

KEY ELEMENTS OF ICAO's GRF AND EU REGULATIONS (EASA)

COMMENT:

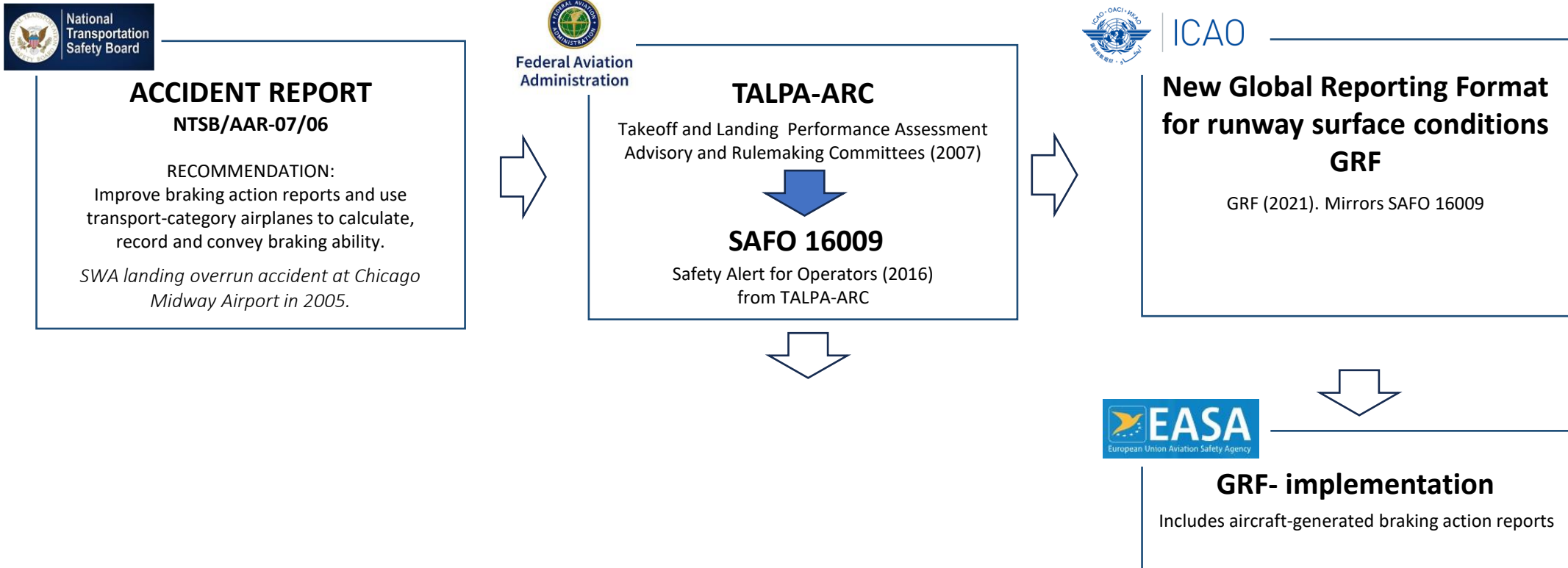
INTRODUCTION:

The following page shows the “history” of GRF, how it originated with SWA 1248 accident at Midway and the subsequent TALPA-ARC initiative by FAA that resulted in FAA SAFO 16009. Furthermore, how this work (SAFO 16009) became the foundation for ICAO's new Global Reporting Format (GRF) for runway surface condition.

Subsequent pages draw a link to EASA and the implementation of GRF in Europe and will highlight on GRF framework pertinent to runway surface condition reporting and the implementation of GRF by EASA in Europe and point to certain parts of the framework relevant to reporting.

*It should be noted that ICAO's GRF is an **assessment** **NOT measurement**. Visual inspections is the primary tool,. Exceptions are flight crew's AIREP (subjective perception of Braking Action) and airplane-generated AIREPs.*

BACKGROUND, ORIGIN & DEVELOPMENT OF GRF



KEY ELEMENTS OF ICAO's GRF AND EU REGULATIONS (EASA)



ICAO

GLOBAL REPORTING FORMAT

GRF is described through ICAO documents:

STANDARD AND RECOMMENDED PRACTICES

- Annex 14 - Aerodromes, Volume I - Aerodrome Design and Operations
- Annex 3 - Meteorological Service for International Air Navigation
- Annex 6 - Operation of Aircraft (Part 1 & 2)
- Annex 8 - Airworthiness of Aircraft
- Annex 15 - Aeronautical Information Services

PROCEDURES for AIR NAVIGATION SERVICES

- PANS Aerodromes (Doc 9981),
- PANS-AIM (Doc 10066)
- PANS-ATM (Doc 4444)

SUPPORTING MATERIAL

- Circular 355 Assessment, Measurement and Reporting of Runway Surface Conditions
- Doc 10064 Aeroplane Performance Manual



EU HAS ADOPTED GRF

Implementation of GRF in EU is established through:

- Regulation (EU) 2019/1387
- Regulation (EU) 2020/469
- Regulation (EU) 2020/2148



ICAO

ICAO Circular 355

“4.42 Increasingly, AIREPs may be generated by automated systems processing aeroplane data recorded during the deceleration phase. **Such reports are deemed to be less subjective than those generated based on the flight crew’s perception alone and may provide additional information.** It is therefore encouraged to discriminate between the to types of report origin.”



Regulation (EU) 2019/1387

Amending Regulation (EU) 965/2012- requirements for Aeroplane landing performance calculations and the standards for assessing runway surface conditions

(103c) “runway condition report (RCR)” means a comprehensive standardized report relating to the condition of the runway surface and their effect on Aeroplane landing and take-off performance, described by means of runway condition code”

CAT.OP.MPA.311 Reporting on runway braking action

Whenever the runway braking action encountered during the landing roll is not as good as that reported by the aerodrome operator in the runway condition report (RCR), the commander shall notify the air traffic services (ATS) by means of a special air-report (AIREP) as soon as practicable.

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COMMENT:

*It should be noted that ICAO's GRF is an **assessment** **NOT measurement**. Visual inspections is the primary tool and is subjected to airport personnel's observational ability and skill.*

Flight crew AIREPs are subjective perceptions of Braking Action, while airplane-generated AIREPs are deemed more objective and not influenced by subjective perceptions or observational uncertainties.



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4.38 When a friction measuring device is used for upgrading purposes, a preponderance of evidence needs to exist. To upgrade an RWYCC 0 or 1 to RWYCC 3 or less, the friction measuring device has to demonstrate an equivalent friction to that of a wet runway (RWYCC 5) or higher.

4.39 Pilot reports of runway braking action via AIREPs may be a trigger for a new assessment or be directly taken into account in the downgrade process (in accordance with the last two columns of the RCAM).

PILOT REPORT OF RUNWAY BRAKING ACTION

4.40 Pilot reports of runway braking action via AIREPs will typically provide aerodrome personnel and other pilots with an observation that can confirm the ground-based assessment or alert of degraded conditions experienced in terms of braking capability and/or lateral control during the landing roll. The braking action observed depends on the type of aircraft, aircraft weight, runway portion used for braking and other factors. Pilots will use the terms GOOD, GOOD TO MEDIUM, MEDIUM, MEDIUM TO POOR, POOR and LESS THAN POOR. When receiving an AIREP, the recipient should consider that these terms rarely apply to the full length of the runway and are limited to the specific sections of the runway surface in which sufficient wheel braking is applied. Since AIREPs are subjective and contaminated runways may affect the performance of different aeroplane types in different ways, the reported braking action may not be directly transferrable to another aeroplane.

4.41 If air traffic service (ATS) units receive an AIREP by voice communications concerning braking action that is found not to be as good as that reported, they will forward the AIREP without delay to the appropriate aerodrome operator. This is a prerequisite for using the AIREP for downgrading purposes when assessing the RWYCC. The distribution of AIREPs to aerodrome operators may be regulated by service level agreements (SLAs).

4.42 Increasingly, AIREPs may be generated by automated systems processing aeroplane data recorded during the deceleration phase. Such reports are deemed to be less subjective than those generated based on the flight crew's perception alone and may provide additional information. It is therefore encouraged to discriminate between the two types of report origins.

COMMENT:

ICAO Circular 355 forms part of new Global Reporting Format (GRF) for runway surface conditions.

It states the objective nature of airplane-generated braking action reports in form of AIREP.

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(Non-legislative acts)

REGULATIONS

COMMISSION IMPLEMENTING REGULATION (EU) 2019/1387

of 1 August 2019

amending Regulation (EU) No 965/2012 as regards requirements for aeroplane landing performance calculations and the standards for assessing the runway surface conditions, update on certain aircraft safety equipment and requirements and operations without holding an extended range operational approval

COMMENT: EASA is responsible for ensuring safety and environmental protection in air transport in Europe.

Its role includes among many, harmonizing regulation and certification.

Regulation (EU) 2019/1387 represents a central document regarding assessment of runway surface conditions.

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- (2) Investigation reports of accidents have indicated that the different methods for assessing the runway surface conditions before landing and on reporting on them after landing contribute significantly to runway excursions, in particular when the runway is wet or contaminated. The current standards in Commission Regulation (EU) No 965/2012 for aeroplane performance calculations do not cover adequately all surface conditions on wet and contaminated runways in relation to the method used for assessing and reporting the runway surface conditions.
- (3) In this regard, the International Civil Aviation Organization ('ICAO') amended a number of Standards and Recommended Practices ('SARPs') in Annexes 6, 8, 14 and 15 to the Convention on International Civil Aviation ('Chicago Convention') and has produced extensive accompanying guidance material. The purpose of those documents is to establish a globally harmonised reporting format for runway surface conditions and the airworthiness standards necessary for the assessment of the landing distance for aeroplanes as well as operational provisions on landing performance calculations and runway surface conditions reporting.
- (4) Regulation (EU) No 965/2012 should therefore be amended to address the safety recommendations issued by investigation authorities and to implement the relevant ICAO SARPs. In order to meet the ICAO recommendations, the amended requirements should enter into force on 5 November 2020 at the latest.

COMMENT: This paragraph describes ICAO's work leading up to the new Global Reporting Format (GRF) for runway surface conditions.

COMMENT: This paragraph states implementation of ICAO Standards And Recommended Practices (SARPs), in this case GRF.

ANNEX

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Annexes I, II, III, IV, VI, VII and VIII to Regulation (EU) No 965/2012 are amended as follows:

(103c) “runway condition report (RCR)” means a comprehensive standardised report relating to the conditions of the runway surface and their effect on the aeroplane landing and take-off performance, described by means of runway conditions code;”



COMMENT: Standardized reporting according to the new Global Reporting Format (GRF) for runway surface conditions.

CAT.OP.MPA.311 Reporting on runway braking action

Whenever the runway braking action encountered during the landing roll is not as good as that reported by the aerodrome operator in the runway condition report (RCR), the commander shall notify the air traffic services (ATS) by means of a special air-report (AIREP) as soon as practicable.”



COMMENT: See also ICAO Circular 355 . Increasingly, AIREPs may be generated by automated systems processing aeroplane data recorded during the deceleration phase. Such reports are deemed to be less subjective than those generated based on the flight crew’s perception alone and may provide additional information. It is therefore encouraged to discriminate between the two types of report origin.”



EASA Regulations on GRF implementation (OPS and IAW)

Giovanni CIMA - EASA
EASA GRF Webinar - 10 March 2021

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An Agency of the European Union

Air operations, AIREP (Regulation (EU) 2019/1387 – CAT.OP.MPA.311)

- AIREPs are an essential element of the GRF construction, useful to validate the reporting system and support the work of the aerodrome personnel.
- Caution should however be exercised as a “Less Than Poor” AIREP may lead to a runway closure.
- It is acceptable to report on a more coarse scale of “Good”, “Medium” and “Poor”.
- It is possible to report also braking actions that are better than expected.
- “Aircraft-generated” reports may be used provided that:
 - The origin of the report is also communicated
 - The PIC has the possibility to amend such reports based on its judgement



COMMENT: Boeing’s “Airplane Braking Friction” is based on a scale denominated by “DRY”, “GOOD”, “MEDIUM” and “POOR”. For data consistency with GRF (originally TALPA-ARC and FAA SAFO 16009) aircraft stopping distance calculations for the intermediate conditions (“GOOD TO MEDIUM, MEDIUM TO POOR etc.), aircraft operators can interpolate data found in their QRH, FCOM and FPPM documents

Reporting (Regulation (EU) 2020/2148 – ADR.OPS.A.065)

- Significant changes that trigger a new RCR
 - change in the RWYCC
 - change in the contaminant type
 - change in reportable contaminant coverage
 - change in contaminant depth
 - other information



COMMENT: Automatic airplane-generated AIREP will provide aerodrome operators with additional information and understanding of runway surface conditions.

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 RCR/SNOWTAM, ATIS, ATC
- AIREPs for continuous observation of changes



COMMENT: Automatic airplane-generated AIREP will provide better situational awareness for airplane operators/airlines.

