ICAO UNITING AVIATION

# Global Reporting Format Implementation EVALUATION


Eng. Mrs. Natasha Leonora-Belefanti

*AIM TF Rapporteur – ICAO NACC*


**28-30 NOVEMBER 2022**

# Topics

- Recap on GRF Set Procedures & Duties
- Evaluation NOV 2021 - 2022
- GRF Lessons Learned
- Preventive measures
- GRF Implementation Status


ICAO UNITING AVIATION
RECAP ON GRF SET
PROCEDURES & DUTIES

# Recap On GRF Set Procedures

## Global Reporting Format (GRF):

- ICAO's methodology of GRF, was applicable **since 4 November 2021** for our region
- It is used for assessing and reporting of runway surface conditions
- Enables the harmonized assessment and reporting of runway surface conditions

# Recap On GRF Set Procedures

## Global Reporting Format (GRF):

- Helps improve flight crew assessment of take-off and landing performances
- Improves the accuracy and timeliness of runway condition assessment and harmonizes this information globally
- Expected to reduce the risk of runway excursions.

# Reporting runway surface conditions:

- The Aerodrome Operator assesses runway surface conditions, whenever water is present on an operational runway.
- The Aerodrome Operator produces a Runway Condition Report (RCR).
- Helps to coordinate with and establish a common language between the related parties involved, such as:
  Aerodrome operator – Aircraft operators & Pilots – ATC – AIS/AIM.

# Reporting runway surface conditions:

| Contaminant Types | Definition |
|---|---|
| **Wet / slippery wet** | Water on the surface less than 1/8 inch in depth |
| **Water** | Water on the surface at least 1/8 inch in depth |
| **Standing water** | Water on the surface of depth greater than 3 mm. |
| **Sand / dirt** | Grains of finely divided rock and mineral particles |
| **Slush** | Mix of water and sand/dirt |

**Evaluation of the Runway is carried out by Airport Operations with the help of the Runway Condition Assessment Matrix (RCAM)**

# Recap On GRF Set Procedures

## Reporting runway surface conditions:

- **Contaminated runway**
  A runway is contaminated when more than 25% per third of the runway surface area (whether in isolated areas or not) within the required length and width being used is covered by water, or slush more than 3 mm (0.125 in) deep.

- **Dry runway**
  A dry runway is one which is clear of contaminants and visible moisture within the required length and the width being used.

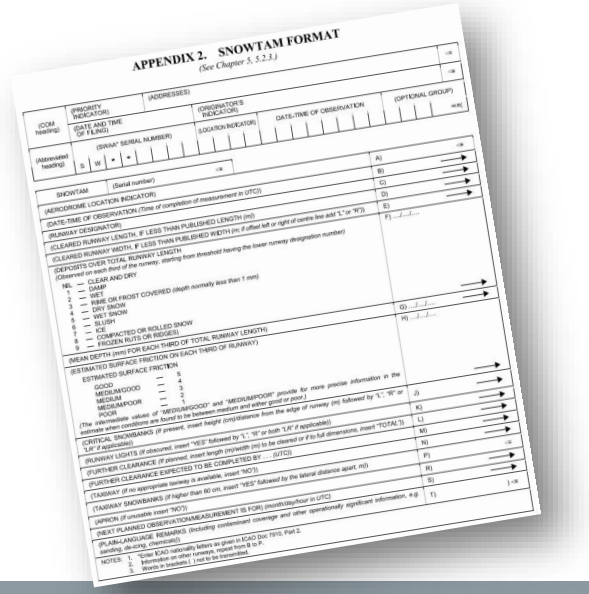
- **Wet runway**
  A runway that is neither dry nor contaminated.

Evaluation of the Runway is carried out by Airport Operations with the help of the Runway Condition Assessment Matrix (RCAM)

# Recap On GRF Set Procedures

## How do the Dutch Caribbean (DC) Islands exercise/execute the GRF Implementation?

- When delivering SNOWTAM related data, the data originator (DO) can send the RCR via the email-automated system OR when no application is in place, the DO uses the company "SNOWTAM Request form", fills it out and sends it to the NOF.



APPENDIX 2. SNOWTAM FORMAT

*(See Chapter 5, 5.2.3.)*

# Recap On GRF Set Procedures

## How do the Dutch Caribbean (DC) Islands exercise/execute the GRF Implementation?

- The submission is immediately followed by a confirmation phone call to the NOF's
- DO's are encouraged to use an automated system/application, to avoid making unnecessary errors.
- Physical analyses then and therefor remains as a back-up.

# Recap On GRF Set Procedures

## How do the Dutch Caribbean (DC) Islands exercise/execute the GRF Implementation?

- The NOF confirms receipt once called, reviews the information and:
  1. If the information provided is complete, the NOF publishes the requested immediately and contacts the assigned Control Tower by phone to inform of the published RCR/SNOWTAM;

  2. If the information is incomplete and/or the content has errors, the NOF will contact the DO via phone to quickly inform of the actions needed to be taken by the DO. The DO submits a new request.
     After publication, the NOF sends records the encountered errors in the Watchlog.

- The DO keeps track of the validity of the SNOWTAM published and takes timely action if required *(See the DC eAIP AD 1)*

# Recap On GRF Set Procedures

# Applicable RwyCC for our Region

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


| RWYCC | Descriptor |
|---|---|
| 6 | DRY |
| 5 | WET |
| 3 | (SLIPPERY) WET |
| 2 | STANDING WATER |


# RECAP ON GRF SET PROCEDURES & DUTIES

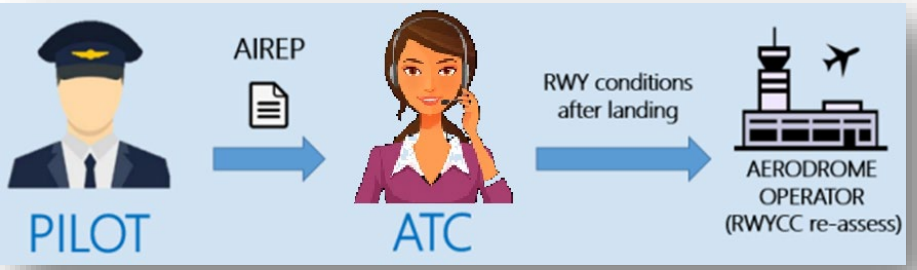
# Recap On GRF Set Duties

## Data Originator → Aerodrome OPS:

- **Originates** the information!!!
- **Provides** technical training to Airport Operations Officers as required
- **Assesses** (per third (⅓) section of the RWY) and **Creates the report** for the runway surface conditions
- **Reviews** and **Sends** the Runway Condition Report (RCR) to **AIS / NOTAM Office** (NOF)

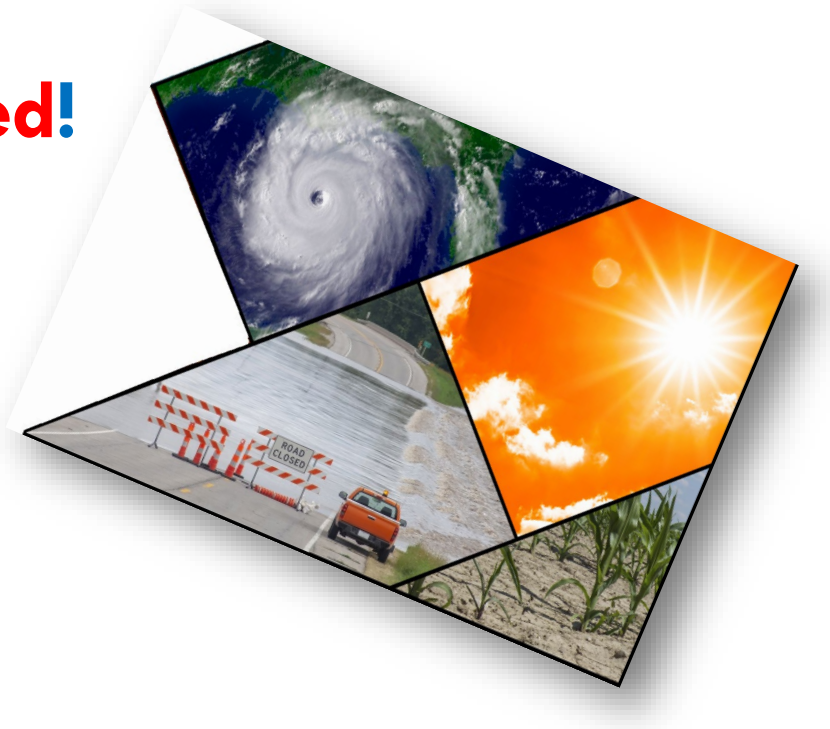
# Recap On GRF Set Duties

- The **NOF issues** the GRF for Runway surface condition → SNOWTAM *(incl. the RCR string);*
- **ATC / Automation** reflects the published info in the ATIS (if applicable);
- **DO maintains** close contact with ATC
  → to reassess the runway if needed, in case Pilots provide feedback (AIREP) to ATC.
  → ATC then in turn informs the AD OPS (DO) of the Pilot's report.
- **DO keeps** the information **up-to-date** and **changes/updates** the condition reported **without delay**!

# Recap On GRF Set Duties

- Every **significant change** in the Runway condition requires a runway condition report to be issued and requires AD operations to do an assessment!
- **Raining? → DO: An assessment is required!**
- A runway assessment should be done **by trained personnel.**
- The **GRF is a safety tool**



# RECORDED ERRORS ANALYSES NOV 2021 TO NOV 2022

# Since November 4th 2021 the following areas regarding SNOWTAM has been evaluated:

- Timely request of submission?

1. SNOWTAM requests are submitted too late, while the weather has undergone multiple significant changes within the 8hrs of validity;

2. RWY Analyses are carried out too late, which results in a late request

# Since November 4th 2021 the following areas regarding SNOWTAM has been evaluated:

- Request is submitted via Automated application or manual Form?

1. Most requests with error are submitted via the manual form.

2. Automated system error only occurred (2 out of 115), whereby the error was wrong RwyCC chosen → incorrect analyses.

# Since November 4th 2021 the following areas regarding SNOWTAM has been evaluated:

- **Confirmation call is received immediately after request submission?**

1. **SNOWTAM requests are submitted but no confirmation call is received at the NOF → Signed SLA is not followed accordingly;**

2. **DO's not aware of procedure stated in SLA → unfamiliar responses**

# Evaluation NOV 2021 - 2022

## Since November 4th 2021 the following areas regarding SNOWTAM has been evaluated:

- Significant changes are submitted immediately?

1. DO's are not assessing the runway condition as required by ICAO standards;
2. TWR also to coordinate with DO, if necessary, in case there is significant change and/or request new assessment to be done by DO;
3. Pilots can always confirm the runway condition and feedback to TWR.

# Since November 4th 2021 the following areas regarding SNOWTAM has been evaluated:

## ✈ Availability of DO / TWR:

1. DO/TWR not reachable or contact info incorrect;
2. TWR not aware of SNOWTAM procedure.

# Since November 4th 2021 the following areas regarding SNOWTAM has been evaluated:

- **Up-to-date knowledge of the requestor:**

  **Lack of sufficient knowledge regarding runway condition.**

ICAO UNITING AVIATION

# GRF Lessons Learned

## Miracle on the St. Johns

# GRF Lessons Learned

## A runway excursion is a runway safety incident where an aircraft makes an inappropriate exit from the runway.

VIDEO

# Accident Base Information:

- May 3rd, 2019
- Miami Air Boeing 737
- Flight: Guantanamo Bay to Jacksonville with 143 persons on board
- Bad weather conditions
- 21 people were injured.

# Point of Views and facts:

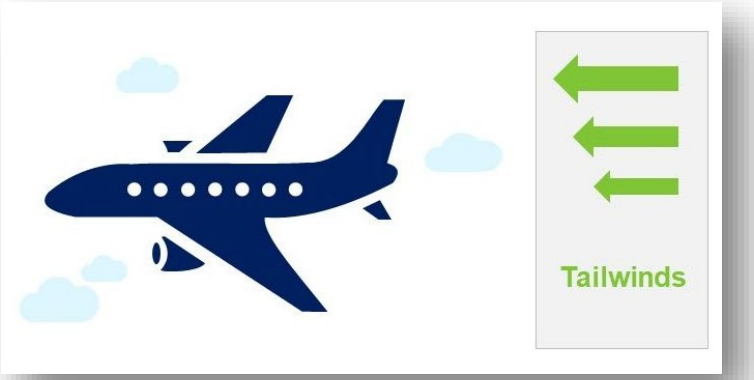
- Passengers explained the feeling of the plane never slowing down upon landing
- Heavy rain fall and Runway contaminated by lots of water
- No updated runway condition information in place to flight crew

# Point of Views and facts (cont.):

- Flight Crew had extreme loss of braking friction

- Flight crew not aware of rain condition landing guidance on wet runway

# Point of Views and facts (cont.):




- Landed fast with tailwind;
- Landed in a heavy rain showers ;
- Slid into shallow water of the runway's end.

# GRF Lessons Learned

## Results:

- Loss of braking friction on rain-soaked runway deemed primary cause of the crash;
- Aircrafts skids off the runway into the St. Johns River;
- No SNOWTAM /RCR information was known;
- The airplane would still not have stopped on the un-grooved runway because the rainfall rate and runway contamination contributed to water depths that caused the accident.


# PREVENTIVE MEASURES

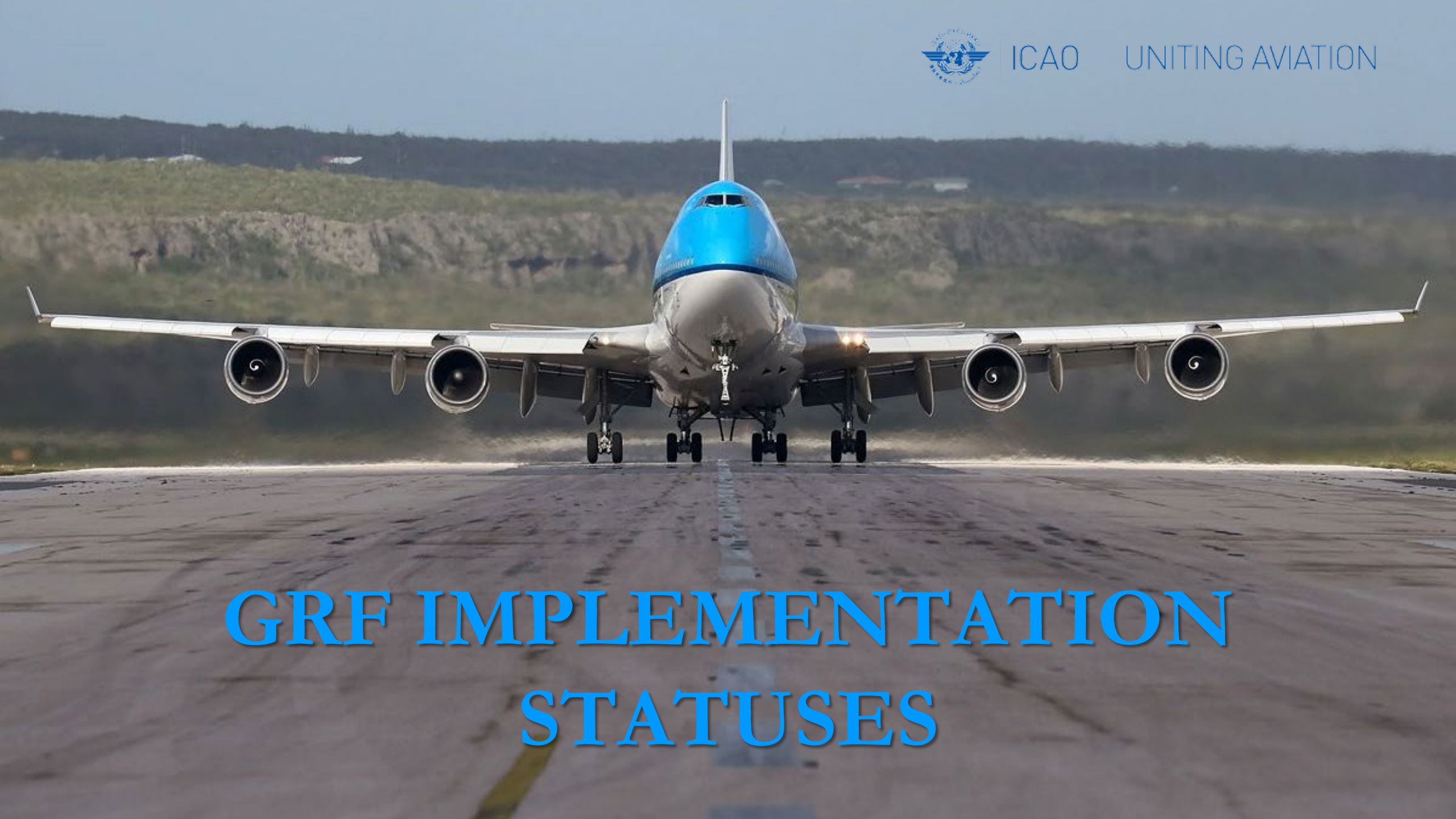
# Preventive measures

- The use of an Automated Application has shown to produce less errors by the DO, regarding the RCR data;
- Manual SNOWTAM Form, is advised to be used as an redundancy and should be filled out by trained personnel;
- Confirmation calls to the NOF are highly recommended in order to have requests processed immediately … Safety is our priority;

# Preventive measures

- DOs must remain vigilant on significant weather changes and maintain RWY Condition information up-to-date;

- 8hrs validity must be taken into account!



ICAO UNITING AVIATION

# GRF IMPLEMENTATION STATUSES

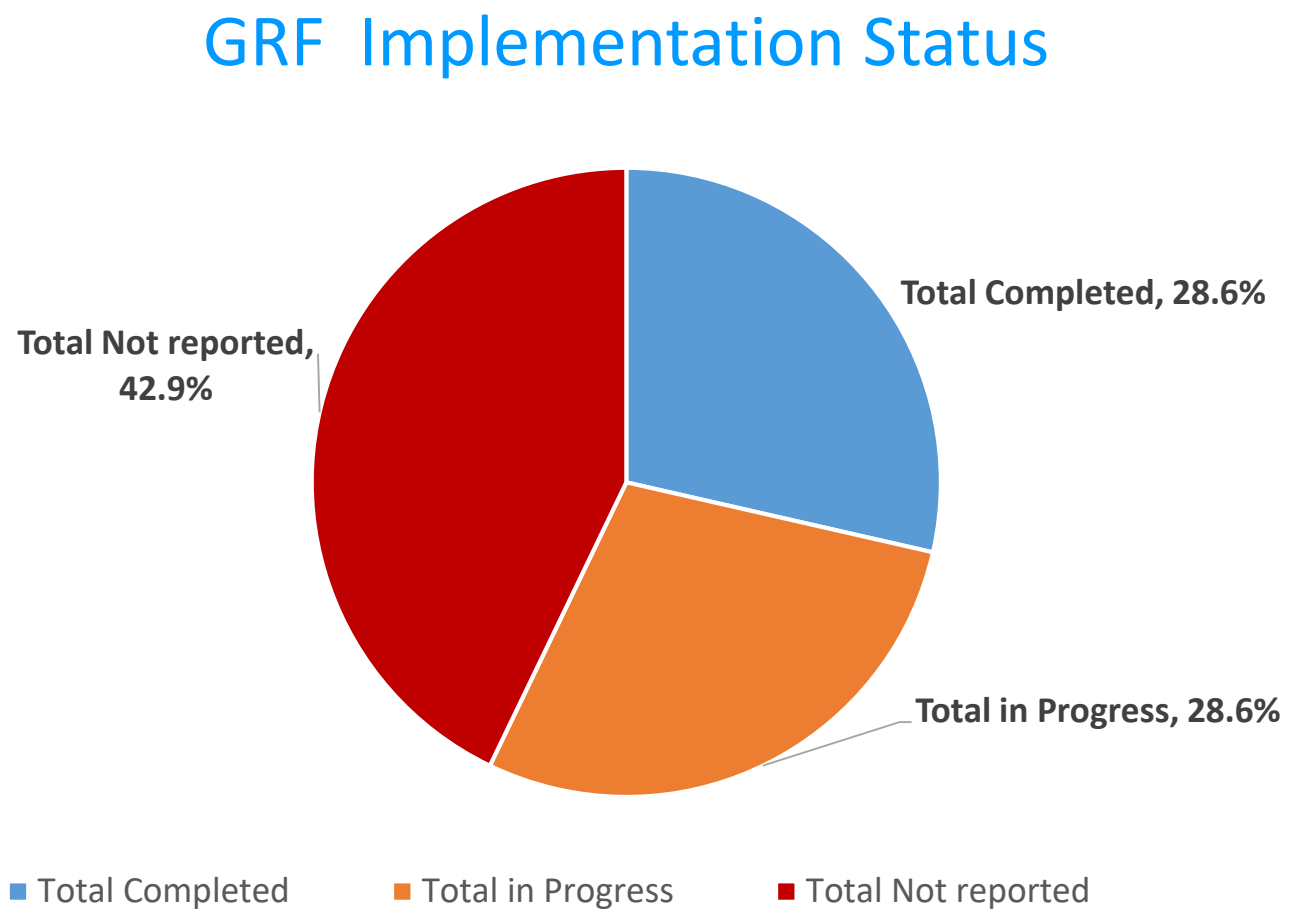
# GRF Implementation Statuses

## Up to NOV 24th 2022:

- A Total of 21 States registered to the AIM TF on GRF implementation
- 6 Stated Completed GRF Implementation
- 6 Stated has Not Completed the GRF Implementation
- 9 States have not provided GRF Implementation Status

# GRF Implementation Statuses

## Up to NOV 24th 2022:



ICAO


North American Central American and Caribbean (NACC) Office Mexico City
South American (SAM) Office Lima
ICAO Headquarters Montréal
Western and Central African (WACAF) Office Dakar
European and North Atlantic (EUR/NAT) Office Paris
Middle East (MID) Office Cairo
Eastern and Southern African (ESAF) Office Nairobi
Asia and Pacific (APAC) Sub-office Beijing
Asia and Pacific (APAC) Office Bangkok
THANK YOU