GHANA
CIVIL AVIATION AUTHORITY

ADVISORY CIRCULAR
AC 14-037

GLOBAL REPORTING FORMAT (GRF) FOR RUNWAY SURFACE CONDITION REPORTING

SECTION 1 GENERAL

Ghana Civil Aviation Authority (GCAA) Advisory Circulars from Aerodrome Safety and Standards (ASAS) contain information about standards, practices, and procedures that the Authority has found to be an Acceptable Means of Compliance (AMC) with the associated Directives.

An AMC is not intended to be the only means of compliance with a Directive, and consideration will be given to other methods of compliance that may be presented to the Authority.

1.1 PURPOSE

The purpose of this document is to introduce and provide guideline for the implementation of the International Civil Aviation Organization (ICAO) Global Reporting Format (GRF) for runway condition reporting.

This document is available to the aviation industry for the purpose of conveying flight safety information regarding the new runway condition reporting. All aerodrome personnel involved with runway condition assessment should be aware of the forthcoming implementation of the new GRF.

1.2 REFERENCE

It is intended that the following reference materials be used in conjunction with this document:
International Civil Aviation Organization (ICAO) Annex 14 to the *Convention on International Civil Aviation — International Standards and Recommend Practices: Aerodromes – Volume I Aerodrome Design and Operations* (Eighth Edition, July 2018);

(1) ICAO Doc 9981 PANS Aerodromes Part II – Aerodrome Operational Management

(2) ICAO Doc 9981 Procedures for Air Navigation Services – Aerodromes (Second Edition, 2016); and

(3) ICAO Amendment 2 to Doc 9981 Procedures for Air Navigation Services, 2018-11-08

(4) ICAO Circular 355 on Assessment, Measurement and Reporting of Runway Surface Conditions

(5) Advisory Circular AC 14-035 *Runway Surface Friction Characteristics and Friction Testing;*

1.3 RELATED DIRECTIVES

The following directives are directly applicable to the guidance contained in this advisory circular—
GCAD Part 14
GCAD Part 27

1.4 STATUS OF THIS ADVISORY CIRCULAR

This is an original issuance of this AC.

1.5 FOREWARD

This document provides guidance to Aerodrome Operators on the implementation of global reporting format (GRF) at various airports in Ghana. An Aerodrome Operator is responsible to implement the GFR for runway condition reporting.

1.6 APPROVAL

Issue No: Original	Approved by: Director-General	OCTOBER 2021

- Advisory Circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the directives, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.
- Where a directive contains the words "prescribed by the Authority," the AC may consider to "prescribe" a viable method of compliance, but status of that "prescription" is always "guidance" (never a directive).

1.7 TABLE OF CONTENTS

1.8 Definitions and Abbreviations

The following **definitions** are used in this document:

Aircraft Movement Surface Condition Report: means a report that details the surface conditions of all movement areas at an airport, including runways and taxiways.

Contaminant: means material that collects on a surface, including standing water and sand.

Contaminated runway: A runway is contaminated when a significant portion of the runway surface area (whether in isolated areas or not) within the length and width being used is covered by standing water.

Note: Sand is also a contaminant but are not included in the definition of contaminated runway because its effect on runway surface friction characteristics and the runway condition code cannot be evaluated in a standardized manner.

Dry: means a surface condition that is free of visible moisture and has no observed contaminants within the area intended to be used.

Paved surface: means a surface of asphaltic concrete (flexible) or Portland cement concrete (rigid).

Percent coverage of contaminant: means the estimated amount of contaminant present on the surface of the runway and reported as percentage of the assessed surface.

Runway Condition Assessment Matrix: means a matrix allowing for the assessment of runway condition code, using associated procedures, from a set of observed runway surface condition(s) and pilot report of braking action.

Runway Condition Code: means a number describing the runway surface condition.

Runway Surface Condition: means the portion of the AMSCR which reports the surface condition of the runway.

Sand: means small particles of crushed angular mineral aggregates or natural sand material used to improve runway surface friction levels.

Significant change: means, with respect to runway surface condition includes, but is not limited to: changes in type of contaminant, changes in depth of contaminant, following the application or removal of sand or chemicals, changes in conditions caused by rapid increases or decreases in temperature.

Slippery wet runway: means a wet runway where the surface friction characteristics of the runway have been determined to be degraded.

Note: A runway or its portion is deemed as having degraded friction characteristics when friction measurements are below the minimum friction levels specified in 27.42 of GCAD Part 27Aerodrome Safeguarding and Maintenance

Standing water: means water of depth greater than 3 mm.

Take-off and Landing Performance Assessment: means a method of reporting runway conditions (which relates to aeroplane performance) which is intended to reduce the risk of runway excursions.
Wet: means a surface condition where there is any visible dampness or water up to and including 3 mm deep.

The following **abbreviations** are used in this document:

AC: Advisory Circular

AMSCR: Aircraft Movement Surface Condition Report

CL: Centreline

GRF: Global Reporting Format

ICAO: International Civil Aviation Organization

RCAM: Runway Condition Assessment Matrix

RCR: Runway Condition Reporting

RFI: Runway Friction Index

RSC: Runway Surface Condition

RWY: Runway

RWYCC: Runway Condition Code

TALPA: Takeoff and Landing Performance Assessment

TWY: Taxiway

SECTION 2 BACKGROUND

The International Civil Aviation Organization (ICAO) has developed a new globally harmonized methodology for runway condition assessment and reporting. This is intended to be the only such reporting format for international aviation with the objective of reducing runway excursions, thus improving the safety of airport operations. The methodology is called the Global Reporting Format (GRF) and the implementation date is November 4th, 2021.

The philosophy of the GRF (in the case of Ghana) is that the airport operator assesses the runway surface conditions whenever water or sand is present on an operational runway. From this assessment, a Runway Condition Code (RWYCC) and a description of the runway surface are reported, to aid aircraft operational performance calculations. This format, based on the type, depth and coverage of contaminants is the best assessment of the runway surface condition by the airport operator. All other pertinent information should also be taken into consideration. When changes in conditions occur, they should be reported without delay.

The RWYCC reflects the expected braking capability as a function of the surface conditions. With this information, the flight crew can derive, from the performance information provided by the aeroplane manufacturer, the landing distance of an aeroplane under the existing conditions. When a RWYCC is not provided, pilots refer to the reported runway surface conditions to determine expected landing performance.

Flight crew utilize runway surface condition descriptors (type and depth of contamination) when determining their aeroplane's expected take-off performance.

In preparation for the November 4, 2021 target date for GRF implementation, Ghana Civil Aviation Authority (GCCA) has developed the new runway condition reporting methods which are described in this AC.

2.1 IMPLEMENTATION OF THE GLOBAL REPORTING FORMAT (GRF) IN GHANA

2.2 General

The Global Reporting Format (GRF) is an internationally accepted concept which utilizes a consistent method to produce an Aircraft Movement Surface Condition Report (AMSCR). The GRF consists of five fundamental **elements**:

(1) Runway surface conditions

(2) Runway surface descriptors

(3) Runway Condition Assessment Matrix (RCAM)

(4) Runway Condition Code (RWYCC)

(5) Runway Condition Report (RCR)

2.3 Runway Surface Conditions

There are four defined runway surface conditions:

(1) Dry runway;

(2) Wet runway;

(3) Slippery (when) wet runway; and

(4) Contaminated runway

2.4 Runway Surface Condition Descriptors

There is one contaminated runway surface condition descriptor:

(1) Standing water

This runway surface condition descriptor, together with contaminant depth and temperature, are used to determine the RWYCC.

This runway surface condition descriptor is used singly or in combination when describing the runway surface condition. Further details are provided in Section 5(d) of this AC.

2.5 Runway Condition Assessment Matrix (RCAM)

The RCAM is a matrix used to determine a runway condition code, from a set of observed runway surface condition(s) and associated procedures from a set of observed runway surface condition(s) and pilot report of braking action.

Details respecting the RCAM are provided in Section 6 of this AC.

2.6 Runway Condition Code (RWYCC)

The Assessment Criteria consist of Runway Surface Descriptions which are used to determine the Runway Condition Code (RWYCC).
Flight crew use the RWYCC for determining the landing performance of their aeroplane. (The RWYCC is not utilized for determining aeroplane takeoff performance).

The process for determining the RWYCC is provided in Section 6.4 of this AC.

2.7 Runway Condition Report (RCR)

This is an agreed set of criteria used in a consistent manner for runway surface condition assessment, aeroplane performance certification and operational performance calculation. It links the agreed set of criteria with the aircraft landing and take-off performance table and is related to the braking action experienced and eventually reported by flight crew.

The RCR reports the contaminant type and depth which is relevant to take-off performance. It is a standardized common terminology and phraseology for the description of runway surface conditions that can be used by aerodrome operator inspection personnel, air traffic controllers, aircraft operators and flight crew.

The RCR consists of two sections;

(1) Aeroplane performance calculation section (for each third)

(2) Situational awareness section

The process for determining the RWYCC is provided in Section 6 of this AC.

SECTION 3 RUNWAY SURFACE CONDITIONS

The following terms will be used to describe the runway surface condition for each runway third:

(1) DRY

(a) A runway is considered dry if its surface is free from visible moisture and not contaminated within the area intended to be used.

(b) The RWYCC for a dry runway is 6.

(c) A dry surface must be reported only when there is a need to report conditions on one or more of the other thirds.

(d) A dry surface will be reported where the report is the last, final report that closes a period in which the runway was contaminated.

(2) WET

(a) A runway is considered wet when it is covered by any visible dampness or water that is 3mm or less in depth.

(b) The RWYCC for a Wet Runway is 5.

(c) Wet runway assessments do not necessarily require direct observation of all affected pavement surfaces.

(d) Credible evidence of wet conditions such as receiving reports of rain at the airport can be used as a rationale for assigning wet RWYCCs.

(3) SLIPPERY WET

(a) A wet runway may be slippery where the surface friction characteristics of a significant portion of the runway have been determined to be degraded.

(b) Some contributing factors that can create such conditions include rubber buildup, groove failures/wear or pavement micro/macro textures.

(c) The RWYCC for a Slippery Wet Runway is 3

(d) Methods to determine that a runway is slippery wet may include a functional friction measurement, observation by aerodrome maintenance personnel, repeated reports by pilots and analysis of aeroplane stopping performance that indicates a substandard surface.

(4) CONTAMINATED (STANDING WATER)

(a) For contaminants like mud, ash, sand or oil, the RCC are not reported. Rather they are reported in the plain language remark section of the RCR.

(b) Ash, oil, sand and rubber contaminants should be reported without a measured depth but the measured depth for mud should be reported.

(c) Water of a depth of more than 3mm is defined as standing water

(d) The RWYCC for Standing Water is 2

3.1 Percent Coverage of Surface Condition Descriptors

The data input process will limit the reporting of percent coverage of surface condition descriptors to the increments given in Table 1. If the assessed percent coverage is between increments, it should be rounded up as indicated in Table 1.

Table 1 – Percent Coverage Increments

Assessed Percent Coverage	Reported Percent Coverage
10 – 25	25
26 – 50	50
51 – 75	75
76- 100	100

Where some sections of the runway, or sections of a runway third, are not contaminated, the reported runway contaminants are not required to add up to 100%.

For example:

(a) If 50% of the runway third is covered with 12mm STANDING WATER and the other 50% is DRY, it will be reported as “50% 12mm STANDING WATER”.

3.2 Contaminant Depth Assessments

Contaminant depths significantly affect aircraft takeoff and landing performance including stopping capability. Specific contaminants with more than 3mm depth have been found to significantly degrade aircraft takeoff and landing performance.
Contaminant depths will be reported for:

(a) STANDING WATER;

The depth is reported as a two or three-digit number representing the assessed depth in millimeters (mm) of the contaminant for each runway third.
The assessment is based upon an even distribution within the runway thirds as assessed by trained personnel.

If measurements are included as part of the assessment process, the reported values are still reported as assessed depths, as the trained personnel have placed their judgment upon the measured depths to be representative for the runway third.
Where contaminant depth is not being reported, operator should indicate that no information exists by entering “NR”.

SECTION 4 RUNWAY CONDITION ASSESMENT MATRIX COMPONENTS (RCAM)

4.1 General

The Runway Condition Assessment Matrix (RCAM) (Table 2) is the method by which the airport or aerodrome operator determines a Runway Condition Code (RWYCC) for each runway third, whenever water is present on the runway surface. This matrix allows for the assessment of the runway condition code using associated procedures from a set of observed runway surface condition(s) and pilot braking action.

The RCAM applies only to paved (asphalt and concrete) runway surfaces, and does not apply to unpaved or partially paved surfaces.

Table 2 – Runway Condition Assessment Matrix (RCAM)

Assessment Criteria		**Downgrade Assessment Criteria (Control/Braking Assessment Criteria)**	
RWYCC	**Runway Surface Description**	**Aeroplane Deceleration or Directional Control Observation**	**Pilot report of runway Braking Action**
6	DRY	**-**	**-**
5	WET (The runway surface is covered by any visible dampness or water up to and including 3mm depth)	Braking deceleration is normal for the wheel braking applied AND directional control is normal	GOOD
4	N/A	Braking deceleration OR directional control is between Good and Medium	GOOD TO MEDIUM
3	WET(slippery wet runway|)	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced	MEDIUM
2	**Greater than 3 mm depth:** STANDING WATER	Braking deceleration OR directional control is between Medium and Poor	MEDIUM TO POOR
1	N/A	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced	POOR
0	N/A	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain	LESS THAN POOR

4.2 Assessment Criteria

(1) The first column of RCAM is for Assessment Criteria that consists of a Runway Surface Description and a Runway Condition Code. The Runway Surface Descriptions in each category are linked to the corresponding Runway Condition Code based on their effect on aeroplane braking performance.

(2) The second column of RCAM is the Downgrade Assessment criteria which provides the assessment criteria allowing the airport operator to further assess the runway and validate the RWYCC. This includes;

(a) The column to be used by the pilot to rate the estimated aeroplane braking performance on a given contaminant and estimate a runway braking action category based on six descriptors.

(b) A report of braking action on the runway by a pilot, providing other pilots with an indication of the degree/quality of expected braking.

4.3 Runway Condition Description

The Runway Surface Description column lists contaminants that are directly correlated to aeroplane landing performance. The description sections, ranging in terms of slipperiness, are categorized based on type and depth of contaminant and outside air temperature.

4.4 Runway Condition Code (RWYCC)

Runway Condition Codes (Format: X/X/X) represent the runway condition description based on defined terms and increments. Use of these codes harmonizes with ICAO Annex 14, providing a standardized “shorthand” format for reporting runway condition, which can be used by pilots to determine landing performance parameters.

A RWYCC is determined using the RCAM based on type and depth of contaminant and outside air temperature. When available, the runway surface temperature should be used.

(1) The following process may be used to determine the RWYCC:

(i) When the runway third contains a single contaminant, the RWYCC for that third is based directly on that contaminant in the RCAM (Table 3) as follows:

- If the percent coverage of contaminant for the runway third is less than or equal to 25%, a RWYCC of 6 is reported for that third;

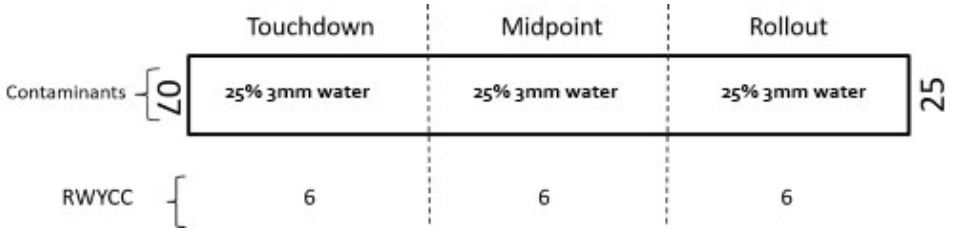


Figure 1 – Single contaminant, less than or equal to 25% coverage per runway third

- If the percent coverage of contaminant for the runway third is greater than 25%, the RWYCC for that third is based on the code for that contaminant that is specified in the RCAM.

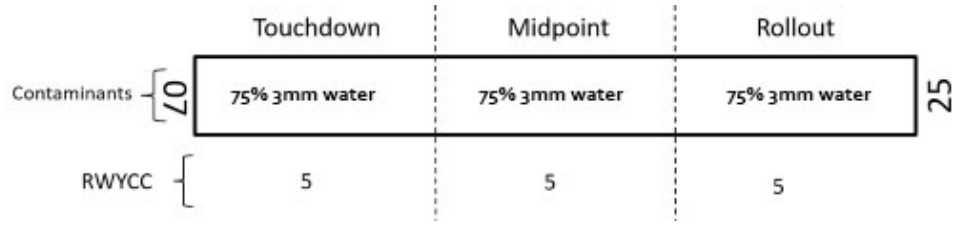


Figure 2 – Single contaminant, greater than 25% coverage per runway third

- When two contaminants are present in a runway third and the percent coverage for each individual contaminant is less than or equal to 25%, the RWYCC is based upon the judgement by trained personnel considering what contaminant will most likely be encountered by the aeroplane and its likely effect on the aeroplane's performance.

Note: The process described in Section 6.4 (4) is summarized in a flowchart in Appendix A for a single contaminant and in Appendix B for two contaminants.

4.5 Downgrade Assessment Criteria

As described in Section 6.4, the RWYCC is initially determined through use of the RCAM Assessment Criteria (type and depth of contamination and temperature).

(1) The airport or aerodrome operator should consider downgrading a RWYCC when RFI measurements (if available), pilot reports or other observations reveal that the runway surface is more slippery than the RWYCC that was initially determined.

(2) The airport or aerodrome operator should exercise vigilance and downgrade the RWYCC when appropriate so that flight crew(s) are provided with a RWYCC that best reflects the actual slipperiness of the runway.

(3) A pilot report of braking action should be taken into consideration for downgrading purposes. This is a report of braking action on the runway by a pilot which provides other pilots with a degree/quality of expected braking. The braking action experienced is dependent on the type of aircraft, aircraft weight, touchdown point, and other factors.

(4) When previous pilot braking action reports have indicated GOOD or MEDIUM braking action, two consecutive pilot braking action reports of POOR indicates that surface conditions may be deteriorating. In this situation, the airport or aerodrome operator should conduct a runway assessment prior to the next operation.

(5) When one pilot report of runway braking action of LESS THAN POOR (or NIL) is received, the information should be disseminated, a new assessment should be made and the suspension of operations on that runway should be considered.

Note: If considered appropriate, maintenance activities may be performed simultaneously or before a new assessment is made.

4.6 Upgrade Assessment criteria

An assigned RWYCC of 5 or 3 shall not be upgraded

SECTION 5 RUNWAY CONDITION REPORTING (RCR)

The Runway Condition Reporting comprises of two sections:

(1) Aeroplane performance calculation

(2) Situational Awareness Section

5.1 Aeroplane Performance Calculation

This section basically consists of eight elements that are described by the block diagram as shown below;

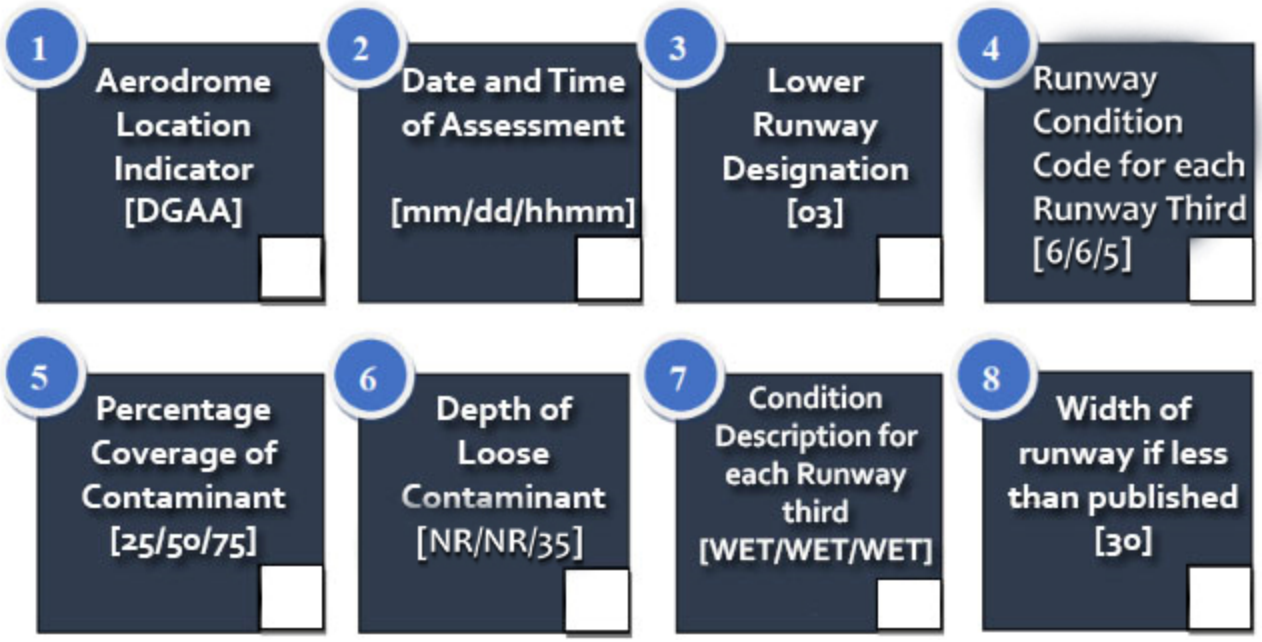


Figure 3: Flow chart for aeroplane performance calculation

(1) Aerodrome Location Indicator

This is the first element of RCR that clearly specifies the Aerodrome for which the RCR is prepared. A four-letter ICAO location indicator assigned to the aerodrome is provided to this element of RCR.

(2) Date and time of Assessment

This is the second element of RCR to which Coordinated Universal Time (UTC) is provided complying the time frame 'mm/dd/hhmm'. For example, if the Runway Condition is assessed at 8:30 am on july 12 at DGAA the corresponding RCR up to 2nd element shall be as follows:

RCR DGAA07120830

(3) Lower Runway Designation

The Runway shall be considered to be of three equal segments and the runway condition shall be assessed for each third of the runway considering the assessment from lower runway designation side.

Figure 4: KIA runway divided into three equal segments

For example, the assessment of runway condition at KIA should be carried out from lower designation side 'RWY 03' as shown above in the Figure above. This is third element of RCR.

(4) Runway Condition Code for each Runway Third

After assessment of condition for each runway third, a corresponding RWYCC shall be assigned to them from Runway Condition Assessment Matrix (RCAM) and shall be separated by slash '/'. For example, if 1st, 2nd and 3rd Runway third from lower designation is dry, Wet and slippery wet, this element of RCR shall be described as: 6/5/3.

(5) Percent Coverage Contaminant for each Runway Third

For assessed percent of coverage of contamination for each runway third, a corresponding value in column B of the Table 3 shall be reported to this fifth element of RCR. The value for each Runway Third shall be separated by slash '/'

Table 3: Assessed coverage of contamination

Assessed percent	Percent to be Reported	RWYCC
≤9	NR	6
10-25	25	6
26-50	50	Based on contaminant/Descriptor
51-75	75	
76-100	100	

(6) Depth of Loose Contaminants

The depth in millimeter (mm) of any loose contaminant is required to be provided for each Runway third. Such values shall be expressed in two-digit form and be separated from each other by slash '/'.

The Table 4 describes the contaminant applicable for RCR with respect to the RCAM.

Table 4: RCAM contaminant applicable for RCR

Contaminant	Valid values to be reported	Significant change
STANDING WATER	Any assessed value rounded to nearest integer and higher than 03.	3 mm upto and including 15mm

(7) Condition Description for each Runway third
The surface condition of each Runway Third is required to be provided to this element of RCR in terms of various surface descriptors given in RCAM like DRY, WET, STANDING WATER. They shall be in capital letter and be separated by slash '/'

(8) Width of Runway to which the RWYCC apply
If the width of the runway to which the RWYCC applies is less than the published width, it should be provided through this element of RCR.

(9) RCR Information String
RCR information string that consists of all eight elements as described above is expressed as below:

RCR ____ ________ __ _/_/_ __/___/___ _/_/_ …./…/… ….

Aerodrome | **Date &Time** | **RWY** | **RWYCC** | **%Coverage of Contaminant** | **Depth** | **Contaminant type** | **Reduced RWY Width**

EXAMPLE:
Runway assessment done at 8am UTC on 12 July 2020 at KIA shows that First Third is 20% Wet, Second Third is 5% Wet and Third Third has 40% water of maximum 5mm depth.

ICAO Location Indicator for KIA: DGAA
UTC timeframe for 8 am: month 07, day 12, time 08h 00m
Lower Runway Designation: RWY 03

Referring table, 20% damp is to be reported as 25% WET and RWYCC is assigned as 6 for First Third, 5% damp is not required to be reported thereby reported as NR and RWYCC is assigned as 6 for Second Third. And 40% water is to be reported as 50% STANDING WATER and RWYCC is assigned as 2 for Third Runway Third.

Since the depth of contaminant like STANDING WATER only above 3mm is to be reported, the reporting of the same shall be NR for the First and Second Runway Third.
Hence, the RCR for this case will be as follows:

RCR DGAA07120800 03 6/6/2 25/NR/50 NR/NR/5 WET/DRY/STANDING WATER

5.2 Situational Awareness Section

This section provides information on various elements that have been shown in the Table 5 below. The information to be provided must be in the order of listed five elements.

Table 5: Situational awareness elements

Situational Awareness Section		
1	Reduced Runway length	
2	Loose sand on the runway	
3	Taxiway conditions	
4	Apron conditions	
5	Plain language remarks	

Note: Consideration is being given to only these elements because Ghana is not exposed to ice or snow and hence only Taxiway conditions and Apron conditions will be reported. The reporting format shall be as follows:

Situational Awareness Format: TWY name POOR. APRON name POOR

Only one type of surface condition and corresponding depth, if applicable, should be reported for taxiways and aprons. The percentage of contaminants is not to be reported.

Example

TWY A POOR. APRON NORTH POOR

SECTION 6 STAKEHOLDER RESPONSIBILITIES

6.1 Aerodrome Operator

The Aerodrome Operator is responsible for assessing aerodrome surface conditions and disseminating such information through the relevant GCAA/ATS/AIS Units.

To fulfill this role, it is expected that the aerodrome operator adopts a process which includes the following:

(1) identify the methodology to be adopted to measure the percentage of coverage and depth of contaminant for each third of runways. The process shall also include data gathering for other parts of the movement area.

(a) Develop procedures for the:

(b) collection of data,

(c) production of RCR,

(d) dissemination of information to GCAA/ATS/AIS Units, and

(e) updating of RCR.

(2) Identify personnel who would be responsible for tasks highlighted in point 2.

(3) Develop and amend existing training programmes to include subjects related to runway surface condition reporting as per ICAO Circular 355 and PANS Aerodromes (current versions).

(4) Coordinate with the respective ATS/AIS Units to ensure seamless transmission of RCR taking into account the applicable aeronautical data transfer protocols.

(5) Perform necessary updates to ATIS/AFTN and adopt the new format, where applicable.

(6) Inform all aerodrome users on GRF implementation, ideally through established safety committees.

(7) Apply the approved change management process and conduct a safety risk assessment to address any potential concerns.

(8) In conjunction with ATS/AIS Units, conduct system testing to ensure a smooth transition on target date.

(9) Update occurrence reporting process to include GRF.

6.2 Air Traffic Services (ATS)/Aeronautical Information Services (AIS) UNITS

Depending on the situation, the RCR may be disseminated by means of:

(1) AFTN

(2) ATIS, or

(3) radiotelephony.

It is the responsibility of the ATS/AIS Units to ensure the timely availability of the RCR to aircrew and, to perform these tasks, it is expected that the ATS/AIS adopts a process which includes the following:

(1) Coordinate with the aerodrome operator to establish the appropriate methodology for the receipt of the RCR considering the applicable aeronautical data transfer protocols.

(2) Amend and introduce new procedures for the implementation of GRF. This shall consider the receipt and forwarding of Air Reports (AIREPs) to the aerodrome operator.

(3) Develop and amend existing training programmes to include subjects related to GRF application, with interest groups mainly consisting of:

(4) management; b) ATCOs; c) AIS personnel.

(5) Training subjects should primarily focus on: RCR decoding; and R/T transmission of RCR.

(6) Perform necessary updates to include the new GRF format, where necessary.

(7) Apply the established change management process and conduct a safety risk assessment to address any concerns stemming pre implementation.

(8) In conjunction with aerodrome operator, conduct system testing to ensure effective implementation on target date.

(9) Update occurrence reporting process to include GRF.

(10) Update AIP as required.

6.3 Ghana Civil Aviation Authority (GCAA)

As expected, the effective application of GRF requires the collective effort of several stakeholders from all domains of the aviation system. Invariably, the key players of the process are aerodrome operators and air navigation services providers (GCAA ATS/AIS). For this reason, the Aerodromes Safety and Standards (ASAS) Inspectorate is the leading Inspectorate in collaboration with Air Navigation Service (ANS) Inspectorate for the promotion and oversight of the process at national level.

It is understood that Air Operators are preparing for the introduction of GRF as should be General Aviation and Military (GAF) operators. Related requests for information received from such organisations will be directed to the Flight Operations Inspectorate.
All units will be including GRF in their oversight schedule and operators are to expect audits and/or inspections accordingly.

6.4 AIRCRAFT OPERATORS

It is the **responsibility** of aircraft operators to utilize the information in conjunction with the performance data provided by the aircraft manufacturers to determine if landing or take-off operations can be conducted safely and provide runway braking action special Air-Reports (AIREP)

6.5 AIRCRAFT MANUFACTURERS

Aircraft manufacturers provide the necessary performance data in the aeroplane flight manual

SECTION 7 TRAINING

7.1 Requirement

Aerodrome operators shall ensure that their personnel are adequately trained to perform their duties. It is recommended that aerodrome operators develop a training program for all personnel who will assess and report runway conditions. This training programme should include:

(1) Initial Training

(2) Annual Recurrent training

7.2 Initial Training

(1) For the purpose of Initial Training, aerodrome operators should utilize the information in this AC to develop and conduct training which includes both:

(a) a review of the theoretical concepts; and

(b) practical exercises

(2) Initial training should include, but not limited to the following topics:

(a) Aerodrome familiarization, including aerodrome markings, signs and lightings

(b) Aerodrome procedures as described in the aerodrome manual

(c) Aerodrome emergency plan

(d) NOTAM initiation procedures

(e) Aerodrome driving rules

(f) Air traffic control procedures on the movement area

(g) Radiotelephony operating procedures

(h) Phraseology used in aerodrome control, including the ICAO spelling alphabet

(i) Aerodrome inspection procedures and techniques

(j) Assessment and reporting of runway surface friction characteristics

(k) Calibration, maintenance and use of runway friction measurement device

(l) Low visibility procedures

(m) Basics of the Global Reporting Format (GRF)

(n) Runway Condition Assessment Matrix Components (RCAM)

(o) Determination along with Downgrade and Upgrade of RWYCC

(p) Runway Condition Report (RCR)

(q) Measurement technique and assessment

Note: The aforementioned topics which are in bold letters are mandatorily required to be provided to the concerned personnel involved.

7.3 Annual Recurrent Training

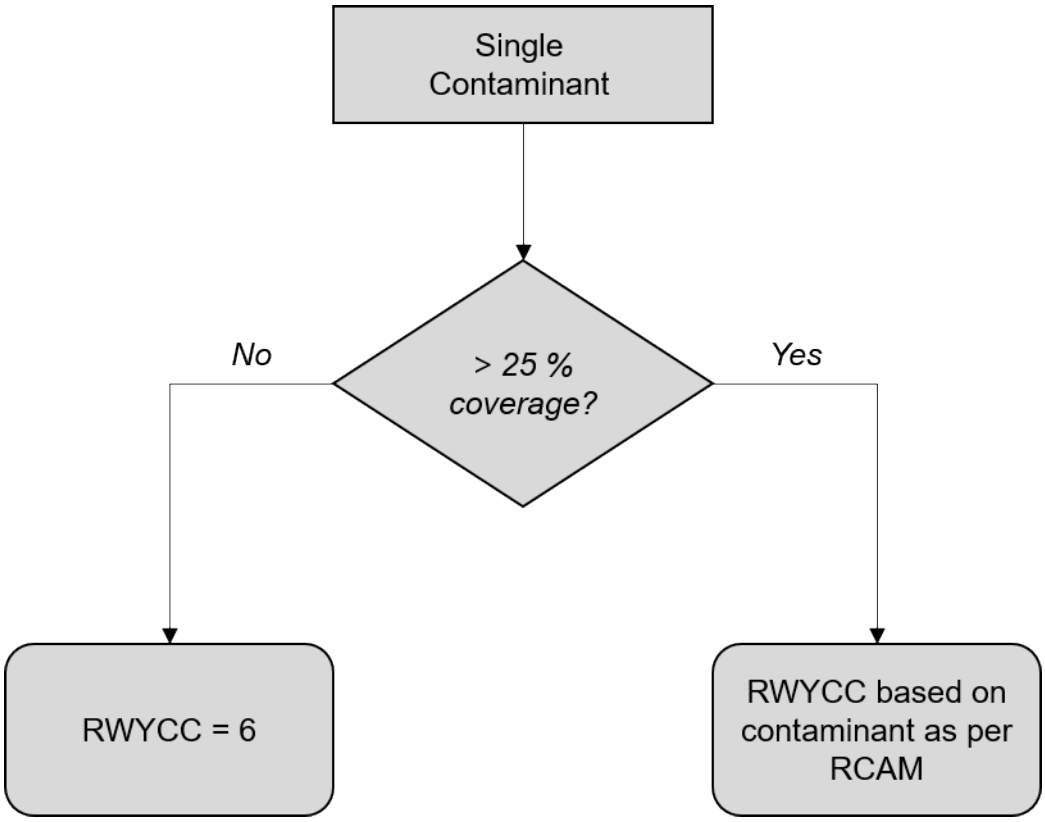
For the purpose of Annual Recurrent Training, aerodrome operators should utilize the information in this AC to develop and conduct appropriate training for their personnel which:

(1) focuses primarily on the practical aspects of runway condition assessment and reporting; and

(2) incorporates “lessons learned” from the previous year(s) operations.

APPENDIX

APPENDIX A – SINGLE CONTAMINANT DECISION PROCESS



Note: Refer to Appendix B for complete process to determine RWYCC (including downgrade/upgrade, as appropriate).

APPENDIX B – PROCESS TO DETERMINE THE RWYCC