ENAC
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ICAO GRF - Global Reporting Format Implementation

Webinar, 09.12.2020

Global Reporting Format Framework

Domenico Mele

GRF concept:

history and background information

What is '**GRF**' about ?

ICAO Global Reporting Format is «**a globally harmonized methodology of assessing and reporting runway surface conditions that impact aircraft operations safety**»

The **GRF** method:

→ enables a standardized correlation between runway conditions and aircraft performance;

→ aims to improve the flight crew assessment of take-off and landing performance;

→ promotes the **mitigation of runway excursion risk**.

Global → unique **common 'code'** spoken by all the players, on a global basis

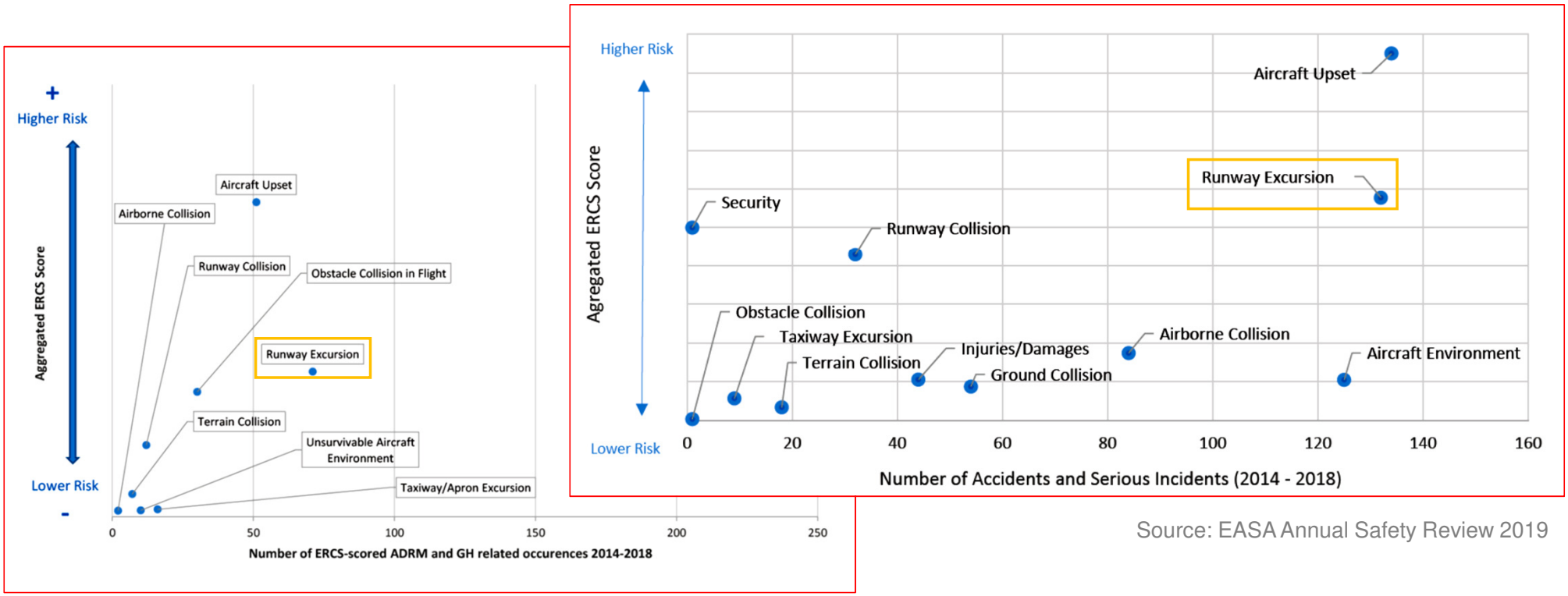
Reporting → focused on **reporting** runway conditions to the **final user**

Format → use of **standardized** information layout

Entry into force:

Worldwide as of **4 Nov. 2021** but in EU MS as of **12 Aug. 2021**

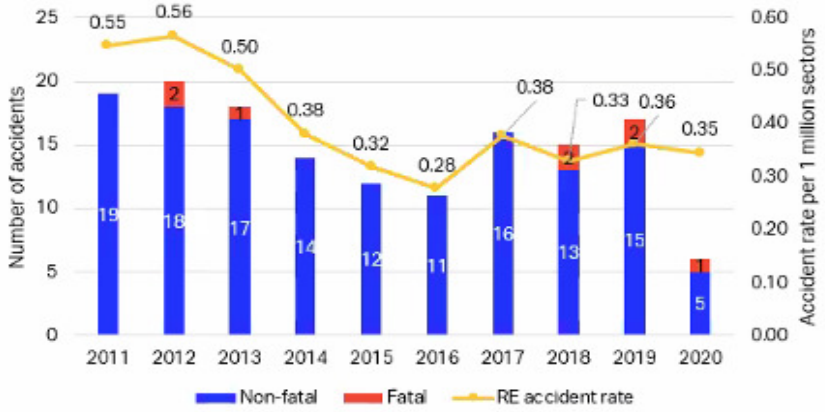
Runway excursions are still a **safety concern** …



Source: EASA Annual Safety Review 2019

… **runway surface condition** may be a **contributory factor** !

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.

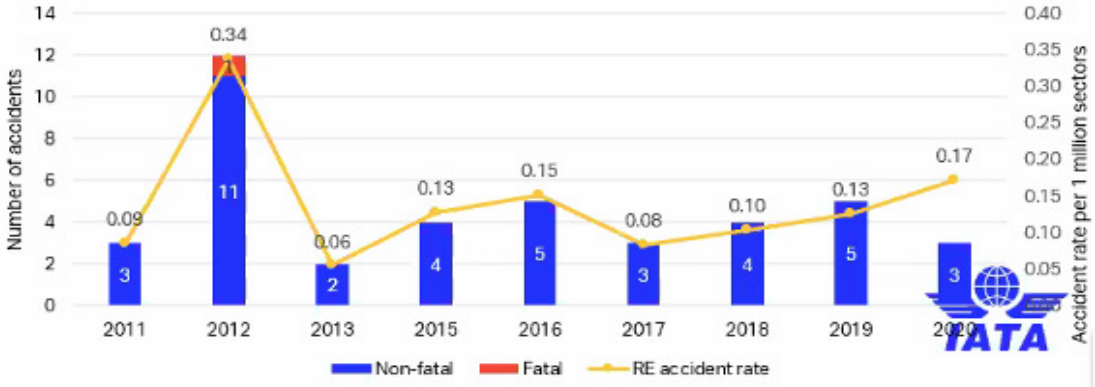
Contaminated runway

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

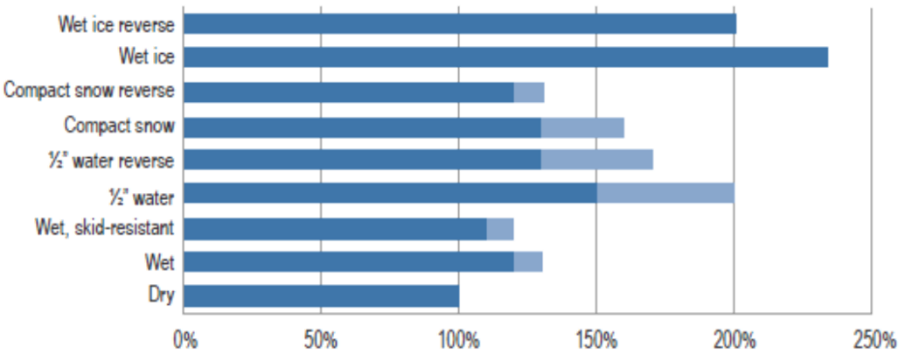
22% (9) Hull losses

Accident data updated as of 30 June 2020

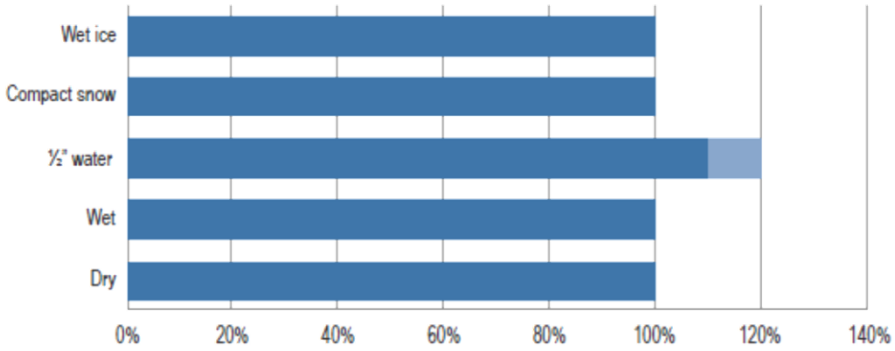


How does **runway surface condition** affect **aircraft performance** …

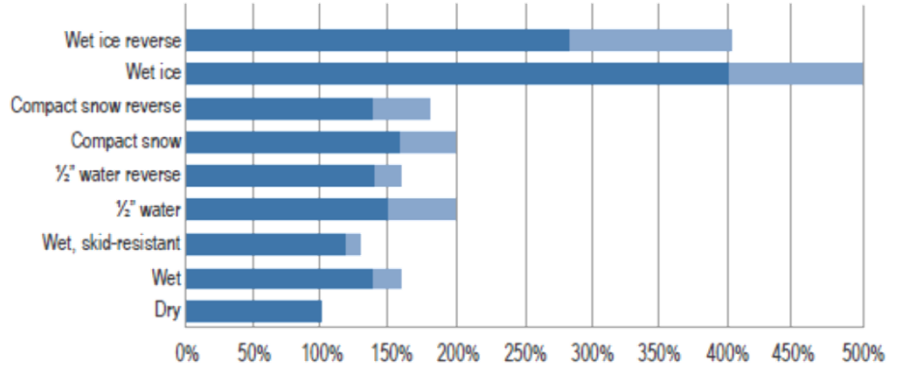
- … when **landing** ?
- … when **taking off** ?



Impact of the rwy condition on accelerate-stop distance



Impact of the rwy condition on actual take-off distance



Impact of the rwy condition on landing ground phase

Source: ICAO Circular 355

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

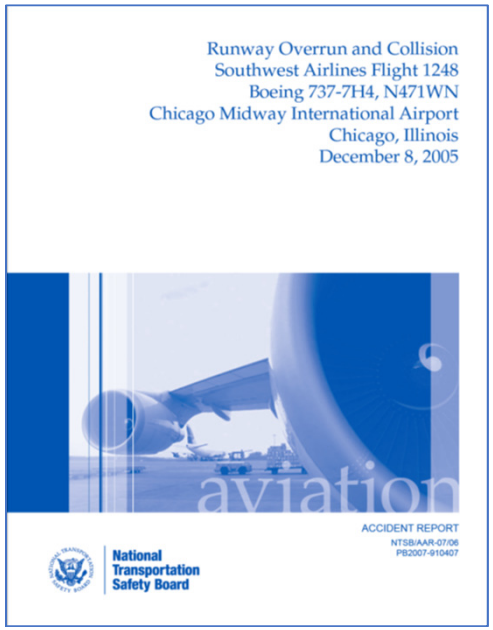
- a child killed and 1 pax seriously injuried in the car
- other 3 car pax and 18 out of 103 acft occupants injuried
- airplane substantially damaged

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

US NTSB (National Transportation Saferty 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 aircraft operators to:
  - conduct arrival landing distance assessments incorporating a **15% safety margin**;
  - provide **guidance** and **training** to pilots / dispatcher on **surface condition** and **braking action reports** and assumptions affecting landing distance calculations.

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

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 / MANUFACTURERS

Pilots to use the information for acft landing performance calculation purposes

… and a '**common language**' for all the players !

The TALPA - Take-off And Landing Performance Assessment Project

TALPA ARC - Aviation Rulemaking Committee, 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.*

Source: TALPA ARC Aiport/Part 139 Working Group Recommendation (2009)

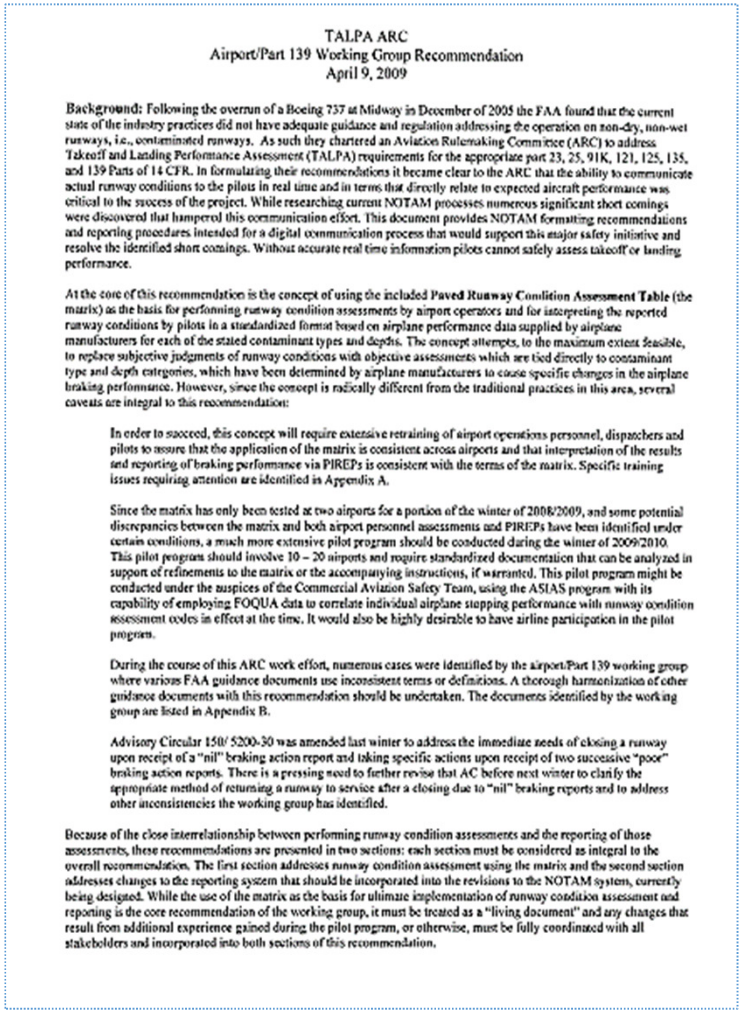
TALPA ARC Recommendations, 2009

⇨ 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:

- aerodrome operators 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 short comings 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 short comings. 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 airplane performance data supplied by airplane 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 airplane manufacturers to cause specific changes in the airplane 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 assure 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 ASIAS program with its capability of employing FOQUA 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	40 or Higher	---	---
5	• Frost • Wet (Includes Damp and1/8" or less depth of Water) ***1/8" or less depth of:*** • Slush • Dry Snow • Wet Snow	40 or Higher	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	Good
4	***-15°C and Colder outside air temperature:*** • Compacted Snow	39 to 30	Braking deceleration OR directional control is between Good and Medium.	Good to Medium
3	• Wet ("Slippery when wet" runway) • Dry Snow or Wet Snow (Any depth) over Compacted Snow ***Greater than 1/8" depth of:*** • Dry Snow • Wet Snow ***Warmer than -15°C outside air temperature:*** • Compacted Snow	39 to 30	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	Medium
2	***Greater than 1/8" depth of:*** • Water • Slush	29 to 21	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
1	• Ice [2]	29 to 21	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
0	• Wet Ice [2] • Water on top of Compacted Snow [2] • Dry Snow or Wet Snow over Ice [2]	20 or Lower	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

ICAO regulatory framework

ICAO activities to address the issue of rwy sfc conditions assessment and reporting methods - ICAO Friction Task Force (est. 2008):

- focused on addressing shortcomings in ICAO SARPs
- multidisciplinary approach, key industry experts / stakeholders
- review, update and recommend changes to the existing provisions

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 amendments to SARPs (FTF / AIS-AIM Study Group)
- ICAO Circular 355

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

2013

Measured / calculated Coefficient Mu (μ)

(assessment mainly based upon 'μ' measurements)

(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

Estimated Surface Friction

(assessment based upon all information available)

2020

Rwy Condition Code RWYCC

(new methodology - GRF)

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*

* new, unedited version

… towards a '**global approach**' …

ADR OPERATOR

ANNEX 14 (ADR)

Doc 9981 PANS-ADR

Circular 355

AIS / ATS / MET

ANNEX 3 (MET)

ANNEX 11 (ATS)

ANNEX 15 (AIS)

Doc 4444 PANS-ATM

ACFT OPERATOR

ACFT MANUFACTURERS

ANNEX 6 (OPS)

ANNEX 8 (AW)

Doc 10064 APM

… and a '**common language**'

ANNEX 14 Vol. I Aerodromes (Ed. 7th - Amdt 13-B)

Main changes relating to GRF:

[1.1] Definitions (RCAM, RWYCC, RCR, rwy condition descriptors, rwy surface conditions: 'dry', 'wet', 'slippery wet', 'contaminated')

[2.9] Condition of the movement area and related facilities

[10.2] Pavements (maintenance)

[10.3] Removal of contaminants

[Att. A6] Reporting of runway surface condition (RCR concept, RWYCC, RCAM, training of personnel)

Associated objectives and operational practices are described in Doc 9981

ICAO Doc 9981 PANS-Aerodromes (2nd Ed. 2016)

Part II Aerodrome Operational Management

Ch. 1_ Reporting format using standard runway condition report

[1.1] Runway surface condition assessment and reporting

- General
- Objectives
- Operational practices (RCR, RWYCC, RCAM)

[Att. A] Methods of assessing runway surface condition

(for maintenance purposes)

Source: ICAO Doc 9981

Philosophy of **Runway Condition Reporting**

Assessing & reporting the rwy / movement area condition is necessary to provide crew with the information needed for safe operation of acft.

- ADR Operator is required to assess runway conditions **whenever water, snow, slush, ice or frost are present** on an operational rwy.
- The assessment is based on **contaminant type / depth / coverage** (information to be kept updated, changes reported without delay).
- Flight crews use the reported information for **aircraft performance** calculations.

ICAO Circular 355 - Global Reporting Format in a nutshell …

'GRF is a validated method replacing subjective judgements with objective assessments directly related to criteria relevant for aircraft performance, determined by the aircraft manufacturers.'

It is based on **5 fundamental elements**:

- Runway Surface **Condition**
- Runway Surface Condition **Descriptor**
- **RWYCC** (**R**un**W**a**Y** **C**ondition **C**ode)
- **RCAM** (**R**unway **C**ondition **A**ssessment **M**atrix)
- **RCR** (**R**unway **C**ondition **R**eport)

Runway Surface Conditions

A runway may be: '**dry**', '**wet**', '**slippery wet**' or '**contaminated**'.

Runway Surface Condition Descriptors (contaminants):

- **compacted snow**
- **dry snow**
- **frost**
- **ice**
- **slush**
- **standing water**
- **wet ice**
- **wet snow**

A runway is contaminated when the coverage is more than 25% of the surface of at least one third; below this threshold, it is assumed to be dry.
Aircraft performance is considered to be impacted whenever coverage on any rwy third exceeds 25%

RWYCC - **Runway Condition Code** is a numerical code (0-6) used in the RCR to describe the effect of surface condition on aircraft performance (reported for each rwy third).

RCAM – **Runway Condition Assessment Matrix** is a tool used to determine the Runway Condition Code.

RCR - **Runway Condition Report** is a standardized report relating to runway surface condition and its effect on aircraft performance.

PANS AIM (Doc 10066) Appendix 4 - New Snowtam Format

SNOWTAM format until 3 Nov. 2021

(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 OBSERVATION	(OPTIONAL GROUP)

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)* 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)	F) …/…/…	→
(MEAN DEPTH *(mm)* FOR EACH THIRD OF TOTAL RUNWAY LENGTH)	G) …/…/…	→
(ESTIMATED SURFACE FRICTION ON EACH THIRD OF RUNWAY) ESTIMATED SURFACE FRICTION GOOD — 5 MEDIUM/GOOD — 4 MEDIUM — 3 MEDIUM/POOR — 2 POOR — 1 *(The intermediate values of "MEDIUM/GOOD" and "MEDIUM/POOR" provide for more precise information in the estimate when conditions are found to be between medium and either good or poor.)*	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 higher than 60 cm, insert "YES" followed by the lateral 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, chemicals)*)	T)	)

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)*

Estimated Surface Friction

SNOWTAM format as of 4 Nov. 2021

(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 ASSESMENT	(OPTIONAL GROUP)

SNOWTAM (Serial number)				
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)* 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	M	G)	/ /	→
(WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITION 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 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).

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Performance Calculation Section (new)

Rwy Condition Code new)

Percent Coverage (new)

Rwy Condition Description

Situational Awarness Section (new)

new items

Remember …

- The **intent** of the **assessment and reporting procedures** is to communicate the runway surface conditions to aircraft operators in a way that is **consistent** with the effect on aircraft performance.

- The **purpose** of the **RCR** is to establish a **common language between all system actors**, based on the impact of runway conditions on aircraft performance.

- It is **essential** for aerodrome personnel **to accurately report runway condition** rather than seek a systematically conservative assessment of RWYCC (‘conservatism’ is different from motivated ‘downgrade’).

EU regulatory framework

Adoption of GRF at EU level

EASA Rulemaking process aimed at adopting the GRF was based on:

- FAA TALPA ARC work
- ICAO Annexes (3, 6, 8, 11, 14*, 15)
- ICAO Docs (9981, 10066, 4444, 10064) & Circular 355
- Safety Recommendations issued by Accident Investigation Boards
- EAPPRE Recommendations

* Ed. 7th - Amdt 13-B

Source: EASA

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

Source: EASA

EASA Regulatory Process … in a nutshell

Multidisciplinary 'cross-domain' approach

3 coordinated RMT (Rulemaking Tasks) addressing …

AIR OPS / IAW RMT.0296

RMT.0296
Review of the aeroplanes performance requirements for CAT operations

ADR / ATM / ANS RMT.0704

RMT.0704
Runway condition assessment and reporting
(+ RMT.0703 'Runway Safety')

AIS / MET RMT. 0477

RMT.0477
Technical requirements and operational procedures for AIS and AIM

Source: EASA

As a result of the 3 RMGs, coordinated amendments to

- Reg. EU 2017/**373** > Opinion 02/2018 > Reg. EU 2020/**469**
- Reg. EU **965**/2012 > Opinion 02/2019 > Reg. EU 2019/**1387**
- Reg. EU **139**/2014 > Opinion 03/2019 > (publication pending)
- Reg. EU **923**/2012 > Opinion 03/2019 > (publication pending)
- + EASA AMC/GM

Source: EASA

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

EASA

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.

New **IRs** relating to the adoption of GRF (Opinion 03/2019)

- **ADR.OPS.A.057** Origination of NOTAM
- **ADR.OPS.A.060** Reporting of sfc contaminants
- **ADR.OPS.A.065** Reporting of the rwy sfc condition
- **ADR.OPS.B.036** Ops on specially prepared winter rwys
- **ADR.OPS.B.037** Assessment of rwy sfc condition …

+ related EASA AMC/GM

Thanks for your attention

Info: grf@enac.gov.it