



DCA- GM- AGA 09

**GUIDELINE FOR ASSESSMENT AND REPORTING OF
RUNWAY SURFACE CONDITIONS -
Global Reporting System and Format (GRF)**

First Edition
12 November, 2020

**Department of Civil Aviation
Ministry of Transport and Communications
Myanmar**

Foreword

The purpose of guideline is to provide broad and fundamental concepts and guidance to the aerodrome operators for assessing and reporting runway surface conditions and the global reporting system which will be applicable on 4 November 2021.

MCAR Part 139 Section 2 contains provision for the assessment and reporting of runway surface condition.

The intent of the assessment and reporting procedures is to communicate the runway surface conditions impacted by any remaining contamination to the aeroplane operators in a way consistent with the effect on aeroplane performance.

The new Global Reporting System and Format (GRF) for assessing and reporting runway surface conditions involves all stakeholders involved in collecting data, converting the data into structured operational information and bringing the structured information to the end users, and the end users using the structured information.

Aerodrome personnel to make the best attempt to accurately report runway surface Conditions. It is the task of the aerodrome personnel assessing and reporting runway surface conditions to determine the RWYCCs that appropriately reflect the conditions on the runway.

DCA has appointed national focal point for the implementation of GRF and to coordinate all the agencies involved in the runway operation. It is required to establish Implementation Coordination Team including regulator, service providers, industry, etc.,. It is also required to develop national implementation plan and safety risk assessment. Each entity should establish its specific implementation plan and safety risk assessment. Training should be conducted prior to implementation. Therefore, Airport Runway Safety Team should be used for implementation planning, coordination, support, follow-up, monitoring and reporting.

Readers should forward advice of errors, inconsistencies or suggestions for the improvement of GRF at the address shown below:

Director of Aerodrome Standards and Safety Division

Mingalardon Township, Yangon Myanmar 11021

Phone: 951 7533002, 951 7533013 Fax: 951 7533000



Aung Kyaw Tun

Director General

Department of Civil Aviation



Content

Foreword	
AMENDMENT RECORD	3
Chapter 1 General and Objectives	4
Chapter 2 Definition	6
Chapter 3 Roll of the Main Agencies for Runway Surface Condition Assessment And Reporting	10
Chapter 4 Operational Need for Reporting	12
Chapter 5 The Defined Concept	13
Chapter 6 Reporting Format Using Standard Runway Condition Report	16
Chapter 7 Runway Condition Assessment Process – Flowcharts	28
Chapter 8 Displaced threshold and Reporting of RWYCC	32
Chapter 9 Reporting Formats	34
Appendix – 1. Runway Condition Report — Aeroplane performance calculation section	38
Appendix – 2. Runway condition report — Situational awareness section	41
Appendix – 3. Complete information string	43
Appendix – 4. SNOWTAM Format	44
Appendix – 5 ABBREVIATIONS AND ACRONYMS	46

Chapter 1 General and Objectives

1.1 General

- 1.1.1 The Global Reporting System and Format (GRF) is new ICAO methodology and terminology for assessing and reporting the runway surface conditions to improve safety in aircraft landing and take-off.
- 1.1.2 Assessing and reporting the condition of the movement area and related facilities is necessary in order to provide the flight crew with the information needed for safe operation of the aeroplane. The runway condition report (RCR) is used for reporting assessed information.
- 1.1.3 Movement areas are exposed to a multitude of climatic conditions and consequently a significant difference in the condition to be reported. The RCR describes a basic structure applicable for all these climatic variations.
- 1.1.4 The philosophy of the RCR is that the aerodrome operator assesses the runway surface conditions whenever water, snow, slush, ice or frost are present on an operational runway. From this assessment, a runway condition code (RWYCC) and a description of the runway surface are reported which can be used by the flight crew for aeroplane performance calculations. This format, based on the type, depth and coverage of contaminants, is the best assessment of the runway surface condition by the aerodrome operator; however, all other pertinent information will be taken into consideration and be kept up to date and changes in conditions reported without delay.
- 1.1.5 RCR based on Runway Condition Assessment Matrix (RCAM) and RWYCC and then disseminated by ATC or Snowtam.
- 1.1.6 The RWYCC reflects the runway 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 necessary stopping distance of an aircraft on the approach under the prevailing conditions.
- 1.1.7 MCAR Part 139 Section 2 contains provision for the assessment and reporting of runway surface condition. When the runway is wholly or partly contaminated by standing water, snow, slush, ice or frost, or is wet associated with the clearing or treatment of snow, slush, ice or frost, the runway condition report should be disseminated through the AIS and ATS services. When the runway is wet, not associated with the presence of standing water, snow, slush, ice or frost, the assessed information should be disseminated using the runway condition report through the ATS only.

1.2 Objectives

- 1.2.1 The runway condition code (RWYCC) shall be reported for each third of the runway assessed.
- 1.2.2 The assessment process shall include:
 - a) assessing and reporting the condition of the movement area;
 - b) providing the assessed information in the correct format; and
 - c) reporting significant changes without delay.

1.3 Use of global reporting system and format (GRF)

1.3.1 As the Myanmar does not expose to snow or ice, the aerodromes used in Myanmar are not necessary to use the full global reporting format other than for water.

Note - In *Table 6-3 Assigning a runway condition code (RWYCC)*, use code 6, 5, 3, 2 for RCR.

1.3.2 Use of the global reporting format requires the application of equipment, processes and procedures for the removal of contaminants and treatments, and most crucially, requires the involvement of competent personnel in maintenance activities as well as assessment and reporting activities.

1.4 Related references

1.4.1 This guideline should be read in conjunction with the following documents:

- (a) Annex 14 Volume I - Aerodrome Design and Operations (8th Edition, July 2018)
- (b) Annex 15 - Aeronautical Information Services
- (c) Procedures for Air Navigation Services – Aerodromes
- (d) Circular 355- Assessment, Measurement and Reporting of Runway Surface Conditions
- (e) Airport Services Manual (Doc 9137), Part 2 - Pavement Surface Conditions
- (f) Manual on the Prevention of Runway Incursions (Doc 9870)

Chapter 2 Definition

When the following terms are used in this document, they have the following meanings:

Aeronautical information service (AIS).* A service established within the defined area of coverage responsible for the provision of aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation.

Air traffic service.* A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).

Automatic terminal information service (ATIS).* The automatic provision of current, routine information to arriving and departing aircraft throughout 24 hours or a specified portion thereof:
Data link-automatic terminal information service (D-ATIS). The provision of ATIS via data link.
Voice-automatic terminal information service (Voice-ATIS). The provision of ATIS by means of continuous and repetitive voice broadcasts.

Braking action. A term used by pilots to characterize the deceleration associated with the wheel braking effort and directional controllability of the aircraft.

Coefficient of friction. A dimensionless ratio of the friction force between two bodies to the normal force pressing these two bodies together.

Contaminant. A deposit (such as snow, slush, ice, standing water, mud, dust, sand, oil and rubber) on an aerodrome pavement, the effect of which is detrimental to the friction characteristics of the pavement surface.

Friction. A resistive force along the line of relative motion between two surfaces in contact.

Friction characteristics. The physical, functional and operational features or attributes of friction arising from a dynamic system.

Hazard. A condition or an object with the potential to cause injuries to personnel, damage to equipment or structures, loss of material, or reduction of the ability to perform a prescribed function.

Landing distance available (LDA).* The length of runway which is declared available and suitable for the ground run of an aeroplane landing.

NOTAM.* A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

Operational personnel.* Personnel involved in aviation activities who are in a position to report safety information.

Note.— Such personnel include, but are not limited to: flight crews; air traffic controllers; aeronautical station operators; maintenance technicians; personnel of aircraft design and manufacturing organizations; cabin crews; flight dispatchers; apron personnel and ground handling personnel.

Runway condition assessment matrix (RCAM).^{*1} A matrix allowing the assessment of the runway condition code, using associated procedures, from a set of observed runway surface condition(s) and pilot report of braking action.

Runway condition code (RWYCC).^{*1} A number describing the runway surface condition to be used in the runway condition report.

Note.— The purpose of the runway condition code is to permit an operational aeroplane performance calculation by the flight crew. Procedures for the determination of the runway condition code are described in Chapter 6.

Runway condition report (RCR).^{*1} A comprehensive standardized report relating to runway surface conditions and its effect on the aeroplane landing and take-off performance.

Runway Safety Team. A team comprising representatives from the [aerodrome operator], air traffic service provider, airlines or aircraft operators, pilot and air traffic controllers associations and any other group with a direct involvement in runway operations [at a specific aerodrome,] that advise the appropriate management on potential runway [safety] issues and recommend mitigation strategies.

Note.— This definition is based on ICAO Doc 9870, Manual on the Prevention of Runway Safety Incursions, but takes into consideration evolving concepts resulting from recent work of the ICAO Runway Safety Programme.

Runway surface condition(s).^{*1} A description of the condition(s) of the runway surface used in the runway condition report which establishes the basis for the determination of the runway condition code for aeroplane performance purposes.

Note 1.— The runway surface conditions used in the runway condition report establish the performance requirements between the aerodrome operator, aeroplane manufacturer and aeroplane operator.

Note 2.— Procedures on determining runway surface conditions are available in the PANS-Aerodromes (Doc 9981).

- a) *Dry runway.* A runway is considered dry if its surface is free of visible moisture and not contaminated within the area intended to be used.
- b) *Wet runway.* The runway surface is covered by any visible dampness or water up to and including 3 mm deep within the intended area of use.

- c) *Slippery wet runway*. A wet runway where the surface friction characteristics of a significant portion of the runway have been determined to be degraded.
- d) *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 one or more of the substances listed in the runway surface condition descriptors.

Note.— Procedures on determination of contaminant coverage on runway is available in the PANS Aerodromes (Doc 9981).

- e) *Runway surface condition descriptors*. One of the following elements on the surface of the runway:

Note.— The descriptions for e) i) to e) viii) are used solely in the context of the runway condition report and are not intended to supersede or replace any existing WMO definitions.

- i) *Compacted snow*. Snow that has been compacted into a solid mass such that aeroplane tires, at operating pressures and loadings, will run on the surface without significant further compaction or rutting of the surface.
- ii) *Dry snow*. Snow from which a snowball cannot readily be made.
- iii) *Frost*. Frost consists of ice crystals formed from airborne moisture on a surface whose temperature is below freezing. Frost differs from ice in that the frost crystals grow independently and therefore have a more granular texture.

Note 1.— Below freezing refers to air temperature equal to or less than the freezing point of water (0 degree Celsius).

Note 2.— Under certain conditions frost can cause the surface to become very slippery and it is then reported appropriately as reduced braking action.

- iv) *Ice*. Water that has frozen or compacted snow that has transitioned into ice, in cold and dry conditions.
- v) *Slush*. Snow that is so water-saturated that water will drain from it when a handful is picked up or will splatter if stepped on forcefully.
- vi) *Standing water*. Water of depth greater than 3 mm.

Note.— Running water of depth greater than 3 mm is reported as standing water by convention.

- vii) *Wet ice*. Ice with water on top of it or ice that is melting.
- viii) *Wet snow*. Snow that contains enough water content to be able to make a well-compacted, solid snowball, but water will not squeeze out.

Safety.* The state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

Safety management system (SMS)*. A systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures.

Significant change. A change in the magnitude of a hazard, which leads to a change in the safe operation of the aircraft.

Skid resistant. A runway surface that is designed, constructed and maintained to have good water drainage, which minimizes the risk of hydroplaning when the runway is wet and provides aircraft braking performance shown to be better than that used in the airworthiness standards for a wet, smooth runway.

SNOWTAM. A special series NOTAM given in a standard format providing a surface condition report notifying the presence or cessation of hazardous conditions due to snow, ice, slush, frost, standing water or water associated with snow, slush, ice or frost on the movement area.

Surface friction characteristics. The physical, functional and operational features or attributes of friction that relate to the surface properties of the pavement and can be distinguished from each other.

Note.— The friction coefficient is not a property of the pavement surface but a system response from the measuring system. Friction coefficient can be used to evaluate the surface properties of the pavement provided that the properties belonging to the measuring system are controlled and kept stable.

Chapter 3 Roll of the Main Agencies for Runway Surface Condition Assessment and Reporting

The New Global Reporting System and Format (GRF) for runway surface conditions involved all stakeholders including regulators, aerodrome operators, aircraft operators and air navigation service provider. Each agency shall have responsibilities to perform timely implementation of GRF.

3.1 Department of Civil Aviation (DCA)

3.1.1 The following actions shall be performed by the Department of Civil Aviation (DCA)-

- (a) Appoint national focal point;
- (b) Establishment of a national implementation plan;
- (c) Notification to aerodromes, ANSPs and aircraft operators of the new requirements;
- (d) Establish implementation coordination team including regulator, service providers, industry/professional associations
- (e) Provide training for inspectors
- (f) Complete State level safety risk assessment
- (g) Organise national workshop and safety promotion
- (h) Conduct trial prior to applicability
- (i) Update in the AIP

3.2 Aerodrome Operator's

3.2.1 Aerodromes assess the runway surface conditions, including contaminants, for each third of the runway length using codes from Runway Condition Assessment Matrix (RCAM).

3.2.2 Report information in a timely manner to ATS/ATC through the Runway Condition Report (RCR).

3.2.3 Use airport Runway Safety Teams (RSTs) for implementation planning, coordination, support, follow-up, monitoring, reporting.

3.2.4 Complete airport level safety risk assessment under SMS.

3.2.5 Provide training for aerodrome personnel and conduct On-the-Job Training (OJT).

Note – An example of a syllabus for training aerodrome operator personnel and flight crews using the global reporting format is given in Appendix- H of Cir 355.

3.3 Air traffic services (ATS)

3.3.1 Air traffic services (ATS) convey the information received in the RCR and/or special air-reports (AIREP) to pilots by voice communications / ATIS/ CPDLC.

3.3.2 Provide training for Air traffic controllers.

3.4 Aeronautical information services (AIS)

3.4.1 Aeronautical information services (AIS) provide the information received in the RCR to aircraft operators by SNOWTAM.

3.4.2 Provide training for AIS personnel.

3.5 Aircraft Operators

3.5.1 Aircraft operators 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).

3.5.2 Ensure training of crews and dispatchers.

3.5.3 Harmonized timely implementation.

Note – An example of a syllabus for training aerodrome operator personnel and flight crews using the global reporting format is given in Appendix- H of Cir 355.

Chapter 4 Operational Need for Reporting

4.1 The flight crew needs information relevant for the safe operation of the aircraft, as far as it is relevant to the conditions of the runway surface, obtained through the use of NOTAMs (slippery wet runway) and the RCR.

4.2 The introduction of the RCR based on the RCAM and RWYCC, in conjunction with new or existing performance data, establishes a clear link between the observation, reporting and accounting of runway surface conditions in performance.

4.3 It is the task of the aerodrome personnel assessing and reporting runway surface conditions to determine the RWYCCs that appropriately reflect the conditions on the runway and that are to be used for the performance check at the time of arrival. It is important that the aerodrome personnel understand the operational use of the RWYCC by the flight crew in order to assess and report it properly.

4.4 Proper assessment and reporting is ensured by an RWYCC that is reported in line with the the classification shown in the RCAM inTable 6-5 and its downgrading or upgrading in accordance with the procedures. These procedures require that aerodrome personnel use all other observations available to them to downgrade or upgrade the RWYCC to an RWYCC that is different from that which is usually associated with a contaminant and depth.

4.5 Through the upgrading procedures, RWYCC 1 or 0 can be upgraded to no higher than RWYCC 3.

4.6 For RWYCC 0 assessed by aerodrome personnel or a pilot report of runway braking action reported as LESS THAN POOR by a flight crew, the suspension of operations on that runway shall be considered until corrective action has been taken to improve the runway surface conditions and an RWYCC between 1 and 3 can be reported appropriately. In case of complete removal of a contaminant, the remedial action may result in higher RWYCCs being reported.

Chapter 5 The Defined Concept

5.1 The definitions of the terms listed in 5.2 to 5.4 define the fundamental, conceptual part of the report and assessment of the runway surface conditions methodology.

5.2 There are five fundamental elements:

- a) runway condition report (RCR);
- b) runway condition assessment matrix (RCAM);
- c) runway condition code (RWYCC);
- d) runway surface conditions; and
- e) runway surface condition descriptors.

5.3 There are four runway surface conditions:

- a) dry runway;
- b) wet runway;
- c) slippery wet; and
- d) contaminated runway.

Note.— Due to the challenges of reporting fluctuations between damp and wet runway conditions in a timely manner, any water film up to 3 mm in depth is reported as wet for the purposes of performance calculation.

5.4 There are eight contaminated runway surface condition descriptors:

- a) compacted snow;
- b) dry snow;
- c) frost;
- d) ice;
- e) slush;
- f) standing water;
- g) wet ice; and
- h) wet snow.

5.5 Based on **the defined concept** outlined above, the RCR is a validated method that replaces subjective judgements with objective assessments that are directly tied to criteria relevant for aeroplane performance. These criteria have been determined by aeroplane manufacturers to cause specific changes in aeroplane braking performance.

5.6 The above constitutes the conceptual integrity of the global reporting format. Any change to the definitions of the above elements can cause the conceptual integrity to fall apart.

5.7 The classification of RWYCC is shown in Table 6-3 and RCAM in Table 6-4 which is central to this concept.

5.8 Visually inspecting the movement area to assess the surface condition is the core method for determining an RWYCC. Continuously monitoring the development of the situation and prevailing weather condition is essential to ensuring safe flight operations. Other information that might influence the assessment result includes the outside air temperature (OAT), surface temperature, dew point, wind speed and direction, control and deceleration of the inspection vehicle, pilot reports of runway braking action, friction readings (continuous friction measuring device or decelerometer), weather forecast, etc.

5.9 Aerodrome personnel use their best judgement and experience to determine an RWYCC that best reflects the prevailing situation.

5.10 The RCAM supports the classification of runway surface conditions according to their effect on aeroplane braking performance using a set of criteria identified and quantified based on the best industry knowledge, built on dedicated flight testing and in-service experience.

5.11 Aerodrome personnel shall monitor and accurately report conditions when operating close to the thresholds. These conditions are as follows:

(a) **Percentage of coverage of contamination in each runway third.** A runway is considered to be contaminated when the extent of the coverage is more than a quarter of the surface of at least one third of the runway. It is important to note that, whenever coverage is assessed to be below the 25 per cent threshold in each third, the calculation assumption made by flight crew will be a dry runway (uniformly bare of moisture, water and contamination). It has been demonstrated that in conditions of contamination just below the reporting threshold but concentrated in the most unfavourable location, this assumption of dry runway still provides positive stop margins.

(b) **Type of contaminant.** Different contaminants affect the contact area between the tire and runway surface, where the stopping force is generated, in different ways. A water film of any depth leads to the partial separation (viscous aquaplaning) or total separation (dynamic aquaplaning) of the tire from the surface. The smaller the surface, the smaller the force of adhesion, and the less braking is available. This is why the maximum braking force decreases at higher speed and depends on contaminant depth. Other fluid contaminants have a similar effect. Hard contaminants such as ice or compacted snow prevent contact between the tire and runway surface completely and at any speed, effectively providing a new surface that the tire rolls on. A deterministic classification of the stopping performance can be made only for the contaminants listed in the RCAM. For other reportable contaminants (oil, mud, ash, etc.), there is a large variance in the aeroplane performance effect, or insufficient data are available to permit a deterministic classification. An exception is rubber contamination, for which in-service data indicate that an assumption of RWYCC 3 restores usual performance margins. Runway surface treatments with sand, grit or chemicals may be very effective or detrimental depending on the conditions of the application, and no credit can be attributed to such treatment without verification and validation.

(c) **Depth of the contamination.** The industry accepts that the threshold for the effect of depth of fluid contaminants on aeroplane performance is 3 mm. Below this threshold, any type of fluid contaminant can be removed from the tire/runway contact zone either by forced drainage or by compressing the contaminant into the macrotexture of the surface, thus allowing adhesion between tire and surface, albeit on less than the full footprint surface area. This is why contamination depths of up to 3 mm are expected to provide similar stopping performance as a wet runway. The physical effects causing reduced friction forces begin to take effect from very small film thickness, which is why damp conditions are considered to provide no better braking action than a wet runway. It is important for aerodrome personnel to be aware of the fact that the capability to generate friction in wet conditions (or with thin layers of fluid contaminants) highly depends on the inherent qualities of the runway surface (friction characteristics) and may be less than normally expected on poorly drained, polished or rubber-contaminated surfaces. Above the 3 mm threshold, the impact on friction forces is more significant, leading to classification in lower RWYCCs. Above this depth, and depending on the density of the fluid, additional drag effects start to apply due to displacement or compression of the fluid and impingement on the airframe of the aeroplane. These latter effects depend on the depth of the fluid and affect the aeroplane's ability to accelerate for take-off. It is thus important to report depths with the precision required.

(d) **Surface or air temperature.** Significant changes in surface conditions can occur very quickly close to the freezing point. Surface temperature is more significant for the relevant physical effects, and surface and air temperature may be significantly different due to latency and radiation. However, surface temperature may not be readily available, and it is acceptable to use air temperature as a criterion for the contaminant classification. The threshold for the classification of compacted snow in RWYCC 4 (below OAT -15°C) or RWYCC 3 (above this temperature) may be very conservative. It is recommended that the classification be supported by other assessment means. Such assessment means must be based on a specific rationale, specific procedures and substantiating aeroplane data, and reviewed and approved by the DCA in order for the RCAM to be changed.

Chapter 6 Reporting Format Using Standard Runway Condition Report

6.1 Operational practices

6.1.1 Reporting, in compliance with the runway condition report, shall commence when a significant change in runway surface condition occurs due to water, snow, slush, ice or frost.

6.1.2 Reporting of the runway surface condition should continue to reflect significant changes until the runway is no longer contaminated. When this situation occurs, the aerodrome will issue a runway condition report that states the runway is wet or dry as appropriate.

6.1.3 A change in the runway surface condition used in the runway condition report (RCR) is considered significant whenever there is:

- a) any change in the RWYCC;
- b) any change in contaminant type;
- c) any change in reportable contaminant coverage according to Table 6-1;
- d) any change in contaminant depth according to Table 6-2; and
- e) any other information, for example a pilot report of runway braking action, which according to assessment techniques used, are known to be significant.

Table 6-1. Percentage of coverage for contaminants

<i>Assessed per cent</i>	<i>Reported per cent</i>
10 – 25	25
26 – 50	50
51 – 75	75
76 – 100	100

Table 6-2. Depth assessment for contaminants

<i>Contaminant</i>	<i>Valid values to be reported</i>	<i>Significant change</i>
STANDING WATER	04, then assessed value	3 mm up to and including 15 mm
SLUSH	03, then assessed value	3 mm up to and including 15 mm
WET SNOW	03, then assessed value	5 mm
DRY SNOW	03, then assessed value	20 mm

Note 1.— For STANDING WATER, 04 (4 mm) is the minimum depth value at and above which the depth is reported. (From 3 mm and below, the runway third is considered WET).

Note 2.— For SLUSH, WET SNOW and DRY SNOW, 03 (3 mm) is the minimum depth value at and above which the depth is reported.

Note 3.— Above 4 mm for STANDING WATER and 3 mm for SLUSH, WET SNOW and DRY SNOW an assessed value is reported and a significant change relates to observed change from this assessed value.

6.2 Assessing a runway and assigning a runway condition code

6.2.1 The assessed RWYCC to be reported for each third of the runway is determined by following the procedure described in paragraph 6.2.6 to 6.2.10.

6.2.2 If 25 per cent or less area of a runway third is wet or covered by contaminant, a RWYCC 6 shall be reported.

6.2.3 If the distribution of the contaminant is not uniform, the location of the area that is wet or covered by the contaminant is described in the plain language remarks part of the situational awareness section of the runway condition report.

6.2.4 A description of the runway surface condition is provided using the contamination terms described in capital letters in Table 6-3 — *Assigning a runway condition code (RWYCC)*.

6.2.5 If multiple contaminants are present where the total coverage is more than 25 per cent but no single contaminant covers more than 25 per cent of any runway third, the RWYCC is based upon the judgment by trained personnel, considering what contaminant will most likely be encountered by the aeroplane and its likely effect on the aeroplane's performance.

6.2.6 The RWYCC is determined using Table 6-3.

6.2.7 The variables, in Table 6-3, that may affect the runway condition code are:

- a) type of contaminant;
- b) depth of contaminant; and
- c) outside air temperature. Where available the runway surface temperature should preferably be used.

6.2.8 An assigned RWYCC 5, 4, 3 or 2 shall not be upgraded.

6.2.9 An assigned RWYCC 1 or 0 can be upgraded using the following procedures :

- (a) if a properly operated and calibrated measuring device and all other observations support a higher RWYCC as judged by trained personnel;
- (b) the decision to upgrade RWYCC 1 or 0 cannot be based upon one assessment method alone. All available means of assessing runway slipperiness are to be used to support the decision;
- (c) when RWYCC 1 or 0 is upgraded, the runway surface is assessed frequently during the period the higher RWYCC is in effect to ensure that the runway surface condition does not deteriorate below the assigned code; and
- (d) variables that may be considered in the assessment that may affect the runway surface condition, include but are not limited to:
 - i) any precipitation conditions;
 - ii) changing temperatures;
 - iii) effects of wind;
 - iv) frequency of runway in use; and
 - v) type of aeroplane using the runway.

6.2.10 Upgrading of RWYCC 1 or 0 using the procedures in paragraph 6.2.9 shall not be permitted to go beyond a RWYCC 3.

6.2.11 If sand or other runway treatments are used to support upgrading, the runway surface is assessed frequently to ensure the continued effectiveness of the treatment.

6.2.12 The RWYCC determined from Table 6-3 should be appropriately downgraded considering all available means of assessing runway slipperiness, including the criteria given in Table 6-4.

6.2.13 Where available, the pilot reports of runway braking action should be taken into consideration as part of the ongoing monitoring process, using the following principle:

- (a) a pilot report of runway braking action is taken into consideration for downgrading purposes; and
- (b) a pilot report of runway braking action can be used for upgrading purposes only if it is used in combination with other information qualifying for upgrading.

Note .— Procedures for downgrading reported RWYCC can be found in paragraph 6.2.17 including the use of Table 6-5 — runway condition assessment matrix (RCAM).

6.2.14 Two consecutive pilot reports of runway braking action of **POOR** shall trigger an assessment if an RWYCC of 2 or better has been reported.

6.2.15 When one pilot has reported a runway braking action of **LESS THAN POOR**, the information shall be disseminated, a new assessment shall be made and the suspension of operations on that runway shall be considered.

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

6.2.16 Table 6-4 shows the correlation of pilot reports of runway braking action with RWYCCs.

6.2.17 Table 6-3 and Table 6-4 combined form the runway condition assessment matrix (RCAM) in Table 6-5. The RCAM is a tool to be used when assessing runway surface conditions. It is not a standalone document and shall be used in compliance with the associated procedures of which there are two main parts:

- a) assessment criteria; and
- b) downgrade assessment criteria.

Table 6-3. Assigning a runway condition code (RWYCC)

Runway condition description	Runway condition code (RWYCC)
DRY	6
FROST WET (the runway surface is covered by any visible dampness or water up to and including 3 mm deep) SLUSH (up to and including 3 mm depth) DRY SNOW (up to and including 3 mm depth) WET SNOW (up to and including 3 mm depth)	5
COMPACTED SNOW (Outside air temperature minus 15 degrees Celsius and below)	4
WET (“Slippery wet” runway) DRY SNOW (more than 3 mm depth) WET SNOW (more than 3 mm depth) DRY SNOW ON TOP OF COMPACTED SNOW (any depth) WET SNOW ON TOP OF COMPACTED SNOW (any depth) COMPACTED SNOW (outside air temperature above minus 15 degrees Celsius)	3
STANDING WATER (more than 3 mm depth) SLUSH (more than 3 mm depth)	2
ICE	1
WET ICE WATER ON TOP OF COMPACTED SNOW DRY SNOW OR WET SNOW ON TOP OF ICE	0

Note – Conditions of *SNOW*, *SLUSH* and *ICE* are not applicable for aerodrome operations in Myanmar. Therefore, **RWYCC 6, 5, 3 & 2** should be applied for RCR.

Table 6-4. Correlation of runway condition code and pilot reports of runway braking action

Pilot report of runway braking action	Description	Runway condition code (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

Table 6-5. Runway Condition Assessment Matrix (RCAM)

RUNWAY CONDITION ASSESSMENT MATRIX (RCAM)			
Assessment criteria		Downgrade assessment criteria	
Runway condition code	Runway Surface Description	Aeroplane deceleration or directional control observation	Pilot report of runway braking action
6	<ul style="list-style-type: none"> • DRY 	---	---
5	<ul style="list-style-type: none"> • FROST • WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth) <p>Up to and including 3 mm depth:</p> <ul style="list-style-type: none"> • SLUSH • DRY SNOW • WET SNOW 	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	GOOD
4	<p>-15°C and lower outside air temperature:</p> <ul style="list-style-type: none"> • COMPACTED SNOW 	Braking deceleration OR directional control is between Good and Medium.	GOOD TO MEDIUM
3	<ul style="list-style-type: none"> • WET (“slippery wet” runway) • DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW <p>More than 3 mm depth:</p> <ul style="list-style-type: none"> • DRY SNOW • WET SNOW <p>Higher than -15°C outside air temperature¹:</p> <ul style="list-style-type: none"> • COMPACTED SNOW 	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	MEDIUM
2	<p>More than 3 mm depth of water or slush:</p> <ul style="list-style-type: none"> • STANDING WATER • SLUSH 	Braking deceleration OR directional control is between Medium and Poor.	MEDIUM TO POOR

RUNWAY CONDITION ASSESSMENT MATRIX (RCAM)			
Assessment criteria		Downgrade assessment criteria	
Runway condition code	Runway surface description	Aeroplane deceleration or directional control observation	Pilot report of runway braking action
1	<ul style="list-style-type: none"> • ICE² 	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	POOR
0	<ul style="list-style-type: none"> • WET ICE² • WATER ON TOP OF COMPACTED SNOW² • DRY SNOW or WET SNOW ON TOP OF ICE² 	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	LESS THAN POOR

Note: 1. Runway surface temperature should preferably be used where available.

2. The aerodrome operator may assign a higher RWYCC (but no higher than RWYCC 3) for each third of the runway, provided the procedure in paragraph 6.7, is followed.

3. SNOW, SLUSH and ICE are not applicable for aerodrome operations in Myanmar.

6.3 Downgrading and Upgrading The RWYCC

6.3.1 The RCAM enables aerodrome personnel to make an initial assessment based on visual observation of contaminants on the runway surface, specifically the contaminant type, depth and coverage, as well as the OAT.

6.3.2 Downgrading and upgrading is an integral part of the assessment process and is essential to making relevant reports of the prevailing runway surface conditions. When all other observations, experience and local knowledge indicate to trained aerodrome personnel that the primary assignment of the RWYCC does not accurately reflect the prevailing conditions, a downgrade or upgrade can be made.

6.3.3 When assessing the runway's slipperiness for a downgrade include the following conditions:

- a) prevailing weather conditions:
 - 1) stable below freezing temperature;
 - 2) dynamic conditions;
 - 3) active precipitation;
- b) observations (information and source);
- c) measurements:
 - 1) friction measurements;
 - 2) vehicle behaviour;
 - 3) shoe scraping;
- d) experience (local knowledge); and
- e) AIREPs.

Table 6-6. Downgrading or upgrading using a friction measuring device

Runway surface description (reportable)	Criterion	RWYCC	Downgrading using a friction measuring device	Upgrading using a friction measuring device
DRY		6	N/A	N/A
FROST		5		
WET	The runway surface is covered by any visible dampness or water up to and including 3 mm depth			
SLUSH	Up to and including 3 mm depth			
DRY SNOW				
WET SNOW				
COMPACTED SNOW	- 15° C and lower OAT	4	Standard Set (to be defined)	
WET	"Slippery wet" runway	3	N/A	N/A
WET SNOW ON TOP OF COMPACTED SNOW				
DRY SNOW ON TOP OF COMPACTED SNOW				
DRY SNOW	More than 3 mm depth			
WET SNOW				
COMPACTED SNOW	Higher than - 15° C OAT		Standard Set (to be defined)	
STANDING WATER		2	N/A	
SLUSH				
ICE		1	Standard Set (to be defined)	Standard Set (to be defined)
WET ICE		0	N/A	N/A
WATER ON TOP OF COMPACTED SNOW				
DRY SNOW ON TOP OF ICE				
WET SNOW ON TOP OF ICE				

6.3.4 If the contaminants cannot be completely removed and the initially assigned RWYCC does not reflect the real runway surface conditions (such as a treated ice-covered or compacted snow-covered runway), the aerodrome personnel may apply upgrade procedures. Upgrading is applicable only when the initial RWYCC is 0 or 1 and is not permitted to go beyond RWYCC 3. Upgrading is conditioned on meeting the standard set and is supported by all other aspects, as described in 6.3.3.

6.3.5 When friction measurements are used as part of the overall runway surface assessment of a compacted snow- or ice-covered surface, the friction measuring device meets the standard set. **Table 6-6** gives information on each reportable runway surface description and whether the friction measuring device can be used for downgrading and upgrading.

6.3.6 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.

6.3.7 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).

6.4 Pilot Report of Braking Action

6.4.1 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.

6.4.2 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.

6.4.3 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 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).

6.4.4 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.

6.5 Source of Information

6.5.1 In the data-gathering process, almost all runway information can typically be gathered from visual observations.

6.5.2 If information is gathered from measuring devices or instruments, they have to be calibrated and operated within their limitations and in compliance with standards set.

6.5.3 The collected data are converted into information by personnel trained to perform their duties.

6.5.4 Table 6-7 lists the sources of the provided information in the order in which it appears in the RCR.

Table 6-7. Sources of information

<i>RUNWAY CONDITION REPORT (RCR)</i>	
<i>Aeroplane performance calculation section</i>	
<i>Information</i>	<i>Source</i>
Aerodrome location indicator	Doc 7910, <i>Location Indicators</i>
Date and time of assessment	UTC time
Lower runway designation number	Actual runway
RWYCC for each runway third	Assessment based on the RCAM and associated procedures
Per cent coverage contaminant for each runway third	Visual observation for each runway third
Depth of loose contaminant for each runway third	Visual observation assessed for each runway third, confirmed by measurements when appropriate
Condition description (contaminant type) for each runway third	Visual observation for each runway third
Width of runway to which the RWYCCs apply if less than published width	Visual observations while at the runway and information from local procedures/snow plan
<i>Situational awareness section</i>	
Reduced runway length	NOTAM
Drifting snow on the runway	Visual observation while at the runway
Loose sand on the runway	Visual observation while at the runway
Chemical treatment on the runway	Known application of the treatment. Visual observation of residual chemicals on the runway.
Snowbanks on the runway	Visual observations while at the runway
Snowbanks on taxiway	Visual observations while at the taxiway

<i>Information</i>	<i>Source</i>
Snowbanks adjacent to the runway penetrating level/profile set in the aerodrome snow plan	Visual observations while at the runway, confirmed by measurements when appropriate
Taxiway conditions	Visual observations, AIREPs, reports by other aerodrome personnel, etc.
Apron conditions	Visual observations, AIREPs, reports by other aerodrome personnel, etc.
DCA approved and published use of measured friction coefficient	Dependent upon the standard set or agreed by the State
Plain language remarks using only allowable characters in capital letters	Any additional significant operational information to be reported

6.6 Single and Multiple Contaminants

6.6.1 When single or multiple contaminants are present, the RWYCC for any third of the runway is determined using the following rules:

- a) when the runway third contains a single contaminant (see Figure 6-1), the RWYCC for that third is directly based on that contaminant in the RCAM as follows:
 - 1) if the contaminant coverage for that third is less than 10 per cent, a RWYCC of 6 is to be generated for that third and no contaminant is to be reported. If all thirds have less than 10 per cent contaminant coverage, no report is generated; or
 - 2) if the per cent contaminant coverage for that third is greater than or equal to 10 per cent and less than or equal to 25 per cent, a RWYCC of 6 is to be generated for that third and the contaminant reported at 25 per cent coverage; or
 - 3) if the per cent contaminant coverage for that third is greater than 25 per cent, the RWYCC for that third shall be based on the contaminant present;
- b) if multiple contaminants are present where the total coverage is more than 25 per cent but no single contaminant covers more than 25 per cent of any runway third, the RWYCC is based upon the judgment by trained personnel, considering what contaminant will most likely be encountered by the aeroplane and its likely effect on the aeroplane's performance. Typically, this would be the most widespread contaminant, but this is not an absolute; and
- c) the RCAM lists contaminants in the runway surface description column from top to bottom with the most slippery contaminants at the bottom. However, this order is not an absolute since the RCAM is landing-oriented by design and, if judged in a take-off scenario, the order could be different due to the drag effects of loose contaminants.

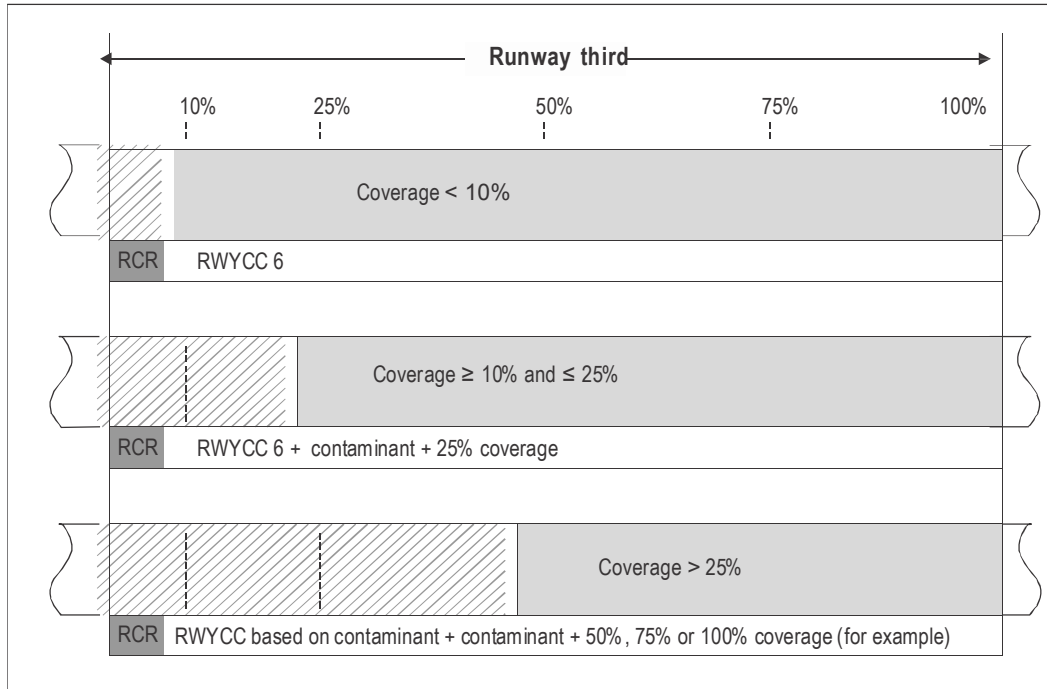


Figure 6-1. Single contaminant

6.7 Runway Condition Report (RCR)

6.7.1 The information reported by the aerodrome operator shall be complied with the RCR requirements.

6.7.2 For detail information, Runway Condition Report — Aeroplane performance calculation section is given in Appendix 1 and Runway Condition Report — Situational awareness section is given in Appendix 2.

6.7.3 An example of a complete information string is given in Appendix 3.

Chapter 7 Runway Condition Assessment Process - Flowcharts

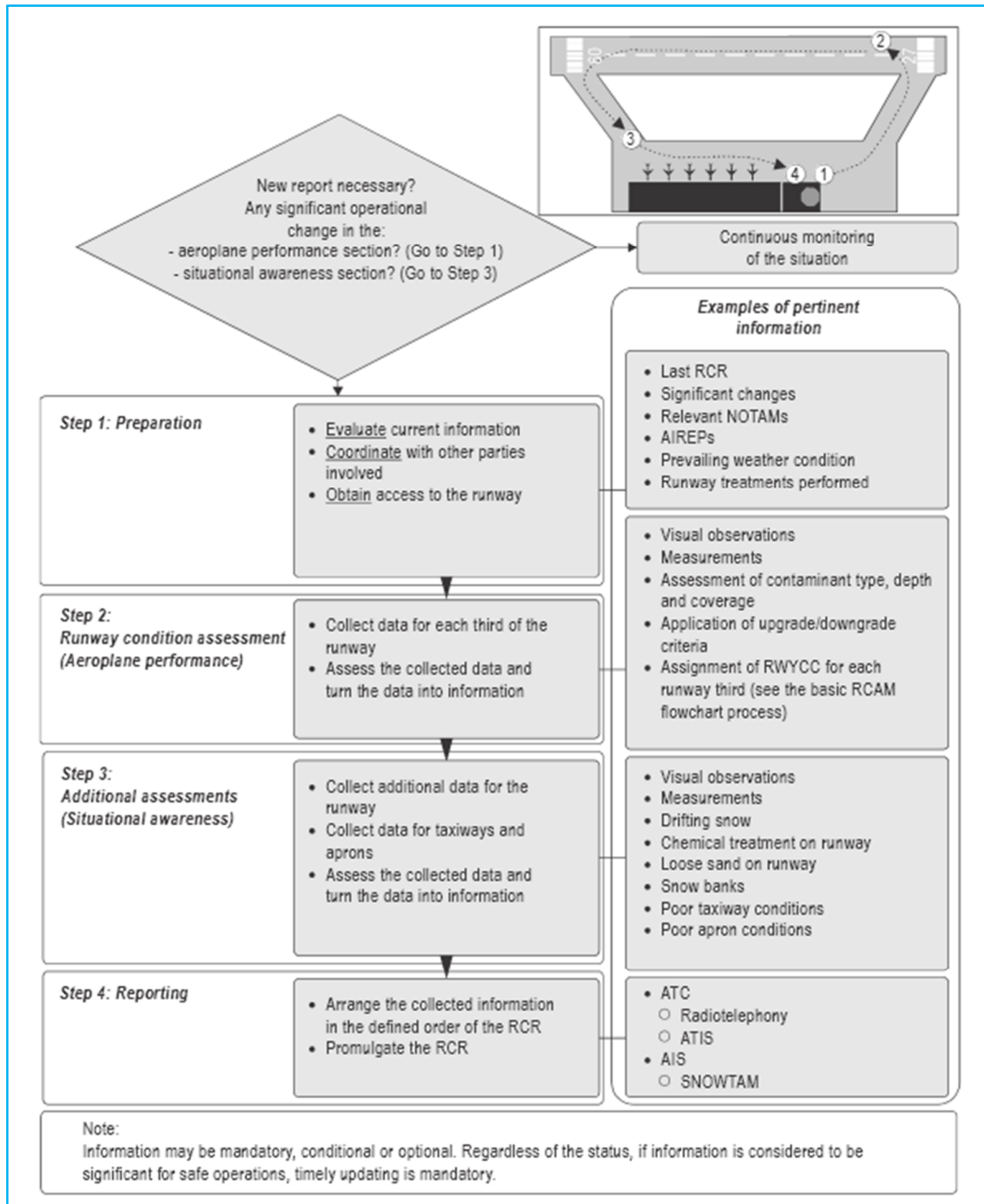
7.1 The runway condition assessment process is described by the following flowcharts:

- a) the generic runway condition assessment process; and
- b) the basic RCAM flowchart process associated with Flowchart A.

The generic runway condition assessment process

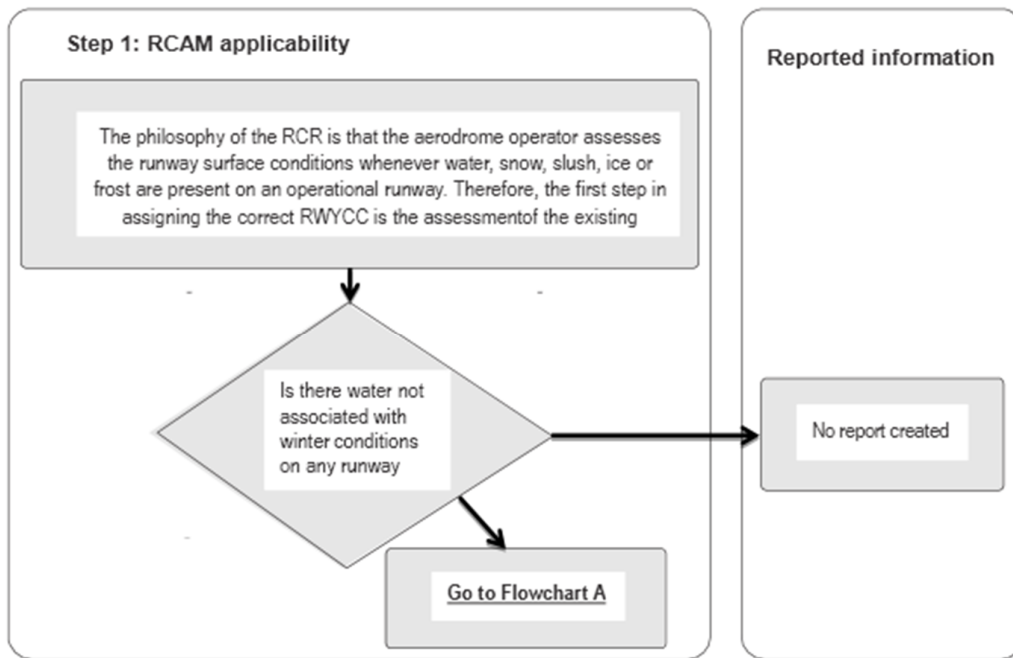
7.2 Figure 7-1 illustrates the generic assessment process for creating an RCR.

7.3 Figures 7-2 to 7-3 illustrate the assessment and reporting of runway surface conditions using the RCAM.



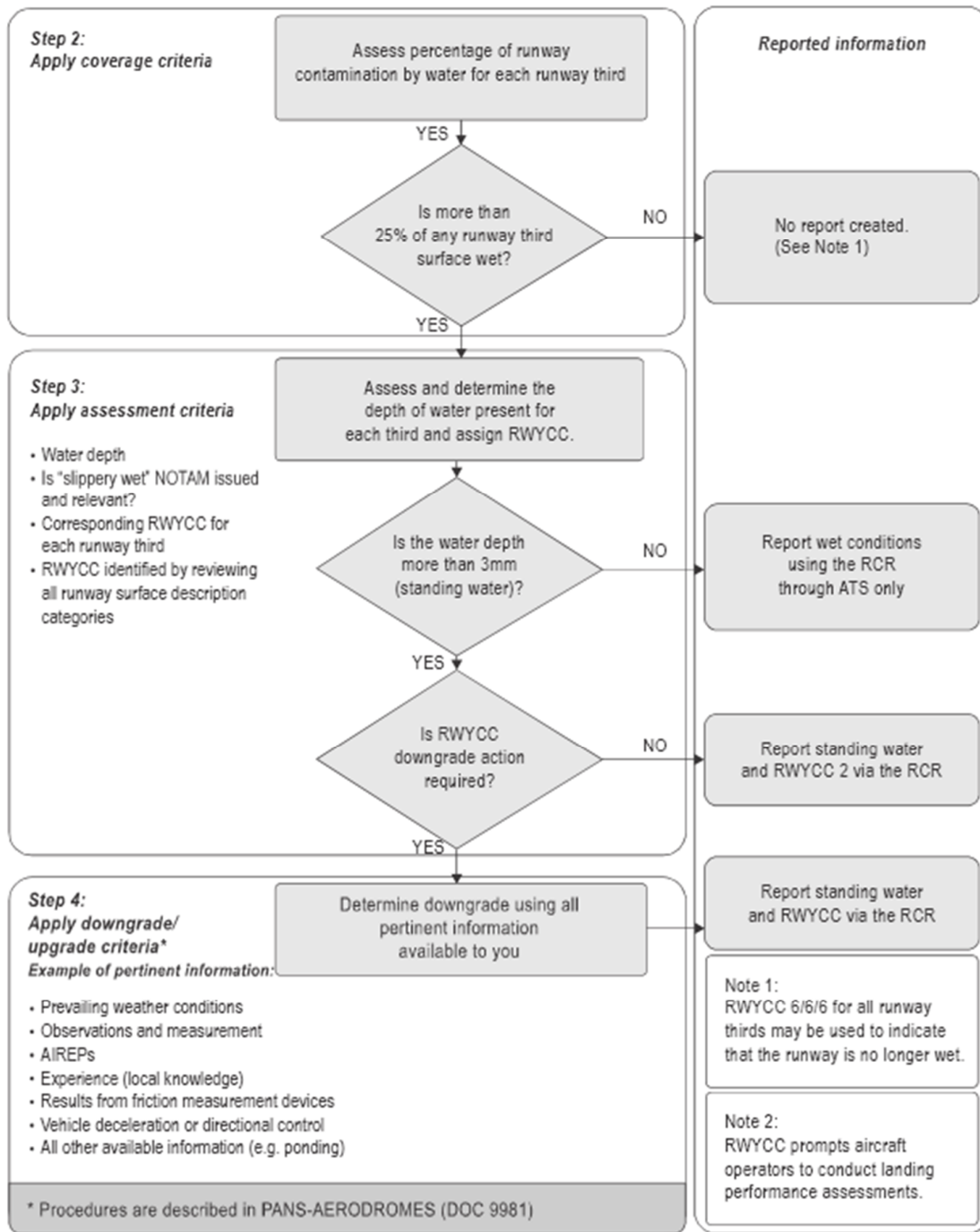
Source : Doc 9981

Figure 7-1. The generic runway condition assessment process



Source : Doc 9981

Figure 7- 2. The basic RCAM flowchart process



Source : Doc 9981

Figure 7- 3. Flowchart A

Chapter 8 Displaced threshold and Reporting of RWYCC

8.1 The information reported in the RCR refers to the physical extent of the runways, notwithstanding the length and position of declared distances within this extent. The flight crew understands this when interpreting the RCR, in particular when:

- a) landing on a runway with a significantly displaced threshold;
- b) performing an intersection take-off; or
- c) when a part of a runway is declared as a runway end safety area (RESA) but is available for take-off in the opposite direction.

8.2 In the RWYCC layout, the three runway thirds are reported in a sequence starting with the lowest runway designator – for example, in the **09** direction, even if the runway is being used in the **27** direction.

8.3 The surface friction characteristics of a stopway before and after the runway threshold not maintained to the surface friction characteristics at or above the level of those of the associated runway is reported in the free text comment section of the RCR.

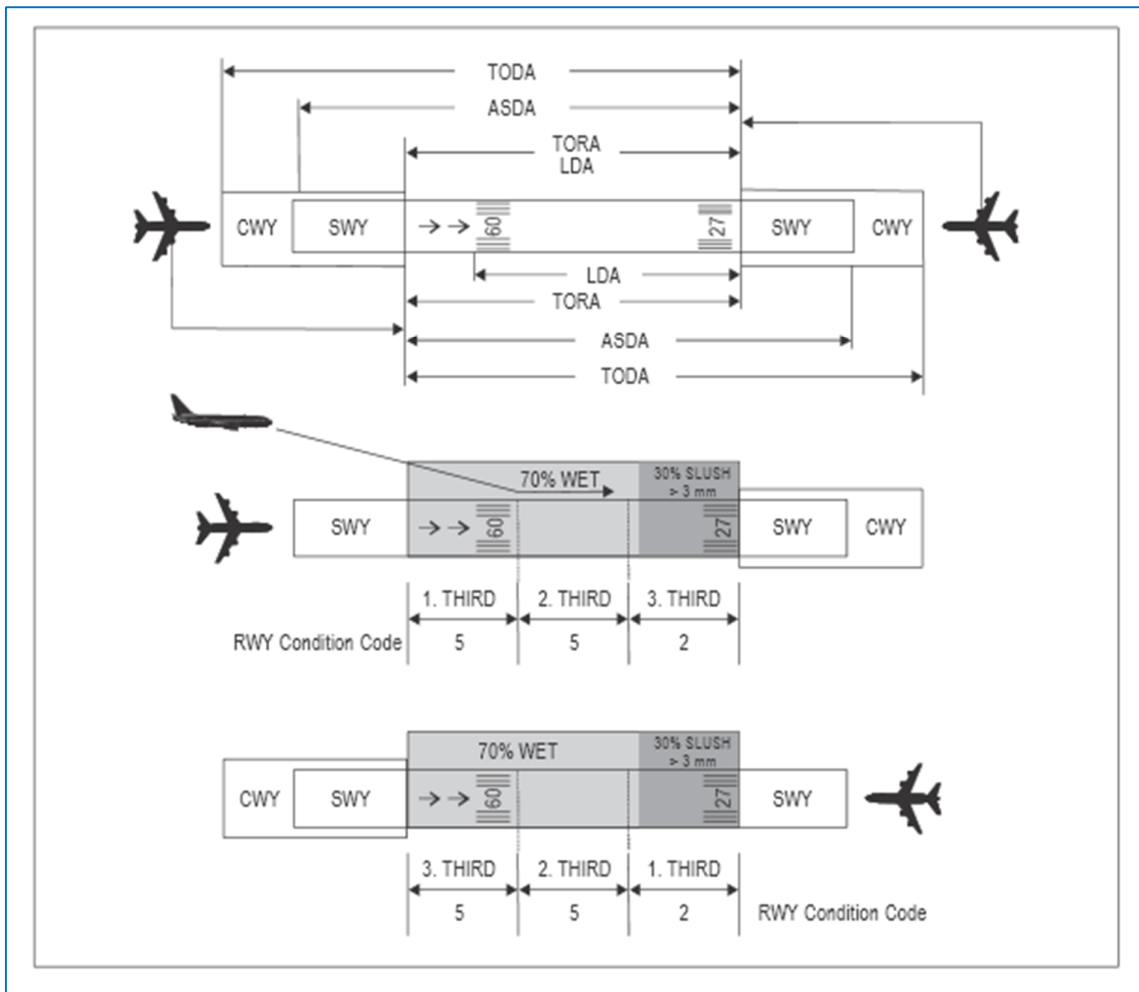


Figure 8-1 Reporting of runway condition code (RWYCC) for runway thirds from ATS to flight crew on a runway with displaced threshold

Chapter 9 Reporting Formats

9.1 Methods of Reporting

9.1.1 The need to report and promulgate runway surface conditions is specified in MCAR Part 139 Section 2, 2.9.1, which stipulates that information on the condition of the movement area and the operational status of related facilities shall be provided to the appropriate aeronautical information services (AIS) units, and similar information of operational significance to the ATS units, to enable those units to provide the necessary information to arriving and departing aircraft. The information shall be kept up-to-date and changes in conditions reported without delay.

9.1.2 Information on the runway surface condition includes the runway surface friction characteristics, which are assessed according to the aerodrome maintenance programme, the presence of water, snow, slush, ice or other contaminants on the runway, as well as the RWYCC in operational conditions.

9.1.3 ICAO's methods of reporting and promulgating information are as follows:

- a) aeronautical information publications (AIPs);
- b) aeronautical information circulars (AICs);
- c) notice to airmen (NOTAM);
- d) SNOWTAM;
- e) AIREPs;
- f) automatic terminal information services (ATIS); and
- g) air traffic control (ATC) communications.

Note: *The SNOWTAM template is shown in **Appendix 4** of this document.*

9.1.4 The increasing use of ground/air-ground data link and computerized systems, both on board the aircraft and on the ground, is being progressively supplemented with digitized information.

9.1.5 Currently, Annex 15 still requires, inter alia, a description to be provided in the AIP of the type of friction measuring device used, although it is accepted that those values cannot be related to aircraft performance. In addition, the runway surface friction characteristics are required to be described in the AIP, AICs and NOTAMs.

9.2 Aeronautical Information Publication (AIP)

9.2.1 Friction issues in the AIP are related to runway physical characteristics.

9.2.2 A detailed description of runway physical characteristics should be provided. The physical characteristics of a wet, skid-resistant surface can be included in the remarks.

9.3 Aeronautical Information Circular (AIC)

9.3.1 An AIC should be originated whenever it is necessary to promulgate aeronautical information that does not qualify for inclusion in an AIP or a NOTAM.

9.4 Notice to airmen (NOTAM)

9.4.1 A NOTAM should be originated and issued promptly whenever information to be distributed is of a temporary nature and of short duration or when operationally significant permanent changes or temporary changes of long duration are made at short notice.

9.4.2 This applies to the friction issues related to the:

- a) physical characteristics published in the AIP; and
- b) presence or removal of, or significant changes in, hazardous conditions due to snow, slush, ice or water on the movement area.

9.5 Data gathering and information processing

9.5.1 Aerodrome operators need to gather relevant data, process the related information using manual systems and make information available to users using conventional ways that require a considerable amount of time in addition to the need to obtain access to runways, which is often difficult, particularly at busy aerodromes.

9.5.2 Presently, the primary means of communication are ATIS and ATC, in addition to SNOWTAM.

9.6 Automatic terminal information service (ATIS)

9.6.1 An ATIS presents a very important means of transmitting information, relieving operational personnel from the routine duty of transmitting runway conditions and other relevant information to the flight crew. In addition to normal operational and weather information, the following information about the runway condition should be mentioned whenever the runway is not dry (RWYCC 6):

Aeroplane performance section:

- a) operational runway in use at time of issuance;
- b) RWYCC for the operational runway, for each runway third in the operational direction;
- c) condition description, coverage and depth (for loose contaminants);
- d) width of the operational runway to which the RWYCC applies, if less than the published width; and
- e) reduced length, if less than the published length.

Situational awareness section:

- f) drifting snow;
- g) loose sand;
- h) operationally significant snowbanks;
- i) runway exits, taxiways and apron if POOR; and
- j) any other pertinent information in short, plain language.

9.6.2 One inherent weakness in the ATIS system is the currency of the information. This is due to the fact that flight crews generally listen to ATIS on arrival, some twenty minutes before landing, and in rapidly changing weather, the runway conditions may alter dramatically in such a time span.

9.7 Air traffic control (ATC)

9.7.1 The organization responsible for gathering data and processing information of operational significance relating to runway conditions usually transmits such information to ATC, and ATC, in turn, provides this information to the flight crew if different from the ATIS. At present, this procedure appears to be the only one that is able to provide timely information to the flight crew, especially in rapidly changing conditions.

9.7.2 In addition to being timely, information disseminated through ATC may contain additional information associated with weather observed and forecasted by meteorological (MET) personnel, even before it is available on ATIS, as well as information gathered by other flight crews, such as braking action reports. This arrangement provides pilots with the best possible information available within the current system for sound decision-making.

9.7.3 Finally, where visibility conditions and aerodrome configuration permit, ATC can provide the flight crew, at very short notice, with their own immediate observations, such as a rapid change in rainfall intensity, notwithstanding that this may be considered as unofficial information.

9.8 Communication network

9.8.1 Air-ground communication between the flight deck and ATIS has generally been conducted through radiotelephony speech but large areas remain beyond the high frequency (HF) or very high frequency (VHF) coverage. The burden of voice communication and the saturation of present ATC capabilities have created a strong demand for automated ATIS transmission of which digital data link has become a key element. Therefore, in the near future, service providers and users will need to adapt their ground communications systems to international data link requirements.

9.9 Digital NOTAM

9.9.1 It is recognized that to satisfy new requirements arising from the Global ATM Operational Concept, AIS must transition to the broader concept of aeronautical information management (AIM).

9.9.2 One of the most innovative data products that will be based on the standard aeronautical data exchange model is a digital NOTAM that will provide dynamic aeronautical information to all stakeholders with an accurate and up-to-date common representation of the aeronautical environment in which flights are operated. The digital NOTAM is defined as a data set that contains the information included in a NOTAM in a structured format which can be fully interpreted by an automated computer system for accurate and reliable updating of the aeronautical environment, both for automated information equipment and humans.

Appendix – 1.

Runway Condition Report — Aeroplane performance calculation section

The aeroplane performance calculation section is a string of grouped information separated by a space “ ” and ends with a return and two line feed “<<≡”. This is to distinguish the aeroplane performance calculation section from the following situational awareness section or the following aeroplane performance calculation section of another runway.

The information to be included in this section consists of the following.

a) **Aerodrome location indicator:** a four-letter ICAO location indicator in accordance with Doc 7910, *Location Indicators*.

This information is mandatory.

Format: nnnn

Example: ENZH

b) **Date and time of assessment:** date and time (UTC) when the assessment was performed by the trained personnel.

This information is mandatory.

Format: MMDDhhmm

Example: 09111357

c) **Lower runway designation number:** a two- or three-character number identifying the runway for which the assessment is carried out and reported.

This information is mandatory.

Format: nn[L] or nn[C] or nn[R]

Example: 09L

d) **Runway condition code for each runway third:** a one-digit number identifying the RWYCC assessed for each runway third. The codes are reported in a three-character group separated by a “/” for each third.

The direction for listing the runway thirds shall be in the direction as seen from the lower designation number.

This information is mandatory.

When transmitting information on runway surface conditions by ATS to flight crews, the sections are, however, referred to as the first, second or third part of the runway. The first part always means the first third of the runway as seen in the direction of landing or take-off as illustrated in Figure 8-1.

Format: n/n/n

Example: 5/5/2

Note 1.— A change in RWYCC from, say, 5/5/2 to 5/5/3 is considered significant.

Note 2.— A change in RWYCC requires a complete assessment taking into account all information available.

Note 3.— Procedures for assigning a RWYCC are available in section 6.2.

e) **Per cent coverage contaminant for each runway third:** a number identifying the percentage coverage.

The percentages are to be reported in an up-to-nine character group separated by a “/” for each runway third. The assessment is based upon an even distribution within the runway thirds using the guidance in Table 6-1.

This information is conditional. *It is not reported for one runway third if it is dry or covered with less than 10 per cent.*

Format: [n]nn/[n]nn/[n]nn

Example: 25/50/100

NR/50/100 if contaminant coverage is less than 10% in the first third

25/NR/100 if contaminant coverage is less than 10% in the middle third

25/50/NR if contaminant coverage is less than 10% in the last third

With uneven distribution of the contaminants, additional information is to be given in the plain language remark part of the situational awareness section of the runway condition report. Where possible, a standardized text should be used.

Note.— When no information is to be reported, insert “NR” at its relevant position in the message to indicate to the user that no information exists (/NR).

f) **Depth of loose contaminant: dry snow, wet snow, slush or standing water for each runway third:** a

two- or three-digit number representing the assessed depth (mm) of the contaminant for each runway third.

The depth is reported in a six to nine character group separated by a “/” for each runway third as defined in Table 6-2. 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.

Format: [n]nn/[n]nn/[n]nn

Examples: 04/06/12 *[STANDING WATER]*

02/04/09 *[SLUSH]*

02/05/10 *[WET SNOW or WET SNOW ON TOP OF ...]*

02/20/100 *[DRY SNOW or DRY SNOW ON TOP OF]*

NR/NR/100 *[DRY SNOW in the last third only]*

This information is conditional. It is reported only for DRY SNOW, WET SNOW, SLUSH and STANDING WATER.

g) **Condition description for each runway third:** to be reported in capital letters using terms specified in 2.9.5 of MCAR Part 139 Section 2. The condition type is reported by any of the following condition type descriptions for each runway third and separated by an oblique stroke “/”.

This information is mandatory.

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

Format: nnnn/nnnn/nnnn

Example: DRY SNOW ON TOP OF COMPACTED SNOW/WET SNOW ON TOP OF COMPACTED SNOW/WATER ON TOP OF COMPACTED SNOW

h) **Width of runway to which the RWYCCs apply if less than published width** is the two-digit number representing the width of cleared runway in metres.

This information is optional.

Format: nn

Example: 30

If the cleared runway width is not symmetrical along the centre line, additional information is to be given in the plain language remark part of the situational awareness section of the runway condition report.

Appendix – 2.

Runway condition report — Situational awareness section

All individual messages in the situational awareness section end with a full stop sign. This is to distinguish the message from subsequent message(s).

The information to be included in this section consists of the following:

a) **Reduced runway length**

This information is conditional when a NOTAM has been published with a new set of declared distances affecting the LDA.

Format: Standardized fixed text

RWY nn [L] *or* nn [C] *or* nn [R] LDA REDUCED TO [n]nnn

Example: RWY 22L LDA REDUCED TO 1450.

b) **Drifting snow on the runway**

This information is optional.

Format: Standardized fixed text

Example: DRIFTING SNOW.

c) **Loose sand on the runway**

This information is optional.

Format: RWY nn[L] *or* nn[C] *or* nn[R] LOOSE SAND

Example: RWY 02R LOOSE SAND.

d) **Chemical treatment on the runway**

This information is mandatory.

Format: RWY nn[L] *or* nn[C] *or* nn[R] CHEMICALLY TREATED

Example: RWY 06 CHEMICALLY TREATED.

e) **Snowbanks on the runway**

This information is optional.

Left or right distance in metres from centre line.

Format: RWY nn[L] *or* nn[C] *or* nn[R] SNOWBANK Lnn *or* Rnn *or* LRnn FM CL

Example: RWY 06L SNOWBANK LR19 FM CL.

f) **Snowbanks on taxiway**

This information is optional.

Left or right distance in metres from centre line.

Format: TWY [nn]n SNOWBANK Lnn *or* Rnn *or* LRnn FM CL

Example: TWY A SNOWBANK LR20 FM CL.

g) Snowbanks adjacent to the runway penetrating level/profile set in the aerodrome snow plan.

This information is optional.

Format: RWY nn[L] or nn[C] or nn[R] ADJACENT SNOWBANKS

Example: RWY 06R ADJACENT SNOWBANKS.

h) Taxiway conditions

This information is optional.

Format: TWY [nn]n POOR

Example: TWY B POOR.

i) Apron conditions

This information is optional.

Format: APRON [nnnn] POOR

Example: APRON NORTH POOR.

j) Approved and published use of measured friction coefficient

This information is optional.

Format: *[Format and associated procedures to be defined]*

k) Plain language remarks using only allowable characters in capital letters

Where possible, standardized text should be developed.

This information is optional.

Format: Combination of allowable characters where use of full stop « . » marks the end of the message.

Allowable characters:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

0 1 2 3 4 5 6 7 8 9

/ [oblique stroke] “ . ” [period]“ ” [space]

Appendix – 3.

Complete information string

An example of a complete information string prepared for dissemination is as follows:

[COM header and Abbreviated header] (Completed by AIS)

GG EADBZQZX EADNZQZX EADSZQZX

070645 EADDYNYX

SWEA0151 EADD 02170055

SNOWTAM 0151

[Aeroplane performance calculation section]

EADD 02170055 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET

EADD 02170135 09R 5/4/3 100/50/75 NR/06/06 WET/SLUSH/SLUSH

EADD 02170225 09C 3/2/1 75/100/100 06/12/12 SLUSH/WET SNOW/WET SNOW

[Situational awareness section]

RWY 09L SNOWBANK R20 FM CL. RWY 09R ADJ SNOWBANKS. TWY B POOR. APRON NORTH POOR.

(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 centreline (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:			
<ol style="list-style-type: none"> 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 <i>Instructions for the completion of the SNOWTAM Format</i>, paragraph 1, item b), in Appendix 4 of PANS-AIM (Doc 10066). 			

SIGNATURE OF ORIGINATOR (not for transmission)

Appendix – 5

ABBREVIATIONS AND ACRONYMS

AIC	Aeronautical information circular
AIM	Aeronautical information management
AIP	Aeronautical information publication
AIREP	Air-report
AIS	Aeronautical information services
ANSP	Air Navigation Service Provider
ATC	Air traffic control (in general)
ATIS	Automatic terminal information service
ATM	Air traffic management
ATS	Air traffic service
CPDLC	Controller Pilot Data Link Communications
DCA	Department of Civil Aviation
GRF	Global Reporting System and Format
HF	High frequency
ICAO	International Civil Aviation Organization
LDA	Landing distance available
MCAR	Myanmar Civil Aviation Requirements
MET	Meteorological services
NOTAM	Notice to airmen
OAT	Outside air temperature
PANS	Procedures for Air Navigation Services
RCAM	Runway condition assessment matrix
RCR	Runway condition report
RESA	Runway end safety area
RST	Runway Safety Team
RWYCC	Runway condition code
SMS	Safety Management System
SLA	Service Level Agreement
UTC	Universal Time Coordinated
VHF	Very High Frequency
WMO	World Meteorological Organization