

GRF and SNOWTAM implementation in MET and AIS domains



Source: PNRA – Concordia Base January 2007

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[1.0]



GRF concept: history and background information

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Chicago Midway runway overrun and collision (2005), a turning point ...

Dec. 8th 2005, 19.14 - SWA flight 1248 (B737) ran off the Runway 31C after landing at MDW.

'The aircraft rolled through a blast fence, an airport perimeter fence, and onto an adjacent roadway, where it struck a car before coming to a stop.'



Outcome

- a child killed and 1 pax seriously injured in the car
- other 3 car pax and 18 out of 103 acft occupants injured
- airplane substantially damaged

Weather conditions on the day of the accident

- 13.47: beginning of snowfall, snow removal ops ongoing (as per Snow Plan)
- 19.15: wind from 110° 7 kts, moderate snow / freezing fog, temp. - 4° C
- 19.37 (after accident): wind from 160° 5 kts; heavy snow / freezing fog; t. - 3°C

Runway (31C) field conditions

- 18.45: last runway clearing (cleared 5 times during the 6 hrs before accident)
- 18.47: Mu readings after rwy clearing: 72/59/68 (avg 67)
- 18.50: 1/16 inch 'wet snow' over 90% of rwy surface, 10% 'wet'
- 19.22: Mu readings (8 min.) after accident 41/40/38 (avg 40)

US NTSB (National Transportation Safety Board) Investigation

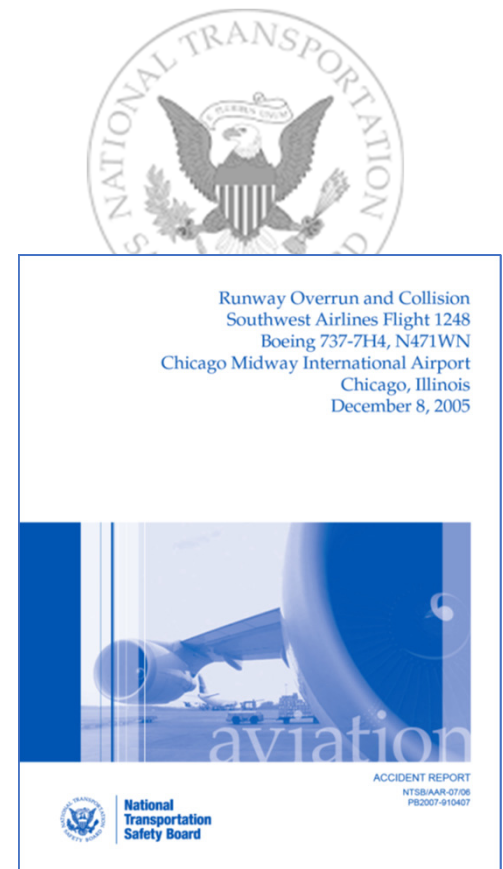
Probable cause of accident

'Pilots' failure to use available reverse thrust in a timely manner to safely slow or stop the airplane after landing, during a challenging landing.'

Contributing factors (among others):

'Airlines' failure to

- provide its pilots with clear and consistent guidance and training regarding [...] landing distance calculations;*
- include a margin of safety in the arrival assessment to account for operational uncertainties.'*



Source: NTSB ACCIDENT REPORT NTSB/AAR-07/06 PB2007-910407

NTSB - Additional findings *[abstract]*

- lack of consistent airline guidance, training, policies, procedures on **interpretation of braking action reports** and the assumptions affecting landing distance assessments;
- urgent need for
 - guidance to Pilots, ATCO and Aerodrome Personnel on **braking action and contaminant type and depth reports** to minimize subjectivity;
 - means of **correlating acft braking ability with rwy surface condition** for reliable assessment of airplane's landing performance capability;
 - an operationally feasible, airplane-based, acft braking ability / **runway condition assessment & reporting system**;
- use of the **most conservative information** to increase the landing safety margin.'

Source: NTSB ACCIDENT REPORT NTSB/AAR-07/06 PB2007-910407

Methods in use for runway condition assessment and reporting (2005)

- runway contaminant (type and depth) 'observations'
 - no clear correlation between contaminant and acft performance
- ground friction measurements (measured / calculated coefficient)
 - no agreed correlation between friction values and acft braking capability
 - unreliability of CFMEs under certain condition
 - meaningless, not usable for landing distance calculations
- pilot braking action reports
 - subjective judgement, reflecting individual perceptions
 - sensitive to airplane type and deceleration methods used

Source: NTSB ACCIDENT REPORT NTSB/AAR-07/06 PB2007-910407

NTSB Recommendation to FAA

- to **issue standards and guidelines** for the development, delivery, and interpretation of **runway surface condition** reports.
- to **establish standards** for **correlating** acft braking ability to braking action reports and rwy contaminant type/depth reports for rwy surface conditions other than 'dry';
- to require Part 121, 135, and 91 subpart K operators to
 - conduct arrival landing distance assessments before landing based on existing performance data, actual conditions, incorporating a 15% min. safety margin;
 - provide guidance and training to pilots / dispatchers on surface condition and braking action reports and assumptions affecting landing distance calculations.

The TALPA (Take-off And Landing Performance Assessment) Project

TALPA ARC - Aviation Rulemaking Committee (ARC), established by FAA in 2008

- based on NTSB recommendations following MDW accident
- involving different stakeholders: NAA, Aircraft Operators & Manufacturers, Airports
- objective:

addressing the aircraft '*take-off and landing performance assessment*' issue by means of real-time *communications of rwy conditions* (from airports to pilots) expressed in terms *directly related to the expected aircraft performance*.

TALPA ARC Recommendations, 2009

- focus on performance data provided by the aircraft manufacturers for given runway conditions
- definition of a Paved Rwy Condition Assessment Table (Matrix), a tool for
 - aerodromes to perform rwy surface assessments
 - pilots to interpret the reported runway conditions

'in a standardized format based on acft performance data supplied by aircraft manufacturers for each of the stated contaminant types and depths.'

TALPA ARC Airport/Part 139 Working Group Recommendation April 9, 2009

Background: Following the overrun of a Boeing 737 at Midway in December of 2005 the FAA found that the current state of the industry practices did not have adequate guidance and regulation addressing the operation on non-dry, non-wet runways, i.e., contaminated runways. As such they chartered an Aviation Rulemaking Committee (ARC) to address Takeoff and Landing Performance Assessment (TALPA) requirements for the appropriate part 23, 25, 91K, 121, 125, 135, and 139 Parts of 14 CFR. In formulating their recommendations it became clear to the ARC that the ability to communicate actual runway conditions to the pilots in real time and in terms that directly relate to expected aircraft performance was critical to the success of the project. While researching current NOTAM processes numerous significant shortcomings were discovered that hampered this communication effort. This document provides NOTAM formatting recommendations and reporting procedures intended for a digital communication process that would support this major safety initiative and resolve the identified shortcomings. Without accurate real time information pilots cannot safely assess takeoff or landing performance.

At the core of this recommendation is the concept of using the included **Paved Runway Condition Assessment Table** (the matrix) as the basis for performing runway condition assessments by airport operators and for interpreting the reported runway conditions by pilots in a standardized format based on aircraft performance data supplied by aircraft manufacturers for each of the stated contaminant types and depths. The concept attempts, to the maximum extent feasible, to replace subjective judgments of runway conditions with objective assessments which are tied directly to contaminant type and depth categories, which have been determined by aircraft manufacturers to cause specific changes in the aircraft braking performance. However, since the concept is radically different from the traditional practices in this area, several caveats are integral to this recommendation:

In order to succeed, this concept will require extensive retraining of airport operations personnel, dispatchers and pilots to ensure that the application of the matrix is consistent across airports and that interpretation of the results and reporting of braking performance via PIREPs is consistent with the terms of the matrix. Specific training issues requiring attention are identified in Appendix A.

Since the matrix has only been tested at two airports for a portion of the winter of 2008/2009, and some potential discrepancies between the matrix and both airport personnel assessments and PIREPs have been identified under certain conditions, a much more extensive pilot program should be conducted during the winter of 2009/2010. This pilot program should involve 10 - 20 airports and require standardized documentation that can be analyzed in support of refinements to the matrix or the accompanying instructions, if warranted. This pilot program might be conducted under the auspices of the Commercial Aviation Safety Team, using the ASIAT program with its capability of employing FOUQA data to correlate individual airplane stopping performance with runway condition assessment codes in effect at the time. It would also be highly desirable to have airline participation in the pilot program.

During the course of this ARC work effort, numerous cases were identified by the Airport/Part 139 working group where various FAA guidance documents use inconsistent terms or definitions. A thorough harmonization of other guidance documents with this recommendation should be undertaken. The documents identified by the working group are listed in Appendix B.

Advisory Circular 150/5200-30 was amended last winter to address the immediate needs of closing a runway upon receipt of a "nil" braking action report and taking specific actions upon receipt of two successive "poor" braking action reports. There is a pressing need to further revise that AC before next winter to clarify the appropriate method of returning a runway to service after a closing due to "nil" braking reports and to address other inconsistencies the working group has identified.

Because of the close interrelationship between performing runway condition assessments and the reporting of those assessments, these recommendations are presented in two sections: each section must be considered as integral to the overall recommendation. The first section addresses runway condition assessment using the matrix and the second section addresses changes to the reporting system that should be incorporated into the revisions to the NOTAM system, currently being designed. While the use of the matrix as the basis for ultimate implementation of runway condition assessment and reporting is the core recommendation of the working group, it must be treated as a "living document" and any changes that result from additional experience gained during the pilot program, or otherwise, must be fully coordinated with all stakeholders and incorporated into both sections of this recommendation.

TALPA-ARC Matrix

(final version, after validation)

The matrix aims at providing

- objective assessments
- directly related to contaminant type/depth categories
- determined by acft manufacturers to cause specific changes in acft braking performance

Related procedures: FAA AC No:150/5200-28F

Source: FAA - Technical Note DOT/FAA/TC-TN13/22 (June 2013)

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		---	---
5	<ul style="list-style-type: none"> • Frost • Wet (Includes Damp and 1/8" or less depth of Water) 1/8" or less depth of: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • Compacted Snow 	39	Braking deceleration OR directional control is between Good and Medium.	Good to Medium
3	<ul style="list-style-type: none"> • Wet ("Slippery when wet" runway) • Dry Snow or Wet Snow (Any depth) over Compacted Snow Greater than 1/8" depth of: <ul style="list-style-type: none"> • Dry Snow • Wet Snow Warmer than -15°C outside air temperature: <ul style="list-style-type: none"> • Compacted Snow 	30 to 39	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: <ul style="list-style-type: none"> • Water • Slush 	29 to 30	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
1	• Ice ²	21 to 29	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
0	<ul style="list-style-type: none"> • Wet Ice² • Water on top of Compacted Snow² • Dry Snow or Wet Snow over Ice² 	20 or Lower	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

ICAO work to address the rwy condition assessment / reporting issue

Friction Task Force (FTF), est. 2008:

- focused on reviewing ICAO SARPS and proposing amendments thereof
- multidisciplinary approach, key industry experts/stakeholders involved

FTF Phase 1 (2008-2011)

- revised Annex 14 and 15, reporting procedure
- revised Snowtam Form (ESF, no longer 'Mu')
- publication of Circular 329

FTF Phase 2 (2011-2020)

- development of Global Reporting Format concept (2016)
- proposed further amendments to ICAO SARPs, publ. of Circular 355



2008

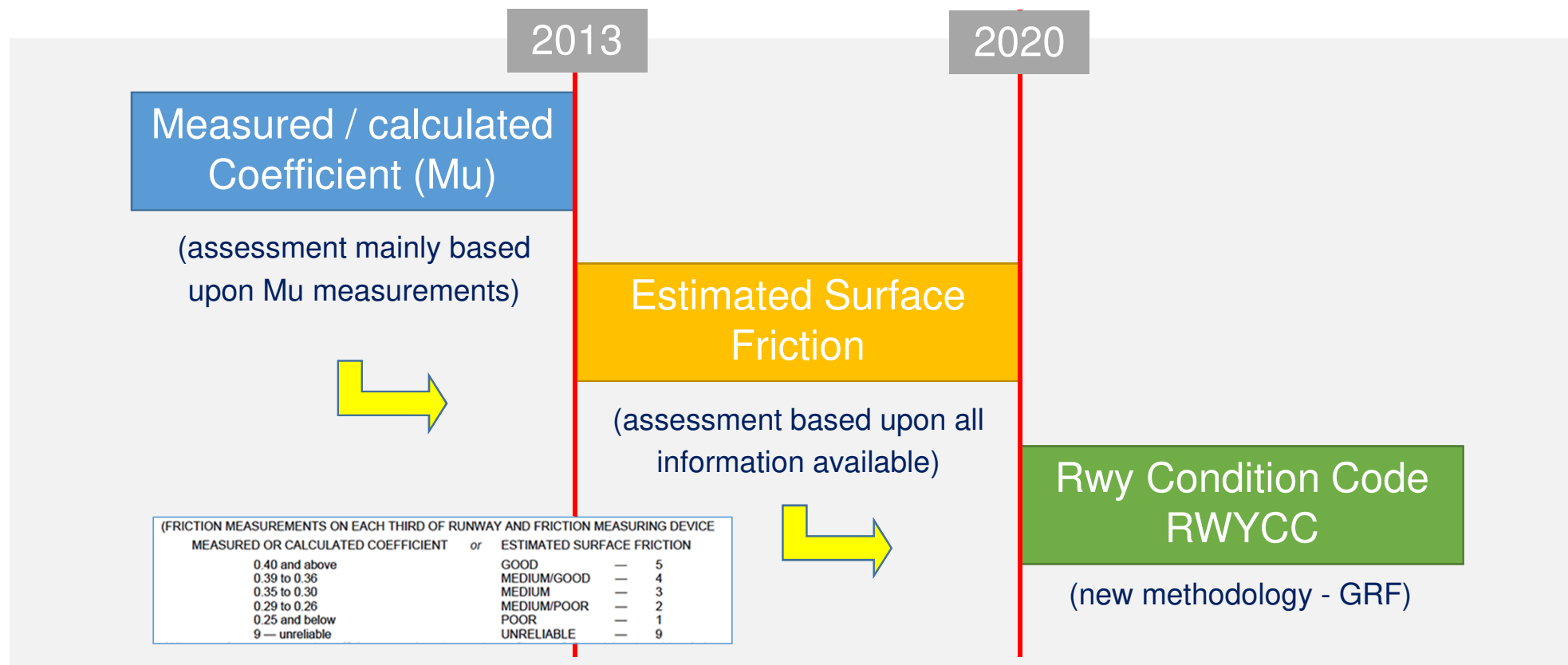
2011

2013

2016

2020

ICAO - Evolution of of rwy condition assessment methodology and philosophy ...



[1.1a]



GRF concept:
**WHY GRF in the perspective of two of the most
interested stakeholders (IATA- IFALPA)**

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Contaminated runway was a contributing factor in 57% of runway excursions accidents



- **Runway excursions** have been consistently one of the **most frequent accident categories** classified, representing **30% of accidents in HY 2020**.
- Since 2011, there have been **148 runway/taxiway excursions** that met the IATA Accident definition. **42% (62)** of these accidents were a **runway overrun**, and **58% (86)** a lateral excursion.

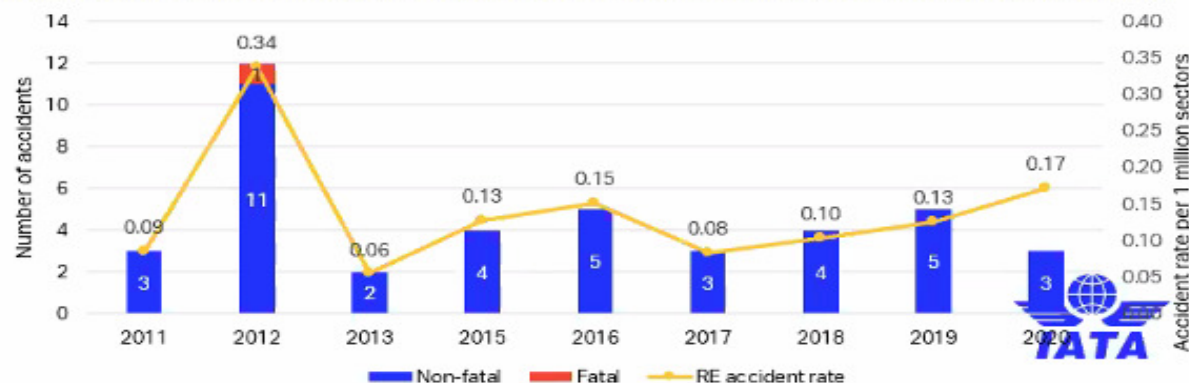
Contaminated runway

Out of these 148 accidents, 28% (41) had **Contaminated runway – poor braking action** as a contributing factor, with an increase in accident rate during the first half of 2020.

76% (31) Jet aircraft

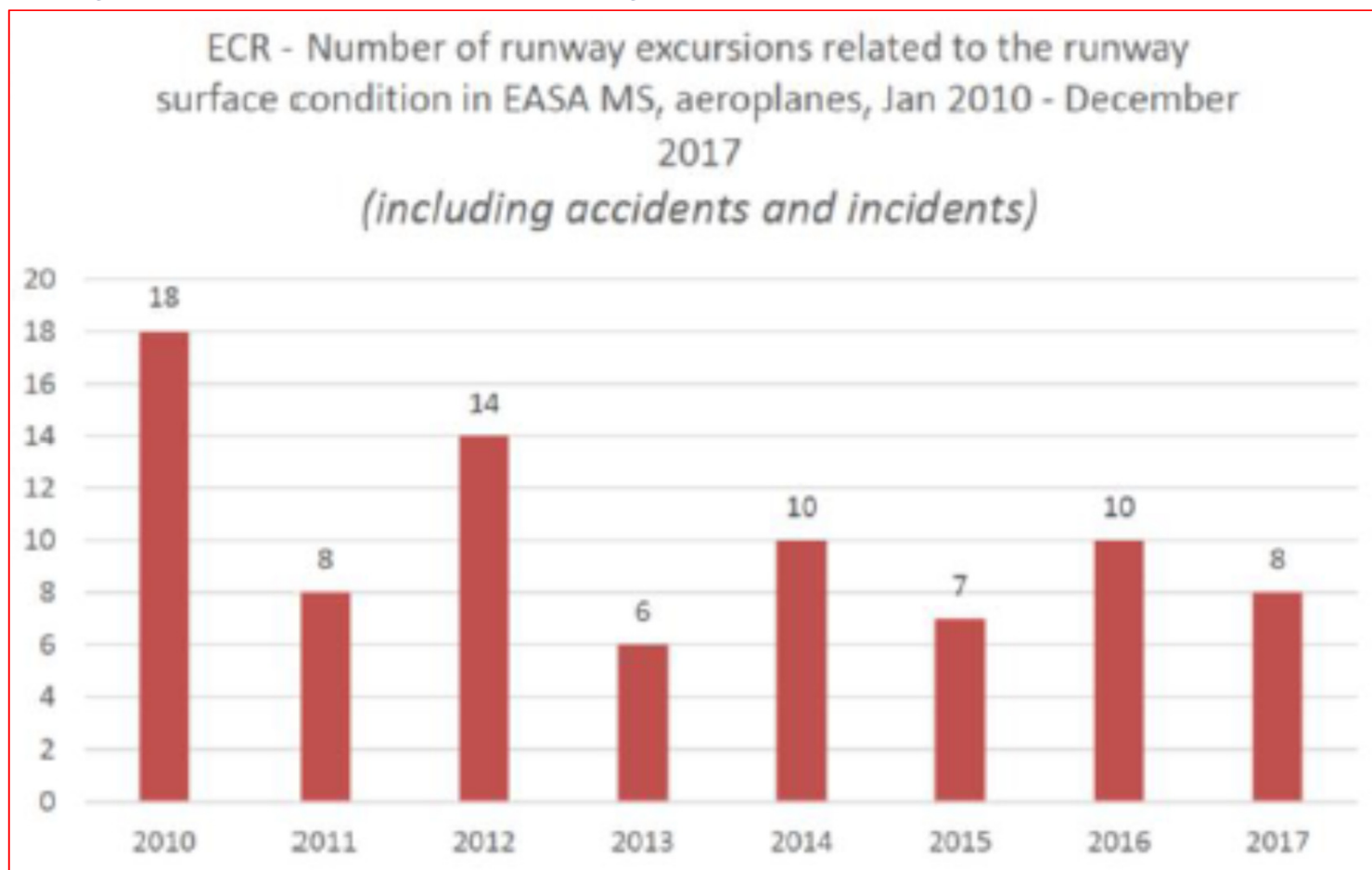
22% (9) Hull losses

Accident data updated as of 30 June 2020



Source: EASA Annual Safety Review 2019

Number of rwy excursions related to rwy surface condition in EASA MS (2010 / 17)



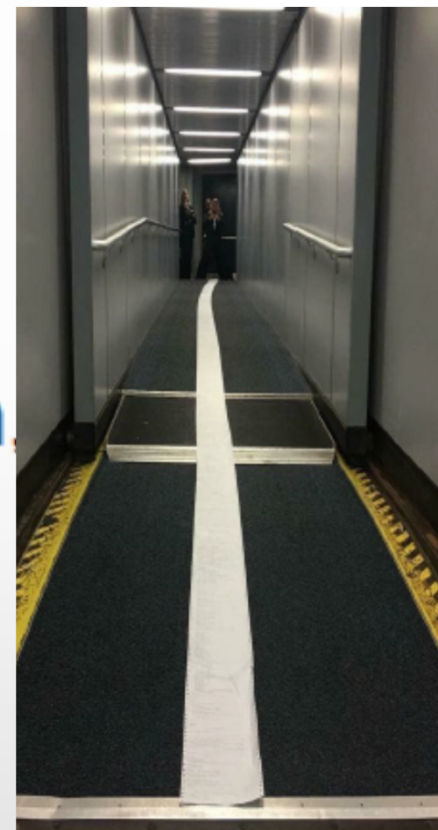
IFALPA



Runway excursions

- Aviation's number one safety risk category
- Caused usually by more than one factor;
 - Unrealistic or Erroneous Perf. Calculations
 - Unstable approach – Hot & High !
 - Long flare or floating
 - Inadequate use of reverse thrust and spoilers
 - Tailwind
- Among the top contributing factors are **poor braking action** due to contaminated runways combined with **shortfalls in the accuracy and timeliness of assessment** and **reporting of the runway surface conditions**.





- Inadequate aircraft performance data.
- Huge NOTAM files where information about runway condition may disappear.
- Different ways of reporting runway condition friction or braking action.
- Increasing information flow & workload
 - Preflight
 - In Flight

Pilots

IFALPA



- They do not read the regulations
 - “Regulations are for the authorities and operators”
- They don't have AIPs
- They do read the operators OPS manuals;
 - Company OPS manual - OM-A
 - The aeroplane AFM / FCOM / OM-B
 - Charts / OM-C
- **THEY NEED TRAINING !**



need for a 'global' approach ...

ADR OPERATOR



ADR operator to assess the runway sfc condition and provide the relevant information to AIS/ATS

AIS / ATS / MET



AIS / ATS to disseminate the relevant information in a timely manner to pilots

ACFT OPERATOR ACFT MANUFACTURERS



Pilots to use the information for acft landing performance calculation purposes

... and a common language for all the players !

Global Reporting Format (GRF) for Runway Surface Conditions Courses

This course aims to assist aviation personnel to understand, use and meet the new ICAO requirements for runway surface condition assessment and reporting requirements as outlined in ICAO Annex 14, Volume 1; Doc 10064 and Circular 355.

ICAO Compliance date 4 November 2021



ICAO-ACI Global Reporting Format (GRF)

Target Population:

- Airport Operations Management, Officers and Staff
- Airport Emergency Managers, Officers and Staff
- Airport Safety Managers, Officers and Staff

Structure of the course:

Course duration: 3 Hours
Delivery mode: Online Course
Language of instruction: English

ICAO-IATA Introduction to the Global Reporting Format (GRF)

Target Population:

- Flight crew
- Airline operational staff
- Dispatchers

Structure of the course:

Course duration: 3 Hours
Delivery mode: Online Course
Language of instruction: English



ICAO-IATA GRF course link: <https://www.icao.int/training/Pages/training-catalogue-details.aspx?catid=4067&language=0®ion=&ITP=0>

ICAO-ACI GRF Course: <https://www.icao.int/training/Pages/training-catalogue-details.aspx?catid=2658&language=0®ion=&ITP=0>

[1.1b]



Global Reporting Format- GRF Benefits and challenges

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What is 'GRF' about ?

GRF (Global Reporting Format) is *'a new ICAO harmonized methodology for assessing and reporting runway surface conditions (on wet / contaminated rwys), enabling the harmonized assessment and reporting of runway surface correlating the reported conditions with aeroplanes performance, aimed at the improvement of flight crew assessment of take-off and landing performance in light of supporting mitigation of the risk of rwy excursions.'*

GRF



Global - unique **common** 'code' spoken by all the players, on a global basis
Reporting - focused on **reporting** runway conditions to the **final user**
Format - use of **standardized** information layout



Applicability: worldwide as of Nov. 2021, but in
EASA MS as of 12 Aug. 2021 !!!

- **This implementation is expected to reduce the risk of runway excursions since the GRF improves the accuracy and timeliness of runway condition assessment and harmonizes this information globally**

Benefits for Operators

- Harmonized Global Standard
- Easier to understand than current SNOWTAM
- Direct Relation to Operational Procedures and Performance
- Improved Reporting Relevance and Timeliness
- Better situation awareness for Pilots
- Same information on SNOWTAM, ATIS, ATC
- AIREPs for continuous observation of changes

Challenges for Operators

- Decision making for varying conditions along runway length
- Length of ATIS reports for multi-runway airports
- Getting the RCR to the cockpit in-flight
- Takeoff
 - Missing contaminants in tables and performance software
 - Slippery Wet
 - Downgraded RWYCC
- Making Special Air Reports (AIREPS)



[1.2]

ICAO regulatory framework

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Adoption of GRF - coordinated amendment of ICAO Annexes & Docs ICAO ...

Annex 3 (Meteor. Service ...)
Annex 6-II (Operations of acft)
Annex 8 (Airworthiness of acft)
Annex 14-I (Aerodromes)
Annex 11 (ATS)
Annex 15 (AIS)

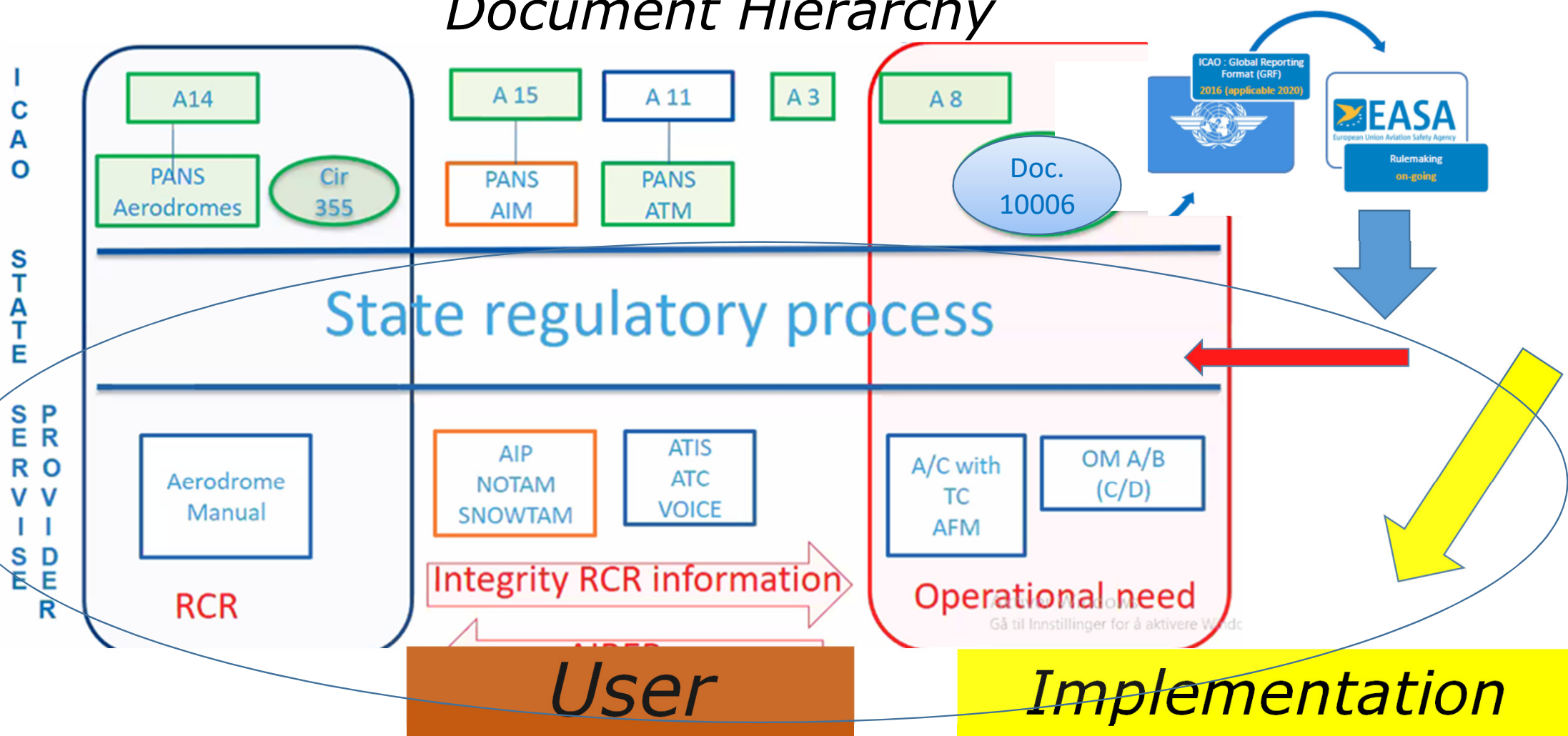
Circular 355
(replacing Circ. 329)

Doc 9981 PANS - Aerodromes
Doc 10066 PANS - AIM
Doc 4444 PANS - ATM
Doc 10064 Acft Performance Manual*
Circular 355 (new, replaces C. 329)



* new, unedited version

Document Hierarchy



Amendment 39B to Annex 15

Amendment 39B arises from:

- Recommendations of the Friction Task Force of the Aerodrome Design and Operations Panel (ADOP) relating to the ***use of a global reporting format for assessing and reporting runway surface conditions.***



<i>Amendment</i>	<i>Source(s)</i>	<i>Subject</i>	<i>Adopted/Approved Effective Applicable</i>
39-B	Friction Task Force of the Aerodrome Design and Operations Panel (ADOP)	Amendment concerning the use of a global reporting format for assessing and reporting runway surface conditions	22 February 2016 11 July 2016 5 November 2020

Major changes of amendment 39B

- SNOWTAM Definition
- SNOWTAM Provisions
- SNOWTAM Format (reporting format for assessing and reporting runway surface conditions has changed)

SNOWTAM.[†] A special series NOTAM notifying the presence or removal of hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area, by means of a specific format.

SNOWTAM.^{††} A special series NOTAM given in a standard format providing a surface condition report notifying the presence or cessation of hazardous conditions due to snow, ice, slush, frost, standing water or water associated with snow, slush, ice or frost on the movement area.

[†] Applicable until 3 November 2021.

^{††} Applicable as of 4 November 2021.

Major Changes in SNOWTAM Provisions

SNOWTAM Provisions (PANS AIM)

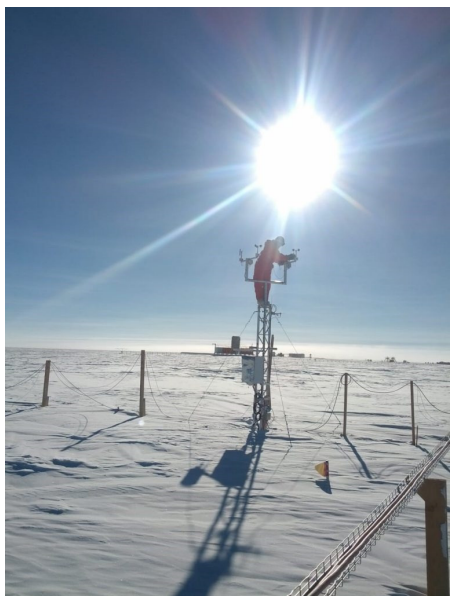
- “Assessment” instead of “Observation”
- The letters used to indicate items in SNOWTAM (A, B, C, ...) are only used for reference purpose and should not be included in the messages.
- The maximum validity of SNOWTAM is 8 hours (not 24 hours).
- A SNOWTAM cancels the previous SNOWTAM
- New SNOWTAM shall be issued whenever a new Runway Condition Report (RCR) is received.
- Mandatory information in RCR / SNOWTAM:
 - i) AERODROME LOCATION INDICATOR
 - ii) DATE AND TIME OF ASSESSMENT
 - iii) LOWER RUNWAY DESIGNATOR NUMBER
 - iv) RUNWAY CONDITION CODE FOR EACH RUNWAY THIRD
 - v) CONDITION DESCRIPTION FOR EACH RUNWAY THIRD

Major Changes in SNOWTAM Provisions

SNOWTAM Provisions (PANS AIM)

Notes (from PANS Aerodrome)

- *RCR shall be initiated when a significant change in runway surface condition occurs due to water, snow, slush, ice or frost. Reporting of the runway surface condition should continue to reflect significant changes until the runway is no longer contaminated.*
- *A change in the runway surface condition used in the runway condition report is considered significant whenever there is:*
 - a) any change in the RWYCC;*
 - b) any change in contaminant type;*
 - c) any change in reportable contaminant coverage according to Table II-1-1;*
 - d) any change in contaminant depth according to [Table II-1-2](#); and*
 - e) any other information, for example a pilot report of runway braking action, which according to assessment techniques used, are known to be significant.*



- New SNOWTAM shall be issued whenever a new runway condition report (RCR) is received from the aerodrome operator.
- As of 4 November 2021, the maximum validity of SNOWTAM is 8 hours.
- A SNOWTAM cancels the previous SNOWTAM. When a new SNOWTAM is issued for a specific aerodrome that has another valid SNOWTAM, the new one automatically replaces the older SNOWTAM (there is no need to reference the older SNOWTAM in the new SNOWTAM, as what we do for NOTAM).
- the letters used to indicate items (A to T; third column of the SNOWTAM template) are only used for reference purpose and should not be included in the messages.

SNOWTAM Provisions moved to PANS AIM



- After amendment 40 to Annex 15 and with the introduction of the new PANS AIM (DOC 10066), the provisions related to SNOWTAM were moved to PANS AIM.

SNOWTAM Provisions moved to PANS AIM



After amendment 40 to Annex 15 and with the introduction of the new PANS AIM (DOC 10066), the provisions related to SNOWTAM were moved to PANS AIM.

AMENDMENT NO. 2

TO THE

PROCEDURES

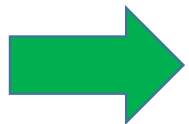
FOR

AIR NAVIGATION SERVICES

AERONAUTICAL INFORMATION MANAGEMENT

(Doc 10066)

FIRST EDITION — 2018



j) Mandatory information is:

- 1) AERODROME LOCATION INDICATOR;
- 2) DATE AND TIME OF ASSESSMENT;
- 3) LOWER RUNWAY DESIGNATOR NUMBER;
- 4) RUNWAY CONDITION CODE FOR EACH RUNWAY THIRD; and
- 5) CONDITION DESCRIPTION FOR EACH RUNWAY THIRD (when runway condition code (RWYCC) is reported 1–5)

Appendix 4

SNOWTAM FORMAT

(see Chapter 5, 5.2.5.1.4)

(applicable until 3 November 2021)

(COM heading)	(PRIORITY INDICATOR)	(ADDRESSES)		->
(Abbreviated heading)	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)		->
(Serial number)	(SWAA) SERIAL NUMBER	(LOCATION INDICATOR)	(DATE-TIME OF OBSERVATION)	(OPTIONAL GROUP)
S	W	X	X	
SNOWTAM (Serial number) ->				
(AERODROME LOCATION INDICATOR)				A) ->
(DATE-TIME OF OBSERVATION (Time of completion of measurement in UTC))				B) ->
(RUNWAY DESIGNATOR)				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))				F) ->
NIL - CLEAR AND DRY 1 - DAMP 2 - WET 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				
(MEAN DEPTH (mm) FOR EACH THIRD OF TOTAL RUNWAY LENGTH)				G) ->
(ESTIMATED SURFACE FRICTION ON EACH THIRD OF RUNWAY)				H) ->
ESTIMATED SURFACE FRICTION GOOD - 5 MEDIUMGOOD - 4 MEDIUM - 3 MEDIUMPOOR - 2 POOR - 1 (The intermediate values of "MEDIUMGOOD" and "MEDIUMPOOR" provide for more precise information in the estimate when conditions are found to be between medium and either good or poor.)				
(CRITICAL SNOWBANKS (If present, insert height (m)/distance from the edge of runway (m) followed by 'L', 'R' or 'LR' if applicable))				I) ->
(RUNWAY LIGHTS (If obscured, insert "YES" followed by 'L', 'R' or both 'LR' if applicable))				J) ->
(FURTHER CLEARANCE (If planned, insert length (m)/width (m) to be cleared or if to full dimensions, insert "TOTAL"))				K) ->
(FURTHER CLEARANCE EXPECTED TO BE COMPLETED BY ... (UTC))				L) ->
(TAXWAY (If no appropriate taxiway is available, insert "NO"))				M) ->
(TAXWAY SNOWBANKS (If higher than 60 cm, insert "YES" followed by the lateral distance apart, m))				N) ->
(APRON (If unusable insert "NO"))				O) ->
(NEXT PLANNED OBSERVATION/MEASUREMENT IS FOR) (month/day/year in UTC)				P) ->
(PLAIN-LANGUAGE REMARKS (Including contaminant coverage and other operationally significant information, e.g. standing de-icing chemicals))				Q) ->
NOTES: 1. "Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2. 2. Information on other runways, repeat from B to P. 3. Words in brackets () not to be transmitted.				

SIGNATURE OF ORIGINATOR (not for transmission)

GG EHAMZQZX EDDFZQZX EKCHZQZX
 070645 LSZHNYX
 SWLS0149 LSZH 11070700
 (SNOWTAM 0149
 A) LSZH
 B) 11070620 C) 02 D)...P)
 B) 11070600 C) 09 D)...P)
 B) 11070700 C) 12 D)...P)
 R) NO S) 11070920
 T) DEICING

SNOWTAM Template applicable till
 3rd November 2021 in ICAO domain,
 till 11 th August 2021 in EU

Appendix 4. SNOWTAM FORMAT

(See Chapter 5, 5.2.5.1.4)

(applicable as of 4 November 2021)

(COM heading)	(PRIORITY INDICATOR)	(ADDRESSES)		«B
	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)		«B
(Abbreviated heading)	(SWAY SERIAL NUMBER)	(LOCATION INDICATOR)	DATE/TIME OF ASSESSMENT	(OPTIONAL GROUP)
	S W + +			«B

SNOWTAM	(Serial number)	«B
Aeroplane performance calculation section		
(AERODROME LOCATION INDICATOR)	M A)	«B
(DATE/TIME OF ASSESSMENT (Time of completion of assessment in UTC))	M B)	→
(LOWER RUNWAY DESIGNATION NUMBER)	M C)	→
(RUNWAY CONDITION CODE (RWYOC) ON EACH RUNWAY THIRD) (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)	M D)	/ / →
(PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD)	C E)	/ / →
(DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH RUNWAY THIRD)	C F)	/ / →
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH) (Observed on each runway third, starting from threshold having the lower runway designation number)	M G)	/ / →
COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLUSH STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE		→
(WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITION CODES APPLY, IF LESS THAN PUBLISHED WIDTH)	O H)	«B
Situational awareness section		
(REDUCED RUNWAY LENGTH, IF LESS THAN PUBLISHED LENGTH (m))	O I)	→
(DRIFTING SNOW ON THE RUNWAY)	O J)	→
(LOOSE SAND ON THE RUNWAY)	O K)	→
(CHEMICAL TREATMENT ON THE RUNWAY)	O L)	→
(SNOWBANKS ON THE RUNWAY) (If present, distance from runway centre line (m) followed by "L", "R" or "LR" as applicable)	O M)	→
(SNOWBANKS ON A TAXIWAY)	O N)	→
(SNOWBANKS ADJACENT TO THE RUNWAY)	O O)	→
(TAXIWAY CONDITIONS)	O P)	→
(APRON CONDITIONS)	O R)	→
(MEASURED FRICTION COEFFICIENT)	O S)	→
(PLAIN-LANGUAGE REMARKS)	O T)	}

NOTES:

1. *Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2 or otherwise applicable aerodrome identifier.
2. Information on other runways, repeat from B to H.
3. Information in the situational awareness section repeated for each runway, taxiway and apron. Repeat as applicable when reported.
4. Words in brackets () not to be transmitted.
5. For letters A) to T) refer to the instructions for the completion of the SNOWTAM Format paragraph 1, item b).

EXAMPLE OF COMPLETED SNOWTAM FORMAT

Example SNOWTAM 1

GG EADBZQZX EADNZQZX EADSZQZX
170100 EADDYNYX
SWEA0149 EADD 02170055
(SNOWTAM 0149
EADD
02170055 09L 5/5/5 100/100/100 NR/NR/03 WET/WET/WET SNOW
)

Example SNOWTAM 2

GG EADBZQZX EADNZQZX EADSZQZX
170140 EADDYNYX
SWEA0150 EADD 02170135
(SNOWTAM 0150
EADD
02170055 09L 5/5/5 100/100/100 NR/NR/03 WET/WET/WET SNOW
02170135 09R 5/2/2 100/50/75 NR/06/06 WET/SLUSH/SLUSH
)

SNOWTAM Template applicable from 4th November 2021 in ICAO domain from 12 August 2021 in EU

NEW

GG EADBZQZX EADNZQZX EADSZQZX
170350 EADDYNYX

SWEA0149 EADD 02170345

(SNOWTAM 0149

EADD 02170345 09L 5/5/5 100/100/100 NR/NR/NR
WET/WET/WET

EADD 02170134 09R 5/2/2 100/50/75 NR/06/06
WET/SLUSH/SLUSH

EADD 02170225 09C 2/3/2 75/100/100 06/12/12
SLUSH/WET SNOW/STANDING WATER

SNOW 35

DRIFTING SNOW. RWY 09L LOOSE SAND. RWY 09R
CHEMICALLY TREATED. RWY 09C CHEMICALLY
TREATED.)

OLD

GG EHAMZQZX EDDFZQZX EKCHZQZX
070645 LSZHNYX

SWLS0149 LSZH 11070700

(SNOWTAM 0149

A) LSZH

B) 11070620 C) 02 D)...P)

B) 11070600 C) 09 D)...P)

B) 11070700 C) 12 D)...P)

R) NO S) 11070920

T) DEICING

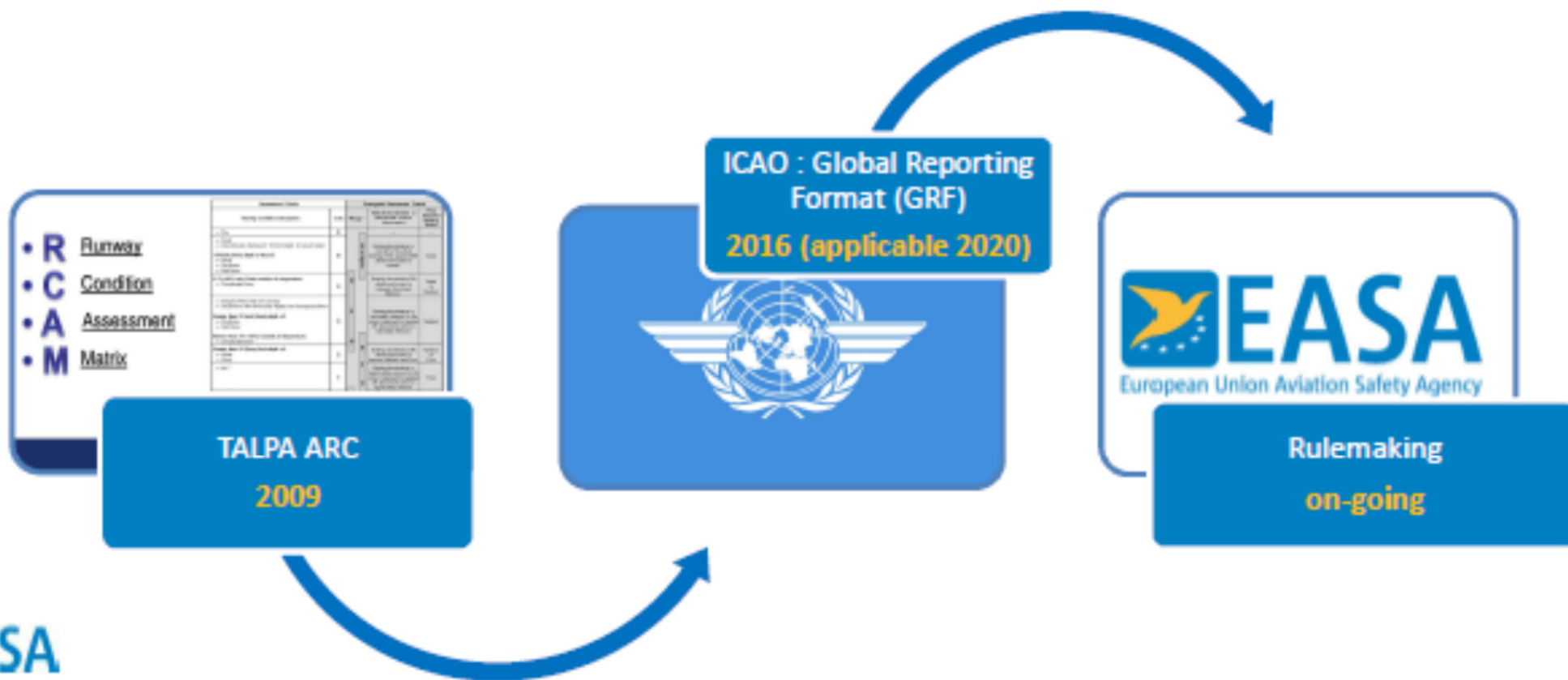


[1.3]

EASA framework for GRF

T.Col Angelo ROMITO

Direzione Regolazione Aeroporti e Spazio Aereo



EASA regulatory process-overview- Principles



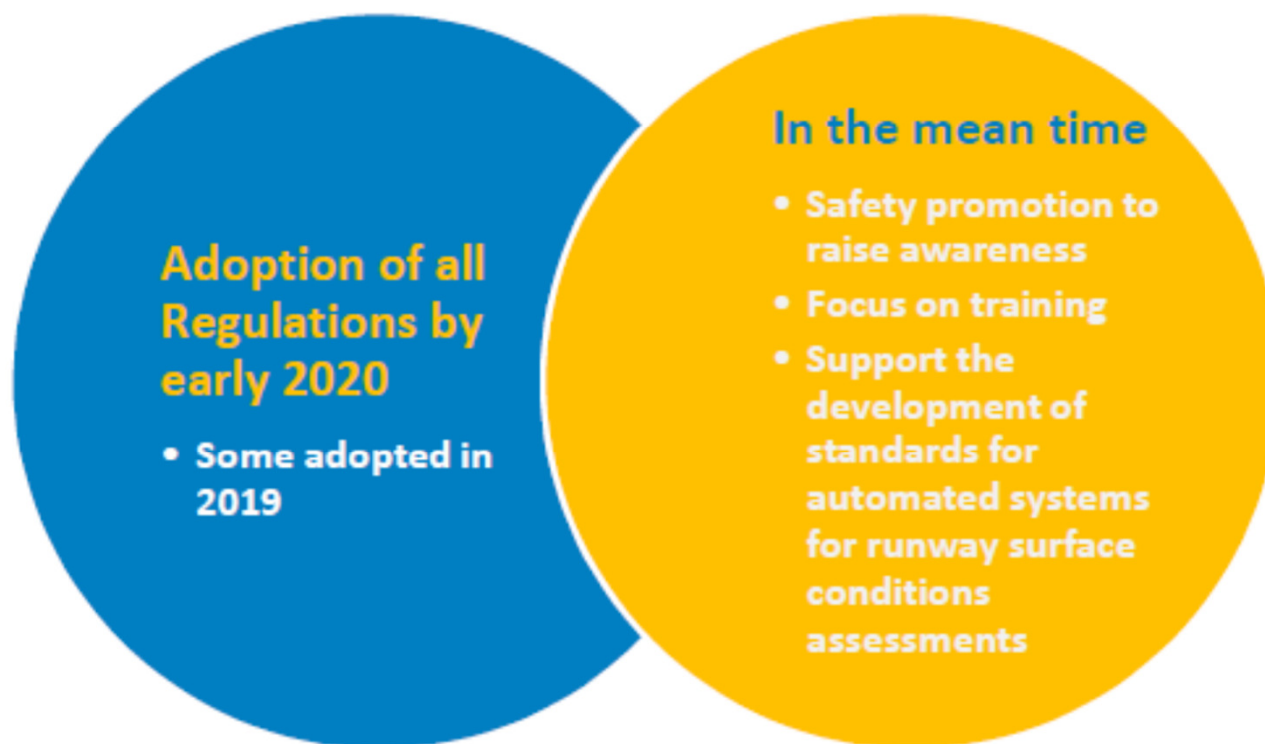
- **Follow ICAO provisions**
 - To support global application and implement the GRF
- **Keep a balance between implementing rules (IR), acceptable means of compliance (AMC) and guidance material (GM)**
 - Reviewing and analysing every ICAO provision
 - Basic principles of the GRF kept at rule level to prohibit deviations
 - Procedural issues included in the acceptable means of compliance to allow some flexibility in the implementation
 - Extensive guidance material provided in order to explain the GRF

Implementation of GRF

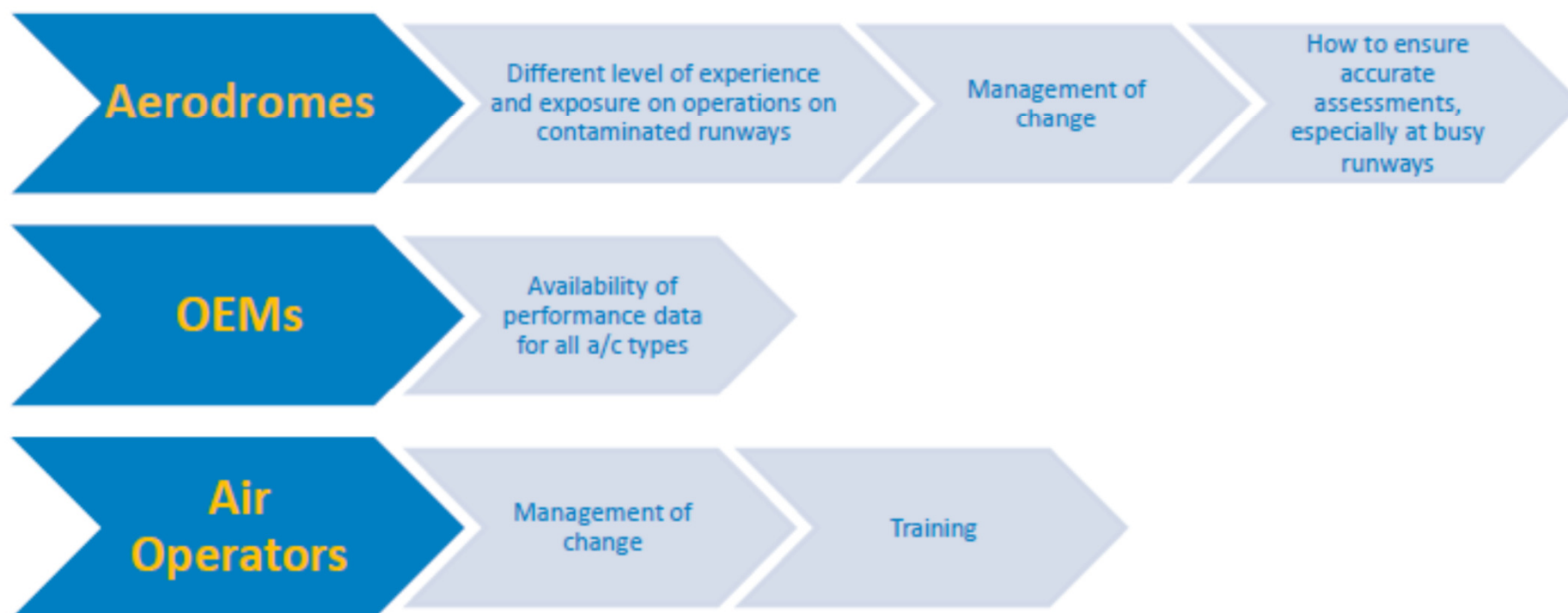
→ Principles

- Follow ICAO provisions
 - To support Global application
- Keep a balance between rules, acceptable means of compliance and guidance material
 - Reviewing and analysing every ICAO provision
 - Basic principles of the GRF are kept at rule level to prohibit deviations
 - Procedural issues are included in the acceptable means of compliance to allow some flexibility in the implementation
 - Extensive guidance material is provided in order to explain the GRF

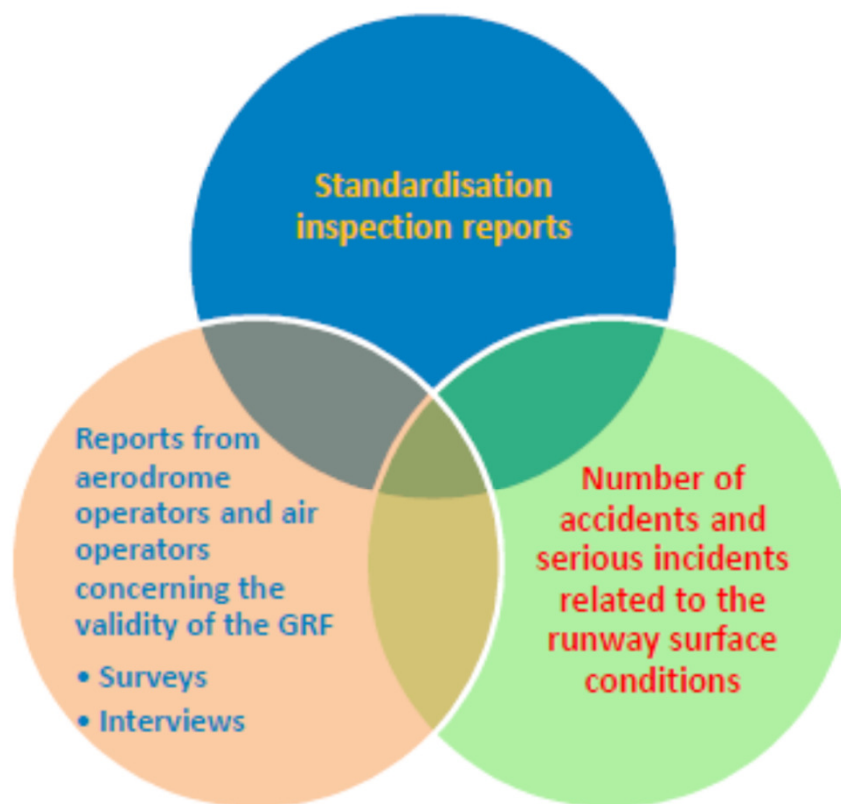
Implementation - 1



Implementation - 2



Implementation - 3



Implementation of GRF



- [Opinion 2/2019](#) – Changes to Reg. (EU) 965/2012 – Air Operations
- [Opinion 2/2018](#) – Changes to Reg. (EU) 2017/373 – AIS & MET
- [Opinion 3/2019](#) - Changes to Reg. (EU) 139/2014 – Aerodromes & Reg. (EU) 923/2012 – Standardized European Rules of the Air & Reg. (EU) 2017/373 – ATM/ANS

Opinion 2/2018 –
Changes to Reg. (EU)
2017/373 – AIS & MET

Opinion 2/2019 –
Changes to Reg. (EU)
965/2012 – Air
Operations

Opinion 3/2019 - Changes to
Reg. (EU) 139/2014 –
Aerodromes & Reg. (EU)
923/2012 – Standardized
European Rules of the Air &
Reg. (EU) 2017/373 –
ATM/ANS

Upcoming ED Decisions –
CS/AMC/GM

EASA regulatory process

Changes stemming from EASA Regulation



Definitions - SNOWTAM

- Addition of two (2) new terms for describing runway surface condition
 - Specially prepared winter runway
 - Runway covered with compacted snow or ice, which has received special treatment and has improved friction characteristics (RWYCC greater than 3)
 - Slippery wet
 - Associated with RWYCC 3 when the runway is wet and below the minimum friction level
- Changes to the SNOWTAM Format
 - To include the two terms above
 - To simplify the situational awareness section in order to avoid long NOTAM strings

Changes stemming from EASA Regulation

METAR – Reporting

- Changes to the METAR Format
 - Removal of runway surface conditions
- Obligation of the PIC to report back when braking action encountered is not as good as reported
- Obligation of the ATS to report to the aerodrome operator when a pilot indicates that the braking action is not as good as reported.



[2]
Global Reporting Format- GRF
RWY conditions assessment and reporting

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Direzione Regolazione Aeroporti e Spazio Aereo

‘Runway Condition Report (RCR)’ concept

The aerodrome operator is required to report to AIS/ATS on matters of operational significance affecting operations on the movement area with regard to the presence of:

- water
- snow
- slush
- ice
- frost
- anti-icing or de-icing liquid chemicals or other contaminants
- snowbanks or drifts

Ref. new ADR.OPS.A.060

Reporting of runway surface condition

The aerodrome operator shall report the rwy surface condition over each third of the runway using a runway condition report (RCR), including the RWYCC (0 to 6), the contaminant coverage and depth, and a description using the following terms: [...]

COMPACTED SNOW	STANDING WATER;
DRY	WATER ON TOP OF COMPACTED SNOW
DRY SNOW	WET
DRY SNOW ON TOP OF COMPACTED SNOW	WET ICE
DRY SNOW ON TOP OF ICE	WET SNOW
FROST	WET SNOW ON TOP OF COMPACTED SNOW
ICE	WET SNOW ON TOP OF ICE
SLIPPERY WET	CHEMICALLY TREATED
SLUSH	LOOSE SAND
SPECIALLY PREPARED WINTER RWY	

Ref.: new ADR.OPS.A.065

- Reporting shall start when a **significant change** in runway surface condition occurs due to water, snow, slush, ice or frost.
- Subsequent reports required to reflect significant changes until the runway is no longer contaminated.*
- When a paved rwy or portion thereof is 'slippery wet', the aerodrome operator shall issuing a NOTAM to inform pilots and describe the location of the affected portion.
- N.B.: **Friction measurements shall not be reported !**

* In this case, the operator shall issue an RCR that states that the runway is wet or dry (as appropriate).

Ref.: new ADR.OPS.A.065

Runway Condition Report (RCR)

- RCR is a comprehensive standardized report relating to runway surface condition and its effect on the aeroplane landing and take-off performance.

(New definition added in Annex I to Reg. 139/2014)

- RCR consists of 2 sections:
 - Airplane Performance Calculation Section
 - Situational Awareness Section.

Ref.: Draft EASA AMC2 ADR.OPS.A.065(a)

Philosophy of the RCR

- The aerodrome operator assesses the runway surface condition whenever water, snow, slush, ice, frost are present and reports the information by means of a RCR.
- The RCR describes a basic structure applicable for all the climatic conditions to which movement areas are exposed.
- The RCR format (based on the type, depth and coverage of contaminants) is the best assessment of runway surface condition by the aerodrome operator.
- The RCR provides the flight crew with the information needed for the safe operation of the airplane (performance calculation).

Ref.: Draft EASA GM1 ADR.OPS.A.065(a)

RCR - Aeroplane performance calculation section

Information to be included

- Aerodrome location indicator (mandatory)
- date and time of assessment (mandatory)
- lower runway designation number (mandatory)
- RWYCC for each runway third (mandatory)
- % coverage contaminant for rwy third (conditional)
- depth of loose contaminant for rwy third* (conditional)
- condition description for runway third** (mandatory)
- width of runway (conditional) if less than published

* for standing water, dry snow, wet, snow, slush only

** (ADR.OPS.A.065(a))

Ref.: Draft EASA AMC2 ADR.OPS.A.065(a)

Aeroplane performance calculation section			
(AERODROME LOCATION INDICATOR)	M	A)	<=
(DATE/TIME OF ASSESSMENT <i>(Time of completion of assessment in UTC)</i>)	M	B)	→
(LOWER RUNWAY DESIGNATION NUMBER)	M	C)	→
(RUNWAY CONDITION CODE (RWYCC) ON EACH RUNWAY THIRD) (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)	M	D)	// →
(PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD)	C	E)	// →
DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH RUNWAY THIRD)	C	F)	// →
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH (Observed on each runway third, starting from threshold having the lower runway designation number)	M	G)	//
COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLIPPERY WET SLUSH SPECIALLY PREPARED WINTER RUNWAY STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE			→
(WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITIONS CODES APPLY, IF LESS THAN THE PUBLISHED WIDTH)	O	H)	<=

The 'airplane performance calculation section' is reported as

- a string of grouped information,
- separated by a space ' '
- ending with a return and a two-line feed '<<≡', in order to distinguish the aeroplane performance calculation section from
 - the following situational awareness section or
 - the following performance calculation section of another rwy.

Example

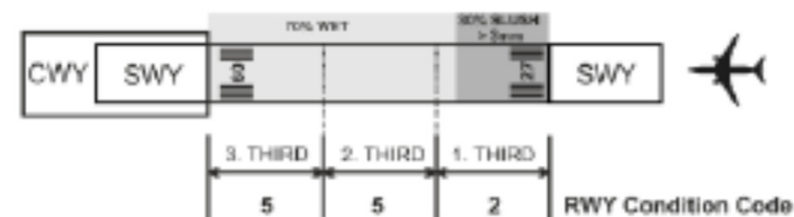
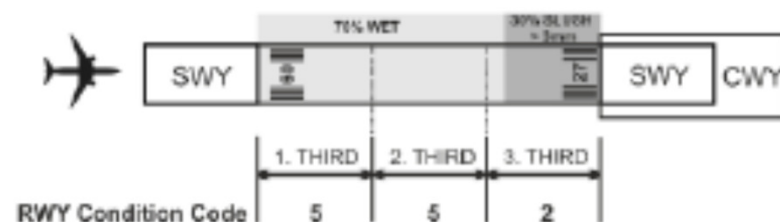
```
EADD _02170055 _09L _5/5/5 _100/100/100 _NR/NR/NR _WET/WET/WET
```

Ref.: Draft EASA GM2 ADR.OPS.A.065(a)

RCR - Runway condition code for each runway third

The RWYCC is expressed as one-digit number identifying each rwy third, reported in a three-character group separated by a '/' for each third.

- The direction for listing the runway thirds on the Snowtam is always as seen from the lower designation number.
- However, **when information is transmitted by ATS to flight crews**, the sections are referred to as the first, second or third part of the rwy as seen in the direction of landing or take-off.



Ref.: Draft EASA GM2 ADR.OPS.A.065(a)

RCR - Per cent coverage contaminant for each runway third

- Number identifying the percentage coverage, reported in an up-to-nine character group (separated by a '/' for each runway third).
- Based upon an even distribution within the rwy thirds (25-50-75-100); in case of uneven distribution additional info is given in the plain-language remark box of the situational awareness section.
- **Not reported for any rwy third dry or covered with less than 10%.**
- When no information is to be reported, 'NR' is inserted at the relevant position of the message, to indicate to the user no information exists.

Ref.: Draft EASA GM2 ADR.OPS.A.065(a)

RCR - Depth of loose contaminant

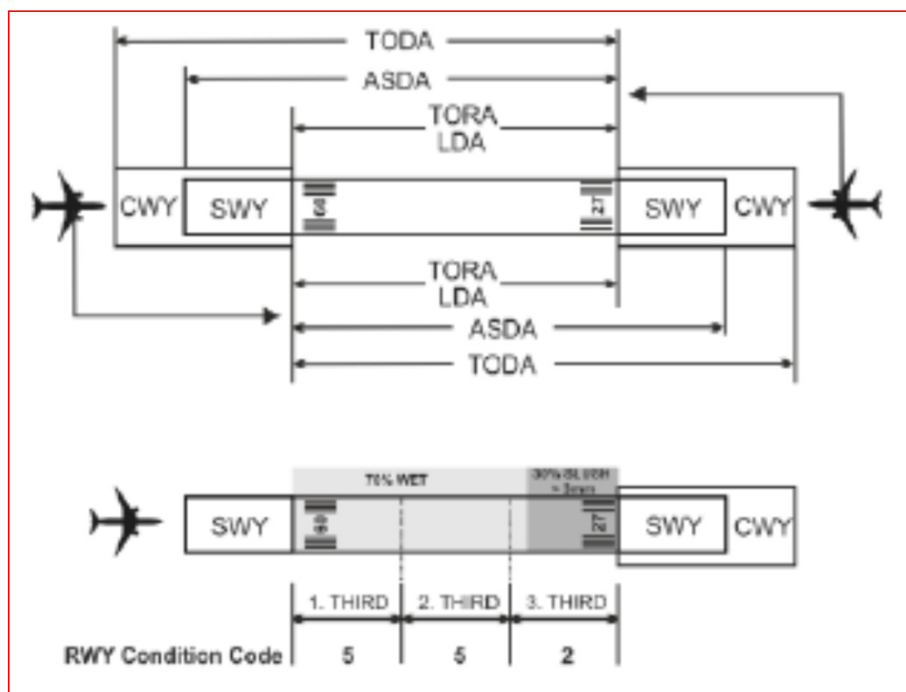
- expressed as a 2- or 3-digit number representing the assessed depth (mm) of the contaminant for each third (6- to 9-character group sep. by a '/' for each rwy third);
- to be reported for dry / wet snow, slush or standing water only (for each rwy third); not reported ('NR') for other contaminant types;
- based upon an even distribution* within the runway thirds following an assessment.

* When the depth of the contaminants varies significantly within a runway third, additional information is to be given in the plain-language remark part of the situational awareness section of the RCR. Draft EASA GM1 ADR.OPS.A.065(b);(c)

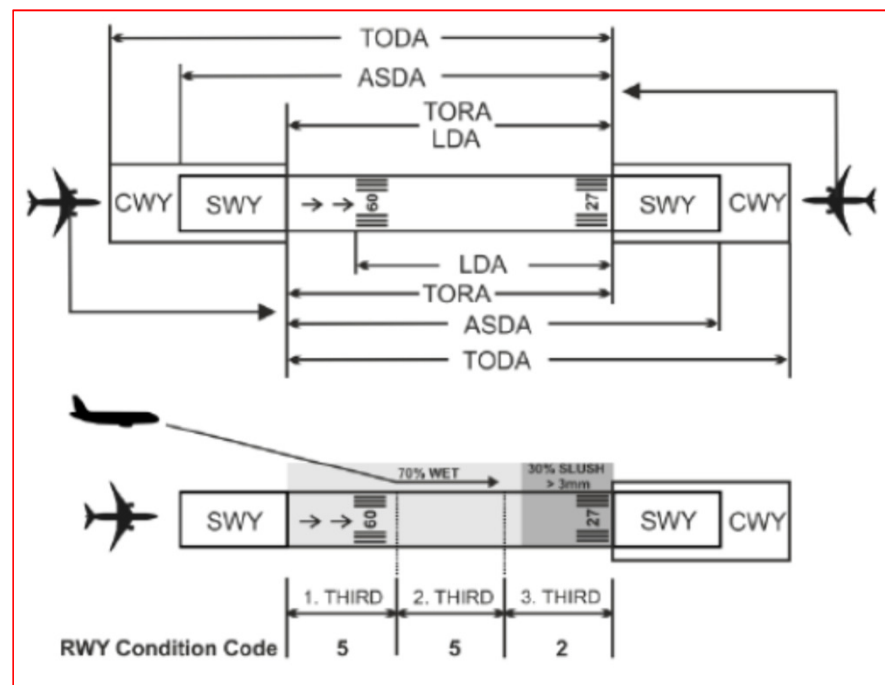
Ref.: Draft EASA GM2 ADR.OPS.A.065(a)

Reporting of RWYCC vs declared distances

A - 'balanced field'



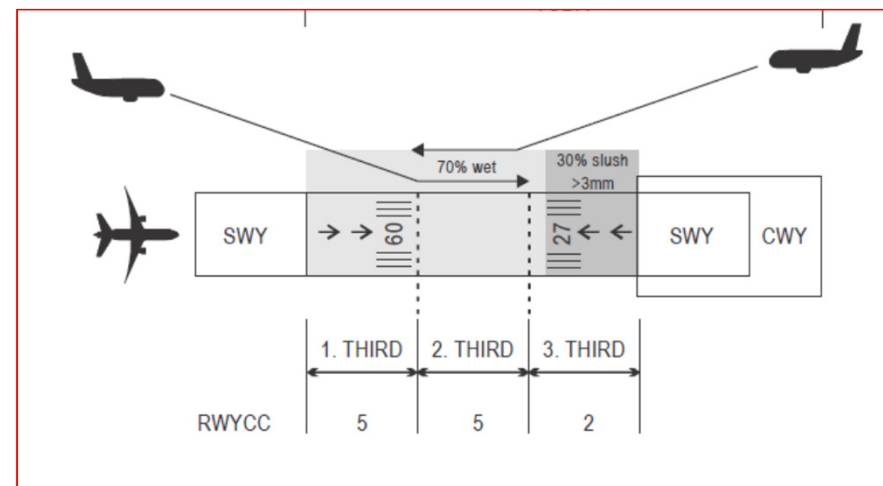
B - 'displaced threshold'



The information reported in the RCR refers to the physical extent of the runway, notwithstanding the length of the declared distances (position of the threshold).

This is an important concept for flight crew to understand when interpreting the RCR, especially when:

- landing on a runway with a significantly displaced threshold
- performing an intersection take-off
- part of a rwy is declared as a RESA but is available for take-off



Source: ICAO Circular 355

RCR - Situational awareness section

Information to be included

- reduced runway length * (conditional)
- drifting snow on the runway (conditional)
- loose sand on the runway (conditional)
- chemical treatment on the runway (conditional)
- snowbanks on the runway (conditional)
- snowbanks on the taxiway (conditional)
- snowbanks adjacent to the runway (conditional)
- taxiway conditions (conditional)
- apron conditions (conditional)
- plain-language remarks (optional)

Situational awareness section			
(REDUCED RUNWAY LENGTH, IF LESS THAN THE PUBLISHED LENGTH (m))	0	I)	→
(DRIFTING SNOW ON THE RUNWAY)	0	J)	→
(LOOSE SAND ON THE RUNWAY)	0	K)	→
(CHEMICAL TREATMENT ON RUNWAY)	0	L)	→
(SNOWBANKS ON THE RUNWAY) (If present, distance from runway centreline (m) followed by 'L', 'R' or 'LR' as applicable))	0	M)	→
(SNOWBANKS ON A TAXIWAY)	0	N)	→
(SNOWBANKS ADJACENT TO THE RUNWAY)	0	O)	→
(TAXIWAY CONDITIONS)	0	P)	→
(APRON CONDITIONS)	0	R)	→
(MEASURED FRICTION COEFFICIENT)	0	S)	→
(PLAIN-LANGUAGE REMARKS)	0	T)) <<≡
NOTES:			

* when a NOTAM is published with a new set of declared distances affecting the landing distance avbl

Ref.: Draft EASA AMC2 ADR.OPS.A.065(a)

Assessment Criteria		Downgrade Assessment Criteria	
RWYCC	Runway surface description	Aeroplane deceleration or directional control observation	Special air-report of runway braking action
6	<ul style="list-style-type: none"> • DRY 	-	-
5	<ul style="list-style-type: none"> • FROST • WET (the runway surface is covered by any visible dampness or water up to and including 3mm) <p>Up to and including 3 mm depth:</p> <ul style="list-style-type: none"> • SLUSH • DRY SNOW • WET SNOW 	Braking deceleration is normal for the wheel braking effort AND directional control is normal	GOOD
4	<ul style="list-style-type: none"> • SPECIALLY PREPARED WINTER RUNWAYS <p>-15°C and lower outside temperature:</p> <ul style="list-style-type: none"> • COMPACTED SNOW 	Braking deceleration OR directional control observation is between good and medium	GOOD TO MEDIUM
3	<ul style="list-style-type: none"> • SLIPPERY WET • DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW <p>More than 3 mm depth:</p> <ul style="list-style-type: none"> • DRY SNOW • WET SNOW <p>Higher than -15°C outside temperature:</p> <ul style="list-style-type: none"> • COMPACTED SNOW 	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced	MEDIUM
2	<p>More than 3 mm:</p> <ul style="list-style-type: none"> • STANDING WATER • SLUSH 	Braking deceleration OR directional control is between medium and poor	MEDIUM TO POOR
1	<ul style="list-style-type: none"> • ICE 	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced	POOR
0	<ul style="list-style-type: none"> • WET ICE • WATER ON TOP OF COMPACTED SNOW • DRY SNOW or WET SNOW ON TOP OF ICE 	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain	LESS THAN POOR

Runway Condition Assessment Matrix (RCAM)

Runway condition assessment matrix (RCAM)			
Assessment		Downgrade assessment criteria	
Runway condition code	Runway surface description	Aeroplane deceleration or directional control observation	Pilot report of runway braking action
6	• DRY	---	---
5	• FROST • WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth) <i>Up to and including 3 mm depth:</i> • SLUSH • DRY SNOW • WET SNOW	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	GOOD
4	• -15°C and Lower outside air temperature: • COMPACTED SNOW	Braking deceleration OR directional control is between Good and Medium.	GOOD TO MEDIUM
3	• WET ("slippery wet" runway) • DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW <i>More than 3 mm depth:</i> • DRY SNOW • WET SNOW <i>Higher than -15°C outside air temperature:</i> • COMPACTED SNOW	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	MEDIUM
2	<i>More than 3 mm depth of water or slush:</i> • STANDING WATER • SLUSH	Braking deceleration OR directional control is between Medium and Poor.	MEDIUM TO POOR
1	• ICE	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	POOR
0	• WET ICE • WATER ON TOP OF COMPACTED SNOW • DRY SNOW or WET SNOW ON TOP OF ICE	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	LESS THAN POOR

EBOS Aerodrome: 02020635 Date/Time (UTC) of assessment (MMGGHHmm): 08 Lower Runway Designator: -1°C Outside Air Temperature: Initials:

Scenario data to EBOS situation sketch to RCAM

Assess the % coverage of runway contamination for each runway third

< 10% coverage RWYCC - 6 for that third. No contaminant is reported

≥ 10% - ≤ 25% coverage RWYCC - 6 for that third. Report contaminant at 25% coverage

> 25% coverage Assign RWYCC based on contaminant present & temperature considerations

NOTE: RCR not required if all RWY thirds have <10% coverage (unless making a final report to advise the RWY is no longer contaminated)

1st RWY Third	2nd RWY Third	3rd RWY Third
<p>For coverage 25% or less enter Code 5</p> <p>Identify any contaminant that covers more than 25% of the RWY third</p> <p>Identify % coverage</p> <p>Identify depth (if applicable)</p> <p>Identify Runway Condition Code</p> <p>Record the most restrictive code in the box to the right</p> <p>Dry [6] Wet (Damp) [5] Frost [5] Slippery Wet (Below Min Friction Level Classification) [3]</p> <p>% Cov. 25/50/75/100 % Cov. 25/50/75/100 % Cov. 25/50/75/100 % Cov. 25/50/75/100</p> <p>Depth: 3mm or less Assessed depth (mm): 10</p> <p>Mark depth only for Standing Water, Slush, Wet or Dry Snow. Any snow on top of compacted snow</p>	<p>For coverage 25% or less enter Code 5</p> <p>Identify any contaminant that covers more than 25% of the RWY third</p> <p>Identify % coverage</p> <p>Identify depth (if applicable)</p> <p>Identify Runway Condition Code</p> <p>Record the most restrictive code in the box to the right</p> <p>Dry [6] Wet (Damp) [5] Frost [5] Slippery Wet (Below Min Friction Level Classification) [3]</p> <p>% Cov. 25/50/75/100 % Cov. 25/50/75/100 % Cov. 25/50/75/100 % Cov. 25/50/75/100</p> <p>Depth: 3mm or less Assessed depth (mm): 10</p> <p>Mark depth only for Standing Water, Slush, Wet or Dry Snow. Any snow on top of compacted snow</p>	<p>For coverage 25% or less enter Code 5</p> <p>Identify any contaminant that covers more than 25% of the RWY third</p> <p>Identify % coverage</p> <p>Identify depth (if applicable)</p> <p>Identify Runway Condition Code</p> <p>Record the most restrictive code in the box to the right</p> <p>Dry [6] Wet (Damp) [5] Frost [5] Slippery Wet (Below Min Friction Level Classification) [3]</p> <p>% Cov. 25/50/75/100 % Cov. 25/50/75/100 % Cov. 25/50/75/100 % Cov. 25/50/75/100</p> <p>Depth: 3mm or less Assessed depth (mm): 10</p> <p>Mark depth only for Standing Water, Slush, Wet or Dry Snow. Any snow on top of compacted snow</p>

In addition in the plain language remarks:

RWY 08 REMAINDER 50 mm WET SNOW. RWY 08 CHEMICALLY TREATED.

Situational Awareness Section

☒ RWY Reduced length LDA: 2600 m

☐ RWY Drifting snow ☐ RWY Loose sand

☒ RWY Snowbanks L of CL: m / R of CL: 20 m

☐ TWY Snowbanks L of CL: m / R of CL: m

☒ Asym. reduced RWY width R: 20 m FM CL

☐ TWY: Poor

☐ Apron: Poor

☐ Other:

RWY Treatment Used? Time Applied: 0600

☒ Chem. Treatment ☒ Plowed ☐ Swept ☐ Sanded ☐ Scarified

☐ Liquid ☐ Solid

Notes:

State approved CFME Braking coefficient

Adjusted RWYCC

ONLY if Downgrade/Upgrade Assessments used

Downgrade/Upgrade Criteria

☐ AIREP ☐ CFME ☐ Other

RCR EBOS 02020635 08 2 / 2 / 2 100 / 100 / 100 10 / 10 / 10

Aerodrome Date & Time RWY % Coverage Depth in mm

SLUSH / SLUSH / SLUSH

Contaminant Type 1st third Contaminant Type 2nd third Contaminant Type 3rd third

Plain language remarks: RWY 26 LDA REDUCED TO 2600. RWY 08 SNOWBANK R20 FM CL. 42

RWY 08 REDUCED CLEARED WIDTH R20 FM CL. +

Reduce RWY width in m (if applicable)

In house Tool under development and customization phase as a DST for assessing RCR and RCAM in order to help Airport Management in assessing RCR
AIM Management must report RCR via new SNOWTAM

AIRPORT (ICAO LOCATION IND.)	>	LIME	OPERATOR	>	AAA SpA
LOWER RWY DESIGNATION	>	14.0	DATE / TIME	>	10/12/20 10:30
		A - 1st third	B - 2nd third		C - 3rd third
TEMPERATURE (OAT)		-5,0	-3,0		-2,0
CONTAMINANT TYPE		ICE	SLIPPERY WET		SP. PREP. WINTER RWY
ACTUAL COVERAGE %		100	100		25
MEASURED DEPTH		1	1		1
INITIAL RWYCC		1	3		6
SPECIAL AIR-REP		MEDIUM	GOOD TO MEDIUM		MEDIUM
BRAKING ACTION (NUMERICO)		3	4		3
SUGGESTED RWYCC		1	3		6
FINAL RWYCC (INS. MANUALLY)		1	3		6
REPORTED COVERAGE %		100	100		25
REPORTED DEPTH mm		NR	NR		NR
CONTAMINANT TYPE		ICE	SLIPPERY WET		SP. PREP. WINTER RWY

RCR - AEROPLANE PERFORMANCE CALCULATION SECTION (INFORMATION STRING)

RCC A	RCC B	RCC C	% COV A	% COV B	% COV C	SP. A	SP. B	SP. C	CONT. A	CONT. B	CONT. C
1	3	6	100	100	25	NR	NR	NR	ICE	SLIPPERY WET	SP. PREP. WINTER RWY

IF ALL THE FIELDS ARE REPORTED AS "---", NO RCR IS TO BE GENERATED



[3.1]

[3.2]

SNOWTAM Template

Differences between ICAO and EASA provisions

Definitions - SNOWTAM

- Addition of two (2) new terms for describing runway surface condition
 - Specially prepared winter runway
 - Runway covered with compacted snow or ice, which has received special treatment and has improved friction characteristics (RWYCC greater than 3)
 - Slippery wet
 - Associated with RWYCC 3 when the runway is wet and below the minimum friction level
- Changes to the SNOWTAM Format
 - To include the two terms above
 - To simplify the situational awareness section in order to avoid long NOTAM strings



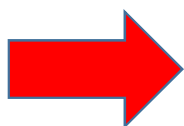
European Union Aviation Safety Agency

Opinion No 03/2019

Runway safety

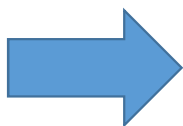
RELATED NPA/CRD 2018-14 — RMT.0703 (INCLUDING ALSO RMT.0704)

ANNEX II



Draft Annex II to draft Commission Implementing Regulation (EU) .../... amending Implementing Regulation (EU) 2017/373 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight

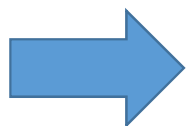
Appendix 3a



SNOWTAM FORMAT

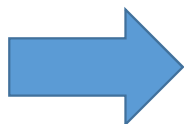
Commission Implementing Regulation (EU) 2017/373

ATS.OR.530 is added to ensure that when air traffic services are receiving special air-reports in regard to runway surface condition, they are communicated immediately to the aerodrome operator. This is a consequential change in ICAO Doc 4444 by the introduction of the GRF and is considered important for the implementation of the new method. This provision complements SERA.12005 and ensures a proper communication link between aerodrome operators, pilots and air traffic services.



The template of the METAR (Appendix 1) in Annex V is replaced by a new one where the information for runway surface conditions is deleted. This is a consequential change to ICAO Annex 3, following the introduction of the GRF.

In AIS.TR.330, point (b)(2) is deleted and transferred to point (a)(29). Currently, the publication of a NOTAM is not required for temporary closures of runways under (b)(2); however, it is considered safer as even in these cases, the publication of the NOTAM will increase pilots' situational awareness.



The SNOWTAM Format (Appendix 3a) in Annex VI is replaced to include in the runway condition descriptors the terms 'SLIPPERY WET' and 'SPECIALLY PREPARED WINTER RUNWAY'. Furthermore, it includes some changes in the reporting of snowbanks in order to avoid excessive SNOWTAM strings, as well as to correct some errors in the examples given.

INTERNATIONAL CIVIL AVIATION ORGANIZATION

European and North Atlantic Office



European Union Aviation Safety Agency

Opinion No 03/2019

Runway safety

RELATED NPA/CRD 2018-14 — RMT.0703 (INCLUDING ALSO RMT.0704)



GUIDANCE ON THE ISSUANCE OF SNOWTAM

(Applicable from 5 November 2020)

- First Edition -
(V.1.0)

February 2020

The SNOWTAM Format (Appendix 3a) in Annex VI is replaced to include in the runway condition descriptors the terms 'SLIPPERY WET' and 'SPECIALLY PREPARED WINTER RUNWAY'. Furthermore, it includes some changes in the reporting of snowbanks in order to avoid excessive SNOWTAM strings, as well as to correct some errors in the examples given.

(COM heading)	(PRIORITY INDICATOR)	(ADDRESSES)		≡
	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)		≡
(Abbreviated heading)	(SWAA* SERIAL NUMBER)	(LOCATION INDICATOR)	DATE-TIME OF ASSESSMENT	(OPTIONAL GROUP)
	S W * * *			≡
SNOWTAM	(Serial number)	≡		
Aeroplane performance calculation section				
(AERODROME LOCATION INDICATOR)	M	A)	≡	
(DATE/TIME OF ASSESSMENT <i>(Time of completion of assessment in UTC)</i>)	M	B)	→	
(LOWER RUNWAY DESIGNATION NUMBER)	M	C)	→	
(RUNWAY CONDITION CODE (RWYCC) ON EACH RUNWAY THIRD) (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)	M	D)	//	→
(PER CENT COVERAGE OF CONTAMINANT FOR EACH RUNWAY THIRD)	C	E)	//	→
DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH RUNWAY THIRD)	C	F)	//	→
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH (Observed on each runway third, starting from threshold having the lower runway designation number) COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLIPPERY WET SLUSH SPECIALLY PREPARED WINTER RUNWAY STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE	M	G)	//	→
(WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITIONS CODES APPLY, IF LESS THAN PUBLISHED WIDTH)	O	H)	≡	



Situational awareness section			
(REDUCED RUNWAY LENGTH, IF LESS THAN PUBLISHED LENGTH (m))	O	I)	→
(DRIFTING SNOW ON THE RUNWAY)	O	J)	→
(LOOSE SAND ON THE RUNWAY)	O	K)	→
(CHEMICAL TREATMENT ON RUNWAY)	O	L)	→
(SNOWBANKS ON THE RUNWAY (If present, distance from runway centreline (m) followed by 'L', 'R' or 'LR' as applicable))	O	M)	→
(SNOWBANKS ON A TAXIWAY)	O	N)	→
(SNOWBANKS ADJACENT TO THE RUNWAY)	O	O)	→
(TAXIWAY CONDITIONS)	O	P)	→
(APRON CONDITIONS)	O	R)	→
(MEASURED FRICTION COEFFICIENT)	O	S)	→
(PLAIN-LANGUAGE REMARKS)	O	T)) <<≡
NOTES:			
1. *Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2 or otherwise applicable aerodrome identifier. 2. Information on other runways, repeat from B to H. 3. Information in the situational awareness section repeated for each runway, taxiway and apron. Repeat as applicable, when reported. 4. Words in brackets () not to be transmitted. 5. For letters A) to T), refer to the <i>Instructions for the completion of the SNOWTAM format, paragraph 1, item b)</i> .			

SIGNATURE OF ORIGINATOR (not for transmission)

The SNOWTAM Format

Information concerning the presence on the movement area of

- snow
- slush
- ice
- frost
- standing water or
- water associated with snow, slush, ice or frost

are disseminated through SNOWTAM and contains the information required by the SNOWTAM Format.

Ref.: new ADR.OPS.A.057(d) / Appendix 2 Reg.

HEADING

AEROPLANE PERFORMANCE CALCULATION SECTION

SITUATIONAL AWARENESS SECTION

(COM heading)	(Priority indicator)	(Addresses)	
(Abbreviated heading)	(Date and time of filing)	(Originator's indicator)	
SNOWTAM	(SWAA* SERIAL NUMBER)	(LOCATION INDICATOR)	(DATE-TIME OF ASSESSMENT)
	(Optional group)		
Aeroplane performance calculation section			
(AERODROME LOCATION INDICATOR)	M	A)	<=
(DATE/TIME OF ASSESSMENT (Time of completion of assessment in UTC))	M	B)	→
(LOWER RUNWAY DESIGNATION NUMBER)	M	C)	→
(RUNWAY CONDITION CODE (RWYCC) ON EACH RUNWAY THIRD) (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)	M	D)	//
(PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD)	C	E)	//
DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH RUNWAY THIRD	C	F)	//
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH (Observed on each runway third, starting from threshold having the lower runway designation number))	M	G)	//
COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLIPPERY WET SLUSH SPECIALLY PREPARED WINTER RUNWAY STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE			→
(WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITIONS CODES APPLY, IF LESS THAN THE PUBLISHED WIDTH)	O	H)	<=
Situational awareness section			
(REDUCED RUNWAY LENGTH, IF LESS THAN THE PUBLISHED LENGTH (m))	O	I)	→
(DRIFTING SNOW ON THE RUNWAY)	O	J)	→
(LOOSE SAND ON THE RUNWAY)	O	K)	→
(CHEMICAL TREATMENT ON RUNWAY)	O	L)	→
(SNOWBANKS ON THE RUNWAY) (If present, distance from runway centreline (m) followed by 'L', 'R' or 'LR' as applicable))	O	M)	→
(SNOWBANKS ON A TAXIWAY)	O	N)	→
(SNOWBANKS ADJACENT TO THE RUNWAY)	O	O)	→
(TAXIWAY CONDITIONS)	O	P)	→
(APRON CONDITIONS)	O	R)	→
(MEASURED FRICTION COEFFICIENT)	O	S)	→
(PLAIN-LANGUAGE REMARKS)	O	T)	> <=
NOTES:			

How to fill in the SNOWTAM format ... Heading

TT = data designator for SNOWTAM = SW;
AA = geographical designator for Member States, e.g. LI
iiii = SNOWTAM serial number in a four-digit group

DATE / TIME OF ASSESSMENT (MMYYGGgg)
MM = month, e.g. January = 01, December = 12;
YY = day of the month;
GGgg = time in hours (GG) and minutes (gg) UTC;

(COM heading)	(Priority indicator)	(Addresses)							<≡	
	(Date and time of filing)			(Originator's indicator)						<≡
(Abbreviated heading)	(SWAA* SERIAL NUMBER) S W * *			(LOCATION INDICATOR) 		DATE-TIME OF ASSESSMENT 				(OPTIONAL GROUP) <≡(
SNOWTAM →		(Serial number)								

AERODROME LOCATION INDICATOR
CCCC = four-letter aerodrome location
indicator

(BBB) = OPTIONAL GROUP for: Correction, in the case of an error, to a SNOWTAM message previously disseminated with the same serial number = COR. Brackets in (BBB) should be used to indicate that this group is optional.

Ref.: Draft EASA GM1 ADR.OPS.A.057(d)(4)c

Abbreviated heading ('TTAAiiii CCCC MMYGgg (BBB)')

Aeroplane performance calculation section

Aeroplane performance calculation section			
(AERODROME LOCATION INDICATOR)	M	(A)	
(DATE/TIME OF ASSESSMENT (<i>Time of completion of assessment in UTC</i>))	M	(B)	
(LOWER RUNWAY DESIGNATION NUMBER)	M	(C)	
(RUNWAY CONDITION CODE (RWYCC) ON EACH RUNWAY THIRD) (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)	M	(D)	//
(PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD)	C	(E)	//
DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH RUNWAY THIRD	C	(F)	//
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH (Observed on each runway third, starting from threshold having the lower runway designation number))	M	(G)	//
COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLIPPERY WET SLUSH SPECIALLY PREPARED WINTER RUNWAY STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE			
(WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITIONS CODES APPLY, IF LESS THAN THE PUBLISHED WIDTH)	O	(H)	

A) four-letter location indicator

B) eight-figure date/time group giving time of observation as month, day, hour and minute in UTC

C) (nn[L] or nn[C] or nn[R]). Only one rwy designator should be inserted for each rwy and always the lower number

D) RWYCC for each rwy third. Only one digit (0-6) is inserted for each third separated by an oblique stroke (n/n/n).

E) When provided, insert 25, 50, 75 100 for each rwy third, separated by an oblique stroke ([n]nn/[n]nn/[n]nn) [...] When the conditions are not reported [...] 'NR' for the appropriate rwy third

F) When provided, insert in mm for each rwy third, separated by an oblique stroke (nn/nn/nn or nnn/nnn/nnn) or 'NR'

H) The width in metres if less than the published rwy width.*

G) Any of the [...] condition descriptions for each rwy third, separated by an oblique stroke, should be inserted. When the conditions are not reported, [...] insertion of 'NR' for the appropriate rwy third(s).

* If the cleared width is not symmetrical, additional info is given in the plain-language remark of the situational awareness section.

Situational awareness section

Situational awareness section			
(REDUCED RUNWAY LENGTH, IF LESS THAN THE PUBLISHED LENGTH (m))	0	I)	I) Applicable rwy designator and available length in m [...] (e.g. RWY nn [L] or nn [C] or nn [R] REDUCED TO [n]nnn).
(DRIFTING SNOW ON THE RUNWAY)	0	J)	J) lower rwy design with a space 'DRIFTING SNOW' (RWY nn or RWY nn[L] or nn[C] or nn[R] DRIFTING SNOW).
(LOOSE SAND ON THE RUNWAY)	0	K)	K) lower rwy designator with a space 'LOOSE SAND' (RWY nn or RWY nn[L] or nn[C] or nn[R] LOOSE SAND).
(CHEMICAL TREATMENT ON RUNWAY)	0	L)	L) lower rwy designator with a space 'CHEMICALLY
(SNOWBANKS ON THE RUNWAY) (If present, distance from runway centreline (m) followed by 'L', 'R' or 'LR' as applicable))	0	M)	M) lower rwy des. with a space 'SNOWBANK' and a space 'L' or 'R' or both sides 'LR', followed by distance in m from cl separated by a space 'FM CL' (RWY nn or RWY nn[L] or nn[C] or nn[R] SNOWBANK Lnn or Rnn or LRnn FM CL)
(SNOWBANKS ON A TAXIWAY)	0	N)	N) twys des. with a space 'SNOWBANKS' (TWY [nn]n or TWYS [nn]n/[nn]n/[nn]n/ or ALL TWYS SNOWBANKS)
(SNOWBANKS ADJACENT TO THE RUNWAY)	0	O)	O) snowbanks penetrating the height profile in the snow plan, lower rwy designator and 'ADJ SNOWBANKS' (RWY nn or RWY nn[L] or nn[C] or nn[R] ADJ SNOWBANKS)
(TAXIWAY CONDITIONS)	0	P)	P) slippery/poor twy conditions, twy designator followed by a space 'POOR' (TWY [n or nn] POOR or TWYS [n or nn]/[n or nn]/... POOR or ALL TWYS POOR).
(APRON CONDITIONS)	0	R)	R) slippery/poor apron condition, apron designator followed by a space 'POOR' (APRON [nnnn] POOR or APRONS [nnnn]/[nnnn]/... POOR or ALL APRONS POOR).
(MEASURED FRICTION COEFFICIENT)	0	S)	
(PLAIN-LANGUAGE REMARKS)	0	T)	
NOTES:			

S) NR (not reported)

SNOWTAM - Aeroplane performance calculation section - sample

Aeroplane performance calculation section			
(AERODROME LOCATION INDICATOR)	M	A)	LIML <=>
(DATE/TIME OF ASSESSMENT <i>(Time of completion of assessment in UTC)</i>)	M	B)	01240900 →
(LOWER RUNWAY DESIGNATION NUMBER)	M	C)	18 →
(RUNWAY CONDITION CODE (RWYCC) ON EACH RUNWAY THIRD) (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)	M	D)	5 / 2 / 2 →
(PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD)	C	E)	100 // 100 / 50 →
DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH RUNWAY THIRD) *	C	F)	NR // 06 / 06 →
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH (Observed on each runway third, starting from threshold having the lower runway designation number)	M	G)	// WET / SLUSH / SLUSH
COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLIPPERY WET SLUSH SPECIALLY PREPARED WINTER RUNWAY STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE			
(WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITIONS CODES APPLY, IF LESS THAN THE PUBLISHED WIDTH)	O	H)	<=>

* to be provided for the following contaminants only:

- standing water, value to be reported 04, then assessed value. Significant changes 3 mm;
- slush, value to be reported 03, then assessed value. Significant changes 3 mm;
- wet snow, value to be reported 03, then assessed value. Significant changes 5 mm; and
- dry snow, value to be reported 03, then assessed value. Significant changes 20 mm.
- When the conditions are not reported, insert 'NR' for the appropriate rwy third(s).

The letters used to indicate items are only for reference purposes and should not be included in the messages.

Example of complete information string

[COM header and abbreviated header] (Completed by AIS)

GG EADBZQZX EADNZQZX EADSZQZX

070645 EADDYNYX

SWEA0151 EADD 02170055

SNOWTAM 0151

[Aeroplane performance calculation section]

EADD 02170055 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET

EADD 02170135 09R 5/2/2 100/50/75 NR/06/06 WET/SLUSH/SLUSH

EADD 02170225 09C 2/3/3 75/100/100 06/12/12 SLUSH/WET SNOW/WET SNOW

[Situational awareness section]

RWY 09L SNOWBANK R20 FM CL. RWY 09R ADJ SNOWBANKS.

TWY B POOR. APRON NORTH POOR.

Code	Remarks	Comments	Unit
01	01	01	01
02	02	02	02
03	03	03	03
04	04	04	04
05	05	05	05
06	06	06	06
07	07	07	07
08	08	08	08
09	09	09	09
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
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38	38	38	38
39	39	39	39
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41	41	41	41
42	42	42	42
43	43	43	43
44	44	44	44
45	45	45	45
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99	99	99	99
100	100	100	100

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62	62	62	62
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99	99	99	99
100	100	100	100

Ref.: Draft EASA GM3 ADR.OPS.A.065(a)

Information on alkali-organic runway de-/anti-icing substances

- During winter operations, the aircraft carbon brakes (discs) and open wheel/bay are exposed to alkali-organic rwy de-/anti-icing substances during taxi, take-off, landing.
- The presence of the alkali-organic salt creates a catalytic condition lowering the carbon oxidation temperature, leading to deterioration of the carbon discs and reduction of brakes service life and efficiency.
- It is fundamental for aircraft operators to have information on the de-/anti-icing substances used, in order to assess the acft exposure and adjust the maintenance programme.

Ref.: Draft EASA GM1 ADR.OPS.B.035(b)(3)

The information, in the RCR or AIP, should be given using the following key words:

- KAC, for potassium acetate fluids
- KFOR, for potassium formate fluids
- GAC, for glycerine acetate fluids
- NAFO, for sodium formate solids
- NAAC, for sodium acetate solids
- EG, for ethylene glycol fluids
- PG, for propylene glycol fluids
- UREA
- SAND

Ref.: Draft EASA GM1 ADR.OPS.B.035(b)(3)



[3.2]

SNOWTAM dissemination

T.Col Angelo ROMITO

Direzione Regolazione Aeroporti e Spazio Aereo

ICAO Reporting Formats

Annex 14 (Vol. I, 2.9.1) establishes the need to promulgate the runway surface conditions, through the appropriate AIS / ATS units; ICAO's methods of reporting / promulgating information are:

- a) Aeronautical Information Publications (AIPs)
- b) Aeronautical Information Circulars (AICs)
- c) Notice to Airmen (NOTAM)
- d) SNOWTAM
- e) AIREPs
- f) Automatic Terminal Information Services (ATIS)
- g) Air Traffic Control (ATC) communications.

The formats for a) to d) are described in Annex 15; the formats for e), f), g) are described in Doc 4444.

Source: ICAO Circular 355

Global Reporting Format AIS Aspects (SNOWTAM)

Aerodrome operator assess the runway surface conditions, including contaminants, for each third of the runway length, and report it by mean of a uniform runway condition report (RCR)

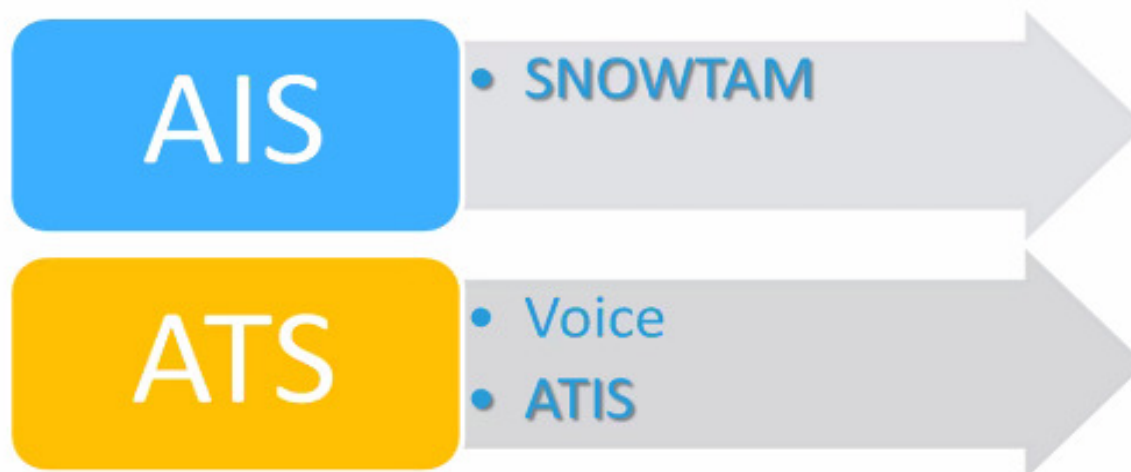
Aeronautical information services (AIS) provide the information received in the RCR to end users (SNOWTAM)

Air traffic services (ATS) provide the information received via the RCR to end users (radio, ATIS) and received special air-reports

Aircraft operators utilize the information in conjunction with the performance data provided by the aircraft manufacturer to determine if landing or take-off operations can be conducted safely and provide runway braking action special air-report (AIREP)

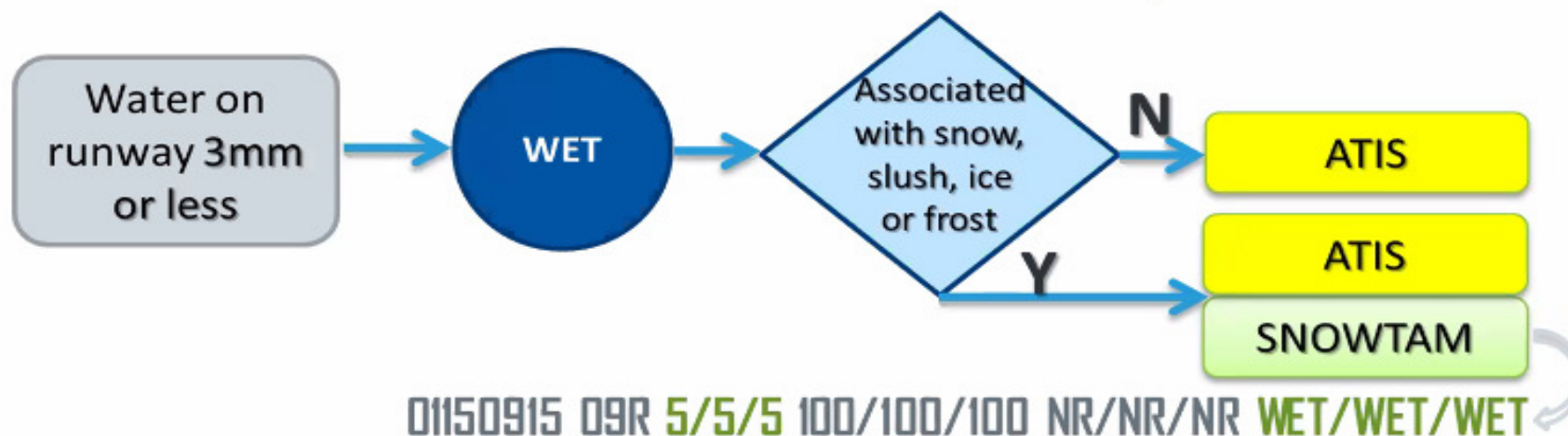
Dissemination of information

- **Through the AIS and ATIS:** when the runway is wholly or partly contaminated by standing water, snow, slush, ice or frost, or is wet associated with the clearing or treatment of snow, slush, ice or frost.
- **Through the ATIS only:** when the runway is wet, not associated with the presence of snow, slush, ice or frost.



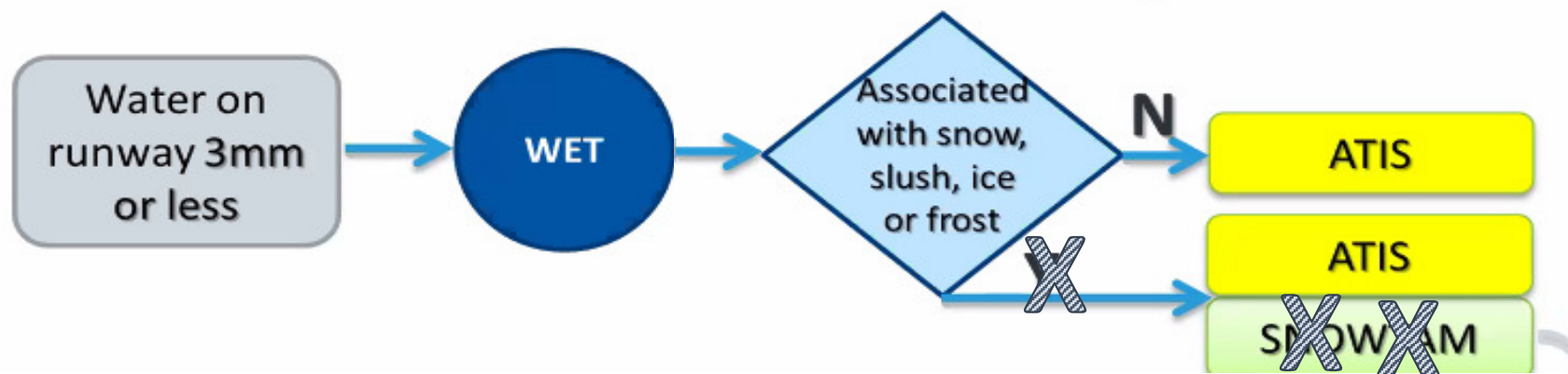
SNOWTAM Dissemination

Water on runway



SNOWTAM PROVISION- Scenarios

Water on runway



SNOWTAM PROVISION- Scenario 1
water 0-3 mm exists on runway
but no snow slush ice or frost associated
NO SNOWTAM only ATIS

Scenario-2



- Water 0-3 mm exist on runway
- Water is associated with snow, slush, ice or frost
- → **SNOWTAM is issued (& ATIS)**
 - RCC 5 (wet)
 - RCC 3 (Slippery wet)

02160930 11L 5/5/5 100/50/50 NR/NR/NR WET/WET/WET

Scenario-3



- Water 4 mm (or above) exist on runway
- → **SNOWTAM is issued (& ATIS)**
 - RCC 2 (standing water)
- It doesn't matter whether water is associated with snow, slush, ice or frost, or not

02160930 11L 2/2/2 100/50/50 05/08/13 STANDING WATER/STANDING WATER/STANDING WATER



[3.3]

SNOWTAM samples

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Issuance of RCR / SNOWTAM - Ex. 1

Airport: **Milan Linate**

Date: **16 Feb**

Runway: **18/36**

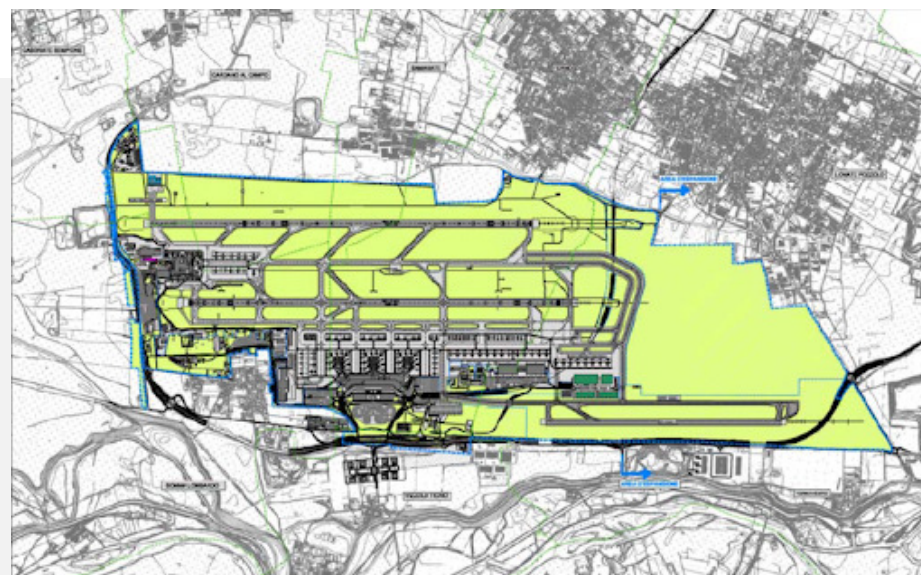
Time of assessment: **06:55**

Type of contaminant: **water / water / wet snow**

Depth of contaminant: **1 mm / 2 mm / 2 mm**

% Coverage: **80/100/80**

Additional info: **OAT 1°C / No Braking Action Report avbl**



Ref.: Draft EASA GM2 ADR.OPS.A.057(d)(4) Origination of NOTAM

Issuance of RCR / SNOWTAM - Ex. 1

INFORMATION STRING

SWLI0020 LIML 02160655

(SNOWTAM 0020

LIML

02160655 18 5/5/5 100/100/100 NR/NR/03 WET/WET/WET SNOW)

Airport: Milan Linate, 16 Feb

Runway: 18/36

Type of contaminant: water / water / wet snow

Depth of contaminant: 1 mm / 2 mm / 2 mm

% Coverage: 80/100/80

Additional info: OAT 1°C /no braking action avbl

Ref.: Draft EASA GM2 ADR.OPS.A.057(d)(4) Origination of NOTAM

Issuance of RCR / SNOWTAM - Ex. 2

Airport: **Milan Malpensa**

Date: **16 Feb**

Runway: **17L/35R** Time of assessment: **06:50**

Type of contaminant: **water / water / wet snow**

Depth of contaminant: **1 mm / 2 mm / 2 mm**

% Coverage: **100/100/80**

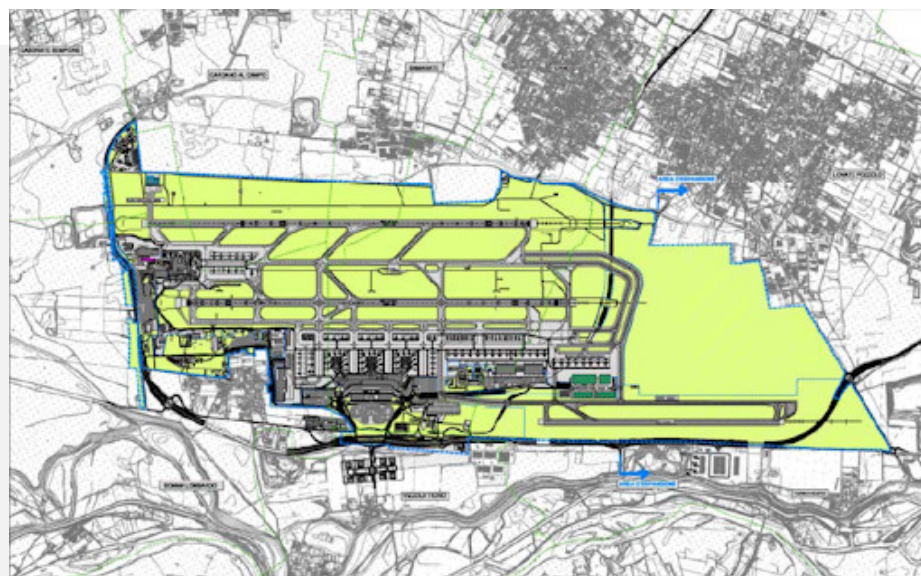
Runway: **17R/35L** Time of assessment: **06:55**

Type of contaminant: **water / slush / slush**

Depth of contaminant: **0 mm / 6 mm / 6 mm**

% Coverage: **90/100/70**

Additional info: **OAT 1°C / No Braking Action Report avbl**



Issuance of RCR / SNOWTAM - Ex. 2

INFORMATION STRING

SWLI0021 LIMC 02160655

(SNOWTAM 0021

LIMC

02160650 17L 5/5/5 100/100/100 NR/NR/03 WET/WET/WET SNOW

02160655 17R 5/2/2 100/100/75 NR/06/06 WET/SLUSH/SLUSH)

Runway: 17L/35R, 16Feb

Type of contaminant: water / water / wet snow

Depth of contaminant: 1 mm / 2 mm / 2 mm

% Coverage: 100/100/80

Runway: 17R/35L

Type of contaminant: water / slush / slush

Depth of contaminant: 0 mm / 6 mm / 6 mm

% Coverage: 90/100/70

Ref.: Draft EASA GM2 ADR.OPS.A.057(d)(4) Origination of NOTAM

Issuance of RCR / SNOWTAM - Ex. 3

Airport: **Milan Malpensa**

Date: **16 Feb**

Runway: **17L/35R** / Time of assessment: **08:00**

Type of contaminant: **water / water / wet snow**

Depth of contaminant: **1 mm / 2 mm / 2 mm**

% Coverage: **100/100/100**

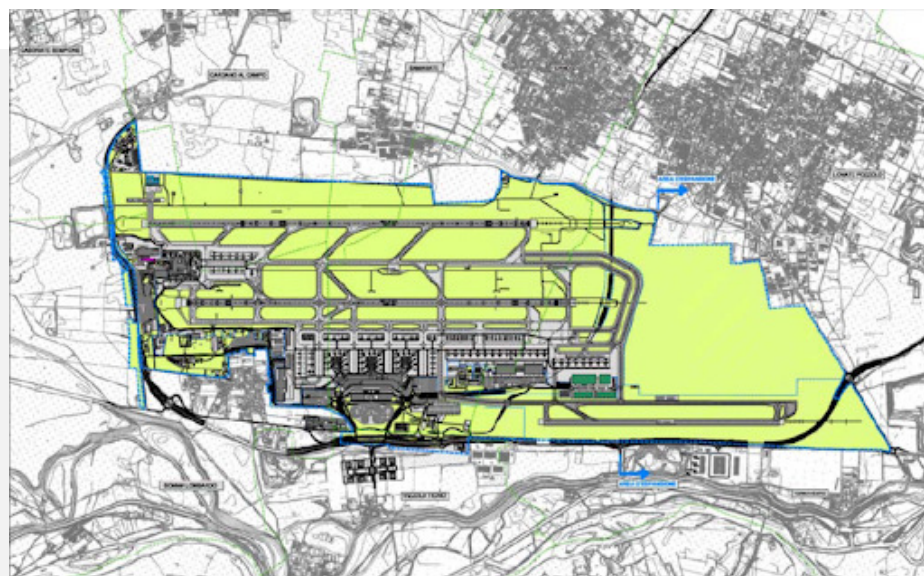
Runway: **17R/35L** / Time of assessment: **08:05**

Type of contaminant: **water / slush / slush, snowbanks 30 m from center line (west of rwy)**

Depth of contaminant: **2 mm / 6 mm / 6 mm**

% Coverage: **100/100/70**

Additional info: **OAT 0°C / No Braking Action Report avbl, poor surface conditions on twy Y**



Issuance of RCR / SNOWTAM - Ex. 3

INFORMATION STRING

SWLI0022 LIMC 02160805

(SNOWTAM 0022

LIMC

02160800 17L 5/5/5 100/100/100 NR/NR/03 WET/WET/WET SNOW

02160805 17R 5/2/2 100/100/75 NR/06/06 WET/SLUSH/SLUSH

RWY 17R SNOWBANK R30 FM CL. TWY Y POOR.)

Runway: 17L/35R

Type of contaminant: water / water / wet snow

Depth of contaminant: 1 mm / 2 mm / 2 mm

% Coverage: 100/100/100

Runway: 17R/35L snowbanks 30 m from c/l west side

Type of contaminant: water / slush / slush

Depth of contaminant: 2 mm / 6 mm / 6 mm

% Coverage: 100/100/70

Add. info: OAT 0°C/no braking action avbl /twy Y poor

Ref.: Draft EASA GM2 ADR.OPS.A.057(d)(4) Origination of NOTAM

Issuance of RCR / SNOWTAM - Ex. 4

Airport: **Milan Malpensa**

Date: **16 Feb**

Runway: **17L/35R** / Time of assessment: **10:30**

Type of contaminant: **water / water / slush**

Depth of contaminant: **1 mm / 1 mm / 2 mm**

% Coverage: **100/100/100**

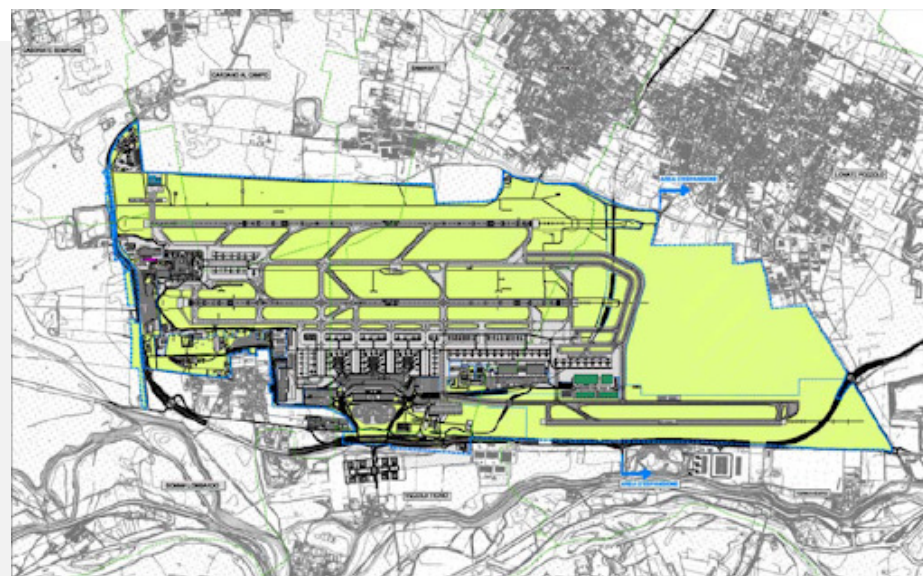
Runway: **17R/35L** / Time of assessment: **10:35**

Type of contaminant: **water / slush / slush**

Depth of contaminant: **3 mm / 6 mm / 6 mm**

% Coverage: **100/100/70**

Additional info: **OAT -1°C / No Braking Action Report avbl / runway 35R chemically treated**



Issuance of RCR / SNOWTAM - Ex. 4

INFORMATION STRING

SWLI0023 LIMC 02161035

(SNOWTAM 0023

LIMC

02161030 17L 5/5/5 100/100/100 NR/NR/03 WET/WET/SLUSH

02161035 17R 5/2/2 100/100/75 NR/06/06 WET/SLUSH/SLUSH

RWY 17L CHEMICALLY TREATED.)

Runway: 17L/35R

Type of contaminant: water / water / slush

Depth of contaminant: 1 mm / 1 mm / 2 mm

% Coverage: 100/100/100

Runway: 17R/35L, chemically treated

Type of contaminant: water / slush / slush

Depth of contaminant: 3 mm / 6 mm / 6 mm

% Coverage: 100/100/70

Additional info: OAT -1°C / No Braking Action abl

Ref.: Draft EASA GM2 ADR.OPS.A.057(d)(4) Origination of NOTAM

Issuance of RCR / SNOWTAM - Ex. 5

Airport: **Milan Malpensa**

Date: **16 Feb**

Runway: **17L/35R** / Time of assessment: **10:30**

Type of contaminant: **dry snow / compacted snow / ice**

Depth of contaminant: **4 mm / - mm / - mm**

% Coverage: **100/100/100**

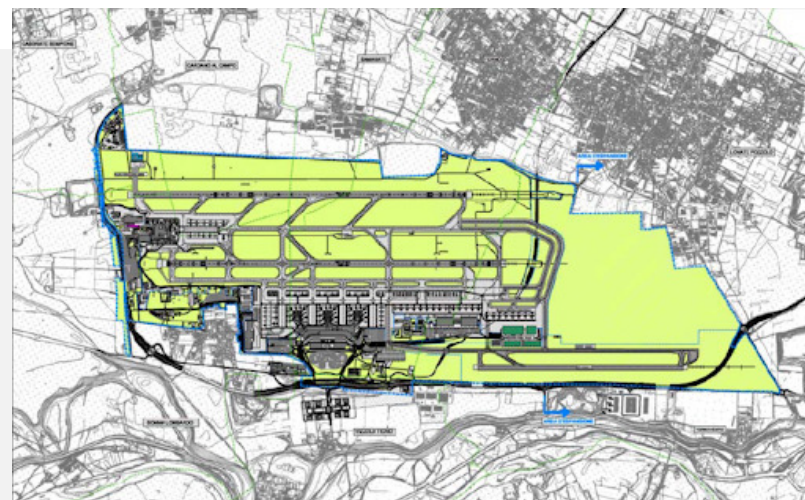
Runway: **17R/35L** / Time of assessment: **10:35**

Type of contaminant: **ice / ice / ice**

Depth of contaminant: **- mm / - mm / - mm**

% Coverage: **100/100/70**

Additional info: **OAT -5°C / No Braking Action Report avbl**



Ref.: Draft EASA GM2 ADR.OPS.A.057(d)(4) Origination of NOTAM

Issuance of RCR / SNOWTAM - Ex. 5

INFORMATION STRING

SWLI0024 LIMC 02161035

(SNOWTAM 0024

LIMC

02161030 17L 3/3/1 100/100/100 04/NR/NR DRY SNOW/COMPACTED
SNOW/ICE

02161035 17R 1/1/1 100/100/75 NR/NR/NR ICE/ICE/ICE

Remark: for compacted snow at -15°C or lower RWYCC = 4, for compacted snow at higher than -15°C RWYCC = 3

Ref.: Draft EASA GM2 ADR.OPS.A.057(d)(4) Origination of NOTAM

Runway: 17L/35R

Type of contaminant: dry snow / compacted snow / ice

Depth of contaminant: 4 mm / - mm / - mm

% Coverage: 100/100/100

Runway: 17R/35L

Type of contaminant: ice / ice / ice

Depth of contaminant: - mm / - mm / - mm

% Coverage: 100/100/70

Additional info: OAT -5°C / No Braking Action avbl



Thanks for your attention

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