WORKSHOP EASA 2010

Runway surfaces: evaluation of contamination

Technical guide

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RÉPUBLIQUE FRANÇAISE

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Introduction

- Study “operational friction”
  - Good information not always provided
  - Friction measuring devices not always properly used
- Technical guide in progress
  - To point out regulations and best practices
  - To give technical information on using friction measuring devices
- Based on current regulations, tools and methods

Regulations

- ICAO annexes 6, 14 and 15
- Airport Information Publication AD 1.2
- French regulations
  - Arrêté du 14 mars 2007 relatif aux conditions d'homologation et aux procédures d'exploitation des aérodromes (CHEA)
  - Arrêté du 6 mars 2008 relatif aux inspections de l'aire de mouvement d'un aérodrome
  - Arrêté du 3 juin 2008 relatif aux services d'information aéronautique
  - Arrêté du 18 juillet 2008 relatif aux procédures pour les organismes rendant les services de la circulation aérienne aux aéronefs de la circulation aérienne générale (RCA)

French regulations

- Agreement signed between ATC and airport operators to provide aeronautical information
- Contaminated runways: Airport Operators are responsible for
  - Regularly inspecting traffic area
  - Collecting data about runway surface condition, especially about
    - Nature of contamination
    - Extent of contamination
    - Depth of contamination
    - Friction measurements
  - Providing information to ATC

Preventive actions

- Weaknesses of the infrastructure
  - Reporting areas propitious for contaminant accumulation
  - Reporting all reference data, such as functional friction values
  - Etc…
- Debriefings from previous events
  - Areas where contaminant accumulated
  - Evolution of deposits, especially after de-icing/de-snowing operations
  - Slippery areas
  - Operational friction values
  - Etc…
- Training
- Device calibration and maintenance

Information to report

- Nature of contamination
  - Vocabulary and definitions
- Extent of contamination
  - Assessed either visually or with the aid of friction device
- Depth of contamination
  - For water, dry snow, wet snow and slush only
  - Assessment
  - Reporting
- Friction measurements
  - Conditions acceptable to use friction devices
  - Use of friction devices
  - Interpretation and reporting
  - A part of an overall surface condition assessment

Information to report

- Any additional information essential for operating
  - Rapid exit taxiways surface conditions
  - Taxiways surface conditions
  - Snow banks
  - Cleared runway length/width
  - Obscured lights
  - Etc…

Ways of reporting

- Reporting runway surface conditions through
  - SNOWTAM
  - METAR
  - ATIS
  - Etc…

Detailed content		*Template(s)*		
State of the runway (C)[16]	Runway designator (M)	R nn[L]/ *or* Rnn[C]/ *or* Rnn[R]/		R/SNOCLO
	Runway deposits (M)	n *or* /	CLRD//	
	Extent of runway contamination (M)	n *or* /		
	Depth of deposit (M)	nn *or* //		
	Friction coefficient or braking action (M)	nn *or* //		

METAR format

SNOWTAM	(Serial number) →
(AERODROME LOCATION INDICATOR)	A) →
(DATE/TIME OF OBSERVATION *(Time of completion of measurement in UTC)*)	B) →
(RUNWAY DESIGNATORS)	C) →
(CLEARED RUNWAY LENGTH, IF LESS THAN PUBLISHED LENGTH *(m)*)	D) →
(CLEARED RUNWAY WIDTH, IF LESS THAN PUBLISHED WIDTH *(m; if offset left or right of centre line add "L" or "R")*)	E) →
(DEPOSITS OVER TOTAL RUNWAY LENGTH *(Observed on each third of the runway, starting from threshold having the lower runway designation number)* NIL — CLEAR AND DRY 1 — DAMP 2 — WET or water patches 3 — RIME OR FROST COVERED *(depth normally less than 1 mm)* 4 — DRY SNOW 5 — WET SNOW 6 — SLUSH 7 — ICE 8 — COMPACTED OR ROLLED SNOW 9 — FROZEN RUTS OR RIDGES)	F) →
(MEAN DEPTH *(mm)* FOR EACH THIRD OF TOTAL RUNWAY LENGTH)	G) →
(FRICTION MEASUREMENTS ON EACH THIRD OF RUNWAY AND FRICTION MEASURING DEVICE MEASURED OR CALCULATED COEFFICIENT *or* ESTIMATED SURFACE FRICTION 0.40 and above — GOOD — 5 0.39 to 0.36 — MEDIUM/GOOD — 4 0.35 to 0.30 — MEDIUM — 3 0.29 to 0.26 — MEDIUM/POOR — 2 0.25 and below — POOR — 1 9 — unreliable — UNRELIABLE — 9 *(When quoting a measured coefficient, use the observed two figures, followed by the abbreviation of the friction measuring device used. When quoting an estimate, use single digit)*)	H) →
(CRITICAL SNOWBANKS *(If present, insert height (cm)/distance from the edge of runway (m) followed by "L", "R" or "LR" if applicable)*)	J) →
(RUNWAY LIGHTS *(If obscured, insert "YES" followed by "L", "R" or both "LR" if applicable)*)	K) →
(FURTHER CLEARANCE *(If planned, insert length (m)/width (m) to be cleared or if to full dimensions, insert "TOTAL")*)	L) →
(FURTHER CLEARANCE EXPECTED TO BE COMPLETED BY . . . *(UTC)*)	M) →
(TAXIWAY *(If no appropriate taxiway is available, insert "NO")*)	N) →
(TAXIWAY SNOWBANKS *(If more than 60 cm, insert "YES" followed by distance apart, m)*)	P) →
(APRON *(If unusable insert "NO")*)	R) →
(NEXT PLANNED OBSERVATION/MEASUREMENT IS FOR) *(month/day/hour in UTC)*	S) →
(PLAIN-LANGUAGE REMARKS *(Including contaminant coverage and other operationally significant information, e.g. sanding, de-icing)*)	T))

NOTES: 1. *Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2.
2. Information on other runways, repeat from C to P.
3. Words in brackets ( ) not to be transmitted.

SNOWTAM format

Summary

Assessment		Reporting			
Nature	Depth	Extent	Nature	Depth	Friction
Damp	-	YES	YES	NO	NO*
Wet	<3mm	YES	YES	NO	
Flooded	>3mm	YES	YES	YES	
Dry snow	<20mm	YES	YES	NO	
	>20mm			YES	
Wet snow	<3mm	YES	YES	NO	
	>3mm			YES	
Slush	<3mm	YES	YES	NO	
	>3mm			YES	
Compacted snow	-	YES	YES	NO	YES
Frost					
Ice					
Wet ice					

*Friction assessment can always be performed as a part of an overall surface conditions assessment but values should not be published on liquid contaminants