GM 14-22

CIVIL AVIATION AUTHORITY OF BANGLADESH

Guidance Manual

Implemantation of Global Reporting Format (GRF)

Version 1.0
28 MAY 2024

AERODROME STANDARD DIVISION

GM 14-22

CIVIL AVIATATION AUTHORITY OF BANGLADESH

Guidance Manual
on
Implementation of Global Reporting Format (GRF)

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Aerodrome Standard Division

RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENTS			
No.	Date applicable	Date entered	Entered by
Amendments 1-2 incorporated in this edition.			
3	5/11/20; 28/11/24	—	ICAO

CORRIGENDA			
No.	Date of issue	Date entered	Entered By

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ACRONYMS AND ABBREVIATIONS

ACR+	Aircraft classification number
ACR††	Aircraft classification rating
ADP	Airside driver permit
AGL	Above ground level
AIA	Accident investigation authority
AIP	Aeronautical information publication
AIS	Aeronautical information service
ANSP	Air navigation services provider
APAPI	Abbreviated precision approach path indicator
A-SMGCS	Advanced surface movement guidance and control system
ATIS	Automatic terminal information service
ATS	Air traffic service
AVOL	Aerodrome visibility operational level
AVP	Airside vehicle permit
CAA	Civil aviation authority
CAD	Common agreement document
CDM	Collaborative decision-making
CFIT	Controlled flight into terrain
FOD	Foreign object debris/damage
ft	Foot
GSE	Ground support equipment
IAIP	Integrated aeronautical information package
IAS	Indicated airspeed
IFR	Instrument flight rules
RST	Runway safety team
RESA	Runway end safety area
RFF	Rescue and fire fighting
PCN†	Pavement classification number
RVR	Runway visual range
RTF	Radiotelephony
SARPs	Standards and Recommended Practices
SMGCS	Surface movement guidance and control system
SMS	Safety management system
SSP	State safety programme
VASIS	Visual approach slope indicator system
VDGS	Visual docking guidance system
VFR	Visual flight rules
WGS-84	World Geodetic System — 1984
WHMP	Wildlife hazard management programme
WIP	Work in progress
ILS	Instrument landing system
km	Kilometre
kt	Knot
LDA	Landing distance available
ILS	Instrument landing system
LVP	Low visibility procedures
NAVAID	Aid to air navigation
NLA	New larger aeroplane
OFZ	Obstacle free zone
OLS	Obstacle limitation surfaces
PAPI	Precision approach path indicator
PASG	PANS-Aerodromes Study Group
QFU	Magnetic orientation of runway
PCR††	Pavement classification rating
PRM	Precision runway monitor

Symbols

o	Degree
=	Equals
'	Minute of arc
μ	Friction coefficient
>	Greater than
<	Less than
%	Percentage
$\pm$	Plus or minus

† Applicable until 27 November 2024.
†† Applicable as of 28 November 2024.

FOREWORD

In exercise of the powers conferred by the Section 14 of Civil Aviation Act 2017, the Chairman, Civil Aviation authority of Bangladesh has promulgated ANO-14 Vol-I by transposing the Provisions of ICAO Annex 14 Vol-1.as specific operating regulations for the Aerodrome Operators, operating in Bangladesh.

An Aerodrome Operator is expected to comply with the Regulations of the ANO-14 Vol-I. There may be circumstances where compliance of requirements by the Aerodrome Operator becomes difficult because of constraints of trained manpower, training facilities and/or other administrative formalities. These situations require CAAB to establish subject specific guidance manuals.

Provision 2.9 of ANO-14 Vol-I requires that Aerodrome Operator shall assess and report the runway surface condition through a runway condition code (RWYCC) and description using terms as specified by Art 2.9.5.

The new ICAO methodology for assessing and reporting runway surface conditions is aimed to significantly reduce the risks associated with runway contamination which is one of the leading contributing factors of runway excursions.

The philosophy of the runway condition report 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 report, 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 may be taken into consideration.

This guiding manual has been derived from the ANO-14, VOL-I & PANS Aerodromes (Doc 9981); Annex 11; Doc 9774; Annex 15; Cir 355 ; Doc 10066.It provides details of GRF and Guidance for the Aerodrome Operators to develop procedures on the use of the runway condition report and assignment of the RWYCC in accordance with the runway condition assessment matrix (RCAM).

It is expected that the concerned Aerodrome Operator will take this GM as a reference/guidance material in order to comply with the required regulations for the implementation of the GRF. Moreover, the Aerodrome Operator is to ensure that all those involved in implementation of the GRF are aware of context of this Guidance Manual.

This Guidance Manual is issued under the authority of the Chairman of Civil Aviation Authority, Bangladesh and will be effective on the date mentioned in the document.

Air Vice Marshal M Mafidur Rahman
BBP, BSP, BUP, ndu, afwc, psc
Chairman
Civil Aviation Authority of Bangladesh

Definitions

Global Reporting Format (GRF): is a harmonized and an objective methodology for assessing and reporting runway surface conditions in all climates. It is a consistent and standardized format from all airports.

Runway Condition Assessment Matrix (RCAM): 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): A number describing the runway surface condition to be used in the runway condition report. It allows flight crew to interpret the runway conditions in a standardized format and make calculations about how the aircraft will perform in those conditions.

Runway Condition Report (RCR): A comprehensive standardized report relating to runway surface conditions and its effect on the aircraft landing and take-off performance.

Runway Surface Condition(s): 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 aircraft performance purposes.

Runway Excursion: A veer off or overrun off the runway surface and can occur during take-off or landing.

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. **RWYCC = 6**

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. **RWYCC = 5**

Slippery Wet Runway: A wet runway where the surface friction characteristics of a significant portion of the runway have been determined to be degraded. **RWYCC = 3**

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

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.

Important Notes:

- The **GRF** is an evaluation by **trained personnel** who complete a runway condition report (RCR).

- **A simplified RCAM** is published for airports that never experience snow or ice conditions (such as Bangladesh). It gives information for DRY and WET conditions only.

- **There are four runway surface conditions in the RCAM**: Dry/Wet/Slippery Wet/Contaminated.

- **A runway condition code (RWYCC) is assigned for each third of the runway, which**

is a combination or result of Type of Contamination + Depth of Contamination + Outside Temperature.

Introduction

The new ICAO methodology for assessing and reporting runway surface conditions, commonly known as the Global Reporting Format (GRF), enables the harmonized assessment and reporting of runway surface conditions and a correspondingly improved flight crew assessment of take-off and landing performance.

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The GRF includes an agreed set of criteria used in a consistent manner for runway surface condition assessment, unique runway condition code (RWYCC) linking the agreed set of criteria with the aircraft landing and take-off performance, braking action experienced and eventually reported by flight crews; contaminant type and depth, and 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.

This Guidance Manual (GM) provides guidance for the Aerodrome operator, Air Traffic controllers and Aeronautical information Service personnel of the procedure to be followed in Reporting Runway contaminants in relation to the GRF and providing information to aircrew regarding the runway conditions.

Purpose

This Guidance Manual (GM) provides guidance for the operation of aircraft operating worldwide using the Global Reporting Format (GRF) to enable pilot providing important information to ATC, aerodrome personnel and other pilots regarding the issuance of Runway Condition Code (RWYCC) and the Runway Condition Report (RCR)

AERODROME OPERATIONAL MANAGEMENT

Chapter 1 TRAINING

1.1 GENERAL

1.1.1 The activities conducted by an aerodrome operator require the competence and appropriate training of personnel in order to carry out their assigned tasks.

1.1.2 This training is generally conducted by the individual's employer, but may also be conducted by the aerodrome operator or third parties.

1.1.3 This chapter provides the general obligations related to training programmes and competence checks for all personnel carrying out the procedures detailed in this document.

1.2 OBJECTIVES

1.2.1 Aerodrome operators are required to develop and implement a training programme for all personnel involved in aerodrome operations.

1.2.2 The training programmes should include procedures for the verification of personnel knowledge and for the practical application thereof, at adequate intervals.

1.3 OPERATIONAL PRACTICES

1.3.1 Aerodrome operators shall be responsible for ensuring that their staff and all personnel involved in aerodrome operations at the aerodrome are competent for each task they are required to carry out. The details of the training will vary depending on the person's experience and background and the complexity of the required task.

1.3.2 Training objectives shall be identified to ensure that competence is achieved and maintained. Based on these objectives, the training programme should include content and frequency for each technical subject, as well as a method to track the progress of the required training and the maintenance of training records.

1.3.3 A training programme should include:

a) theoretical training;

b) practical or on-the-job training;

c) testing of understanding; and

d) demonstrating competence or recurrent theoretical and/or practical training.

Note 1.— Provisions on demonstrating competence are included in the Appendix to this chapter.

Note 2.— Demonstration of continued competence is an alternative to recurrent training.

Note 3.— The attachment to this chapter provides guidance on the structure of a training programme.

1.3.4 Refresher training should be provided following an accident, incident or serious incident, if training related issues have been identified as a contributing factor, or after a long-term absence to ensure that personnel are kept abreast of the most recent material, developments and practices.

1.3.5 The training syllabus may include initial and periodic recurrent training in the following areas:

a) aerodrome familiarization, including aerodrome markings, signs and lighting;

b) aerodrome procedures as described in the aerodrome manual;

c) aerodrome emergency plan;

d) Notice to Airmen (NOTAM) initiation procedures;

e) completion of/initiation procedures for RCR;

f) aerodrome driving rules;

g) air traffic control procedures on the movement area;

h) radiotelephone operating procedures;

i) phraseology used in aerodrome control, including the ICAO spelling alphabet;

j) aerodrome inspection procedures and techniques;

k) type of runway contaminants and reporting;

l) assessment and reporting of runway surface friction characteristics;

m) use of runway friction measurement device;

n) calibration and maintenance of runway friction measurement device;

o) awareness of uncertainties related to l) and m); and

p) low visibility procedures.

Chapter 2. REPORTING FORMAT USING STANDARD RUNWAY CONDITION REPORT

(Applicable on 4 November 2021)

2.1 RUNWAY SURFACE CONDITION ASSESSMENT AND REPORTING

2.1.1 General

Note.— This section includes an introduction to each of the topics covered in subsequent sections. It also provides an overview of the general principles in order to understand the procedures that follow.

2.1.1.1 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.

2.1.1.1.1 The concept of the RCR is premised on:

a) an agreed set of criteria used in a consistent manner for runway surface condition assessment, aeroplane (performance) certification and operational performance calculation;

b) a unique runway condition code (RWYCC) linking the agreed set of criteria with the aircraft landing and take- off performance table, and related to the braking action experienced and eventually reported by flight crews;

c) reporting of contaminant type and depth that is relevant to take-off performance;

d) 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; and

e) globally-harmonized procedures for the establishment of the RWYCC with a built-in flexibility to allow for local variations to match the specific weather, infrastructure and other particular conditions.

2.1.1.1.2 These harmonized procedures are reflected in a runway condition assessment matrix (RCAM) which correlates the RWYCC, the agreed set of criteria and the aircraft braking action which the flight crew should expect for each value of the RWYCC.

2.1.1.1.3 It is recognized that information provided by the aerodrome's personnel assessing and reporting runway surface condition is crucial to the effectiveness of the runway condition report. A misreported runway condition alone should not lead to an accident or incident. Operational margins should cover for a reasonable error in the assessment, including unreported changes in the runway condition. But a misreported runway condition can mean that the margins are no longer available to cover for other operational variance (such as unexpected tailwind, high and fast approach above threshold or long flare).

2.1.1.1.4 This is further amplified by the need for providing the assessed information in the proper format for dissemination, which requires insight into the limitations set by the syntax for dissemination. This in turn restricts the wording of plain text remarks that can be provided.

2.1.1.1.5 It is important to follow standard procedures when providing assessed information on the runway surface conditions to ensure that safety is not compromised when aeroplanes use wet or contaminated runways. Personnel should be trained in the relevant fields of competence and their competence verified in a manner required by the State to ensure confidence in their assessments.

2.1.1.2 On a global level, 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. Assessing runway surface conditions rely on a great variety of techniques and no single solution can apply to every situation.

Note.— Guidance on methods of assessing runway surface condition is given in Attachment to chapter2.

2.1.1.3 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.

2.1.1.4 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.

2.1.1.5 The operational requirements in 2.1.1.3 stem from Annex 6 — *Operation of Aircraft*, Part I
International Commercial Air Transport — Aeroplanes and Annex 8 — *Airworthiness of Aircraft* with the objective of achieving the desired level of safety for the aeroplane operations.

2.1.1.6 ANO 14, Volume I contains requirements related to the assessment and reporting of runway surface condition. Associated objectives and operational practices are described in 2.1.2 and 2.1.3.

2.1.1.7 The operational practices are intended to provide the information needed to fulfill the syntax requirements for dissemination and promulgation specified in the *Procedures for Air Navigation Services — Aeronautical Information Management* (PANS-AIM, Doc 10066) and the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444 Para 11.4.3.4.3).

Note.— For practical reasons, the RCR information string has been provisionally incorporated in the Procedures for Air Navigation Services — Aeronautical Information Management *(PANS-AIM, Doc 10066) as a revision of the SNOWTAM format.*

2.1.1.8 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.

Note.— Operationally relevant information concerning taxiways and aprons are covered in the situational awareness section of the RCR.

2.1.1.9 The operational practices describe procedures to meet the operationally needed information for the flight crew and dispatchers for the following sections:

a) aeroplane take-off and landing performance calculations:

i) dispatch — pre-planning before commencement of flight:

— take-off from a runway; and
— landing on a destination aerodrome or an alternate aerodrome;

ii) in flight — when assessing the continuation of flight; and

— before landing on a runway; and

b) situational awareness of the surface conditions on the taxiways and aprons.

2.1.2 Objectives

Note.— This section contains the basic principles that have been defined for the topic and have been formulated as required for global uniform application. They cover the whole subject matter and are broken down into the individual subsections.

2.1.2.1 The RWYCC shall be reported for each third of the runway assessed.

2.1.2.2 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.

2.1.2.3 The information to be reported shall be compliant with the RCR which consists of:

a) aeroplane performance calculation section; and

b) situational awareness section.

2.1.2.4 The information shall be included in an information string in the following order using only AIS compatible characters:

a) aeroplane performance calculation section:

i) aerodrome location indicator;

ii) date and time of assessment;

iii) lower runway designation number;

iv) RWYCC for each runway third;

v) per cent coverage contaminant for each runway third;

vi) depth of loose contaminant for each runway third;

vii) condition description for each runway third; and

viii) width of runway to which the RWYCCs apply if less than published width.

b) situational awareness section:

i) reduced runway length;

ii) drifting snow on the runway;

iii) loose sand on the runway;

iv) chemical treatment on the runway;

v) snow banks on the runway;

vi) snow banks on the taxiway;

vii) snow banks adjacent to the runway;

viii) taxiway conditions;

ix) apron conditions;

x) State-approved, and published use of, measured friction coefficient; and

xi) plain language remarks.

2.1.2.5 The syntax for dissemination as described in the RCR template in the *Procedures for Air Navigation Services — Aeronautical Information Management* (PANS-AIM, Doc 10066), Appendix 4, is determined by the operational need of the flight crew and the capability of trained personnel to provide the information arising from an assessment.

Note.— For practical reasons, the RCR information string has been provisionally incorporated in the Procedures for Air Navigation Services — Aeronautical Information Management *(PANS-AIM, Doc 10066) as a revision of the SNOWTAM format.*

2.1.2.6 The syntax requirement in 2.1.2.5 shall be strictly adhered to when providing the assessed information through the RCR.

2.1.3 Operational practices

Note.— This section covers the specific operational practices and the ways in which they are applied in order to achieve the basic principles defined in 2.1.2 — Objectives.

2.1.3.1 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.

2.1.3.2 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.

2.1.3.3 A change in the runway surface condition used in the runway condition report 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 II-2-1;

d) any change in contaminant depth according to Table II-2-2; 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.

Runway Condition Report —Aeroplane performance calculation section

2.1.3.4 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: VGHS

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] or nn
Example: 09L; 14

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 Figures II-2-1 and II-2-2 and detailed in PANS-ATM (Doc 4444).

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. (See further examples below).

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 2.1.3.12 to 2.1.3.16.

e) **Percent 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 II-2-1.

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 II-2-2. 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.

Example of reporting depth of contaminant whenever there is a significant change

1) After the first assessment of runway condition, a **first runway condition report** is generated. The initial report is:

5/5/5 100/100/100 02/02/02 SLUSH/SLUSH/SLUSH

Note.— The full information string is not used in this example.

2) With continuing precipitation, a new runway condition report is required to be generated as subsequent assessment reveals a change in the runway condition code. A **second runway condition report** is therefore created as:

2/2/2 100/100/100 03/03/03 SLUSH/SLUSH/SLUSH

3) With even more precipitation, further assessment reveals the depth of precipitation has increased from 3 mm to 5 mm along the entire length of the runway. However, a new runway condition report **is not** required because the runway condition code has not changed (change in depth is less than the significant change threshold of 3 mm).

4) A final assessment of the precipitation reveals that the depth has increased to 7 mm. A new runway condition code is required because the change in depth from the last runway condition report (**second runway condition code**) i.e. from 3 mm to 7 mm is greater than the significant change threshold of 3 mm. A **third runway condition report** is thus created as below:

2/2/2 100/100/100 07/07/07 SLUSH/SLUSH/SLUSH

For contaminants other than STANDING WATER, SLUSH, WET SNOW or DRY SNOW, the depth is not reported. The position of this type of information in the information string is then identified by /NR/.

Example: /NR/

When the depth of the contaminants varies significantly within a runway third, additional information is to be given in the plain language remark part of the situational awareness section of the runway condition report.

Note.— In this context a significant variation in depth in the lateral direction is more than twice the depth indicated in column 3 of Table II-2-2. Further information is available in Circular 329 — Assessment, Measurement and Reporting of Runway Surface Conditions.

g) **Condition description for each runway third:** to be reported in capital letters using terms specified in 2.9.5 of ANO- 14, Volume I. These terms have been harmonized with the terms used in the Standards and Recommended Practices in Annexes 6, 8, 11 and 15. 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.

Runway condition report — Situational awareness section:

2.1.3.5 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
(i) RWY nn [L] *or* nn [C] *or* nn [R] LDA REDUCED TO [nnnn]
Example: a) RWY 22L LDA REDUCED TO 1450.
(ii) RWY nn LDA REDUCED TO [nnnn]

Example: RWY 14 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] or nn LOOSE SAND.

Example: (i) RWY 02R LOOSE SAND.

(ii) RWY 14 LOOSE SAND.

d) **Chemical treatment on the runway**

This information is mandatory.

Format: RWY nn[L] *or* nn[C] *or* nn[R] or nn CHEMICALLY TREATED
Example: RWY 05 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 N 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] or nn ADJACENT SNOWBANKS
Example: a) RWY 06R ADJACENT SNOWBANKS.
b) RWY 11 ADJACENT SNOWBANKS.

h) **Taxiway conditions**

This information is optional.

Format: TWY [nn]n POOR
Example: TWY A POOR.

i) **Apron conditions**

This information is optional.

Format: APRON [nnnn] POOR
Example: APRON NORTH POOR.

j) A**pproved and published use of measured friction coefficient**

This information is optional.

Format: *[CAAB set format and associated procedures]*
Example: *[Function of CAAB set format and associated procedures].*

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 LM 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]

Complete information string

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

[COM header and Abbreviated header] (Completed by AIS)
GG VGHSZQZX VGEGZTZX VGSYZTZX VIDFYNYX etc
070645 VGHSYNYX
SWAA0151 VGHS 02070055
SNOWTAM 0151

[Aeroplane performance calculation section]

VGHS 02170055 14 5/5/5 100/100/100 NR/NR/NR WET/WET/WET

[Situational awareness section]
RWY 14. TWY S POOR. APRON CARGO POOR.

Assessing a runway and assigning a runway condition code

2.1.3.7 The assessed RWYCC to be reported for each third of the runway is determined by following the procedure described in 2.1.3.12 to 2.1.3.16.

Note.— Guidance on methods of assessing runway surface condition, including the determination of a slippery wet runway, is given in Attachment to this chapter2.

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

2.1.3.9 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.

2.1.3.10 A description of the runway surface condition is provided using the contamination terms described in capital letters in Table II-2-3 — *Assigning a runway condition code (RWYCC)*.

1.1.3.11 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.

2.1.3.12 The RWYCC is determined using Table II-2-3.

2.1.3.13 The variables, in Table II-2-3, 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.

Note.— At air temperatures of plus 3 degrees Celsius and below, with a dew point spread of 3 degrees Celsius or less, the runway surface condition may be more slippery than indicated by the runway condition code assigned by Table II-2-3. The narrow dew point spread indicates that the air mass is relatively close to saturation which is oftenassociated with actual precipitation, intermittent precipitation, nearby precipitation or fog. This may depend on its correlation with precipitation but it may also, at least in part, depend on the exchange of water at the air-ice interface. Due to the other variables involved, such as surface temperature, solar heating and ground cooling or heating, a small temperature spread does not always mean that the braking action will be more slippery. The observation should be used by aerodrome operators as an indicator of slippery conditions but not as an absolute.

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

2.1.3.15 An assigned RWYCC 1 or 0 can be upgraded using the following procedures (but see also 2.1.3.16):

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.

2.1.3.16 Upgrading of RWYCC 1 or 0 using the procedures in 2.1.3.15 shall not be permitted to go beyond a RWYCC 3.

2.1.3.17 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.

2.1.3.18 The RWYCC determined from Table II-2-3 should be appropriately downgraded considering all available means of assessing runway slipperiness, including the criteria given in Table II-2-4.

2.1.3.19 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 1.— The procedures for making special air-reports regarding runway braking action are contained in the Procedures for Air Navigation Services — Air Traffic Management *(PANS-ATM, Doc 4444), Chapter 4, and Appendix 1, Instructions for air-reporting by voice communication.*

Note 2.— Procedures for downgrading reported RWYCC can be found in 2.1.3.23 including the use of Table II-2-5 runway condition assessment matrix (RCAM).

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

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

Note 2.— Procedures for the provision of information to arriving aircraft are contained in Procedures for Air Navigation Services — Air Traffic Management *(PANS-ATM, Doc 4444), Section 6.6.*

2.1.3.22 Table II-2-4 shows the correlation of pilot reports of runway braking action with RWYCCs.

2.1.3.23 Table II-2-3 and Table II-2-4 combined form the runway condition assessment matrix (RCAM) in Table II-2-5. 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.

2.2 AERODROME MOVEMENT AREA MAINTENANCE

Kept Vacant

LIST OF TABLES AND FIGURES

Table II-2-1. Percentage of coverage for contaminants

Assessed per cent	*Reported per cent*
10 – 25	25
26 – 50	50
51 – 75	75
76 – 100	100

Table II-2-2. Depth assessment for contaminants

Contaminant	*Valid values to be reported*	*Significant change*
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.

Table II-2-3. 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**

Table II-2-4. 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 II-2-5. 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	• DRY	---	---
5	• FROST • WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth) ***Up to and including 3 mm depth:*** • SLUSH • DRY SNOW • WET SNOW	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	GOOD
4	***−15ºC and Lower outside air temperature:*** • COMPACTED SNOW	Braking deceleration OR directional control is between Good and Medium.	GOOD TO MEDIUM
3	• WET ("slippery wet" runway) • DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW ***More than 3 mm depth:*** • DRY SNOW • WET SNOW ***Higher than −15ºC outside air temperature[1]:*** • COMPACTED SNOW	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	MEDIUM
2	***More than 3 mm depth of water or slush:*** • STANDING WATER • SLUSH	Braking deceleration OR directional control is between Medium and Poor.	MEDIUM TO POOR
1	• ICE [2]	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	POOR
0	• WET ICE [2] • WATER ON TOP OF COMPACTED SNOW [2] • DRY SNOW or WET SNOW ON TOP OF ICE [2]	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	LESS THAN POOR

[1] Runway surface temperature should preferably be used where available.

[2] The aerodrome operator may assign a higher runway condition code (but no higher than code 3) for each third of the runway, provided the procedure in 2.1.3.15 is followed.

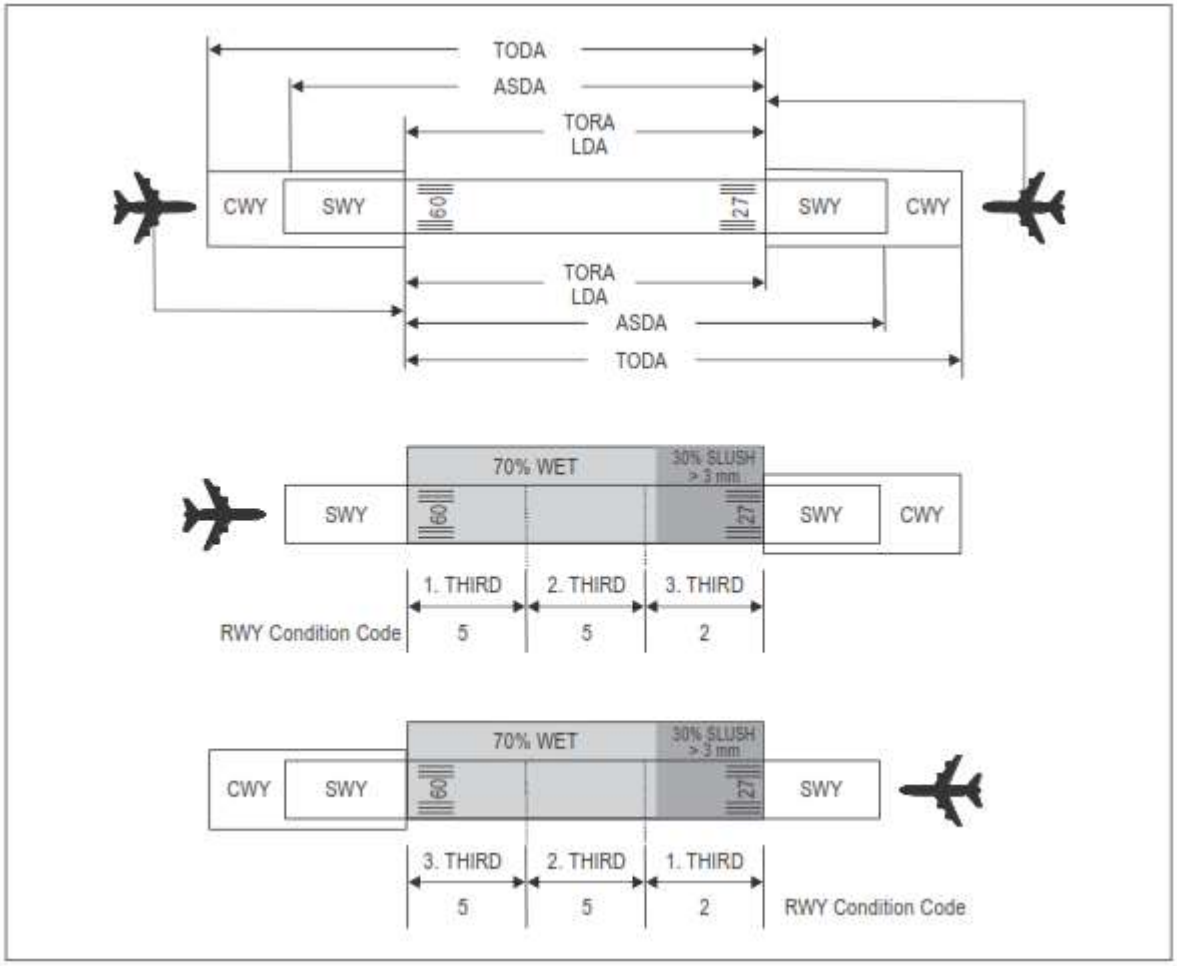


Figure II-2-1. Reporting of runway condition code from ATS to flight crew for runway thirds

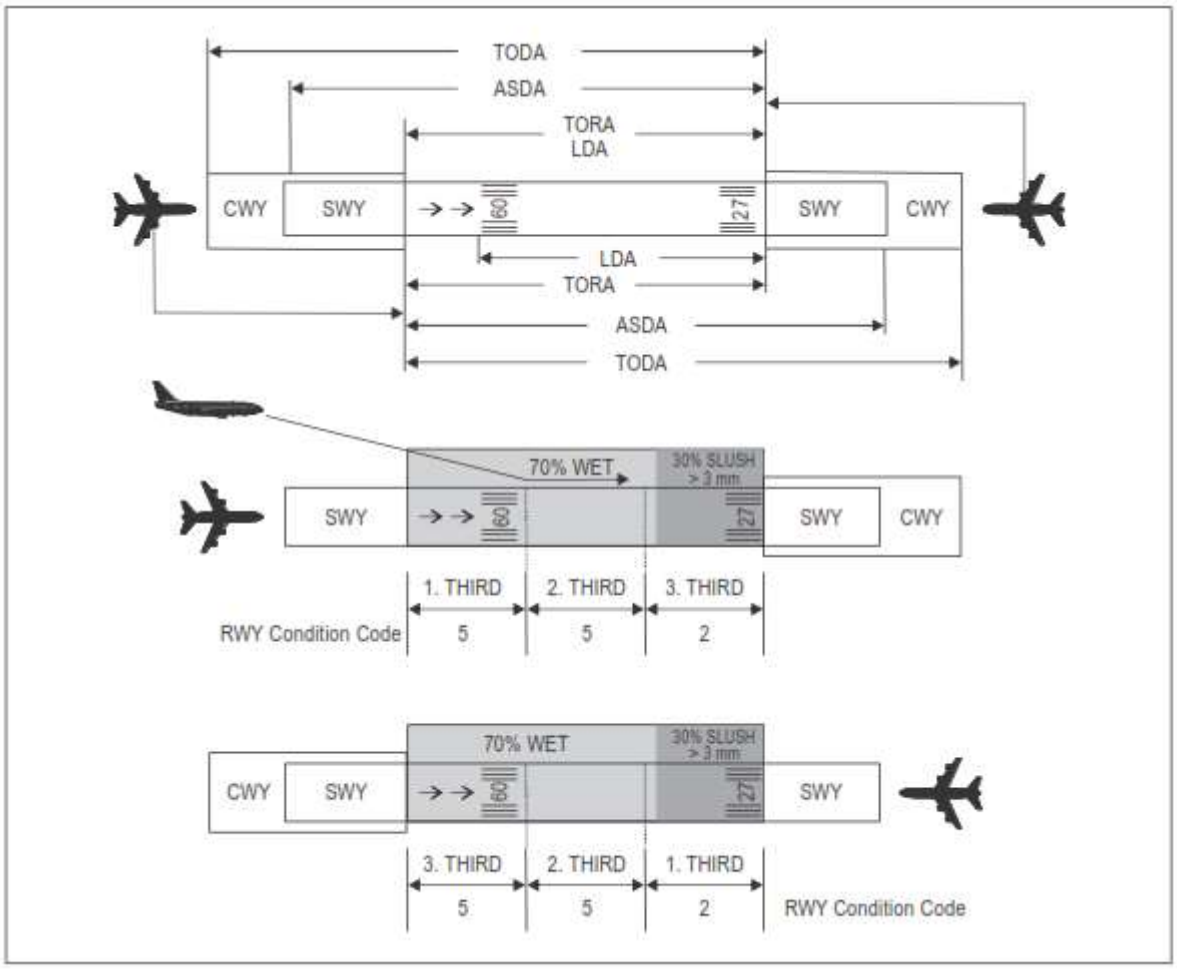


Figure II-2-2. Reporting of runway condition code for runway thirds from ATS to flight crew on a runway with displaced threshold

Appendix to Chapter 1

DEMONSTRATING COMPETENCE

1.1 In order to demonstrate competence in a specific task, personnel shall demonstrate that the theory, practical training and local knowledge can be applied together in a satisfactory way, usually by successfully completing a competence check.

1.2 Competence checks may be used as an alternative to recurrent training whereby personnel demonstrate continued competence in a task and therefore do not require recurrent training.

1.3 Competence checks can be completed during day-to-day activities by having a competent individual accompany and assess the staff member on a task they are required to complete.

1.4 Records of all the steps taken to achieve the task shall be made and an evaluation shall be completed.

1.5 For a team or section to be recognized as competent, periodical audits or checks should be carried out and recorded. All shortfalls should be addressed by reviewing and updating the training material, refresher training or the frequency of recurrent training. Similarly, after any accident, incident or serious occurrence, it may be prudent to review training programmes to ensure that they remain appropriate.

Attachment to Chapter 1.

STRUCTURE OF A TRAINING PROGRAMME

1. INITIAL TRAINING

Initial training should be composed of theoretical and practical training modules. Personnel should be assessed and demonstrate their capability to safely accomplish the required tasks upon completion of the initial training and prior to starting on-the-job training.

2. RECURRENT TRAINING

The aerodrome operator should ensure that personnel complete recurrent training at suitable intervals after the completion of their initial training programme. Continuous competence checking may be used as an alternative to recurrent training.

3. REFRESHER TRAINING

When a person has not performed any of their assigned tasks for a significant period of time, or has been involved in an accident, incident or serious occurrence, in which training-related issues have been identified as a contributing factor, that person should complete relevant refresher training prior to:

a) performing assigned tasks; or

b) being allowed unescorted access on the movement area and other operational areas of the aerodrome, as appropriate.

Attachment to Chapter 2
METHODS OFASSESSING RUNWAY SURFACE CONDITION

		ANNEX 14, Volume I, 8th Edition, July 2018	*REMARK*
DESIGN AND CONSTRUCTION	Slope	3.1.13 Longitudinal slopes 3.1.19 Transverse slopes	
	Texture	3.1.26 **Recommendation.**—The average surface texture depth of a new surface should be not less than 1.0 mm.	
	Minimum friction level set by the State	3.1.23 A paved runway shall be so constructed or resurfaced as to provide surface friction characteristics at or above the minimum friction level set by the State.	The State set criteria for surface friction characteristics and output from State set or agreed assessment methods form the reference from which trend monitoring are performed and evaluated.
	Polishing	3.1.23 A paved runway shall be so constructed or resurfaced as to provide surface friction characteristics at or above the minimum friction level set by the State.	Polished Stone Value. (PSV-value) is a measure of skidding resistance on a small sample of stone surface, having being subjected to a standard period of polishing.

			Rubber build-up	*Geometry change*	*Polishing*
ASSESSMENT METHODS FOR MONITORING TREND OF CHANGE TO SURFACE FRICTION CHARACTERISTICS	Visual − macrotexture	Visual assessment will only give a very crude assessment of the macrotexture. Extensive rubber build-up can be identified.	X		
	Visual − microtexture	Visual assessment will give a very crude assessment of the microtexture and to what degree the microtexture has been filled and covered by rubber.	X		
	Visual – runway geometry (ponding)	Visual assessment during a rain storm and subsequent drying process of the runway will reveal how the runway drains and if there have been any changes to runway geometry causing ponding. Depth of any pond can be measured by a ruler or any other appropriate depth measurement method/tool.		X	
	By touch − macrotexture	Assessment by touch can differentiate between degree of loss of texture but not quantifying it.	X		
	By touch − microtexture	Assessment by touch can identify if microtexture has been filled in/covered by rubber build-up.	X		
	Grease smear method (MTD)	Measure a volume – Mean Texture Depth (MTD) primarily by using the grease smear method, is the measurement method used for research purposes related to aeroplane performance.	X		
	Sand (glass) patch method (MTD)	Measure a volume – Mean Texture Depth (MTD). The sand (glass) patch method is not identical to the grease smear method. There is at present no internationally accepted relationship between the two methods.	X		
	Laser – stationary (MPD)	Measure a profile – Mean Profile Depth (MPD). There is no established relationship between MTD and MPD. The	X		
	Laser – moving (MPD)				

			Rubber build-up	*Geometry change*	*Polishing*
		relationship must be established for the laser devices used and the preferred volumetric measurement method used.			
	Friction measurement – controlled applied water depth	A friction measurement is a system output which includes all the surface friction characteristics and characteristics of the measuring device itself. All other variables than those related to the surface friction characteristics must be controlled in order to relate the measured values to the surface friction characteristics. The system output is a dimensionless number which is related to the surface friction characteristics and as such is also a measure of macrotexture. (The system generated number needs to be paired with other information (assessment methods) to identify which surface friction characteristics significantly influence the system output.) It is recognized that there is currently no consensus within the aviation industry on how to control the uncertainty related to repeatability, reproducibility and time stability. It is paramount to keep this uncertainty as low as possible, consequently ICAO has tightened the Standards associated with use of friction measurement devices, including training of personnel who operate the friction measuring devices.	X		X
	Friction measurement – natural wet conditions	Friction measurements performed under natural wet conditions during a rain storm might reveal if portions of a runway are susceptible to ponding and/or to fall below State set criteria.	X	X	X
	Modelling of water flow and prediction of water depth	Emerging technologies based on the use of a model of the runway surface describing its geometrical surface (mapped) and paired with sensor information of water depth allow real-time information and thus a complete runway surface monitoring, and anticipation of water depths.		X	

			Rubber build-up	*Geometry change*	*Polishing*
ASSESSMENT METHODS FOR MONITORING TREND OF CHANGE TO SURFACE FRICTION CHARACTERISTICS	Visual – macrotexture	Visual assessment will only give a very crude assessment of the macrotexture. Extensive rubber build-up can be identified.	X		
	Visual – microtexture	Visual assessment will give a very crude assessment of the microtexture and to what degree the microtexture has been filled and covered by rubber.	X		
	Visual – runway geometry (ponding)	Visual assessment during a rain storm and subsequent drying process of the runway will reveal how the runway drains and if there have been any changes to runway geometry causing ponding. Depth of any pond can be measured by a ruler or any other appropriate depth measurement method/tool.		X	
	By touch – macrotexture	Assessment by touch can differentiate between degree of loss of texture but not quantifying it.	X		
	By touch – microtexture	Assessment by touch can identify if microtexture has been filled in/covered by rubber build-up.	X		
	Grease smear method (MTD)	Measure a volume – Mean Texture Depth (MTD) primarily by using the grease smear method, is the measurement method used for research purposes related to aeroplane performance.	X		
	Sand (glass) patch method (MTD)	Measure a volume – Mean Texture Depth (MTD). The sand (glass) patch method is not identical to the grease smear method. There is at present no internationally accepted relationship between the two methods.	X		
	Laser – stationary (MPD)	Measure a profile – Mean Profile Depth (MPD). There is no established relationship between MTD and MPD. The	X		
	Laser – moving (MPD)				

			Rubber build-up	*Geometry change*	*Polishing*
		relationship must be established for the laser devices used and the preferred volumetric measurement method used.			
	Friction measurement – controlled applied water depth	A friction measurement is a system output which includes all the surface friction characteristics and characteristics of the measuring device itself. All other variables than those related to the surface friction characteristics must be controlled in order to relate the measured values to the surface friction characteristics. The system output is a dimensionless number which is related to the surface friction characteristics and as such is also a measure of macrotexture. (The system generated number needs to be paired with other information (assessment methods) to identify which surface friction characteristics significantly influence the system output.) It is recognized that there is currently no consensus within the aviation industry on how to control the uncertainty related to repeatability, reproducibility and time stability. It is paramount to keep this uncertainty as low as possible, consequently ICAO has tightened the Standards associated with use of friction measurement devices, including training of personnel who operate the friction measuring devices.	X		X
	Friction measurement – natural wet conditions	Friction measurements performed under natural wet conditions during a rain storm might reveal if portions of a runway are susceptible to ponding and/or to fall below State set criteria.	X	X	X
	Modelling of water flow and prediction of water depth	Emerging technologies based on the use of a model of the runway surface describing its geometrical surface (mapped) and paired with sensor information of water depth allow real-time information and thus a complete runway surface monitoring, and anticipation of water depths.		X	

SNOWTAM FORMAT (Source Doc 10066)

(see Chapter 5, 5.2.5.1.5) (COM heading)	(PRIORITY INDICATOR)	(ADDRESSES)	<≡
	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)	<≡
(Abbreviated heading)	(SWAA* SERIAL NUMBER) S W * *	(LOCATION INDICATOR)	DATE/TIME OF ASSESMENT (OPTIONAL GROUP) <≡(
SNOWTAM →	(Serial number) →	<≡	

Aeroplane performance calculation section			
(AERODROME LOCATION INDICATOR)	M	A)	<≡
(DATE/TIME OF ASSESSMENT *(Time of completion of assessment in UTC)*)	M	B)	→
(LOWER RUNWAY DESIGNATION NUMBER)	M	C)	→
(RUNWAY CONDITION CODE ON EACH RUNWAYTHIRD) (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)	M	D)	/ / →
(PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD)	C	E)	/ / →
(DEPTH *(mm)* OF LOOSE CONTAMINANT FOR EACH THIRD OF RUNWAY)	C	F)	/ / →
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH *(Observed on each runway third, starting from threshold having the lower runway designation number)* 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	M	G)	/ / →
(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 *(If present, distance from the centreline (m) followed by "L", "R" or "LR" as applicable)*	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)	0	T)	) «≡
NOTES: 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 *Instructions for the completion of the SNOWTAM format, paragraph 1, item b)*			

SIGNATURE OF ORIGINATOR *(not for transmission)*

Description of "SNOWTAM FORM"

GENERAL

SWAA Serial Number–to be filled by AIS

Location Indicator- Four letter Aerodrome location indicator of the aerodrome, for which the SNOWTAM is issued. The aerodrome location indicators are listed in the ICAO DOC 7910 (Location Indicators).

Date and Time of Assessment – Date and Time of assessment of the runway surface condition (eight-figure date/time group giving time of observation as month, day, and hour and minute in UTC)

Optional Group–for correction, in the case of an error, to a SNOWTAM previously disseminated with the same serial number (COR)

SNOWTAM Serial Number–to be filled by AIS

SECTION 1: AEROPLANE PERFORMANCE CALCULATION SECTION

Item A— Aerodrome location indicator (four-letter location indicator) of the aerodrome, for which the SNOWTAM is issued. The aerodrome location indicators are listed in the ICAO DOC 7910 (Location Indicators).

Example: **VGSH**

Item B — Date and Time of assessment of the runway surface condition (eight-figure date/time group giving time of observation as month, day, hour and minute in UTC)

Example: **12040638**
12=December;04 =Day 4 (4th);0638 (06 hours and 38 minutes)

Item C—Lower runway designator number(nn)

Note.1—only one runway designator is inserted for each runway and always the lower number.
Example: **14** *for RWY 14/32*

Item D — Runway condition code for each runway third.

Only one digit (0, 1, 2, 3, 4, 5 or 6) is inserted for each runway third, separated by an oblique stroke (n/n/n). Runway Condition Code is determined during the assessment of the runway surface condition, in accordance with the provisions of the PANS- Aerodrome and the Runway Condition Assessment Matrix (RCAM).

Example: **2/2/5:** *runway condition code for the first third of runway 14 is 2, for the second third 2 and for the third third is 5*

Item E—Percent coverage is reported as NR (lessthan10% or DRY), 25 (10-25%),50 (26-50 %),75 (51-75%) or100 (76-100%) for each runway third, separated by an oblique stroke ([n]nn/[n]nn/[n]nn).

*This information is provided only when the run way condition for each runway third (Item D) has been reported as other than 6 and there is a condition description for each runway third (Item G) that has been reported other than DRY.

**When the conditions are not reported, this will be signified by the insertion of "NR" for the appropriate runway third(s).

***When the runway condition is "DRY" or the cover age is less than10%, item E shall be reported by inserting "NR".

****When no information is to be reported, "NR" shall be inserted at its relevant position in the message to indicate to the user that no information exists (/NR/).

Example: **50/25/NR:** *percentage of coverage at the first runway third of RWY 14 is 50% (between 26 to 50%), at the second part of the runway is 25 % (between 10 to 25 %) and the coverage is less than 10 % at the third part of the runway.*

Item F—Depth of loose contaminant for each runway third.

When provided, insert in millimetres for each runway third, separated by an oblique stroke (nn/nn/nn). Depth should be reported in 2 or (i.e.05 for 5mm, 15 for 15 mm) and the units of measurement (mm) are not reported/inserted.

**This information is only provided for the following contamination types:*
Standing water, values to be reported when depth is 04 mm or greater, the assessed value.

***When the conditions are not reported, this will be signified by the insertion of "NR" for the appropriate runway third(s)*

****NR also includes the situations when the depth of the contaminant is less than the minimum values to be reported (as indicated above) or that part of runway is dry, etc.*

*****For contaminants other than STANDING WATER the depth is not reported. The position of this type of information in the information string is then identified by /NR/.*

Example: **06/05/04:** *depth of the contaminant in the first part of runway is 6mm, in the second part 5 mm and in the third part 4mm.*

Item G—Condition description for each runway third.

Insert any of the following condition descriptions for each runway third, separated by an oblique stroke:

STANDING WATER WET
DRY (only reported when there is no contaminant)

***** When the conditions are not reported, this will be signified by the insertion of "NR" for the appropriate runway third(s).

Example: ***WET/WET/STANDING WATER:*** *condition description is "Wet" for the first and the second thirds and "Sanding Water" for the third third of runway.*

Item H—Width of runway to which the runway condition codes apply. Insert the width in meters (without units of measurement), if it is less than the published runway width.

Example: **35:** *published width of RWY 14/32 is 45m and the RCR applies to35m of it.*

Automatic Terminal Information Service (ATIS)

In addition to normal operational and weather information broadcasted on ATIS, the following information about the runway surface condition shall be transmitted whenever the runway is not dry (RWYCC 6).

a. **Operational Runway in use** at the time of the issuance;
b. **RWYCC for operational RWY for each third in the operational direction;**
c. Condition description, coverage and depth (depth for STANDING WATER only);
d. Width of the operational RWY to which RWYCC apply if less than published;
e. Reduced length if less than published;
f. Any other remarkable information in short plain language.

RCR-045/2/2100/50/75NR/06/06WET/STANDINGWATER/STANDINGWATER

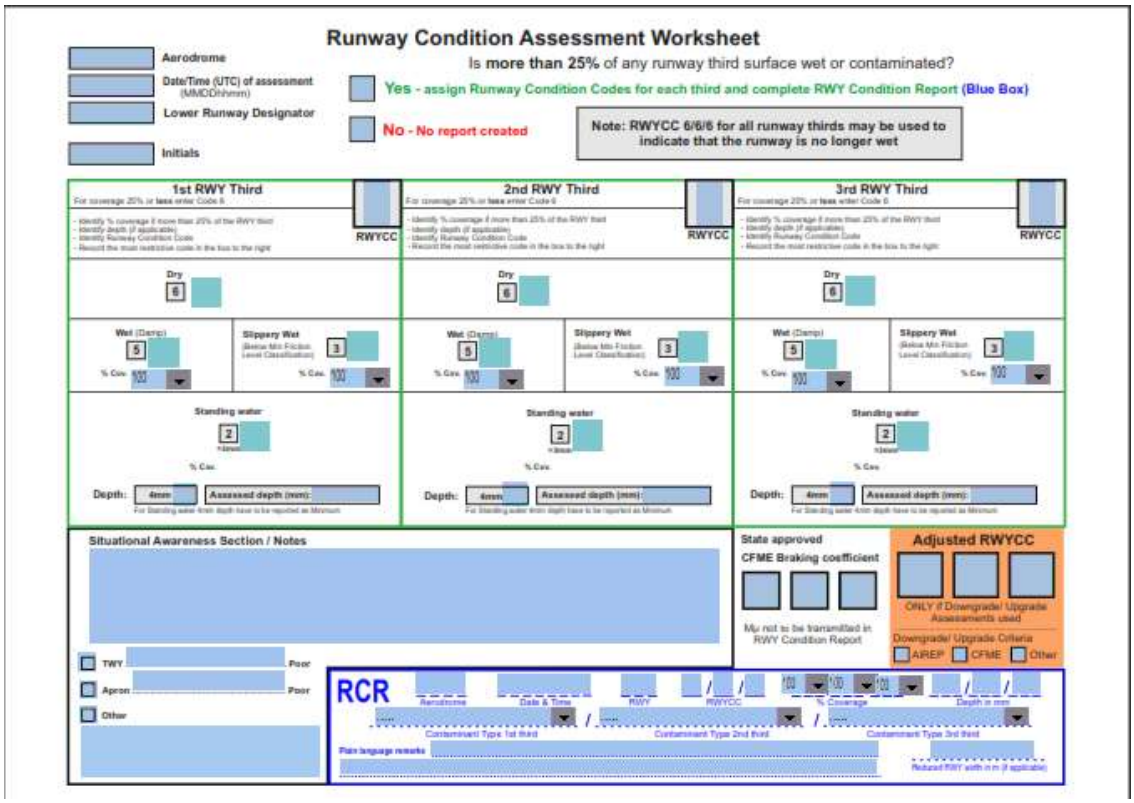
ATIS INFORMATION B

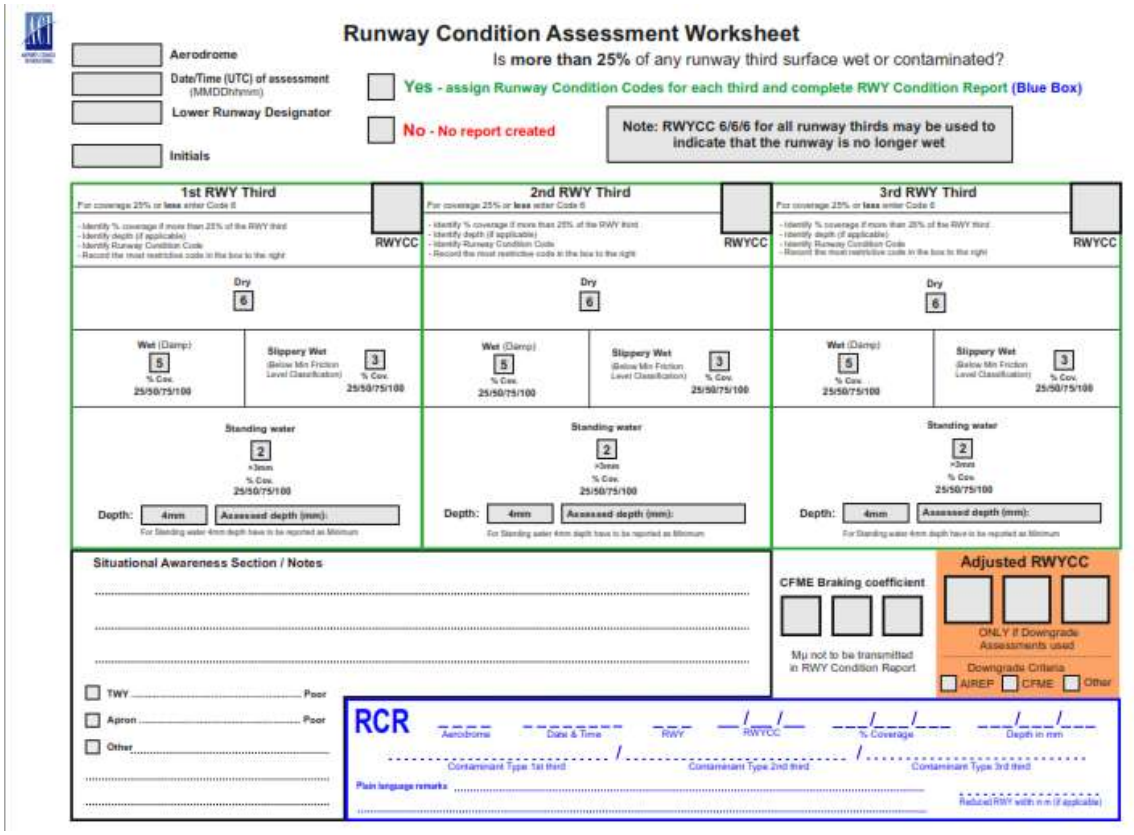
AT 0230
ILS APPROACH
RUNWAY IN USE 14
TRANSITION LEVELFL060
METAR VGSH AT 0210

WIND 220 DEGREES 10 KNOTS VARIABLE BETWEEN 180 AND 250 DEGREES
VISIBILITY 10 KILOMETERS OR MORE CLOUDS SCATTERED AT 3000 FEET
TEMPERATURE 34 DEW POINT 25 QNH 1013 NOSIG

RUNWAY 14 CONDITION REPORT AT 0215
RUNWAY CONDITION CODES 2/ 2 /5
FIRST PART 75 PERCENT 6mm STANDING WATER
SECOND PART 50 PERCENT 6mm STANDING WATER
THIRD PART 100 PERCENT WET

Note: The RCR reports runway thirds commencing from Runway 14, but the ATIS has to report from the direction of the runway-in-use


Runway Condition Assessment Worksheet
Aerodrome
Date/Time (UTC) of assessment (MMDDhhmm)
Lower Runway Designator
Initials
Is more than 25% of any runway third surface wet or contaminated?
Yes - assign Runway Condition Codes for each third and complete RWY Condition Report (Blue Box)
No - No report created
Note: RWYCC 6/6/6 for all runway thirds may be used to indicate that the runway is no longer wet
1st RWY Third
2nd RWY Third
3rd RWY Third
RWYCC
Dry
Wet (Damp)
Slippery Wet
Standing water
Depth:
Assessed depth (mm):
Situational Awareness Section / Notes
State approved
CFME Braking coefficient
Adjusted RWYCC
ONLY if Downgrade/ Upgrade Assessments used
Downgrade/ Upgrade Criteria
AIREP
CFME
Other
TWY
Apron
Poor
RCR
Aerodrome
Date & Time
RWY
RWYCC
% Coverage
Depth in mm
Contaminant Type 1st third
Contaminant Type 2nd third
Contaminant Type 3rd third
Plain language remarks
Reduced RWY width in m (if applicable)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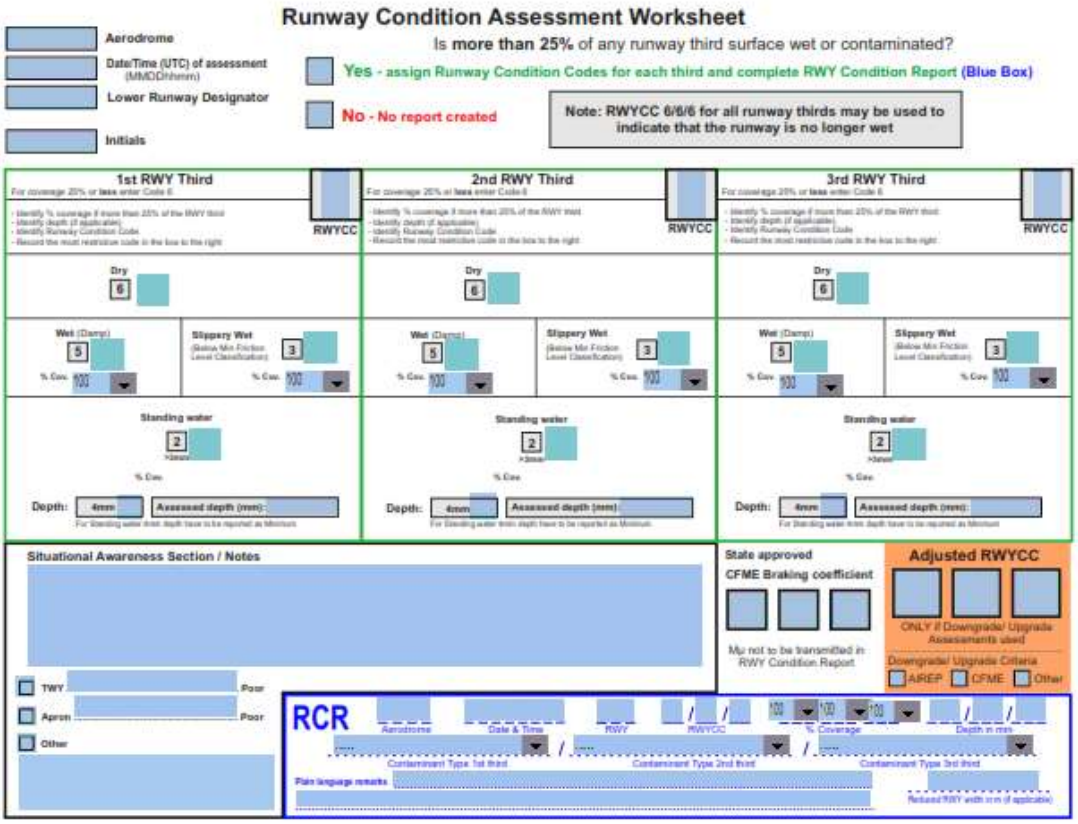
1st RWY Third
2nd RWY Third
3rd RWY Third
RWYCC
Dry
Wet (Damp)
Slippery Wet
Standing water
Depth:
Assessed depth (mm):
Situational Awareness Section / Notes
CFME Braking coefficient
Adjusted RWYCC
ONLY if Downgrade Assessments used
Downgrade Criteria
AIREP
CFME
Other
TWY
Apron
Poor
RCR
Aerodrome
Date & Time
RWY
RWYCC
% Coverage
Depth in mm
Contaminant Type 1st third
Contaminant Type 2nd third
Contaminant Type 3rd third
Plain language remarks
Reduced RWY width in m (if applicable)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Aerodrome
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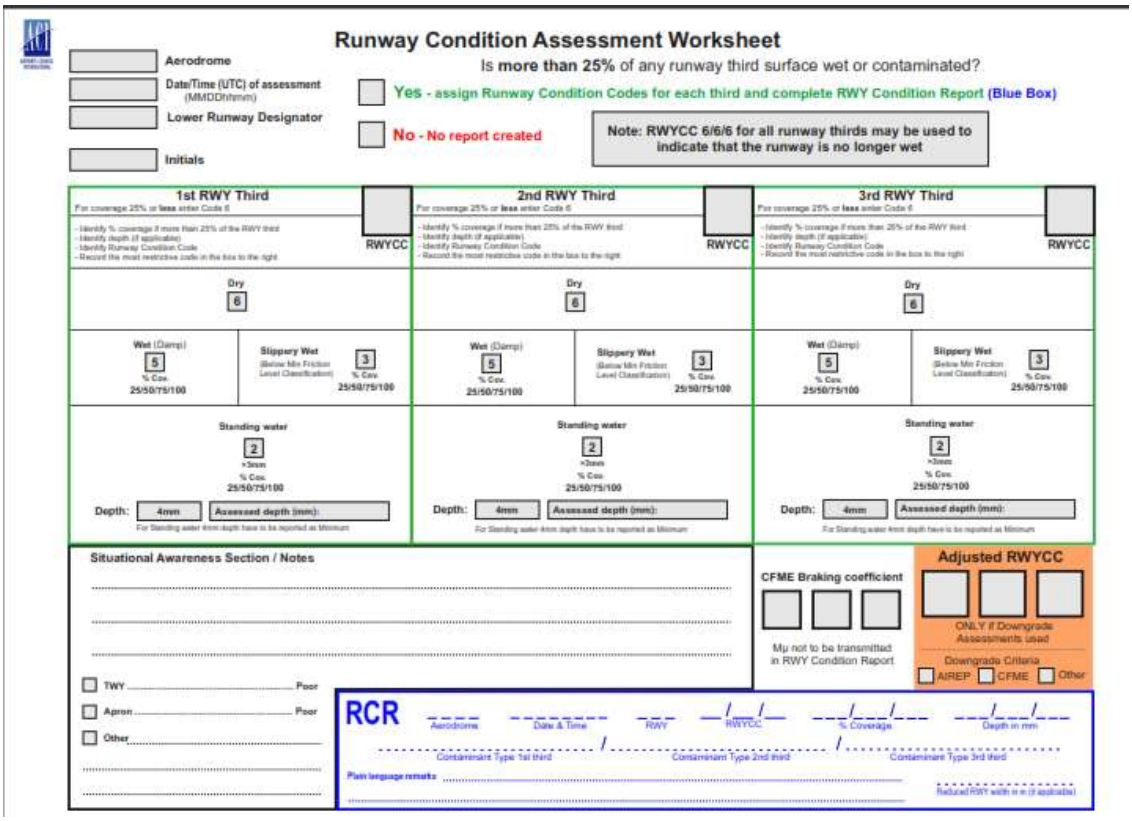
Yes - assign Runway Condition Codes for each third and complete RWY Condition Report (Blue Box)
No - No report created
Note: RWYCC 6/6/6 for all runway thirds may be used to indicate that the runway is no longer wet
1st RWY Third
2nd RWY Third
3rd RWY Third
RWYCC
Dry
Wet (Damp)
Slippery Wet
Standing water
% Cov.
Depth:
Assessed depth (mm):
Situational Awareness Section / Notes
State approved
CFME Braking coefficient
Adjusted RWYCC
ONLY if Downgrade/ Upgrade Assessments used
Downgrade/ Upgrade Criteria
AIREP
CFME
Other
TWY
Apron
Poor
RCR
Aerodrome
Date & Time
RWY
% Coverage
Depth in mm
Contaminant Type 1st third
Contaminant Type 2nd third
Contaminant Type 3rd third
Plain language remarks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No - No report created
Note: RWYCC 6/6/6 for all runway thirds may be used to indicate that the runway is no longer wet
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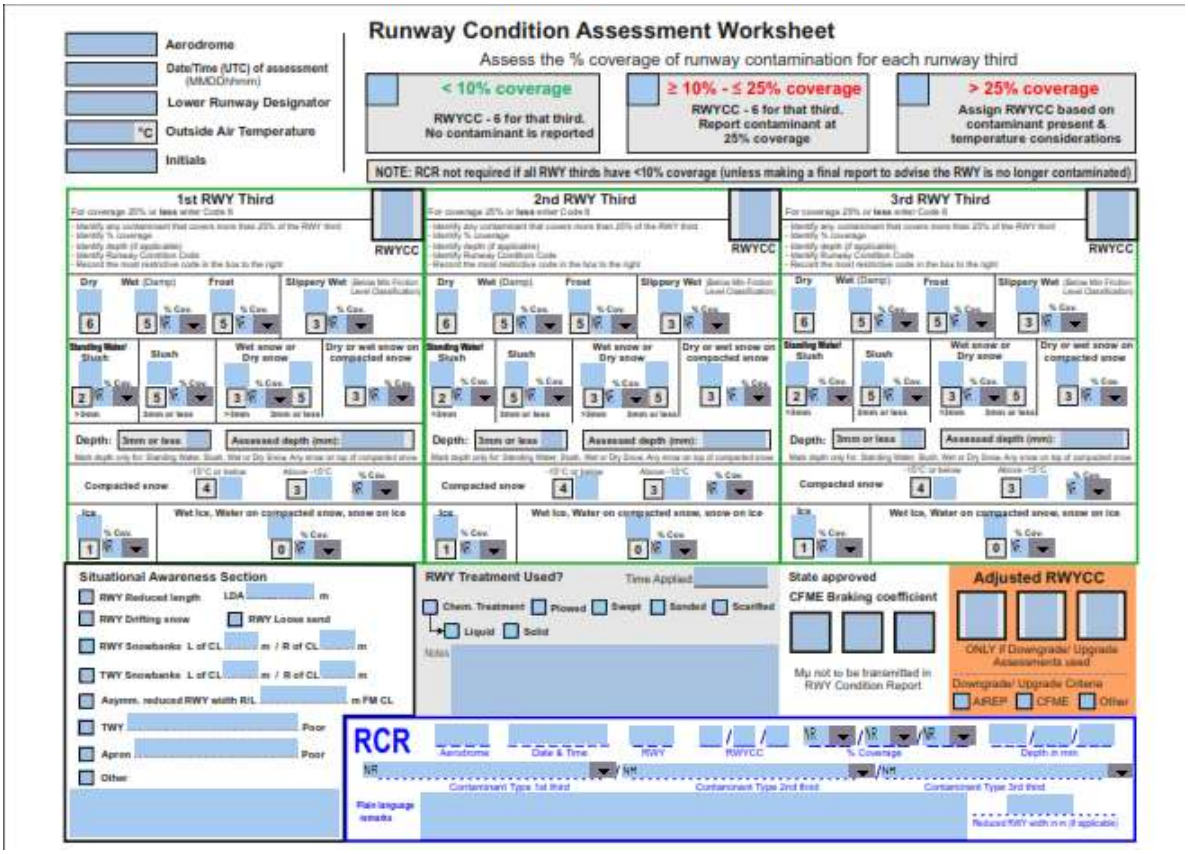
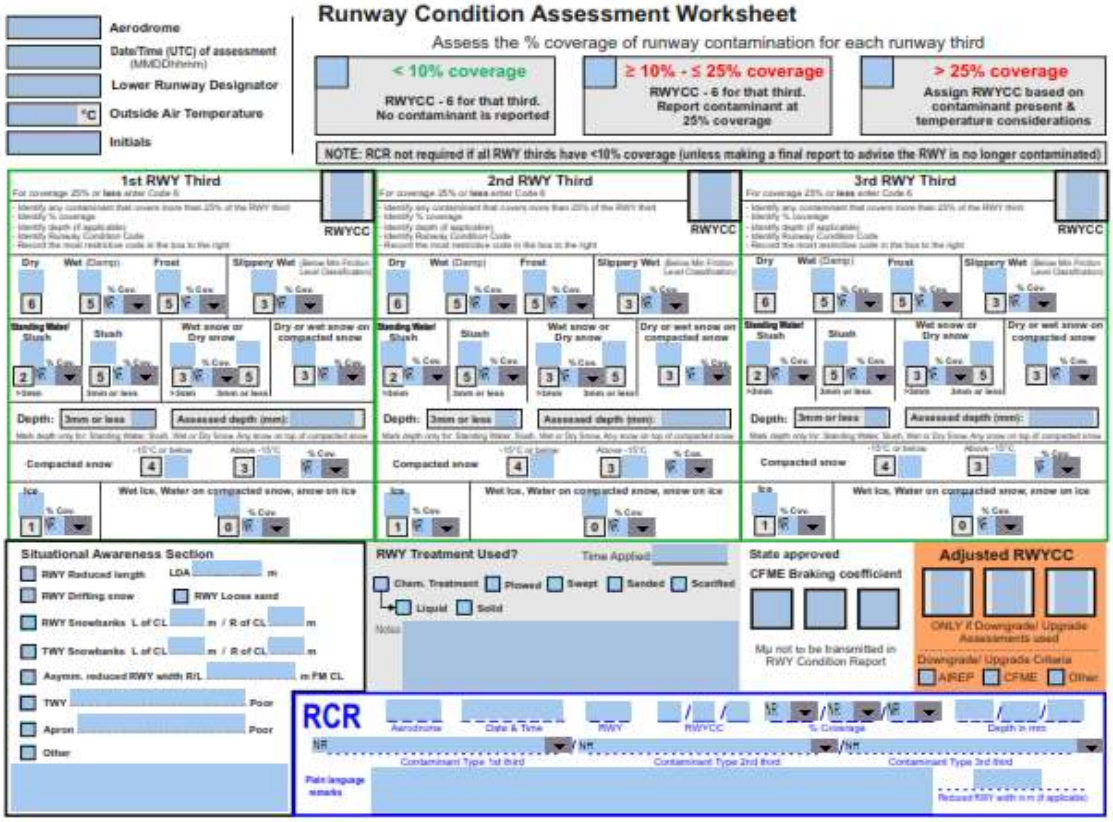
2nd RWY Third
3rd RWY Third
RWYCC
Dry
Wet (Damp)
Slippery Wet
Standing water
% Cov.
25/50/75/100
Depth:
Assessed depth (mm):
Situational Awareness Section / Notes
CFME Braking coefficient
Adjusted RWYCC
ONLY if Downgrade Assessments used
Downgrade Criteria
AIREP
CFME
Other
TWY
Apron
Poor
RCR
Aerodrome
Date & Time
RWY
% Coverage
Depth in mm
Contaminant Type 1st third
Contaminant Type 2nd third
Contaminant Type 3rd third
Plain language remarks


Runway Condition Assessment Worksheet
Assess the % coverage of runway contamination for each runway third
Aerodrome
Date/Time (UTC) of assessment (MMDDhhmm)
Lower Runway Designator
°C Outside Air Temperature
Initials
< 10% coverage
RWYCC - 6 for that third. No contaminant is reported
≥ 10% - ≤ 25% coverage
RWYCC - 6 for that third. Report contaminant at 25% coverage
> 25% coverage
Assign RWYCC based on contaminant present & temperature considerations
NOTE: RCR not required if all RWY thirds have <10% coverage (unless making a final report to advise the RWY is no longer contaminated)
1st RWY Third
2nd RWY Third
3rd RWY Third
RWYCC
Dry
Wet (Damp)
Frost
Slippery Wet
Standing Water/ Slush
Slush
Wet snow or Dry snow
Dry or wet snow on compacted snow
Depth:
Assessed depth (mm):
Compacted snow
Ice
Wet Ice, Water on compacted snow, snow on ice
Situational Awareness Section
RWY Reduced length
RWY Drifting snow
RWY Loose sand
RWY Snowbanks
TWY Snowbanks
Asymm. reduced RWY width R/L
TWY
Apron
Other
Poor
RWY Treatment Used?
Time Applied
Chem. Treatment
Plowed
Swept
Sanded
Scarified
Liquid
Solid
State approved CFME Braking coefficient
My not to be transmitted in RWY Condition Report
Adjusted RWYCC
ONLY if Downgrade/ Upgrade Assessments used
Downgrade/ Upgrade Criteria
AIREP
CFME
Other
RCR
Aerodrome
Date & Time
RWY
RWYCC
% Coverage
Depth in mm
Contaminant Type 1st third
Contaminant Type 2nd third
Contaminant Type 3rd third
Plain language remarks
Reduced RWY width in m (if applicable)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Depth:
Assessed depth (mm):
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Wet Ice, Water on compacted snow, snow on ice
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RWY Reduced length
RWY Drifting snow
RWY Loose sand
RWY Snowbanks
TWY Snowbanks
Asymm. reduced RWY width R/L
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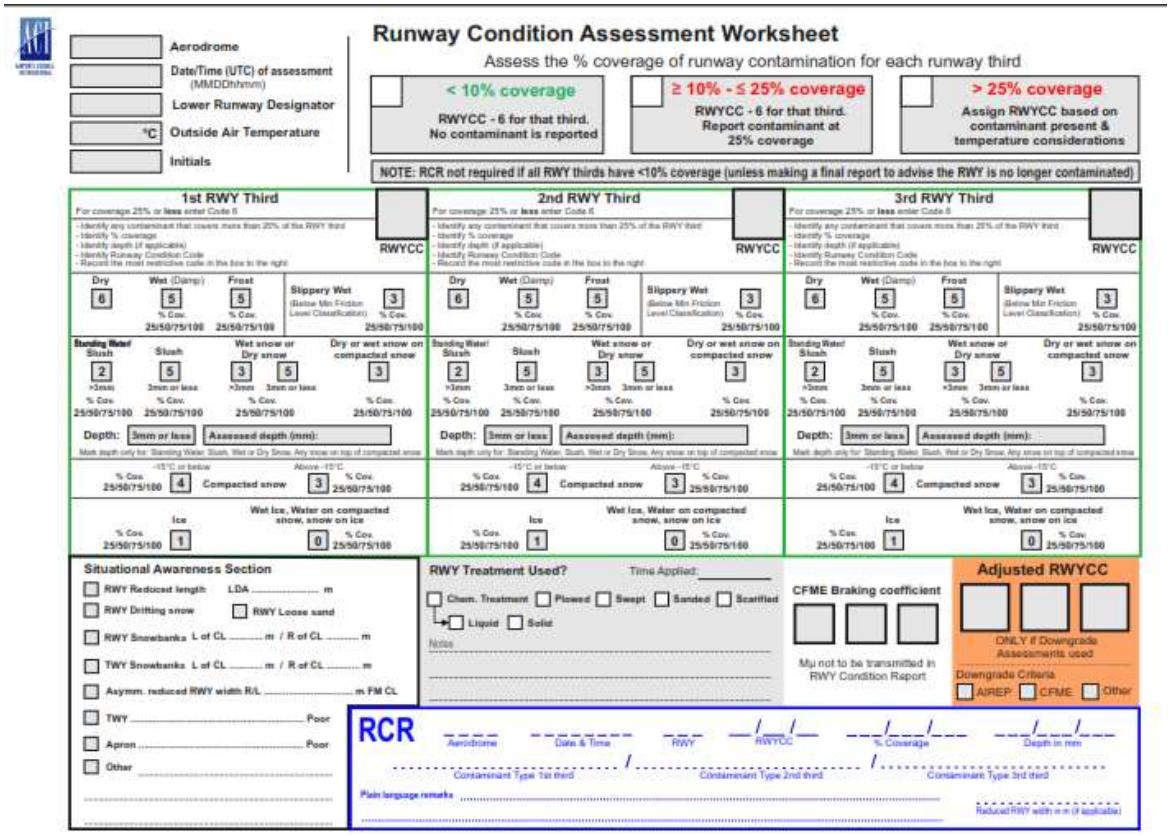
Apron
Other
Poor
RWY Treatment Used?
Time Applied
Chem. Treatment
Plowed
Swept
Sanded
Scarified
Liquid
Solid
State approved CFME Braking coefficient
My not to be transmitted in RWY Condition Report
Adjusted RWYCC
ONLY if Downgrade/ Upgrade Assessments used
Downgrade/ Upgrade Criteria
AIREP
CFME
Other
RCR
Aerodrome
Date & Time
RWY
RWYCC
% Coverage
Depth in mm
Contaminant Type 1st third
Contaminant Type 2nd third
Contaminant Type 3rd third
Plain language remarks
Reduced RWY width in m (if applicable)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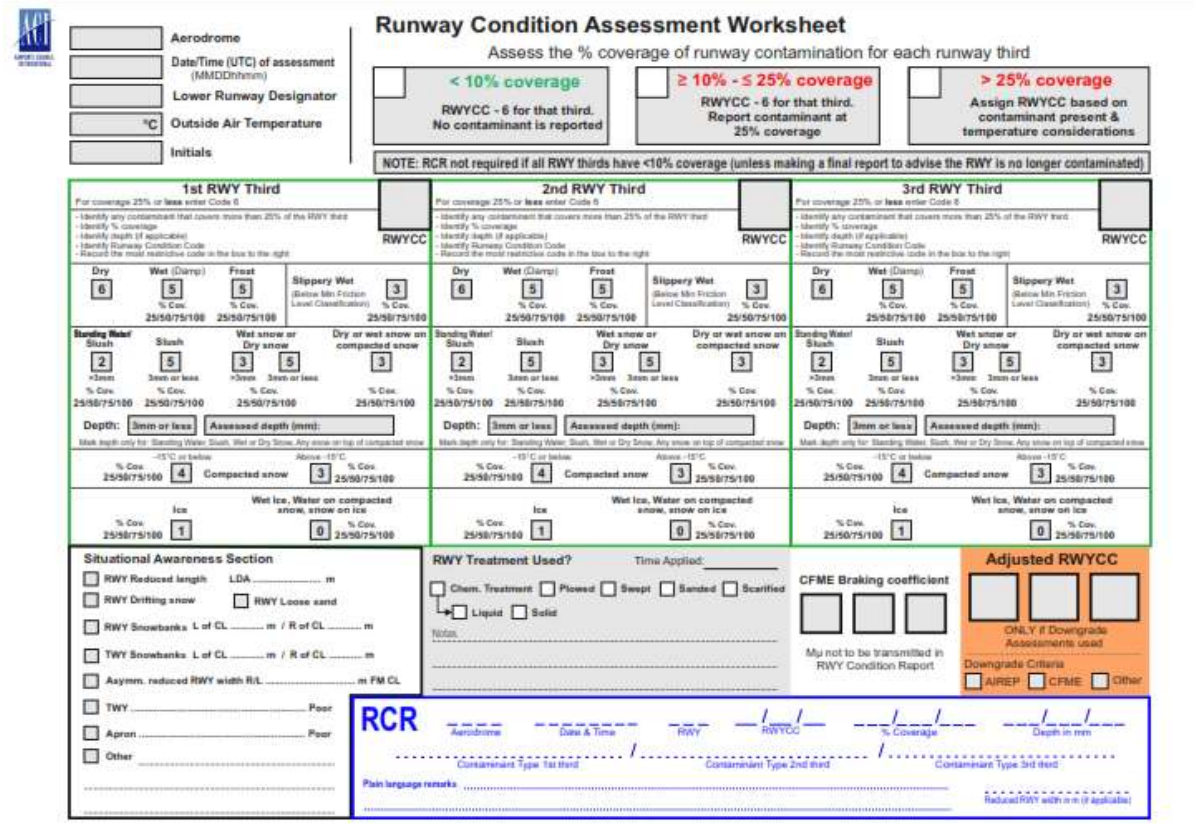
RWYCC
Dry
Wet (Damp)
Frost
Slippery Wet
Standing Water/ Slush
Slush
Wet snow or Dry snow
Dry or wet snow on compacted snow
Depth:
3mm or less
Assessed depth (mm):
Compacted snow
Ice
Wet Ice, Water on compacted snow, snow on ice
Situational Awareness Section
RWY Reduced length
RWY Drifting snow
RWY Loose sand
RWY Snowbanks
TWY Snowbanks
Asymm. reduced RWY width R/L
TWY
Apron
Other
RWY Treatment Used?
Time Applied:
Chem. Treatment
Plowed
Swept
Sanded
Scarified
Liquid
Solid
Notes
CFME Braking coefficient
Mu not to be transmitted in RWY Condition Report
Adjusted RWYCC
ONLY if Downgrade Assessments used
Downgrade Criteria
AIREP
CFME
Other
RCR
Aerodrome
Date & Time
RWY
RWYCC
% Coverage
Depth in mm
Contaminant Type 1st third
Contaminant Type 2nd third
Contaminant Type 3rd third
Plain language remarks
Reduced RWY width in m (if applicable)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Assess the % coverage of runway contamination for each runway third
Aerodrome
Date/Time (UTC) of assessment (MMDDhhmm)
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°C Outside Air Temperature
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RWYCC - 6 for that third. No contaminant is reported
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RWYCC - 6 for that third. Report contaminant at 25% coverage
> 25% coverage
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NOTE: RCR not required if all RWY thirds have <10% coverage (unless making a final report to advise the RWY is no longer contaminated)
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Standing Water/ Slush
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Wet snow or Dry snow
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Depth:
3mm or less
Assessed depth (mm):
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Wet Ice, Water on compacted snow, snow on ice
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RWY Reduced length
RWY Drifting snow
RWY Loose sand
RWY Snowbanks
TWY Snowbanks
Asymm. reduced RWY width R/L
TWY
Apron
Other
RWY Treatment Used?
Time Applied:
Chem. Treatment
Plowed
Swept
Sanded
Scarified
Liquid
Solid
Notes
CFME Braking coefficient
Mu not to be transmitted in RWY Condition Report
Adjusted RWYCC
ONLY if Downgrade Assessments used
Downgrade Criteria
AIREP
CFME
Other
RCR
Aerodrome
Date & Time
RWY
RWYCC
% Coverage
Depth in mm
Contaminant Type 1st third
Contaminant Type 2nd third
Contaminant Type 3rd third
Plain language remarks
Reduced RWY width in m (if applicable)

Table 4-1. Surface friction characteristics versus segment of flight

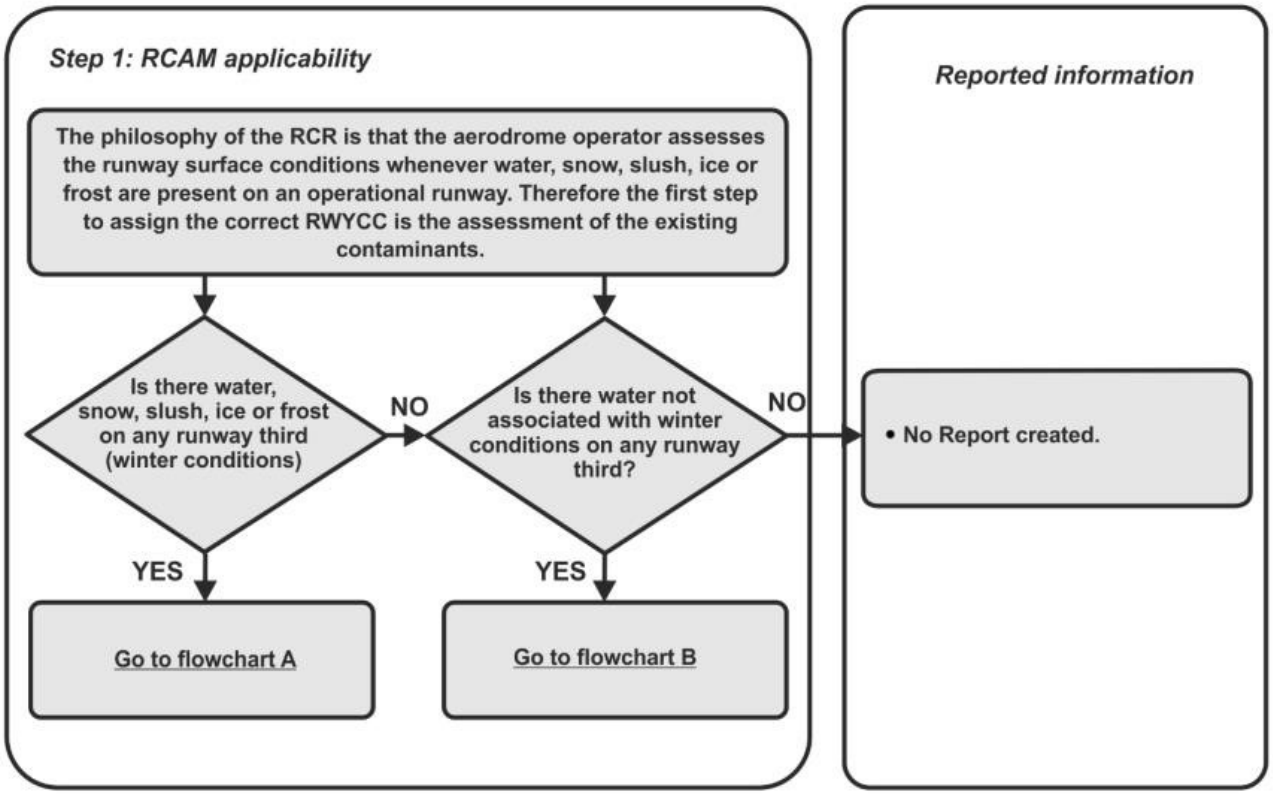
	Flight planning	Cockpit preparation for departure	Taxi-out	Line-up & take-off or missed approach	Climb	Cruise	Approach preparation	Descent	Approach	Landing	Taxi-in
AEROPLANE PERFORMANCE CALCULATION											
Aerodrome location indicator	P SA	P SA				SA	P	ASC			
Date and time of assessment	P SA	P SA	ASC	ASC		SA	P	ASC	ASC		
Lower runway designation number	P SA	P SA	ASC			SA	P	ASC	ASC		
RWYCC for each runway third	P SA	P	ASC	ASC		SA	P	ASC	ASC		
Per cent coverage contaminant for each runway third	P	P	ASC	ASC		SA	P	ASC	ASC		
Depth of loose contaminant for each runway third	P	P SA	ASC	ASC		SA	P	ASC	ASC		
Condition description for each runway third	P	P SA	ASC	ASC		SA	P	ASC	ASC		

Width of runway to which the RWYCCs apply if less than published width	P SA	P	P			SA	P ASC	ASC	ASC		
SITUATIONAL AWARENESS											
Reduced runway length	P SA	P	ASC	ASC		SA	P	ASC	ASC		
Drifting snow on the runway							SA	SA	SA		
Loose sand on the runway							SA	SA	SA		
Chemical treatment on the runway											
Snowbanks on the runway		SA	SA				SA	SA	SA		
Snowbanks on the taxiway		SA	SA				SA				SA
Snowbanks adjacent to the runway		SA	SA				SA	SA	SA		
Taxiway conditions		SA	ASC				SA ASC		ASC		ASC

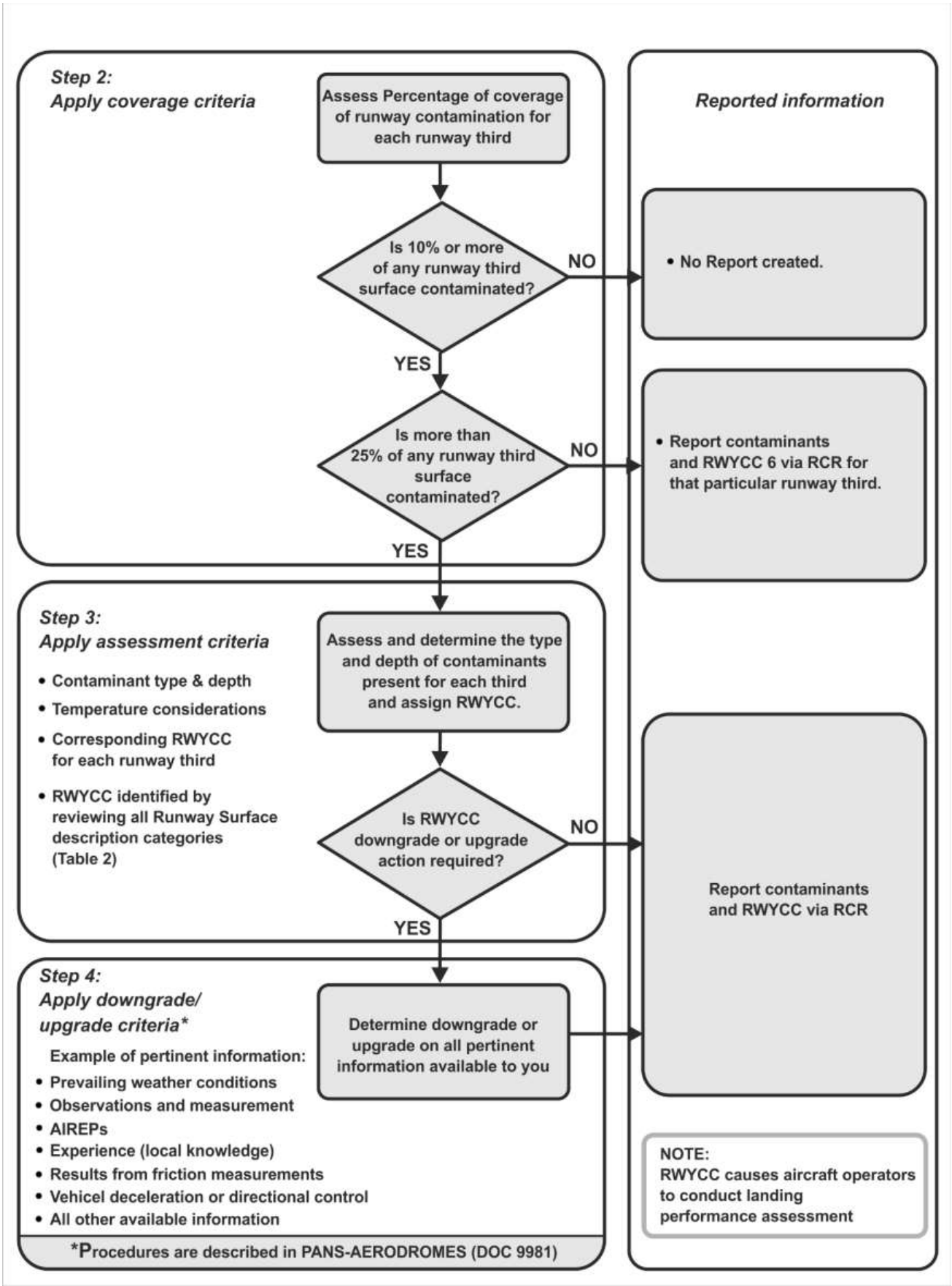
	Flight planning	Cockpit preparation for departure	Taxi-out	Line-up & take-off or missed approach	Climb	Cruise	Approach preparation	Descent	Approach	Landing	Taxi-in
Apron conditions		SA	SA				SA				SA
State-approved, and published use of, measured friction coefficient											
Plain language remarks											

Legend: P = Relevant for aeroplane performance
SA = Relevant for situational awareness
ASC = If there has been any significant change

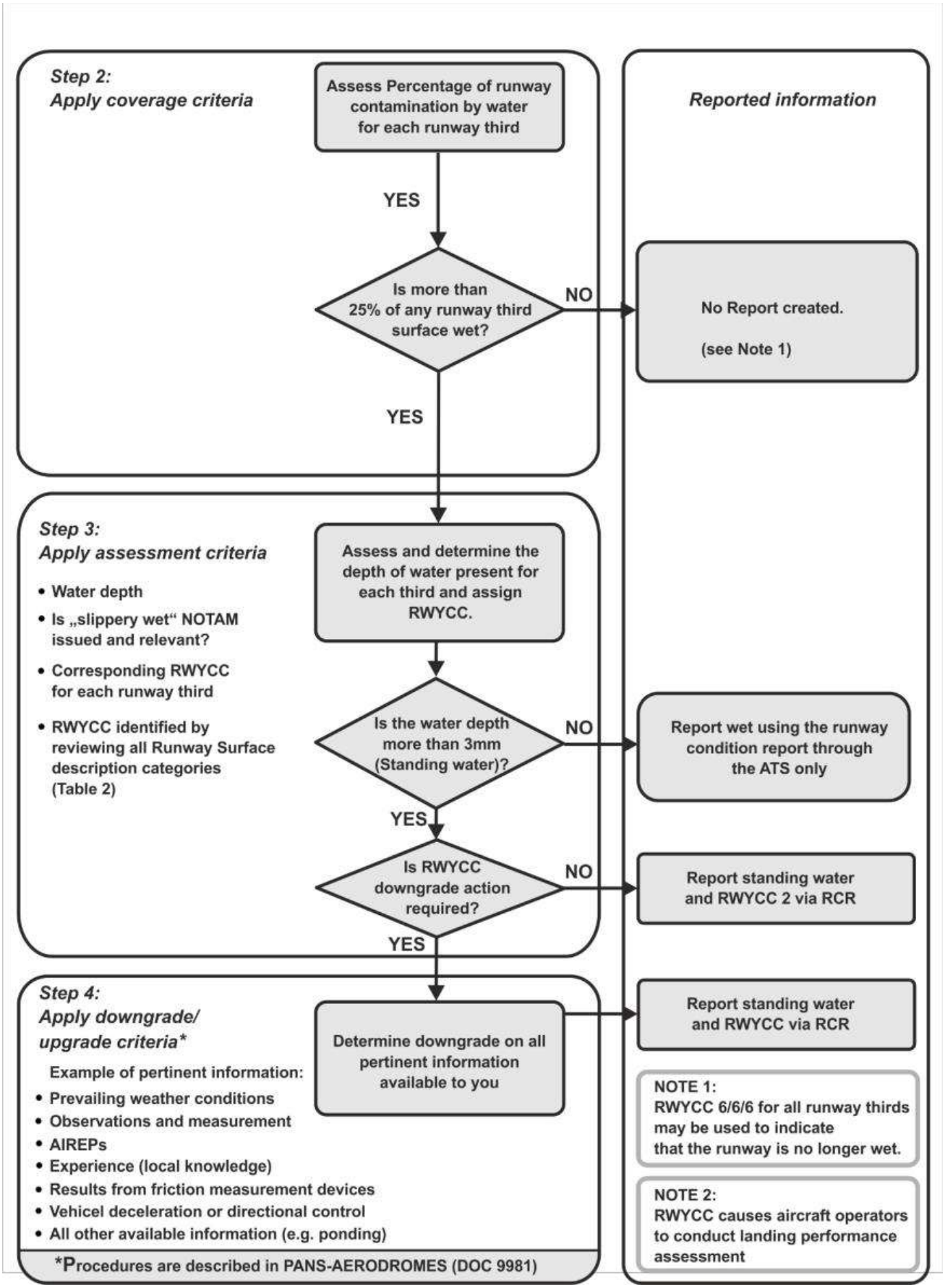
The basic RCAM flowchart process



Flowchart A


Step 2:
Apply coverage criteria
Assess Percentage of coverage of runway contamination for each runway third
Is 10% or more of any runway third surface contaminated?
NO
YES
Is more than 25% of any runway third surface contaminated?
NO
YES
Reported information
• No Report created.
• Report contaminants and RWYCC 6 via RCR for that particular runway third.
Step 3:
Apply assessment criteria
• Contaminant type & depth
• Temperature considerations
• Corresponding RWYCC for each runway third
• RWYCC identified by reviewing all Runway Surface description categories (Table 2)
Assess and determine the type and depth of contaminants present for each third and assign RWYCC.
Is RWYCC downgrade or upgrade action required?
NO
YES
Report contaminants and RWYCC via RCR
Step 4:
Apply downgrade/ upgrade criteria*
Example of pertinent information:
• Prevailing weather conditions
• Observations and measurement
• AIREPs
• Experience (local knowledge)
• Results from friction measurements
• Vehicel deceleration or directional control
• All other available information
Determine downgrade or upgrade on all pertinent information available to you
NOTE:
RWYCC causes aircraft operators to conduct landing performance assessment
*Procedures are described in PANS-AERODROMES (DOC 9981)

Flowchart B


Step 2:
Apply coverage criteria
Assess Percentage of runway contamination by water for each runway third
YES
Is more than 25% of any runway third surface wet?
NO
YES
Reported information
No Report created.
(see Note 1)
Step 3:
Apply assessment criteria
• Water depth
• Is „slippery wet“ NOTAM issued and relevant?
• Corresponding RWYCC for each runway third
• RWYCC identified by reviewing all Runway Surface description categories (Table 2)
Assess and determine the depth of water present for each third and assign RWYCC.
Is the water depth more than 3mm (Standing water)?
NO
YES
Report wet using the runway condition report through the ATS only
Is RWYCC downgrade action required?
NO
YES
Report standing water and RWYCC 2 via RCR
Step 4:
Apply downgrade/ upgrade criteria*
Example of pertinent information:
• Prevailing weather conditions
• Observations and measurement
• AIREPs
• Experience (local knowledge)
• Results from friction measurement devices
• Vehicel deceleration or directional control
• All other available information (e.g. ponding)
Determine downgrade on all pertinent information available to you
Report standing water and RWYCC via RCR
NOTE 1:
RWYCC 6/6/6 for all runway thirds may be used to indicate that the runway is no longer wet.
NOTE 2:
RWYCC causes aircraft operators to conduct landing performance assessment
*Procedures are described in PANS-AERODROMES (DOC 9981)