
• Frost • Wet (includes damp and 1/8 inch depth or less of water) 1/8 inch (3mm) depth or less of: • Slush • Dry Snow • Wet Snow	5	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	Good
-15°C and Colder outside air temperature: • Compacted Snow	4	Braking deceleration OR directional control is between Good and Medium.	Good to Medium
• Slippery When Wet (wet runway) • Dry Snow or Wet Snow (any depth) over Compacted Snow Greater than 1/8 inch (3 mm) depth of: • Dry Snow • Wet Snow Warmer than -15°C outside air temperature: • Compacted Snow	3	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	Medium
Greater than 1/8 inch (3 mm) depth of: • Water • Slush	2	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
• Ice	1	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
• Wet Ice • Slush over Ice • Water over Compacted Snow • Dry Snow or Wet Snow over Ice	0	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

Note: The shaded portion of the RCAM is associated with how an airport operator conducts a runway condition assessment.
Note: The shaded portion of the RCAM is associated with the pilot's experience with braking action.
Note: The Operational RCAM illustration will differ from the RCAM illustration used by Airport Operators.
Note: Runway condition codes, one for each third of the landing surface, for example 4/3/3, represent the runway condition description as reported by the airport operator. The reporting of codes by runway third is expected to begin in October of 2016.

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mm/d/yy

DRAFT

AC 150/5200-30D

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Table 5-2. Runway Condition Assessment Matrix (RCAM) (for Airport Operators' Use Only)

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

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1 The correlation of the Mu (μ) values with runway conditions and condition codes in the Matrix are only approximate ranges for a generic friction measuring device and are intended to be used only to downgrade a runway condition code. Airport operators should use their best judgment when using friction measuring devices for downgrade assessments, including their experience with the specific measuring devices used.

2 In some circumstances, these runway surface conditions may not be as slippery as the runway condition code assigned by the Matrix. The airport operator may issue a higher runway condition code (but no higher than code 3) for each third of the runway if

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Questions/Comments?

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