Australian Government
Civil Aviation Safety Authority

Global Reporting Format (GRF) Implementation

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26 November 2024

Acknowledgement of country

Global Reporting Format

- Why do we need it?
- What is it?
- What does it look like?
- When do we need to do it?
- Who do we report to?

Why do we need it?

ICAO

- Runway safety, particularly runway excursions, is one of the top aviation safety priorities

Flight Safety Foundation

- Third most common landing excursion risk factor
    - ineffective braking action
    - contamination on the runway such as snow, ice, slush or water

GRF addresses this risk!

Why do we need it?

Source: Network Aviation

Image taken of the aircraft stopped within the runway end safety area

- Recent Australian example
- ATSB Investigation AO-2020-002 - September 2021
- Water (or other contaminants) on runways can play a contributing role in runway excursion

Why do we need it?

Contributing factors

- The combination of the approach speed required by the prevailing wind conditions and the poor braking effectiveness in the wet conditions resulted in the aircraft overrunning the runway.

Other factors that increased risk

- During the flight, the potential for the heavy or moderate rainfall to significantly impact the landing distance was not recognised by the flight crew and therefore not considered as a threat.
- Despite technical examination of the runway identifying areas requiring maintenance to maintain the surface friction, no corrective action was taken.
- **The operator's documentation required crew to consider contamination of runways at the departure and destination airports. However, the provided definition and guidance did not include the means to identify water contamination from active rainfall. (Safety Issue)**
- **CASA advisory publications did not include information regarding the potential for reduction in braking performance resulting from active moderate or heavy rainfall. (Safety Issue)**

What is it?

Standardisation of runway surface

- Inspection
- Assessment
- Reporting

Pilot impacts

- Braking action
- Landing and take-off performance
  - Additional landing and take-off distances

What is it?

Report runway

- In thirds

Runway Condition Code (RWYCC)

- Number allocated for surface condition

Runway Surface Condition

Runway Condition Report (RCR)

- Runway number
- RWYCC
- Surface condition description

When to report?

Only report if aeroplane operations are:

- scheduled
- notified in advance to the aerodrome operator
- are known to be in progress at the aerodrome.

Runway Condition Code (RWYCC)

Using a runway surface description to assign a RWYCC (WET and DRY only)

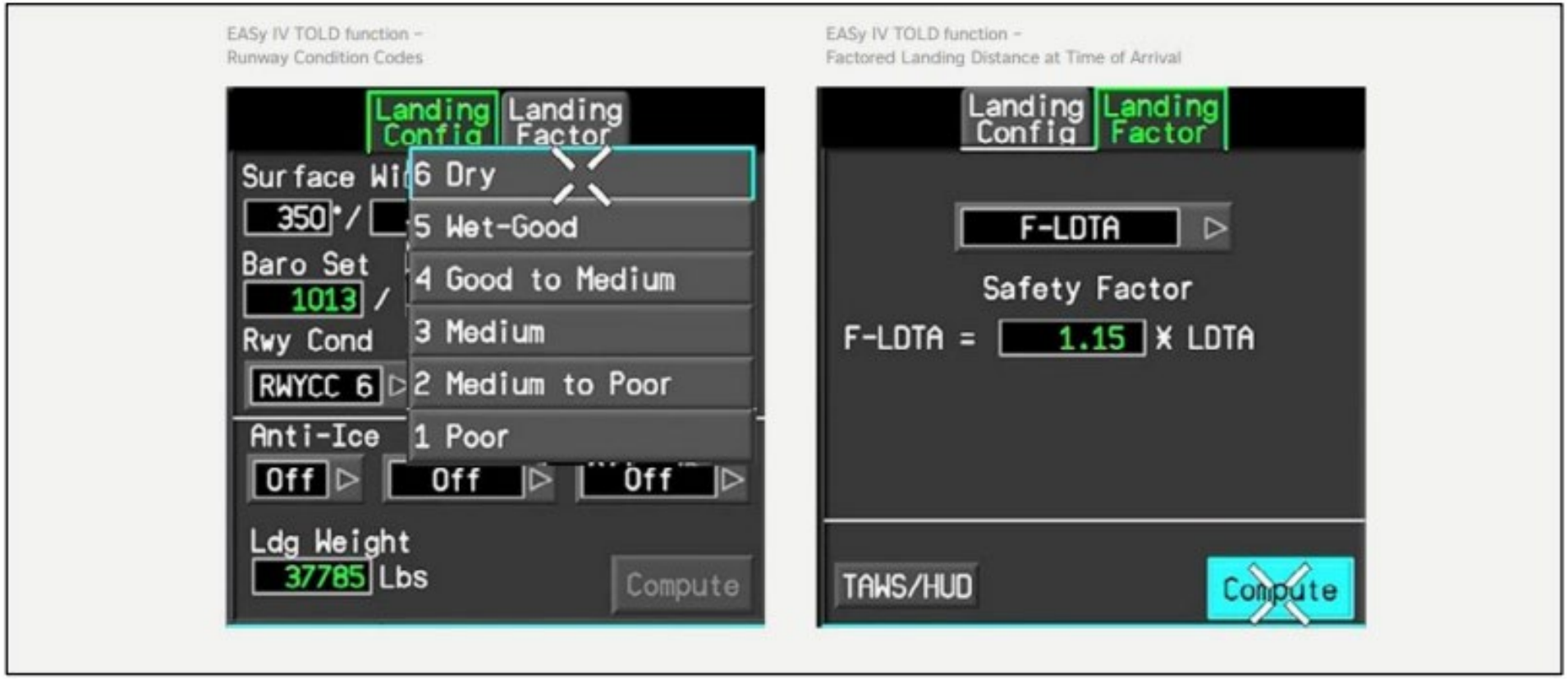
Runway surface description	Applicable RWYCC
DRY	6
WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth)	5
SLIPPERY WET (braking action is MEDIUM for WET runway)	3
STANDING WATER (depth of more than 3 mm)	2

- Runway surface description equates to RWYCC
- RWYCC equates to braking action
- Visual observation

Aeroplane performance

Pilot report of runway braking action	Description	RWYCC
N/A		6
GOOD	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	5
GOOD TO MEDIUM	Braking deceleration OR directional control is between good and medium.	4
MEDIUM	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	3
MEDIUM TO POOR	Braking deceleration OR directional control is between medium and poor.	2
POOR	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	1
LESS THAN POOR	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	0

Aeroplane performance



Honeywell MCDU with braking action, associated RWYCC and landing distance factor

Runway serviceability inspections

Severe storm, or a period of heavy or prolonged rainfall

- **Current requirement**
- Most likely to cause STANDING WATER

Met conditions cause:

- RWYCC to change; or
- Runway surface contaminated, or contaminant changed
- **Only for known aeroplane operations**

Must check for:

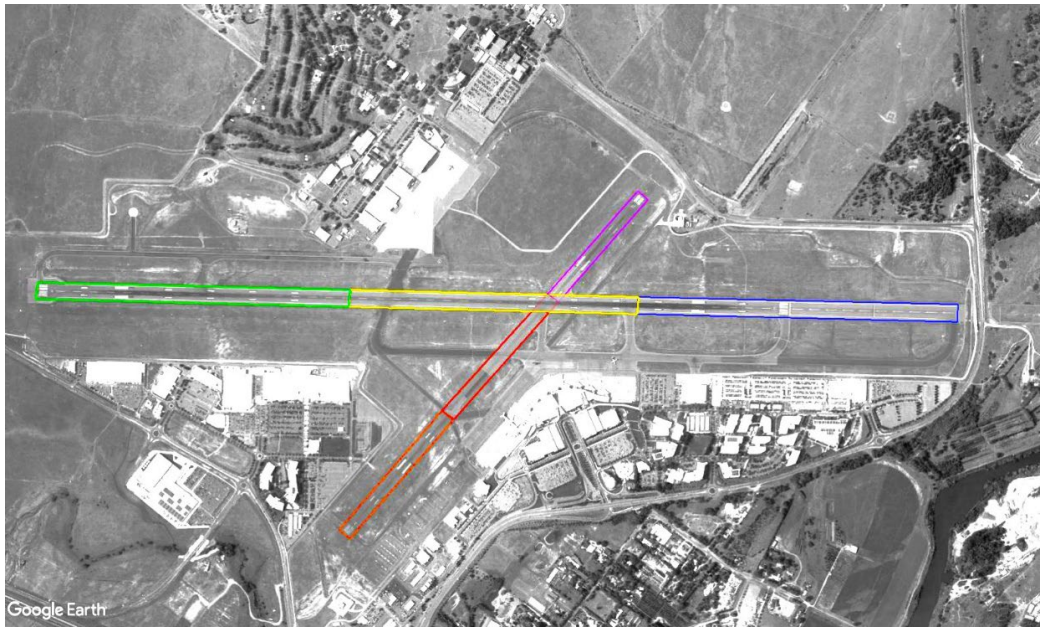
- Visible dampness, standing water, snow, slush, ice or frost
- Pooling, ponding **(current requirement)** or poor drainage

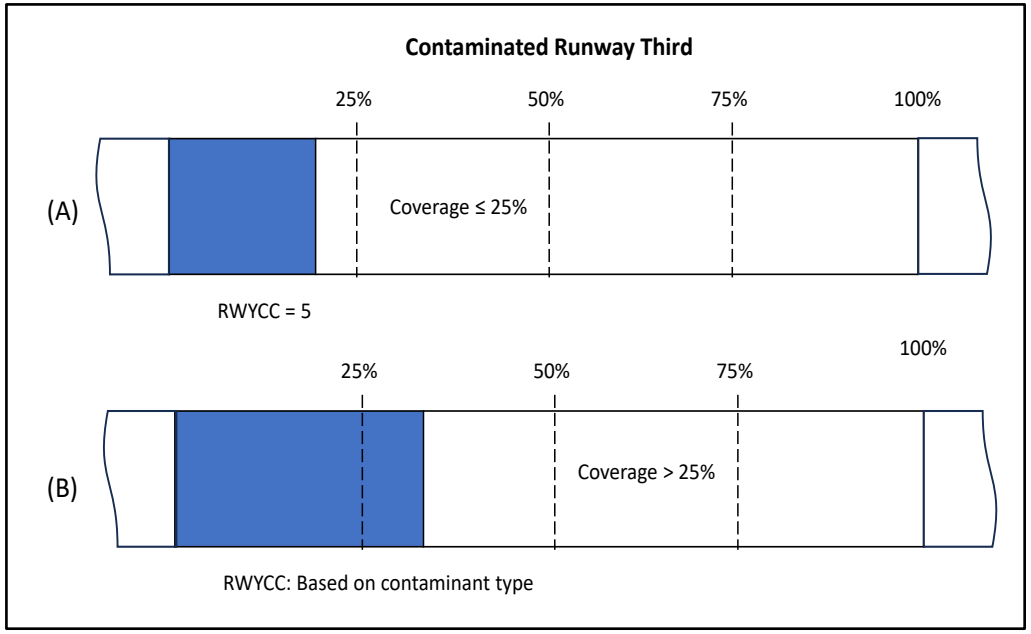
When to inspect?

Timing of serviceability inspections has not changed:

- Must be conducted before the first movement of a scheduled passenger air transport operation
- As soon as possible after a severe wind event, severe storm, or period of heavy or prolonged rainfall

Runway thirds





WET runways

WET ONLY RUNWAY:

ATIS:

MELBOURNE TERMINAL INFORMATION CHARLIE, EXPECT INSTRUMENT APPROACH, RUNWAY 34, SURFACE CONDITION CODE 5, 5, 5, WET, WET, WET, WIND 325 DEGREES/15 KNOTS etc

ATC:

RUNWAY 34 SURFACE CONDITION CODE 5, 5, 5, WET, WET, WET

Note: NOTAMs are not issued for WET runways

SLIPPERY WET runways

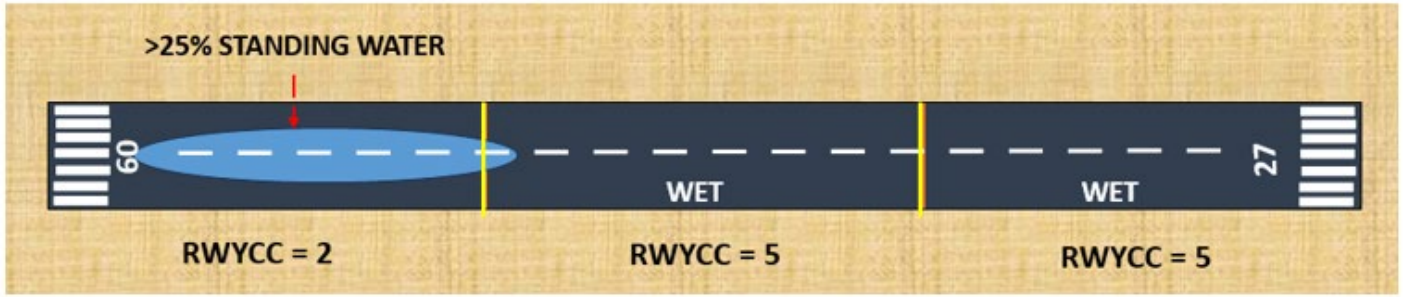
SLIPPERY WET RUNWAYS:

YXXX 01170055 RWY 09 3/5/5 25/NR/NR SLIPPERY WET/WET/WET

Note: The percentage reported of a runway third for SLIPPERY WET runways is the total percentage for the runway third i.e. 25%, 50%, 75% or 100%.

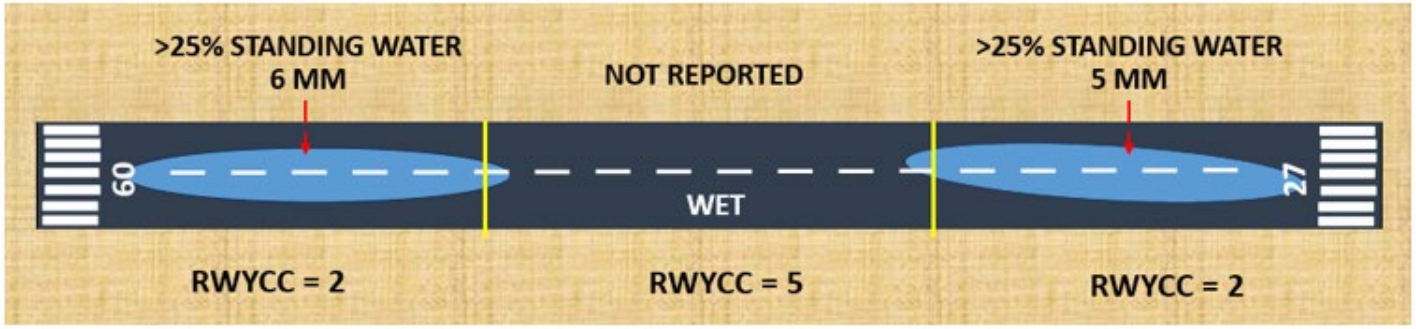
STANDING WATER on runways

STANDING WATER:



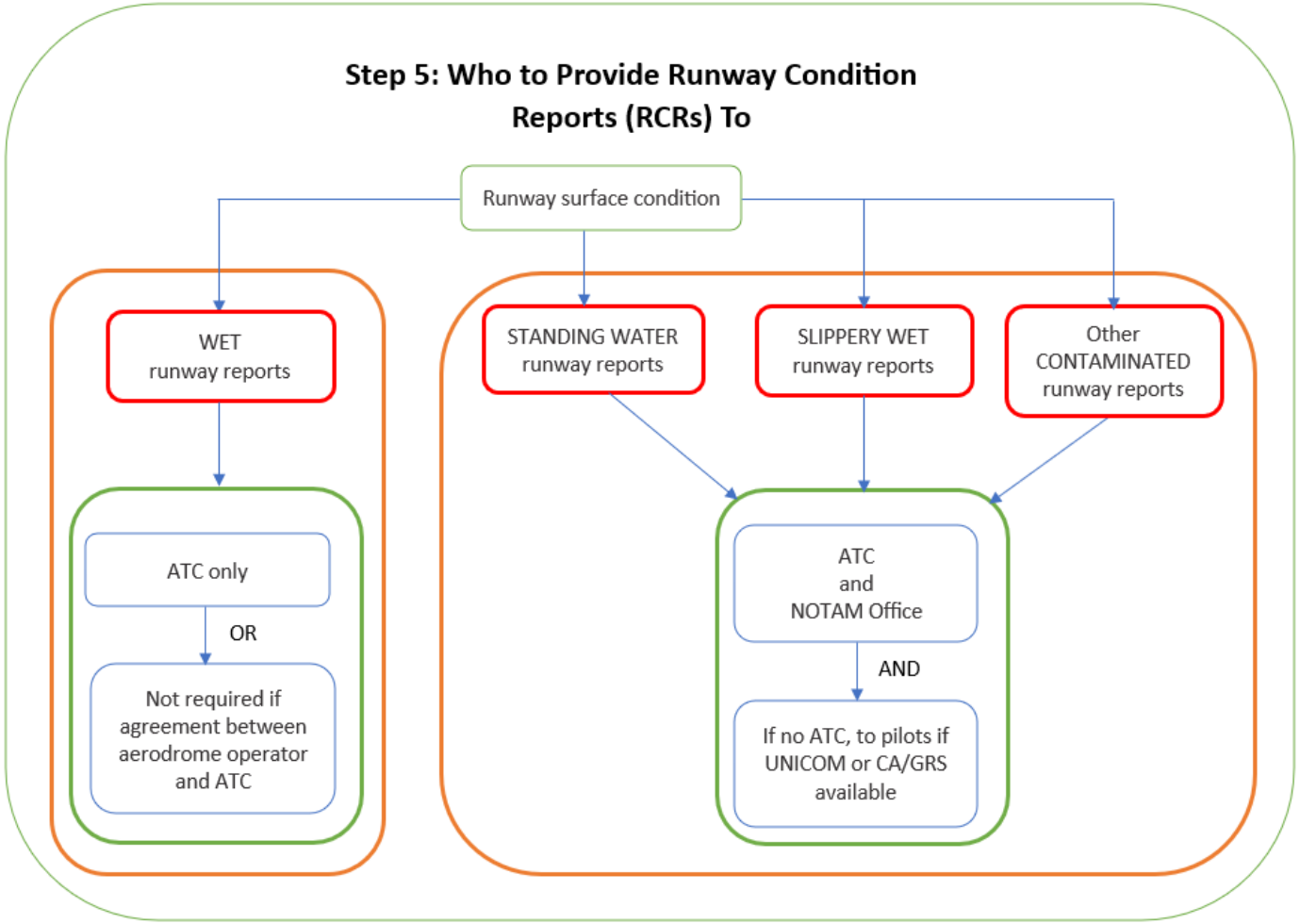
YXXX 01170055 RWY 09 2/5/5 STANDING WATER/WET/WET

STANDING WATER (DEPTH AVAILABLE):



YXXX 01170055 RWY 09 2/5/2 06/NR/05 STANDING WATER/WET/STANDING WATER

Runway surface reporting



Training

Aerodrome reporting officer must be trained

- serviceability inspection, including runway surface conditions
- aerodrome reporting, including runway surface conditions

Multi-Part AC 91-32 and AC 139-22 v1.0 - Global reporting format – Runway surface condition

- Appendix B - Runway Condition Assessment Worksheet - Wet runway surface conditions
- Appendix D - Training Syllabus
- The New Global Reporting Format for Runway Surface Conditions (icao.int)

Aerodrome manual

Aerodrome serviceability inspection procedures

- Making changes to the RWYCC and runway surface contaminant types

Aerodrome reporting procedures

- Notify ATC, AIS and pilots of relevant RWYCC and runway surface descriptions

Recommended to have common RCR and NOTAM examples for the aerodrome

If standing water pools or ponds, measure depth when runway not in use

- ***Note: design and maintenance of runway should prevent pooling or ponding of water***

Runway maintenance

Pooling, ponding, or poor drainage of water observed during an aerodrome serviceability inspection

Remedial maintenance as soon as possible

- Runways or runway surfaces not expected to be overlaid, resurfaced or replaced
- Maintenance action taken to address formation of depressions or surface irregularities

Not so hard!

- Runway serviceability inspections already required after bad weather
- WET runways don’t need to be reported at non-controlled aerodromes
- Snow and ice very rare; and runway can be closed
- STANDING WATER most common contaminant
  - Runway design and maintenance
  - Visual observation
  - Known to aerodrome operator
  - Record RCR/NOTAM in aerodrome manual

Transition

1 August 2024

- Controlled aerodromes
- Certified aerodrome with scheduled Part 121 operations

1 February 2025

- Remaining certified aerodromes

Can implement now if ready!

All aviation actors have a role to play

- Pilots/aeroplane operators
- Aerodrome operators
- ATC
- AIS

GRF components link together to safeguard runway operations!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