CIVIL AVIATION AUTHORITY
OF NEW ZEALAND

Advisory Circular
AC139-03

Revision 6

5 November 2026

Aerodrome Inspection Programme and Condition Reporting

General

Civil Aviation Authority (CAA) advisory circulars (ACs) contain information about standards, practices and procedures that the Director has found to be an **acceptable means of compliance** with the associated rule.

Consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices, or procedures are found to be acceptable they will be added to the appropriate AC.

Purpose

This AC provides guidance on aerodrome inspections, runway condition reporting, maintenance programmes and aerodrome condition reporting requirements, to assist aerodrome operators to meet Civil Aviation Rule Part 139 *Aerodromes—Certification, Operation and Use.*

Related Rules

This AC relates to Part 139 - specifically rules 139.23, 139.103, 139.107, 139.117 and 139.123, for qualifying aerodrome operator determination.

Change Notice

Revision 6 makes minor changes to Section 1.9.2, Foreign Object debris (FOD) and section 3.3.1, Paved movement areas. A list of surfaces to be inspected for contaminants has also been added at section 3.5, Runway and taxi strips and safety areas.

This revision also moves some content to an Introduction section and makes other stylistic updates.

Published by
Civil Aviation Authority
PO Box 3555
Wellington 6140

Authorised by
General Manager, Strategy, Policy and International Engagement

Version History

AC Revision No.	Effective Date	Summary of Changes
AC139-03A	1 May 1994	Initial Issue
AC139-03, Rev. 2	27 April 2007	Re-formatted and re-numbered from AC139-03A to AC 139-3 as part of project to standardise the numbering of all ACs
AC139-03, Rev. 3	20 December 2007	Amended the title of Chapter 7 to read Aerodrome condition notification
AC139-03, Rev. 4	30 October 2015	Updated the content of this AC to align with the latest amendment to Part 139 and made editorial and formatting changes
AC139-03, Rev. 5	30 November 2023	Updated the content of this AC to align with ICAO's introduction of the GRF for runway condition reporting, as set out in ICAO Circular 355, adapted for New Zealand conditions and reflects changes from Part 139 Amendment 15 Added: • A Version History • An Abbreviations and a Definitions section • APPENDIX A: RCRs – Assessment and Report Format • APPENDIX B: Practical guide for the assessment, production and submission of a runway condition report at certificated aerodrome where ATC is required by the Director • APPENDIX C: Practical guide for the assessment, production and passing of a runway condition report at certificated aerodrome where ATC is not required • APPENDIX D: Flow Chart for Part 139 Certificated and Qualifying Aerodrome Operators • APPENDIX E: How to access the RCR Internet Flight Information System (IFIS) portal

		• APPENDIX F: How to use the RCR IFIS portal, and • APPENDIX G: Scenarios with examples of RCR, Voice ATIS, D-ATIS and NOTAM. ***Note**: On 18 December 2023, a participant pointed out a typo in Appendix A, section 11.* ICAO Flowchart A – for aerodrome scenario of all contaminants*, which had a measure of RWCCY 6 instead of the correct RWCCY 5. This has been corrected, along with a reference in Appendix A, paragraph 5.1.i.2 to RWCCY 6 which has been changed to the correct RWCCY 5.*
AC139-03, Rev. 6	5 November 2026	Makes minor changes to Section 1.9.2, Foreign Object debris (FOD) and section 3.3.1, Paved movement areas Adds list of surfaces to be inspected for contaminants at section 3.5, Runway and taxiway strips and safety areas Moves some content to an Introduction section and makes other stylistic updates

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Introduction

This guidance is intended for applicants for and holders of:

- an aerodrome operator certificate, and
- a qualifying aerodrome operator certificate.

It is also recommended to operators of non-certificated aerodromes.

As set out in Part 139, different types of aerodrome operators have different requirements with regards to Runway Condition Reports (RCRs).

Operators of:

- aerodromes required to provide an Air Traffic Control (ATC) service need to compile, produce and submit RCRs into the IFIS tool and publish 'Runway conditions monitored during ATC hours of service', in the Aeronautical Information Publication (AIP), and
- aerodromes not required to provide an ATC service should determine their ability to compile and produce RCRs and how they will pass RCRs to the air operator and publish a status of either 'Runway conditions monitored' or 'Runway conditions not monitored' accordingly, in the AIP. This status should be re-assessed regularly.

Operators of non-certificated aerodromes do not have to produce RCRs. All aerodrome operators however, including non-certificated aerodromes, need to keep their runway clear and free of foreign objects. In addition to RCR guidance, this AC contains advice about keeping runways free of debris.

Note: *This AC uses the term 'take-off and landing performance assessment', instead of the common US acronym TALPA, since New Zealand practices in this area differ from those of the US.*

While some hazardous aerodrome conditions develop virtually instantaneously, others are gradual. It is important, therefore, to have a comprehensive aerodrome inspection programme to ensure:

(a) all areas are systematically checked for conformance with established requirements, and

(b) any deficiencies are identified, and effective remedial action is taken before small defects develop into significant safety hazards.

An effective aerodrome inspection programme is an essential element of preventive maintenance and of aerodrome internal quality assurance.

This AC covers facilities, equipment and activities that could impact directly on the safety of operations. It does not cover those such as rescue fire services or emergency plans that are in place to respond to incidents or accidents.

Under Part 139, aerodromes may be operated:

(a) under an aerodrome operator certificate

(b) under a qualifying aerodrome operator certificate, or

(c) as a non-certificated aerodrome.

The types of operations being conducted and the size of aeroplanes using the aerodrome determine the level of certification required. Part 139 identifies specific aerodrome inspection programme requirements depending on the level of certification.

The underlying principles for an aerodrome inspection programme are the same for all levels of certification, but the specific requirements under a qualifying aerodrome operator certificate or a non-certificated aerodrome are less than those under an aerodrome operator certificate. Throughout this AC the generic term 'aerodrome operator' is used for all three operators unless it is necessary to refer to a particular type of operator.

This AC suggests components and items for continuous, regular, periodic and special inspections and evaluations for use during these inspections and for aerodrome condition reporting. For purposes of training, ongoing competency and efficiency, the incorporation of runway condition reporting into regular and continuous inspections has been required by Part 139.

Guidance relating to compiling, producing and submitting RCRs in the ICAO GRF at New Zealand Part 139-certificated airports is provided in the Appendices.

Availability of Runway Condition Reports (RCRs) at aerodromes

To summarise requirements:

- Aerodromes required to provide ATC should publish the following status in the AIP: 'Runway conditions monitored during ATC hours of service'.
- Aerodromes not required to provide ATC should publish the following status in the AIP: 'Runway conditions not monitored'. This status stands unless agreement between the aerodrome and users has been reached for provision of RCRs.

This AC is written to meet the requirements for holders of an aerodrome operator certificate and includes holders of a qualifying aerodrome operator certificate. However, this guidance can be modified to meet the less stringent requirements of non-certificated aerodromes, or to meet local situations.

The information in this AC is intended to explain the requirements for (and the guiding philosophy behind) an aerodrome inspection programme. It provides the basis by which aerodrome operators can develop their own aerodrome inspection programmes. In updating this AC, the aim is that advice and tips on what to look out for when inspecting aerodromes will be of general use to all aerodrome operators.

Abbreviations

While some abbreviations used in this AC are standard abbreviations from Rule Part 1, *Definitions and Abbreviations*, they have been listed here for convenience.

Abbreviations	
Advisory Circular	AC
Aeronautical Information Service	AIS
Air Traffic Control	ATC
Automatic Terminal Information Service	ATIS
Air Traffic Service	ATS
Civil Aviation Authority of New Zealand	CAA
Effective operational lengths	EOL
Foreign Object Debris	FOD
Global Reporting Format	GRF
Internet Flight Information Service	IFIS
millimetres	mm
Precision Approach Path Indicator	PAPI
Runway Condition Assessment Matrix	RCAM
Runway Condition Code	RWYCC
Runway end indicator lights	REIL
Runway Condition Report	RCR
Radio telephone frequency	RTF
Visual Approach Slope Indicator System	VASIS
World Meteorological Organization	WMO

Definitions

The following definitions are provided to clarify how they are used in this AC:

Aerodromes required to provide ATC Aerodromes with a Part 139 Aerodrome Operator Certificate required by the Director to provide an aerodrome control service. These are controlled aerodromes.

Aerodrome not required to provide ATC Aerodromes with a Part 139 Aerodrome Operator Certificate not required to provide an operating ATC service provided by an ATC unit situated at the aerodrome. These are uncontrolled aerodromes.

Compile The runway condition report is compiled after a physical inspection of the runway supported by the assessment and use of credible data gathered over time to help determine how the runway surface condition reacts to certain weather conditions. Includes visual observation from ATC of WET (5) or DRY (6) runway surface conditions when agreed between ATC and the aerodrome operator.

Conservative The term 'conservative' is not defined in ICAO Circular 355, but a close reading suggests that what is meant is a conservative assumption, that is, an estimate that tends to err on the side of caution and tending to a worst case, instead of a best case, scenario.

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.

Director Director of Civil Aviation

Downgrade A decision to change any aspect of an RWYCC to one less favourable, to reflect any changes in any relevant conditions, for example changes to weather conditions or runway surface conditions.

Evening civil twilight The time between day and night, as these terms are defined in Part 1. Also defined as the lightest of the twilight phases, when the centre of the setting sun is just below the horizon, so there is generally enough natural light to carry out most outdoor activities.

Inspection A planned programme consisting of specific observations of aerodrome physical facilities including runways and taxiways, at a frequency determined by the aerodrome operator. Incorporating runway condition reporting into these inspections should be considered.

Maintenance Work done to maintain the conditions of an aerodrome, either as part of a routine work programme or following issues that have been discovered as a result of inspections.

Monitoring Keeping an eye on aerodrome and other conditions, as part of normal work routines, as opposed to regular inspections, as part of continuous surveillance activities.

Paved In relation to a runway or other ground area, sealed or paved with bitumen, asphalt or concrete, as opposed to a grass or dirt runway.

Produce Compilation of data and information to produce an RCR, whether or not it is provided to Part 121 operators for aircraft performance calculations. RCRs produced at controlled aerodromes (except WET or DRY where an agreement is in place between the aerodrome

operator and ATC) will be submitted to IFIS by the aerodrome operator for distribution to the ATC unit and AIS as appropriate. RCRs compiled at uncontrolled aerodromes are to be produced and stored internally for training and competency verification. The compiled and produced RCR is only passed to the Part 121 operator with prior agreement.

Provision The step beyond compiling and producing RCR. For an operator of a Part 139-certificated or qualifying aerodrome this means when:

- *aerodrome ATC is on watch, and in accordance with the delegation, publishes via IFIS, or*
- *aerodrome ATC is off watch, and an agreement is in place to deliver RCR to an air operator.*

For the aerodrome ATC it means, when delegated, to publish via SmartATIS and/or deliver to an air operator via RTF.

Runway Surface Conditions[1] A description of the condition(s) of the runway surface used in the runway condition report (of the paved runway in use only) which establishes the basis for the determination of the runway condition code for aeroplane performance purposes.

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. The term 'SNOWTAM' has not been adopted in NZ, however the content and format is replicated via the use of an RCR NOTAM format.

Submit The process of entering the RCR information into the IFIS tool by the aerodrome operator. For the purposes of this AC, this is defined as the way the aerodrome operator produces the RCR and then submits the RCR into the IFIS. Once submitted in IFIS, the RCR will be distributed to the ATC unit and AIS as appropriate.

Upgrade A decision to change any aspect of an RWYCC, to one more favourable, to reflect any changes in any relevant conditions, for example changes to weather conditions or runway surface conditions.

Note 1: *The runway surface conditions used in the RCR establish the performance requirements between the aerodrome operator, aeroplane manufacturer and aeroplane operator.*

Note 2: *Aircraft de-icing chemicals and other contaminants are also reported but not included in the list of runway surface condition descriptors because their effect on runway surface friction characteristics and the runway condition code cannot be evaluated in a standardised manner.*

***Note** 3: Procedures on determining runway surface conditions are available in the PANS-Aerodromes (Doc 9981).*

[1] From: ICAO Circular 355 *Assessment, Measurement and Reporting of Runway Surface Conditions* (2019).

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 3mm 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 4**: 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 5**: 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: Ice crystals formed from airborne moisture on a surface, of which the temperature is below freezing. Frost differs from ice in that the frost crystals grow independently and therefore has a more granular texture.*

***Note 6:** Below freezing refers to air temperature equal to or less than the freezing point of water (0 degree Celsius).*

***Note 7:** 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 8:** Running water of depth greater than 3mm is reported as standing water by convention.*

vii. *WET ICE: Ice with water on top of it or ice that is melting.*

***Note 9:** Freezing precipitation can lead to runway conditions associated with wet ice from an aeroplane performance point of view. Wet ice can cause the surface to become very slippery. It is*

then reported appropriately as reduced braking action in line with procedures in the PANS-Aerodromes (Doc 9981). It is important to make use of the "Remarks" field to add comments to enhance situational awareness of the RCR NOTAM to provide necessary detail. (See Appendix F for an illustration.)

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.*

1. AERODROME INSPECTION OVERVIEW

1.1 Introduction

1.1.1 Aerodromes operating under an aerodrome operator certificate must have a documented aerodrome inspection programme, including regular runway and taxiway inspections, and reporting of runway conditions that follows the format required for the completion of RCRs. Part 139 sets out the requirements for all certificated aerodrome operators required to provide ATC to monitor, compile, produce and submit RCRs.

All certificated aerodrome operators not required to provide ATC are still required to compile and produce RCR on a daily basis. They should determine their ability to and pass RCRs to Part 121 operators using their aerodrome regularly. However, runway inspections should still be conducted using the GRF methodology and result in an RCR being compiled and stored internally, even if not passed to a Part 121 operator. A standardised method of assessing and reporting on runway conditions should be used, one that is based on ICAO Circular 355, as outlined in this AC.

For all aerodromes, any issues uncovered by inspections need to be followed up as part of a maintenance programme.

1.1.1.1 The holder of a qualifying aerodrome operator certificate may be required at initial certification, or by a determination made by the Director following an aeronautical study, to have an aerodrome inspection programme. A determination requiring an aerodrome inspection programme will specify all matters to be included in it: these will be based on the requirements for certificated aerodromes. These requirements will be no more onerous than those for holders of an aerodrome operator certificate.

1.1.1.2 Non-certificated aerodromes are required to establish procedures to ensure aircraft movements are restricted or prohibited on parts of the aerodrome where an unsafe condition exists. An aerodrome inspection programme may be needed as part of these procedures.

1.1.2 Routine RCRs should follow the GRF. Even if aerodromes are not required to pass RCRs to aircraft (and have declared this intention in the AIP) they still need to ensure that their aerodrome is free from unsafe conditions. Therefore, it is recommended that qualifying aerodrome operator certificate holders, and non-certificated aerodrome operators, consider the relevance and applicability of all guidance in this AC to their aerodrome and adopt it as necessary.

1.2 Responsibility

1.2.1 Part 139 refers to requirements the applicant must meet before a certificate is issued. This AC may refer to the certificate holder, not the applicant as stated in the rule, because the holder must continue to comply with the same requirements that were met before the certificate was issued.

1.2.2 All matters are applicable to holders of an aerodrome operator certificate, but only those specifically included in a determination made by the Director are applicable for holders of a qualifying aerodrome operator certificate. The rules references are those applicable for aerodrome operator certificate holders.

1.2.3 Aerodrome inspection is a responsibility of the aerodrome operator. Primary attention should be given to such operational items as:

- pavement areas
- safety areas
- markings and signs
- lighting
- fuelling operations
- navigational aids
- ground vehicles
- obstructions
- public protection
- wildlife hazard management, and/or
- construction.

1.2.4 The responsibility for inspection of all or some of the aerodrome areas may be assigned to tenants or organisations, with whom the aerodrome operator has a written agreement, but with the aerodrome operator retaining overall inspection supervision. The aerodrome operator cannot delegate responsibility for operating the aerodrome safely.

1.3 Components of an aerodrome inspection programme

1.3.1 An effective aerodrome inspection programme will, for all facilities and equipment on the aerodrome, have:

(a) Established performance standards, including standards for operational area surfaces, paint markings etc., as well as equipment such as lights, signs, etc.

(b) Identified environmental or other factors that could adversely affect these performance standards.

(c) Pre-agreed assessments for how quickly or slowly changes that could affect performance might take place.

(d) An inspection regime to monitor and record ongoing performance and to identify any change or deterioration in performance before operational safety is compromised.

(e) Timely and effective procedures to:

(i) notify aerodrome users of any operational limitations resulting from a deficiency, and

(ii) correct any deficiencies found.

1.3.2 Typically an aerodrome inspection programme has:

(a) **continuous surveillance** of certain aerodrome activities, for example, presence of runway contaminants and changing runway surface conditions, vehicles on operational areas, passengers on the apron, fuelling operations, wildlife, construction and debris

(b) **regular inspections** (which could incorporate RCR requirements) of physical facilities, for example, paved and unpaved movement areas, runway and taxiway strips, markings and signs, and lighting:

(i) for the purposes of assessing aeroplane performance, or

(ii) after maintenance activity on the manoeuvring area, or

(iii) following an incident or accident, and

(c) **periodic condition evaluations** for such things as rubber build-up on runways, runway surface friction, markings and signs, visual aids, obstructions infringing approach slopes, and visual aids

(d) **special inspections** during unusual conditions or situations such as inclement weather after maintenance activity on the manoeuvring area, or following an incident or accident, and

(e) **flight checking** of visual aids to navigation and approach lighting.

1.3.3 The aerodrome inspection programme requirements discussed in this AC are outlined below in Table 1.

Table 1 Aerodrome inspection programme requirements

Requirement	Continuous Surveillance Section 2	Regular Inspection Section 3	Special Inspections Section 4	Periodic Condition Evaluation Section 5	Flight Checking of Visual Aids Section 6
Frequency of inspections / evaluations	2.1	3.2		5.2	6.2
Ground vehicles	2.2				
Paved movement areas		3.3			
Unpaved movement areas		3.4			
Runway and taxiway strips and safety areas		3.5			
Pavement surface conditions				5.3	
Precipitation and contamination of the runway		Appendix A	4.2		
Markings and signs		3.6.1		5.4	
Lighting		3.6.2		5.5	
Visual aids to navigation		3.6.3		5.6	
Flight checking criteria					6.3
Obstacles and obstructions		3.7		5.7	

Requirement	Continuous Surveillance Section 2	Regular Inspection Section 3	Special Inspections Section 4	Periodic Condition Evaluation Section 5	Flight Checking of Visual Aids Section 6
Construction and maintenance	2.3	3.8	4.3		
Public protection	2.4	3.9			
Wildlife hazard management	2.5	3.10			
Potential problems	2.6	3.11			
Inspections prompted by events such as those including pilot reports and braking issues		Appendix A	Appendix A and Section 4, *Special Inspections*		
Operator reports			4.4		
Incidents and accidents			4.5		

1.4 Inspection frequency

1.4.1 The frequency of inspections should be determined by identifying factors critical to the ongoing safety of aircraft operations, including the:

- frequency of operations
- duration of operations
- types of aircraft served
- aerodrome environment
- complexity of the facilities, and
- size of the aerodrome.

1.4.2 The reasons for establishing the frequency of inspections should be documented and submitted to support sections of the exposition that address the certificate holder's safety inspection programme.

1.4.3 Further information on establishing the frequency of each inspection/evaluation type is given at the beginning of sections 2 to 6 of this AC.

1.5 Inspection checklist

1.5.1 For even the smallest aerodrome, it is desirable to use an aerodrome inspection checklist which:

(a) provides a record of all items inspected, and

(b) can be used as a check that follow-up actions have been taken.

1.5.2 While the format of checklists may vary, it is important to develop a checklist that is relevant to the aerodrome and its operation. The checklist format needs to clearly record the status or condition of every inspected item.

1.5.3 When preparing a checklist, the relevant requirements of Part 139, including all appendices, should be reviewed to ensure all applicable requirements have been identified.

1.5.4 For consistent interpretation of requirements, a checklist can include the standard, or a reference to the standard.

1.5.5 A checklist should identify the type of inspection, who carried it out, the date (and time if necessary), and the result for every item checked (pass or fail) with comments if needed. After the inspection has been completed, the checklist should be signed to confirm it has been carried out in accordance with procedures. It is acceptable to use electronic checklists with the results and deficiencies stored on an electronic database.

1.5.6 If certain inspectors will be responsible for only certain items, separate checklists pertinent to those areas may be developed. If necessary, a sketch of the aerodrome should accompany the checklist to record the location of any problem.

1.5.7 Deficiencies found during an inspection should be recorded, with sufficient detail to ensure appropriate remedial action can be taken. Photographs are recommended to support and clarify the nature of the deficiency.

1.5.8 A typical checklist should contain, at a minimum, the following information:

Figure 1 Example of an inspection checklist

EXAMPLE AERODROME **Regular Inspection Checklist**		
Inspection date: 18 July 2015		**Inspector:** A.B.C Smith
ITEM	**Result**	**Location, Comments**
3.3 Paved movement areas		
(a) Edges < 75mm lip	OK	
(b) Holes < 125 mm dia, < 75 mm deep < 45 degrees side slope (*AC139-3, 3.3(b)*)	OK	Some damage on runway 125m from southern end, 2.3m from eastern edge. Within spec. but needs repair
Comments: Large flock of seagulls on recently ploughed paddock east of 34 glidepath building		
I confirm this inspection has been carried out in accordance with procedures	**Signed:**	A.B.C Smith

1.6 Corrective action

1.6.1 An effective aerodrome inspection programme requires a procedure for reporting deficiencies to the responsible person so they can be corrected. Going through a checklist at scheduled times and noting the date of inspections will ensure the regularity and thoroughness of safety inspections and follow-up of deficient items.

1.6.2 For any aerodrome condition or defect which could have an immediate and critical impact on the safety of aircraft operations, the aerodrome operator should inform the staff at the stationed ATS unit and notify the AIS for the issue of a NOTAM as soon as practicable. When corrective action has been taken, the NOTAM is to be cancelled. Section 7 of this AC provides the detailed requirements for aerodrome condition notification.

1.7 Inspection personnel

1.7.1 The holder of an aerodrome operator certificate, or a qualifying aerodrome operator certificate, if required under their certification, must have procedures to ensure that personnel performing aerodrome inspections are appropriately trained, and to provide ongoing assessment and assurance that personnel are continuing to maintain their competence. Personnel must:

(a) for those facilities and equipment that they are inspecting, know:

(i) their location and types, and

(ii) the applicable inspection standards

Note: *For RCRs the applicable standard is the ICAO Circular 355 as reflected in this AC, or as accepted by the Director. While all certificated aerodromes are required to compile and produce RCRs in the GRF, the way they provide it to the pilot or operator can be different, as long as the method has been found to be acceptable to the Director. For example, some certificated aerodrome operators not required to provide ATC may pass the information to the pilot or operator in different ways.*

(b) be familiar with, and follow the established procedures for carrying out inspection on an operational aerodrome, including correct radio communication procedures and techniques

(c) be familiar with any identified deficiencies found during previous inspections and which are not yet rectified

(d) if construction is in process, be familiar with the method of work plan (MOWP) and safety plan for the project, and

(e) be familiar with the aerodrome certification exposition requirements for aerodrome inspections.

1.8 Inspection equipment

1.8.1 Personnel conducting aerodrome inspections should:

(a) be provided with a two-way radio for:

(i) communications with the air traffic services (ATS) unit, if provided for the aerodrome, or

(ii) notifying intentions and monitoring the unattended radio frequency used at the aerodrome, and

(b) have a vehicle equipped with a flashing or rotating beacon or a chequered flag for day-time inspections, or a flashing or rotating beacon for night-time inspections, and

(c) be supplied with checklists covering the various inspection areas.

1.9 Foreign object debris (FOD)

1.9.1 FOD is fragments of loose material (such as sand, stone, paper, wood, metal and fragments of pavements) that:

(a) are detrimental to aeroplane structures or engines, or

(b) might impair the operation of aeroplane systems if they strike the structure or are ingested into engines.

Damage caused by debris is also known as foreign object damage.

1.9.2 A programme to control FOD should be adopted and for maximum effectiveness should address four main components:

(a) Training of all personnel to include the identification and elimination of FOD.

(b) Inspection of areas including runway, taxiway, apron pavements, taxiway shoulders and other areas operated by airline, airport, and aeroplane handling agency personnel.

(c) Maintenance of areas in (b) to include manual or mechanical sweeping. The areas in which ground support equipment is staged should also be swept regularly.

(d) Coordination of landside and airside activities to control and contain generation of FOD.

2. CONTINUOUS SURVEILLANCE

2.1 Introduction

2.1.1 Continuous surveillance depends on the alertness of aerodrome personnel whenever they are on the aerodrome operational area. All aerodrome personnel should, as part of the induction process, and periodically thereafter, be encouraged to actively monitor and report any defects observed or raise concerns that they may have regarding operational activities. Continuous surveillance of aerodrome physical facilities and activities should cover at least the areas described in this section.

2.1.2 Continuous surveillance is surveillance in addition to the regular inspections covered in Section 3, which are intended for monitoring the runway condition to provide RCRs that may be relied upon by pilots for assessing aeroplane performance, and for publishing or communicating RCRs when required. It is also useful, however, for all aerodrome personnel to be aware of areas covered in regular inspections, to make them more aware of potential areas of concern.

2.2 Ground vehicles

2.2.1 Check procedures for the orderly operation of ground vehicles (including grass mowing machines) are being followed.

2.3 Construction and maintenance

2.3.1 Check for:

(a) unauthorised use of runways, taxiways, and aprons by construction or maintenance personnel and equipment

(b) potential runway incursions or other irregularities

(c) compliance with the MOWPs and safety plans for all construction or maintenance projects

(d) containment of all debris

(e) protection of navigation aids by exclusion of construction or maintenance equipment from critical areas, and

(f) protection of the approach and take off flight paths immediately outside of the airport boundary, for installations or equipment that may impede normal safe operation.

2.4 Public protection

2.4.1 Check that:

(a) there are no unauthorised persons, unsupervised passengers, vehicles or animals in operational areas

(b) measures to protect persons and property from aircraft propeller wash or jet blast are implemented and effective

(c) barriers and gates are serviceable and secure

(d) emergency access for rescue and firefighting vehicles or other emergency services is not obstructed, and

(e) designated points of emergency egress are not obstructed.

2.5 Wildlife hazard management

2.5.1 Check for any:

(a) birds or animals on or adjacent to the runways, taxiways and aprons that could present a hazard to aircraft

(b) unusual activity or change in numbers of birds, and

(c) activity on or adjacent to the aerodrome that could attract birds which create a hazard.

2.6 Potential problems

2.6.1 Note any other issues, including security of airfield buildings and airfield perimeter, which, if not dealt with, might affect the safe or efficient operation of the aerodrome.

3. REGULAR INSPECTIONS

3.1 Introduction

3.1.1 Regular inspections consist of specific observations of aerodrome physical facilities at a frequency determined by the aerodrome operator.

3.1.2 It is important that whenever deficiencies that could affect the safety of aircraft operations are identified, aircraft operators are advised. Section 7 of this AC provides information on these requirements.

3.2 Frequency of inspections

3.2.1 At a minimum, regular inspections should be carried out daily before the start of flight operations, with a second inspection at civil evening twilight if further aircraft operations are expected. Please refer to rule 139.107 (b) and (c) for rules covering RCR requirements for controlled and uncontrolled aerodromes before the start of an air transport operation carried out under Part 121.

3.2.2 If analysis of inspection reports identifies areas that require more frequent inspections, the inspection programme should be adjusted accordingly.

3.3 Paved movement areas

3.3.1 The regularity and condition of pavement surfaces is an important part of aerodrome safety, so pavement inspections should be carried out to ensure all pavement surfaces are clear and have no defects that could present a hazard to aircraft. At a minimum the inspection should check:

(a) pavement edges to ensure that they are the minimum necessary to allow water to drain off the pavement. A lip height no greater than 25 mm to 35 mm is usually sufficient to allow proper drainage. Any edge of 75 mm or more is a hazard to aircraft

(b) for any holes - a hole greater than 125 mm in diameter and 75 mm in depth with a side slope of 45 degrees or greater, is a hazard to aircraft

(c) the condition of pavement areas for scaling, spalling, bumps, low spots, and for debris that could cause damage to aircraft

(d) for any surface cracking

(e) for vegetation growth along runway and taxiway edges that could impede drainage from the pavement surface or slowly break up the paved surface, and

(f) for vegetation growth in cracks.

3.3.2 All results should be recorded on the aerodrome inspection checklist.

3.4 Unpaved movement areas

3.4.1 The condition of these surfaces is as important as paved surfaces, so they should be inspected with the same thoroughness as those areas. At a minimum the inspection should check:

(a) for ruts, depressions, humps or variations from the normal smooth surfaces that could present a hazard to aircraft

(b) for holes that could cause directional control problems for aircraft

(c) for debris and other foreign objects

(d) the condition of grass surfaces, and that the height of the grass is not excessive, and

(e) for vegetation growth along the edges that could impede drainage from the movement areas.

3.4.2 All results should be recorded on the aerodrome inspection checklist.

3.5 Runway and taxiway strips and safety areas

3.5.1 These surfaces should be inspected to the same level of thoroughness as other areas. At a minimum the inspection should check that:

(a) there are no ruts, depressions, humps or variations from the normal smooth surface that could present a hazard to aircraft

(b) there are no objects in these areas, except those that must be located there because of their function (for example, runway lights, signs, or navigation aids)

(c) the base for any equipment is at the same level as the surrounding safety area

(d) the ground has not been eroded from around light bases, manhole covers, or other fittings that should be flush with the surface, and

(e) there is no damage that may have been caused by animals.

3.5.2 These surfaces should be inspected for contaminants and removed as rapidly and completely as possible to minimise accumulation. Contaminants include:

(a) snow

(b) slush

(c) standing water

(d) mud

(e) dust

(f) sand

(g) oil

(h) rubber deposits

(i) other contaminants

3.5.3 All results should be recorded on the aerodrome inspection checklist.

3.6 Markings and signs, lighting, and visual aids to navigation

3.6.1 Some aerodrome facilities may fit into more than one grouping under this section. It is recommended that the facilities listed below are grouped in the following way:

(a) **Markings and signs** which include painted pavement markings and signage that provides direction to pilots using the aerodrome.

(b) **Lighting** which includes runway and taxiway lighting, obstruction lighting, and any other lighting such as apron floodlighting found in the operational areas.

(c) **Visual aids to navigation** which include the wind direction indicator, the aerodrome beacon, and specialised lighting systems such as VASI and REIL.

3.6.2 When developing the inspection programme, particular facilities should be included where it works best for the aerodrome operator. The most important consideration is that all facilities and equipment are included.

3.6.3 Markings and signs: Markings and signs provide important information to pilots during take-off, landing and taxiing. A regular aerodrome inspection should check at a minimum:

(a) all painted pavement markings for correct colour, blistering, chipping, fading, or obscurity due to rubber build-up

(b) all markers are correctly positioned and in good condition, and

(c) that signs:

(i) have the correct inscription, orientation and colour

(ii) are easy to read, secure, and in good condition

(iii) are frangible-mounted if within the strip areas

(iv) are free of vegetation growth that would impede sign visibility, and

(d) that no signs or markers are missing.

3.6.4 All results should be recorded on the aerodrome inspection checklist.

3.6.5 Lighting: At night and during periods of low visibility, lighting is important for safe aerodrome operations. Lights come in different shapes, sizes, colours, and configurations and can be flush mounted or elevated. At a minimum, the inspection should check:

(a) all lights are working, and their optical systems are not obscured by vegetation or deposits of foreign material

(b) no lights have broken lenses or other damage, and no fixtures are missing

(c) runway, taxiway and runway threshold lights are the correct colour and are oriented correctly, and

(d) lighting on-off and intensity controls are working correctly, including any remotely operated, manual or automatic system for controlling the lighting.

3.6.6 All results should be recorded on the checklist and referenced against allowable outages detailed in the aerodrome's local operating procedures.

3.6.7 Visual aids to navigation: The inspection should concentrate on the visual navigational aids and check:

(a) the wind direction indicator (windsock) area is clear of vegetation and that it can be easily seen

(b) the wind direction indicator is secure and in good condition, its supporting mast is upright, the indicator can move freely and, if lighted, the lights operate

(c) the aerodrome beacon, if provided, is visible and working properly

(d) the REIL are flashing, and not obscured to approaching aircraft, and

(e) visual glide slope indicators (VASIS, PAPI), to ensure that their lights are working, not obscured to an approaching aircraft, and that the mountings have not been damaged or disturbed.

3.6.8 All results should be recorded on the aerodrome inspection checklist.

3.7 Obstructions

3.7.1 The inspection should concentrate on a visual check of any construction underway on or near the aerodrome that could affect aircraft operations. In particular, check:

(a) for new or unreported obstructions such as cranes, masts, advertising hoardings, balloons, etc. that could intrude into the aerodrome obstacle free surfaces, and

(b) that obstructions are properly marked and lit.

3.7.2 All results should be recorded on the aerodrome inspection checklist.

3.8 Construction and maintenance

3.8.1 The inspection should focus on construction or maintenance activities on the aerodrome to ensure that a high level of safety for aircraft operations is maintained. In particular, check:

(a) construction or maintenance materials are properly stored or stockpiled to prevent them being moved by wind, jet blast, or propeller wash

(b) construction or maintenance activities adjacent to movement areas are identified with conspicuous marking and lighting

(c) heavy construction or maintenance equipment (such as bulldozers and cranes) are marked, lighted, and parked clear of the runway and taxiway strips and any safety areas

(d) stockpiles and stored equipment are not left in a position that would infringe the obstacle free surfaces, and

(e) construction and maintenance areas are managed to ensure all debris or foreign objects are contained within the work site.

3.8.2 All results should be recorded on the aerodrome inspection checklist.

3.9 Public protection

3.9.1 As part of the inspection, check:

(a) safeguards for preventing inadvertent entry of animals to the movement area

(b) barriers for preventing unauthorised entry of persons and vehicles to the aerodrome operational area

(c) proper operation of gates and doors with secured or controlled access, and

(d) protection of persons and property from aircraft blast.

3.9.2 All results should be recorded on the aerodrome inspection checklist.

3.10 Wildlife hazard management

3.10.1 The inspection should check for any:

(a) birds or animals on or adjacent to operational areas that could present a hazard to aircraft

(b) unusual activity or change in numbers of birds, and

(c) activity on or adjacent to the aerodrome that could attract birds which create a hazard.

3.10.2 All results should be recorded on the aerodrome inspection checklist.

3.11 Potential problems

3.11.1 Note on the aerodrome inspection checklist or other means, any other issues including security of airfield buildings and airfield perimeter which, if not dealt with, might affect the safe or efficient operation of the aerodrome.

4. SPECIAL INSPECTIONS

4.1 Introduction

4.1.1 Aerodromes without ATC units are still required to understand the guidance below, particularly if not issuing RCRs to air operators.

4.1.2 Special aerodrome inspections should occur after an unusual condition or event, after receipt of a complaint (for example, substandard braking action), or an accident or incident.

4.1.3 Depending upon circumstances, special inspections can include any or all of the components of: regular inspections, periodic condition evaluations, and/or flight checking of visual aids.

4.2 Heavy precipitation

4.2.1 Runway surface contamination, and issues with any movement areas, must be notified immediately (via the local air traffic services unit if provided) to arriving and departing aircraft, and the AIS for the issue of a NOTAM.

4.2.2 After heavy precipitation an inspection should be made to assess the runway surface contamination.

(a) **Runway Surface Condition.** Whenever water is present on a runway, a description of the runway surface conditions for each third of the runway length, including the possible assessment of water depth, where applicable, should be made available using the following terms:

(i) **DRY**.

(ii) **WET**

(iii) **SLIPPERY WET.**

(iv) **CONTAMINATED.**

(b) **Runway Surface Condition Descriptors.** Whenever a runway is contaminated and it has not been possible to clear the precipitant fully, the condition of the runway should be assessed using the following descriptors: COMPACTED SNOW, DRY SNOW, FROST, ICE, SLUSH, WET SNOW or WET ICE.

(c) **Water on other areas.** Other areas should be checked for ongoing serviceability:

(i) **Unpaved movement areas.** Check for ponding, and any surface softness which might affect the bearing strength and braking.

(ii) **Runway and taxiway strips and safety areas:**

- check storm water system to verify that inlets are not clogged, and drainage channels are free of debris
- note any standing water, and
- ensure all drain covers are in place and flush with the surface.

4.3 Construction and maintenance

4.3.1 After maintenance or construction, a special aerodrome inspection should be made to confirm:

(a) any operational area has been restored to a fully operational condition before reopening, and

(b) all pavement markings are correct and that any unserviceable markers in place during the work have been removed, and

(c) no hazardous conditions have been created (equipment left in safety areas, unacceptable pavement edges created by ground alteration work, ruts from equipment etc), and

(d) no damage has been done to other equipment or facilities in the vicinity of the work.

4.4 Aircraft operator reports

4.4.1 Following aircraft operator reports of unsatisfactory equipment or facility performance, it may be necessary to carry out a special aerodrome inspection. The circumstances will vary with each report, as will the action taken, but the following options should be considered:

(a) a pilot report on runway braking action being processed in accordance with Appendix A

(b) the equipment or facility being immediately removed from service until an inspection verifies it can safely be returned to service

(c) a special inspection being done to determine if removal from service is necessary

(d) if the information reported identifies an issue that does not affect the safety of operations, no immediate follow-up being needed to maintain operations.

4.4.2 The inspection should use relevant parts of the regular inspection and periodic condition evaluation checklists, supplemented by additional items as necessary.

4.4.3 Additional information on pilot reports of runway braking action is found in s8.5 of Appendix A.

4.5 Incidents and accidents

4.5.1 There are mandatory requirements for incident investigation, and for reporting certain incidents and all accidents to CAA under Part 12. These requirements are summarised in:

- AC12-1 *Mandatory Occurrence Notification and Information*, with a full list of aerodrome incidents contained in Appendix A; and
- AC12-2 *Occurrence investigation.*

4.5.2 Following an incident or accident involving an aircraft it may be necessary to carry out a special aerodrome inspection if there is any suggestion that aerodrome equipment or facilities were impacted by or contributed to the incident or accident. The circumstances will vary as will the action taken, but typically:

(a) the equipment or facility would need to be immediately removed from service until an inspection verifies it can safely be returned to service, and

(b) a special inspection would need to be done to determine if permanent removal from service is necessary.

4.5.3 The special inspection should use relevant parts of the regular inspection and periodic condition evaluation checklists, supplemented by additional items as necessary.

4.5.4 In particular, any time an aircraft has left the pavement and entered a strip or safety area, check to ensure that no ruts or holes have been made by the aircraft tires or personnel and equipment during the recovery operation.

5. PERIODIC CONDITION EVALUATION

5.1 Introduction

5.1.1 Periodic condition evaluations consist of specific aerodrome inspections on a regularly scheduled basis. These evaluations have the same goals as a long-term maintenance plan. They are engineering-focused, so they have an emphasis on areas like assessing the quality and smoothness of the tarmac, and determining any repairs or maintenance that is needed. Because of this focus, these inspections may require use of specialist equipment. They should cover at least the areas described in this section.

5.2 Frequency of evaluations

5.2.1 Over time, all facilities and equipment will gradually deteriorate until they fail to meet the specified performance criteria. Restoring performance to an 'as new' condition can require major (and often expensive) maintenance work which may take some time to complete.

5.2.2 A periodic condition evaluation programme will help to measure this deterioration so remedial work can be scheduled and completed before performance drops below the minimum performance requirements.

5.2.3 The frequency of periodic evaluation should be adjusted as necessary if analysis of evaluation reports, and regular inspection reports, shows deterioration is occurring at a slower or faster rate than was anticipated when the programme was established.

5.3 Pavement surface condition

5.3.1 The condition of all pavement surfaces should be evaluated periodically. At a minimum, and in addition to the items covered during regular inspections, the evaluation should confirm:

(a) pavement meets current specifications

(b) pavement, particularly in the touchdown zone areas, is not affected by rubber build-up

(c) pavement has not deteriorated to a point where, without remedial work, it is likely it will be found defective during regular inspections before the next periodic condition evaluation, and

(d) runway surface friction has been measured and meets specified standards.

5.3.2 Detailed information on the specific requirements and procedures to be used for determining and reporting the friction characteristics of runways is contained in AC139-13 *Aerodrome Maintenance: Runway Surface Friction Characteristics and Friction Testing.*

5.3.3 AC139-13 outlines the procedures for undertaking runway surface friction assessments and defines the criteria by which friction values should be assessed on runways, under specified conditions. These assessments are for maintenance purposes only.

5.4 Markings and signs

5.4.1 A periodic condition evaluation of pavement markings and signs should be carried out to determine whether they:

(a) conform to current specifications

(b) are clearly visible (if night operations take place, this evaluation should be carried out at night)

(c) have not deteriorated to a point where, if remedial work is not undertaken, it is likely they will be found defective during regular inspections before the next periodic condition evaluation, and

(d) are not affected by rubber build-up, particularly in the touchdown zone areas.

5.4.2 Detailed information on the specific requirements for marking and signs is contained in AC139-6, *Aerodrome Design Requirements*.

5.5 Lighting

5.5.1 In addition to the periodic inspection requirements, a periodic condition evaluation should confirm, at a minimum, that:

(a) lighting is positioned correctly and meets current standards

(b) switching and intensity controls are working correctly

(c) power supply reliability, including changeover to auxiliary power, if provided, meets specified changeover times with no effect on performance, and

(d) all prescribed maintenance has been carried out.

5.6 Visual aids to navigation

5.6.1 A periodic condition evaluation must be carried out for all visual aids to navigation. This, at a minimum, should confirm:

(a) accurate alignment of visual navigation aids

(b) correct light emission

(c) correct operation of control switching

(d) power supply reliability, including changeover to auxiliary power, if provided, meets specified changeover times with no effect on performance, and

(e) that all prescribed maintenance has been carried out.

5.6.2 The periodic condition evaluation of some visual aids to navigation requires a flight check to verify performance. This is covered in section 6 of this AC.

5.7 Obstacles

5.7.1 Obstacles need to be evaluated periodically to ensure significant obstructions, such as tree growth and new structures etc. are identified, and that appropriate action is taken to minimise any hazard to aircraft operations that they may create. The period between checks should be determined by identifying the rate changes are likely to occur. At a minimum, this means the aerodrome operator needs to:

(a) if the aerodrome is required to provide the AIS with data for the promulgation of aerodrome obstacle charts, survey all take-off flight paths to confirm the accuracy of the data.

(b) survey the other aerodrome obstacle limitation surfaces established for clearance from protruding obstacles.

(c) if an obstruction is found to infringe an obstacle limitation surface, either:

(i) immediately remove the obstruction, or

(ii) notify the AIS with the corrected effective operational lengths (EOL) for promulgation in a NOTAM, and/or

(d) if the infringing obstruction is permanent, notify the AIS of the permanent EOL for promulgation in the AIP.

6. FLIGHT CHECKING OF VISUAL AIDS

6.1 Introduction

6.1.1 Flight checking of visual aids is carried out to confirm the accuracy of guidance provided, and to verify all lights required for the aerodrome are conspicuous from the air.

6.1.2 Flight checking is not intended to determine the serviceability of lights and visual aids. This is best done by the inspection and evaluation programmes covered in sections 2, 3 and 5 of this AC. The need for ongoing flight checking can be minimised by the effective application of these programmes.

***Note**: Ground-based checking of PAPI and other visual aids should be considered as an option.*

6.2 Specific flight checking

6.2.1 Visual aids to navigation include approach lighting, specialised lighting systems such as VASI and REIL, runway markings and lighting, the wind direction indicator, and the aerodrome beacon.

6.2.2 Visual aids and aerodrome lights, other than taxiway and apron lights, should be flight checked:

(a) prior to commissioning into service

(b) when any major component has been replaced with realignment or re-siting required

(c) when any visual aid is re-sited, and

(d) periodically, to confirm ongoing performance.

6.3 Flight checking criteria

6.3.1 The flight check should establish that all lights are clearly visible, and there must be no interference to visibility by any objects or other lights. The appearance of all lights must be in accordance with the standards specified. Where variable intensity lighting is provided levels should be checked.

6.3.2 Approach slope indicators should be flight checked to confirm that each aid provides accurate guidance within the tolerances prescribed for that aid.

6.3.3 All other visual aids should be flight checked to verify the appearance, uniformity, and intensities of the light.

7. AERODROME CONDITION NOTIFICATION

7.1 Introduction

7.1.1 The holder of an aerodrome operator certificate or qualifying aerodrome operator certificate is required to provide information on any conditions that might affect the safe operations of aircraft.

Note: *This is in addition to the requirements for the provision of RCRs.*

7.1.2 Information on the condition of the movement area and the operational status of related facilities should be notified to the AIS. The local ATC unit should also be notified to enable them to provide the information to arriving and departing aircraft. The information must be kept up to date and changes in condition reported without delay.

7.2 NOTAM

7.2.1 The certificate holder or aerodrome operator must ensure that if an unsafe condition that cannot be immediately rectified is found:

(a) appropriate NOTAM/s are issued, and

(b) local aerodrome users are notified.

After providing the information to the AIS, the aerodrome operator should follow up to ensure the NOTAM/s were issued.

7.2.2 Once a NOTAM has been issued it is the responsibility of the aerodrome operator to monitor the reported condition and to either:

(a) update the NOTAM information if necessary, or

(b) cancel the NOTAM when the condition has been rectified.

7.3 Information

7.3.1 The information provided for the issue of NOTAM/s should be clear and precise and should contain:

(a) type of unserviceability or unsafe condition

(b) extent (area) of the unserviceability or condition, and

(c) duration (expected length of time) the condition will remain.

7.3.2 It is important that the area in which the unserviceability or unsafe condition occurs is referred to correctly. Runways and runway strips should be referred to by the correct runway designator rather than the ‘long’ or ‘main strip’. Similarly, the difference between the runways and runway strips should be recognised and the correct terminology used.

7.3.3 To comply with the rule, the aerodrome operator should provide information to the AIS for the issue of a NOTAM on any of the following aerodrome conditions which may affect the safe operations of aircraft:

(a) establishment, closure or significant changes in the operation of the aerodrome or runways

(b) establishment, withdrawal or significant changes made to visual aids

(c) interruption of, or return to operation of, major components of the aerodrome lighting systems

(d) occurrence, or correction of major defects or impediments in the manoeuvring areas

(e) changes to and limitations on availability of fuel, oil and oxygen (international aerodromes)

(f) establishment, withdrawal or return to operation of hazard beacons marking significant obstacle to air navigation

(g) erecting, removal of or changes to significant obstacles to air navigation in the take-off, climb, missed approach, approach areas, and runway strip

(h) significant changes in the level of rescue and firefighting protection normally provided at the aerodrome

(i) presence or removal of significant changes in hazardous conditions due to snow, slush, ice or water on the movement area, and/or

(j) any other occurrence associated with the aerodrome which might be a hazard to the safety of aircraft operations.

8. SUPPORTING PUBLICATIONS

There are several publications available which address the elements of Aerodrome Inspection Programme and Condition Reporting, including the publications listed below:

- *ICAO Annex 14 Volume 1 – Aerodromes*
- *Doc 9137 Airport Services Manual Part 2 – Pavement Surface Conditions*
- *Doc 9137 Airport Services Manual Part 8 – Airport Operational Services*
- *Doc 9137 Airport Services Manual Part 9 – Airport Maintenance Practices*
- *Doc 9157 Aerodrome Design Manual Part 1 – Runways*
- *Doc 9157 Aerodrome Design Manual Part 2 – Taxiways, Apron and Holding Bays*
- *Doc 9157 Aerodrome Design Manual Part 3 – Pavements*
- *Doc 9365 Manual of All-Weather Operations*
- *Doc 9981 PANS OPS Aerodromes*
- *ICAO Circular 355 Assessment, Measure and Reporting of Runway Surface Conditions*

Since the content of this AC is largely based on ICAO standards, it is also useful to keep up to date with developments, new technology and resources on the ICAO website at:

- https://www.icao.int/Pages/default.aspx.

APPENDIX A: RCRs – Assessment and Report Format

Note: *Contaminants, such as volcanic ash, mud, and oil, that are not included in the list of eight contaminants in paragraph 3.5 of this Appendix are outside the scope of this Appendix and should be reported to AIS and flight crews in the best way, depending on the contaminant and the circumstances, to ensure aircraft safety is not compromised.*

1. Background Information

1.1. Aeroplane performance can be impacted whenever the coverage of any water-based contaminant on any runway third exceeds 25%. 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.

1.2. The intent of the RCR is to put into place a common language between all system users (or what ICAO terms 'actors'), based on the impact of runway surface conditions on aeroplane performance. ICAO also stipulates that all members of the information chain, from data origin to end users, need to have been given proper training. To meet this requirement, aerodrome operators need to ensure that everyone involved at each step of the process is given proper training on reporting procedures and maintains their competency.

1.3. It is important for aerodrome personnel to make the best attempt to accurately report runway surface conditions, rather than seeking a systematically 'conservative'[2] assessment (e.g. an estimate that builds in a margin of error) or trying to do their own risk assessment. Aerodrome operators need to only say what they see: the airline pilot/operator is the one who needs to exercise judgement, whether they choose a conservative assessment or not. Aerodrome personnel should not be evaluating or assessing risk: they should only be reporting on runway surface conditions. Aerodromes need to provide appropriate training to aerodrome personnel to enable accurate reporting of runway surface condition.

1.4. By contrast, it is the role of flight crews to evaluate the information from aerodromes to decide the worst runway surface conditions that would be acceptable for the intended operation. This is an additional safeguard against lack of conservatism, that is, relying on over-optimistic assessments. Conservatism is recommended in the judgement of observations versus criteria such as 3 mm depth or 25% coverage, but not for the RWYCC. A conservative assessment is different from a 'downgrade'[3], that is, a changed assessment motivated by other observations or local knowledge.

1.5. Aircraft manufacturers have determined that variances in contaminant type, depth and air temperature cause specific changes in aircraft braking performance. As a result, it has been possible to take the aircraft manufacturers' data for specific contaminants and produce the Runway Condition Assessment Matrix (RCAM) for use by aerodrome operators. When the runway condition is being monitored by the aerodrome operator, the RCR can be used by pilots to undertake an assessment of aeroplane performance at various stages of the flight

[2] Please see the Definitions section for how this term is used in this AC.

[3] As above.

(from flight planning to cockpit preparation for departure; in-flight replanning; and approach preparation).

1.6. Personnel monitoring and reporting the runway surface conditions via agreement with the holder of the aerodrome certificate must focus on identifying and reporting any significant changes whenever they occur. A significant change is any change that requires the RCR to be updated with any new information.

1.7. The flight crew's ability to receive the RCR in the various phases of flight is dependent on the technology made available to them and consequently, will vary between aeroplane operators. The procedures for aerodrome operators providing RCRs intended to support aeroplane performance, whether a manual observation or automated measuring system, may need to incorporate specific additional communication arrangements with aircraft operators that intend using take-off and landing performance assessment (in addition to reporting RCRs to the ATC unit where present, and via NOTAM and ATIS or local communication direct to pilots). In all cases, however, it is important that flight crew know how current an RCR is.

2. RCR scenarios

2.1. Aerodrome operators can elect to adopt one of two reporting formats in their procedures, depending on whether the aerodrome is one that:

(a) is not exposed to snow or ice which therefore has no need to use the full GRF other than for water, or

(b) will be fully prepared to use the GRF (fully equipped, fully trained for all contaminant types).

2.2. This two-level solution allowed in New Zealand will mean that each aerodrome operator can choose a set of provisions that suits its needs.

3. Report concept defined

3.1. The following terms are used to define the fundamental, conceptual part of the report and assessment of the runway surface conditions methodology.

3.2. There are five fundamental elements:

(a) RCR

(b) RCAM

(c) RWYCC

(d) runway surface conditions, and

(e) runway surface condition descriptors.

3.3. There are four runway surface conditions:

(a) dry runway

(b) wet runway

(c) slippery wet, and

(d) contaminated runway.

3.4. 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.

3.5. 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.

4. Runway Condition Assessment Matrix (RCAM)

Runway Condition Code – RWYCC	Assessment of Runway Surface Condition	Pilot report of aeroplane deceleration or directional control	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) SLUSH (Up to & inc 3 mm depth) DRY SNOW (Up to & inc 3 mm depth) WET SNOW (Up to & inc 3 mm depth)	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	GOOD
4	-15ºC and lower outside air temperature[1]: COMPACTED SNOW	Braking deceleration OR directional control is between Good and Medium.	GOOD TO MEDIUM

Runway Condition Code – RWYCC	Assessment of Runway Surface Condition	Pilot report of aeroplane deceleration or directional control	Pilot report of runway braking action
3	SLIPPERY WET runway DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW DRY SNOW (More than 3 mm depth) WET SNOW (More than 3 mm depth) 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	STANDING WATER (More than 3 mm depth) SLUSH (More than 3 mm depth)	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

Note 1*: Runway surface temperature should preferably be used where available, noting that this is not the same as Outside Air Temperature (OAT). If using in-ground sensors embedded in the runway, these sensors need to be calibrated and acceptable to the Director.*

Note 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 PANS-Aerodromes (Doc 9981), 1.1.3.15, is followed.*

5. Runway condition assessment and measurement

5.1. For all aerodromes:

(a) Assessment can be made by visual observations which may be augmented by measuring devices, instruments or approved automated system of sensing and report compilation.

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

(c) If data or information is gathered from measuring devices or instruments, they must be calibrated and operated within their limitations and in compliance with standards agreed by the Director, or an acceptable means of compliance as agreed by the Director.

(d) The data is then converted into information by personnel trained to perform their duties.

(e) The depth of contamination (in mm) can be determined by ruler measurement, or any equipment suited to the purpose. In particular, a 3 mm depth needs to be measured quickly and easily – the NZ one-dollar coin is just under 3 mm thick!

(f) The assessed RWYCC is reported for each third of the runway. These are identified as the first, second or third part of the runway length beginning from the lowest runway designator. The runway thirds are entered into IFIS in order with the lowest runway designator first.

(g) The length of any displaced threshold is included in the third at that end of the runway.

(h) The percentage of the reported condition code for the runway third must be assessed. The lowest (worst) condition code affecting more than 25% of the runway third should be adopted for the assessment. Water or contaminant affecting less than 25% of a runway third does not warrant reporting.

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

5.1.i.1. if the contaminant coverage for that third is less than 10%, an RWYCC of 6 is to be generated for that third and no contaminant is to be reported. If all thirds have less than 10% contaminant coverage, no report is generated

5.1.i.2. if the percentage contaminant coverage for that third is greater than or equal to 10% and less than or equal to 25%, an RWYCC of 5 is to be generated for that third and the contaminant reported at 25% coverage, or

5.1.i.3. if the percentage contaminant coverage for that third is greater than 25%, the RWYCC for that third shall be based on the contaminant present.

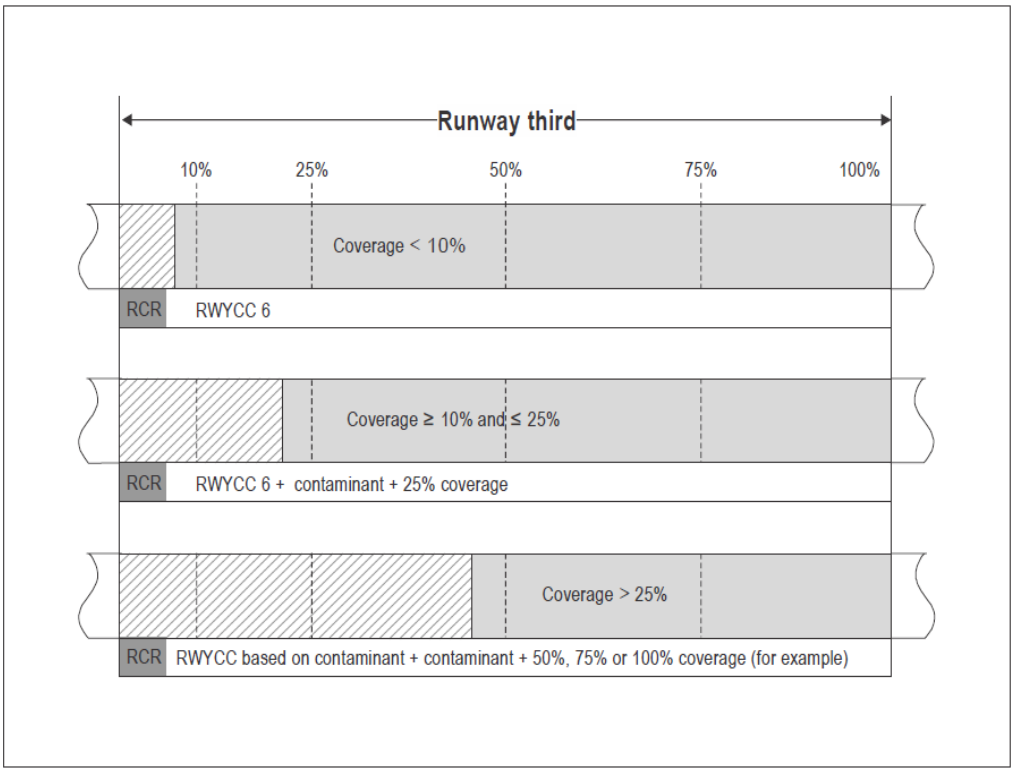


Figure 4-1. Single contaminant

(j) If multiple contaminants are present where the total coverage is more than 25% but no single contaminant covers more than 25% 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.

(k) Continuously monitoring the development of the situation and prevailing weather condition is essential to ensuring safe flight operations. RCR should not be compiled and produced by staff that have not received training and been assessed as competent.

(l) Therefore, if 24-hour continuous monitoring is not available by appropriately trained personnel, the aerodrome operator should publish in the AIP and/or NOTAM the circumstances when continuous monitoring is or is not being provided.

(m) New RCRs only need to be issued when assessment of the runway condition gives rise to change in the most recently issued RCR (for example, a change in depth of water from 3mm to 4mm would generate an updated report).

5.2. For airports operating with water only contamination scenario:

(a) RCRs will generally consist of only the RCR data string.

(b) Unless water ponds to more than 3 mm over 25% or more of a runway third, the assessment will be limited to determining the extent to which the runway is WET or DRY.

(c) Aerodromes with an ATC service should agree protocols with the ATC unit to issue RCRs with RWYCC 6 and RWYCC 5 on behalf of the aerodrome operator based on observations by their personnel, with the ability to call for inspections where water may be ponding to more than 3 mm depth.

(d) Aerodromes could consider studying the unique physical properties of the runway to determine whether a safe procedure can be developed to use rainfall intensity and wind conditions. This procedure would be a guide to situations likely to give rise to more than 3 mm of water ponding on more than 25% of any runway third, where the aerodrome operator would assign appropriately trained personnel to make on-runway inspections to monitor for any change to RWYCC 2.

5.3. For airports operating with full (water, snow, slush, ice[4]) contamination scenario:

(a) Although not used in New Zealand the aerodrome operator should consider including the format of SNOWTAM to be used for RCRs in their exposition for training and familiarisation purposes only. The ICAO recommended format is shown below, for purposes of familiarity and training only. It may be varied to suit specific arrangements with aircraft operators, provided the arrangements are clearly documented in the aerodrome exposition.

Note: *New Zealand does not use the term SNOWTAM. However, the New Zealand RCR NOTAM used for promulgating RCR data by NOTAM, uses the standard data string that aligns to ICAO SNOWTAM format.*

[4] Or, as defined by ICAO: 'wet, dry, standing water, ice'.

SNOWTAM FORMAT

Source: *Procedures for Air Navigation Services — Aeronautical Information Management* (PANS-AIM, Doc 10066) (see Appendix 4)

(Applicable as of 5 November 2020)

(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 ASSESSMENT (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 (RWYCC) ON EACH RUNWAY THIRD) *(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 RUNWAY THIRD)	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	M	G)	/ /

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			→
(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: 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), in Appendix 4 of PANS-AIM (Doc 10066).			

SIGNATURE OF ORIGINATOR *(not for transmission)*

6. RCR data string

6.1. The following explains the components of the RCR data string:

Aerodrome location indicator (nnnn)	Date & time (UTC) (MMDDhhmm)	Lower runway designator number (nn or nn[L], nn[C], or nn[R])	RWYCC for each runway third (n/n/n)	Percent coverage contaminant for each runway third ([n]nn/[n]nn /[n]nn)	Depth in mm of loose contaminant for each runway third ([n]nn/[n]nn/[n]nn)	Condition description (contaminant type) for each runway third

6.2. The runway thirds are always entered into the runway condition report and IFIS tool in the direction of the lower runway designator irrespective of the runway in use.

6.3. Runway thirds are communicated to Pilots in order of operational runway in use over the radio, ATIS and D/ATIS Pilots.

6.4. Runway thirds are shown in order of lower runway designator when detailed in NOTAM.

7. RCR Data String

7.1. The following is an example of the RCR data string:

NZPM	08010300	07	6/5/2	NR/75/100	NR/NR/04	Dry / Wet / Standing Water

8. Upgrading and Downgrading of RWYCC

8.1. 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 outside air temperature. 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.

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

8.3. 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 should be considered and communicated to all parties until corrective action has been taken to improve the runway surface conditions and an RWYCC between 1 and 3 can be reported appropriately.

8.4. Aspects to be considered when assessing the runway's slipperiness for a downgrade include:

(a) prevailing weather conditions:

8.4.a.1. stable below freezing temperature

8.4.a.2. dynamic conditions

8.4.a.3. active precipitation, and

(b) observations (information and source)

(c) measurements:

8.4.c.1. friction measurements

8.4.c.2. vehicle behaviour, and

8.4.c.3. shoe scraping, and

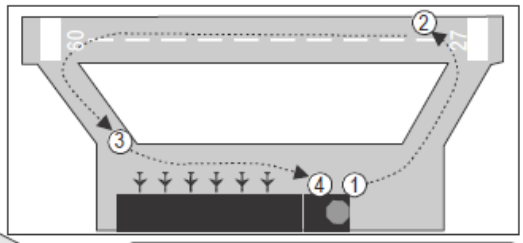
(d) experience (local knowledge), and

(e) AIREPs (Air-Reports).

8.5. 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).

(a) If ATC 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 appropriate 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 determined by service level agreements (SLAs) between the aerodrome operator and the ATC unit.

9. ICAO Flowchart of the generic runway condition process



New report necessary?
Any significant operational change in the:
- aeroplane performance section? (Go to Step 1)
- situational awareness section? (Go to Step 3)

→ Continuous monitoring of the situation

Examples of pertinent information

Step 1: Preparation

- Evaluate current information
- Coordinate with other parties involved
- Obtain access to the runway

- Last RCR
- Significant changes
- Relevant NOTAMs
- AIREPs
- Prevailing weather condition
- Runway treatments performed

Step 2: Runway condition assessment (Aeroplane performance)

- Collect data for each third of the runway
- Assess the collected data and turn the data into information

- Visual observations
- Measurements
- Assessment of contaminant type, depth and coverage
- Application of upgrade/downgrade criteria
- Assignment of RWYCC for each runway third (see the basic RCAM flowchart process)

Step 3: Additional assessments (Situational awareness)

- Collect additional data for the runway
- Collect data for taxiways and aprons
- Assess the collected data and turn the data into information

- Visual observations
- Measurements
- Drifting snow
- Chemical treatment on runway
- Loose sand on runway
- Snow banks
- Poor taxiway conditions
- Poor apron conditions

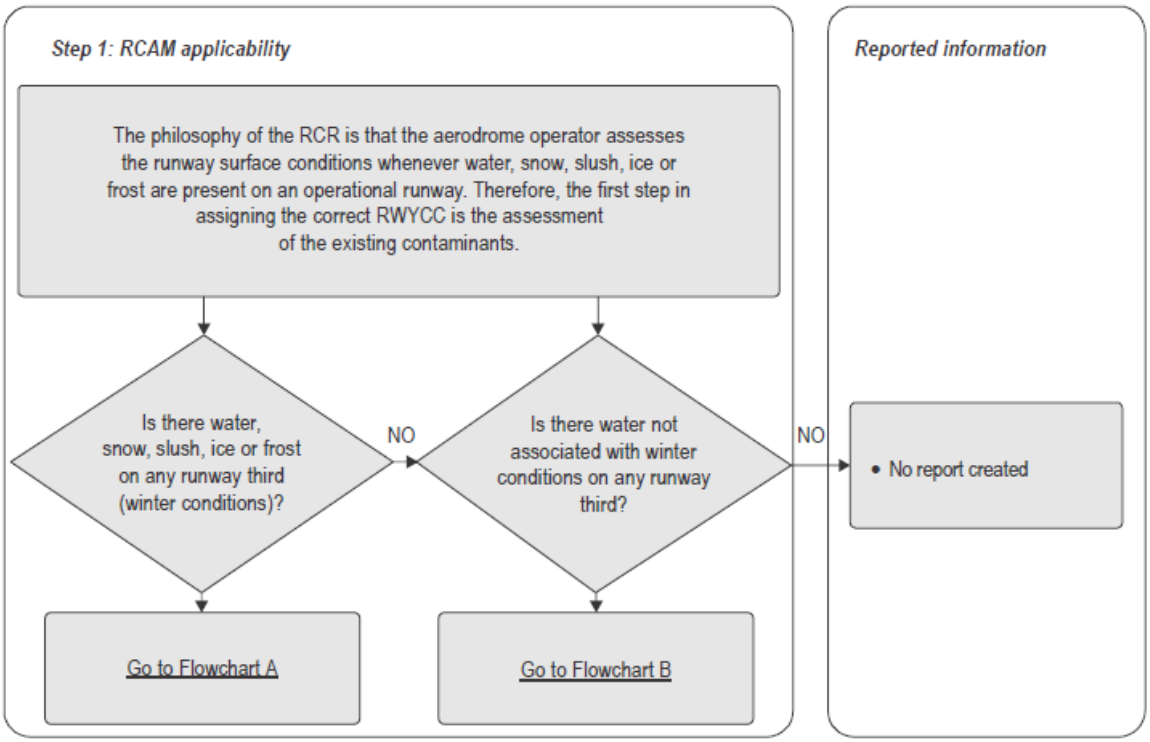
Step 4: Reporting

- Arrange the collected information in the defined order of the RCR
- Promulgate the RCR

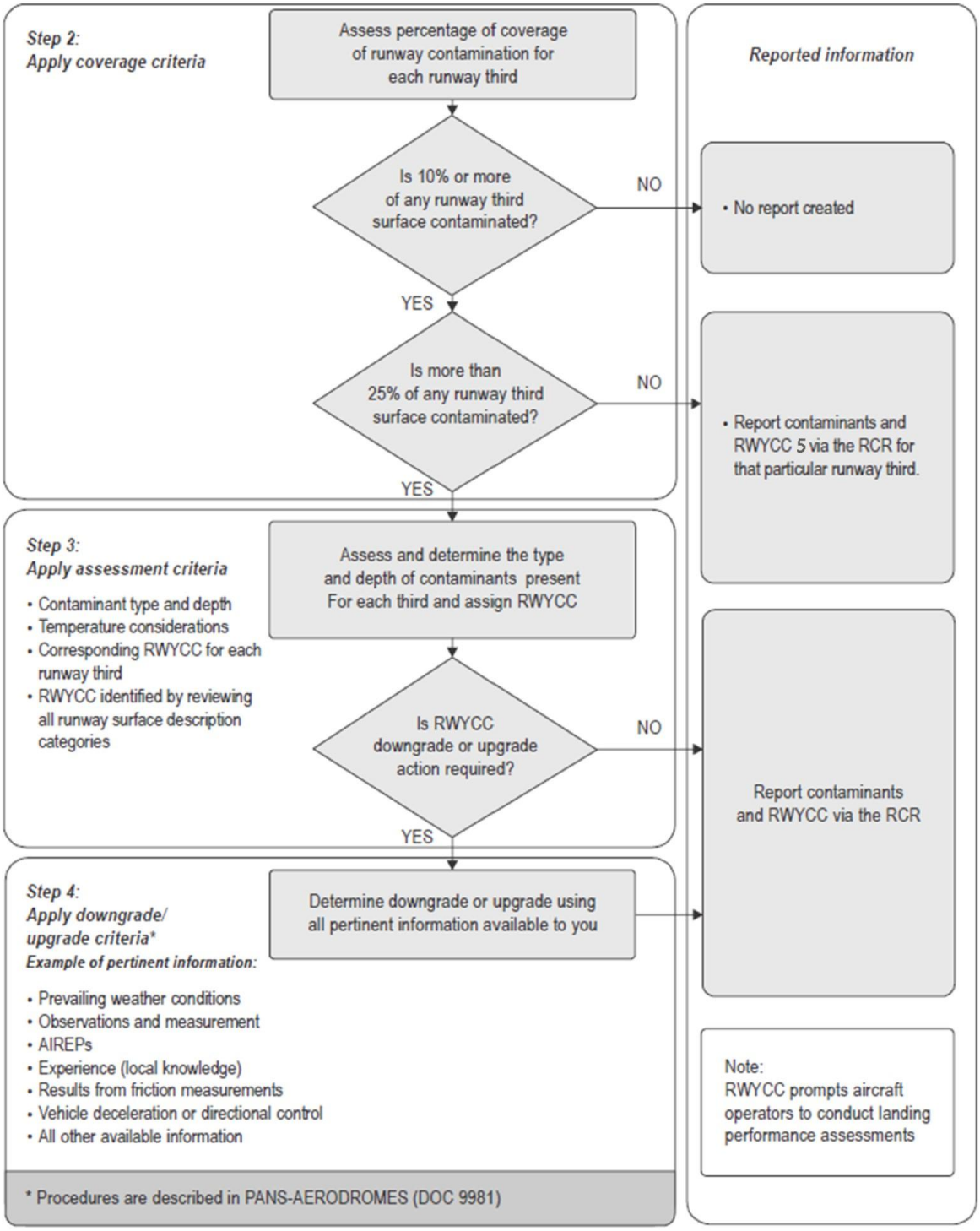
- ATC
  - Radiotelephony
  - ATIS
- AIS
  - SNOWTAM

Note:
Information may be mandatory, conditional or optional. Regardless of the status, if information is considered to be significant for safe operations, timely updating is mandatory.

10. The basic RCAM flowchart process

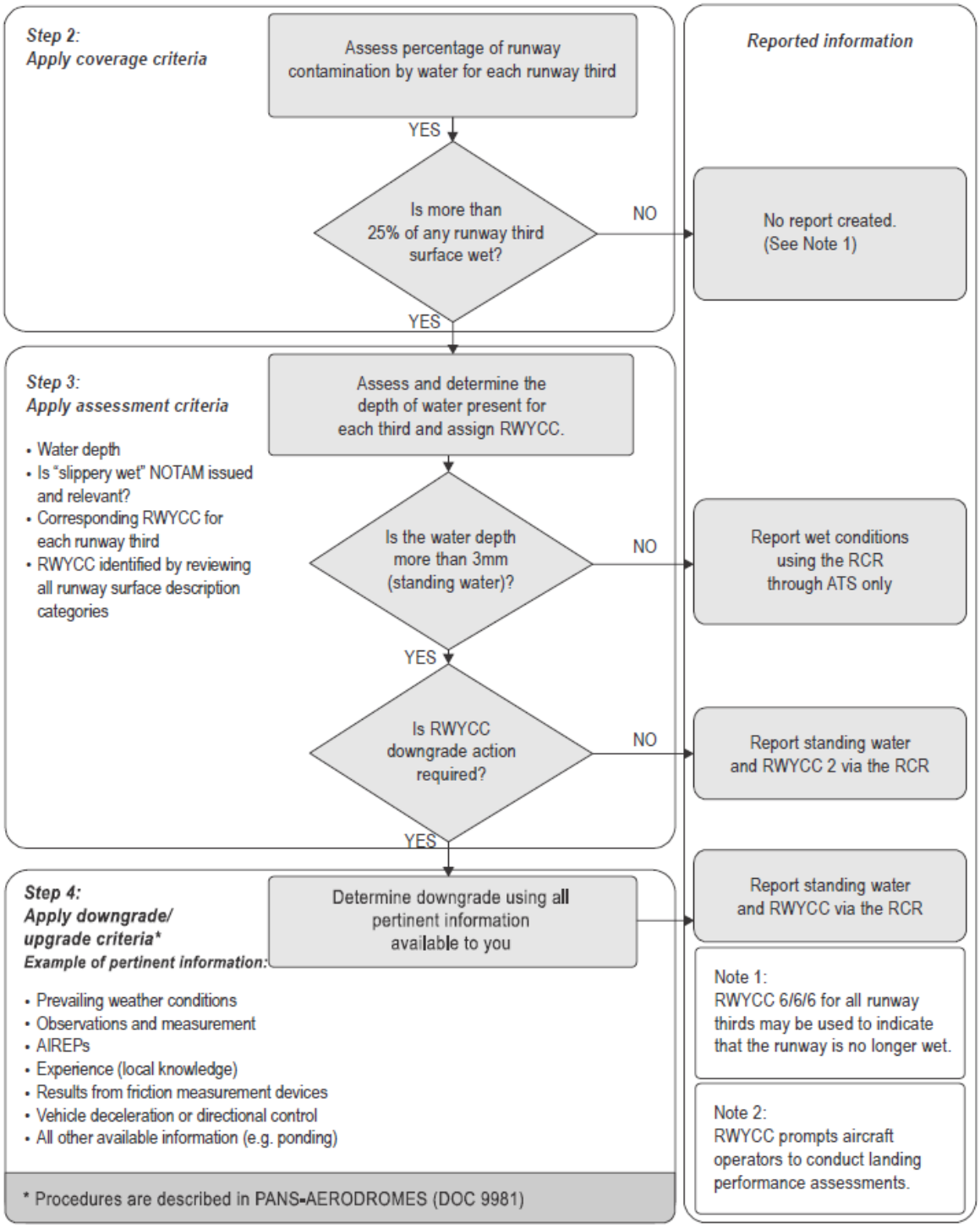


11. ICAO Flowchart A – for aerodrome scenario of all contaminants



***Note:** If the percentage contaminant coverage for that third is greater than or equal to 10% and less than or equal to 25%, an RWYCC of **5** is to be generated for that third and the contaminant reported at 25% coverage.*

12. ICAO Flowchart B – for aerodrome scenario of water only



13. Promulgating RCRs

13.1. All RCRs should be advised promptly (as close to real-time as practical), whether automated or manually prepared, to:

(a) ATC when present at an aerodrome

(b) ATIS and D-ATIS

(c) NOTAM when appropriate, and

(d) aircraft operators in the form (such as email, phone, fax, radio) agreed with those operators and incorporated in the aerodrome operator's exposition.

Note: *Systems used to prepare RCR automatically will require prior acceptance by the Director.*

13.2. The aerodrome operator should ensure the AIS publishes where 'Runway conditions not monitored' and/or 'Runway conditions not reported'.

APPENDIX B: Practical guide for aerodromes required by the Director to provide an ATC service

1. For runway conditions of DRY and WET:

1.1. Operators of aerodromes with an ATC service should agree protocols with the ATC unit if the ATC unit is going to compile and amend the Voice-ATIS and D-ATIS with RWYCC 6 (DRY) and RWYCC 5 (WET) on behalf of the aerodrome operator based on observations by ATC staff.

1.2. Aerodrome operators are to continuously monitor runway surface conditions to enable them to carry out timely inspections when water may be ponding to more than 3 mm depth or where the runway surface condition may be SLIPPERY WET or CONTAMINATED.

1.3. When the surface condition of the paved in-use runway is observed as changing from DRY to WET or from WET to DRY, the Air Traffic Controller is to amend the Voice-ATIS and D-ATIS.

2. For ALL runway conditions and contaminants except DRY and WET:

2.1 The assessment of the runway surface conditions of SLIPPERY WET, and a CONTAMINATED runway is the responsibility of the aerodrome operator.

2.2 The aerodrome operator should provide readily available, trained and competent staff who are able to compile and produce an RCR in accordance with guidance in this AC and ICAO Circular 355.

2.3 The runway surface condition is assessed by the aerodrome operator using the runway condition assessment matrix (RCAM) in Appendix A, Section 4, page 37 of this AC.

2.4 On completion of the runway condition assessment the details are to be submitted into the applicable portal within IFIS which will be available on the Airways website. The RCR can be transferred into the IFIS by selecting from drop down menus and use of some pre-populated fields. The process is designed to be like the process used for raising a NOTAM in the IFIS tool, as shown in Appendix E.

Note: *IFIS is an electronic system, owned and operated by Airways.* Once submitted in IFIS, the RCR will be distributed to the ATC unit and AIS as appropriate.

2.5 The ATC unit will amend the ATIS to reflect the RCR and/or display the RCR for passing to aircraft.

2.6 The NOTAM office will issue NOTAM for any RCR requiring dissemination by AIS.

3 Outside of ATC hours of service

3.1 The use of IFIS by a Part 139 Certificate holder will not result in RCR provision as per this AC. There is no ATIS/D-ATIS generated and only AIS NOTAM is generated, see Appendix E 1.1.

3.2 The aerodrome operator and end user of information generated through IFIS outside of ATC hours of service should be fully cognisant of its restrictions and timeliness.

APPENDIX C: Practical guide for aerodromes not required by the Director to provide an ATC service.

***Note 1: For the purpose of maintaining staff competency, that is, for training only**, runway inspections, including the assessment of the runway surface condition and production of an RCR should be carried out daily before the start of aeroplane operations, with a second inspection at civil evening twilight if further aircraft operations are expected.*

***Note 2:** If the airline operator(s) and aerodrome operator have agreed that RCRs are required to be compiled, produced and passed to the Part 121 operator for the purposes of aeroplane take-off and landing performance assessment, the RCR should be passed to the 121 operators in a timely manner and in a format acceptable to the Director and end user.*

***Note 3:** If the airline operator(s) and aerodrome operator have agreed that RCRs are not required to be reported on for the purposes of aeroplane take-off and landing performance assessment, the aerodrome operator must publish in the AIP the status 'Runway condition not monitored'. This status should be reviewed regularly.*

1. For ALL runway surface conditions and contaminants

1.1. These surface conditions of the paved in-use runway are monitored and assessed by the aerodrome operator.

1.2. The aerodrome operator should provide readily available, trained and competent staff able to compile and produce an RCR as part of the runway inspection in accordance with the guidance in this AC and ICAO Circular 355.

1.3. The runway surface condition is assessed by the aerodrome operator using the RCAM.

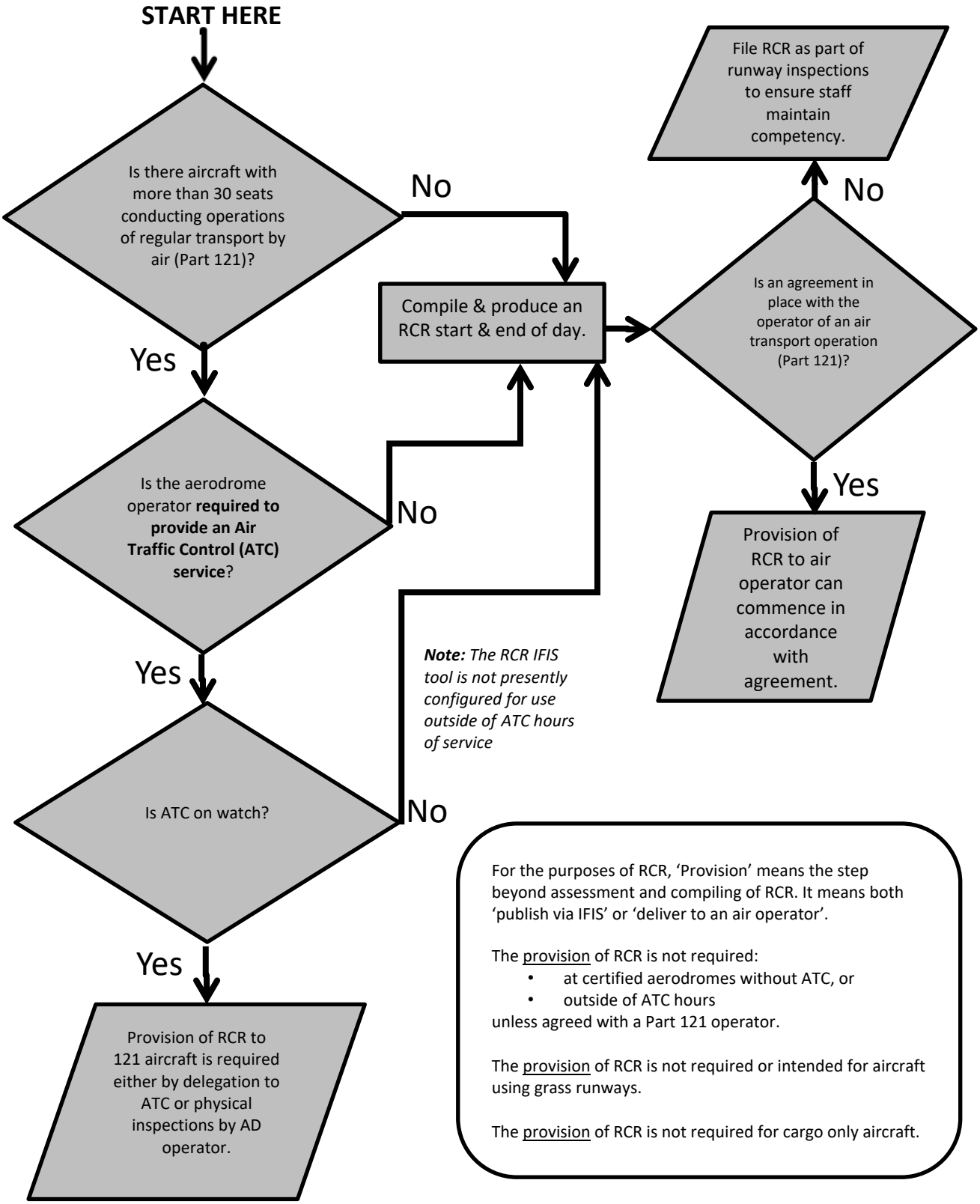
1.4. After compiling the runway condition report, it should be stored.

1.5. If the airline operator(s) and aerodrome operator have agreed that RCRs are required, the RCR should be passed to the 121 operators in a timely manner and in a format acceptable to the Director. The aerodrome operator must publish in the AIP the status of 'Runway conditions monitored'.

1.6. If the aerodrome operator is not passing the RCR to airline operators, the aerodrome operator must publish in the AIP the status of 'Runway conditions not monitored'.

1.7. All completed RCRs should be retained by the aerodrome operator.

APPENDIX D: Flow chart for Part 139 Certificated and Qualifying Aerodrome Operators



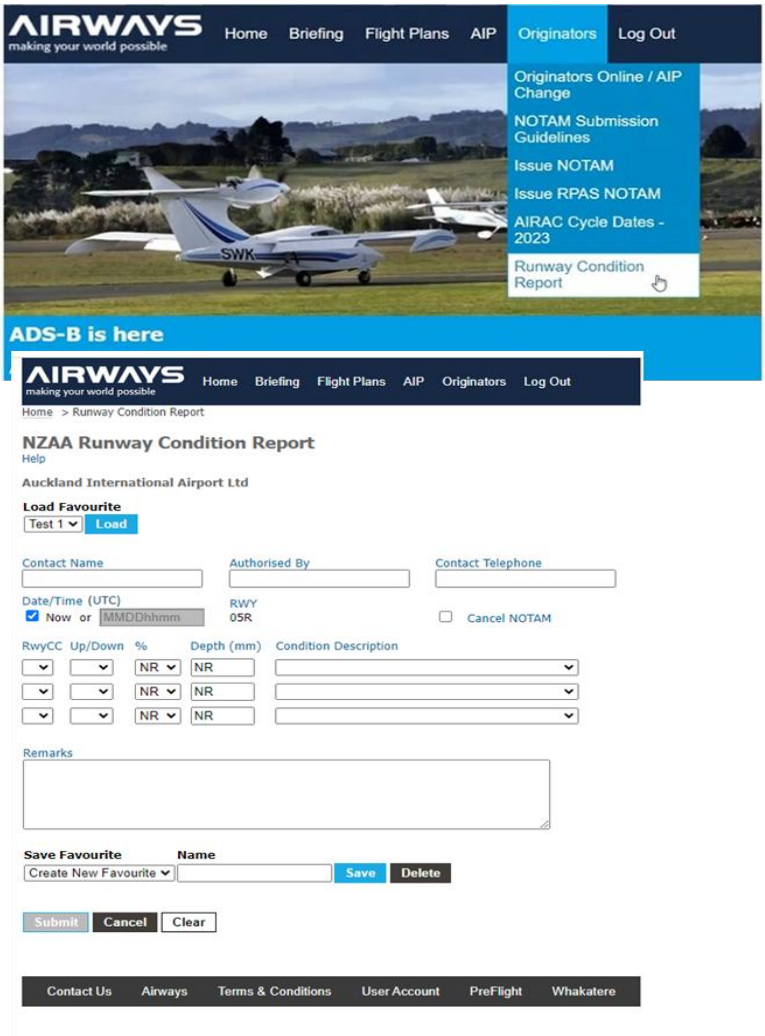
APPENDIX E: How to access the RCR Internet Flight Information System (IFIS) portal

1. General

1.1. Airways has enhanced its Internet Flight Information Service (IFIS) to enable RCR submissions by Part 139 Certificate Holders. Please note:

- The submission of an RCR for RWY Conditions 6 and 5 (WET only) will not result in a NOTAM.
- Outside of ATC hours of service, use of IFIS by a Part 139 Certificate holder will not result in RCR provision as per this AC (No ATIS/D-ATIS generation and only AIS NOTAM generation (in accordance with previous bullet)).

1.2. Designated users will be able to access via the IFIS homepage: *Originators – Runway Condition Report*, shown below.

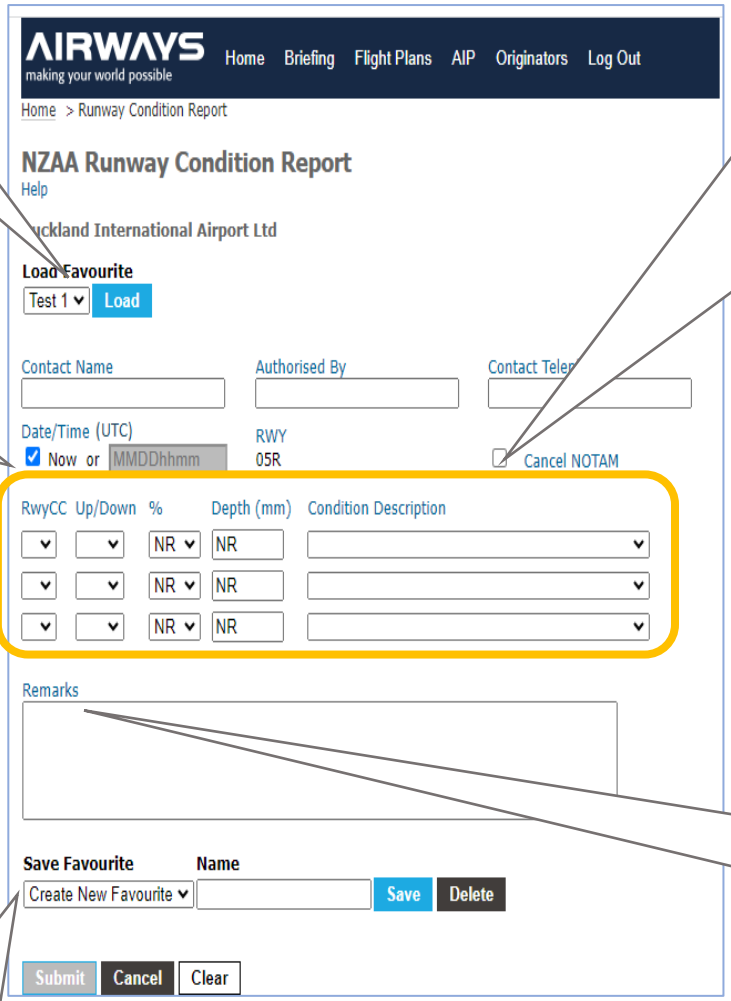


APPENDIX F: How to use the RCR IFIS portal

- Allows a user to select a previously saved favourite.
- Only pertains to the Contact Name/Authorised by/Contact Telephone fields.

- Either Now (time of submission) or user-defined Month/date/time

- Generates a NOTAM Cancellation proposal when the accompanying RCR report is submitted.
- Selectable when conditions improve to RWY 5 (WET) or better and the Part 139 Cert holder wishes to cancel the existing RCR NOTAM for the previous conditions.



RCR detail fields

- Rows divided into RWY 3rds; applicable fields have a dropdown list of potential entries relevant to the column header.

- Situational awareness detail as per the guidance in this AC.

- Allows a user to save inputted data as a default for future loading or select existing favourites from a drop-down list for deletion.
- Only pertains to the Contact Name/Authorised by/Contact Telephone fields.

- **Submit** – RCR entered and sent for NOTAM and/or ATIS distribution.
- **Cancel** – Field data cleared, and form closed.
- **Clear** – Field data cleared but form remains open.

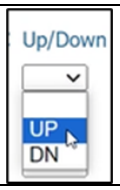
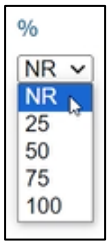
1. Use

1.1. IFIS is internet-based and can be accessed via either fixed terminal or mobile device. The Part 139 Certificate holder will determine how they will interact with IFIS to ensure timely and accurate reporting.

1.2. It is important to note that IFIS does not provide a sanity check of the field entries versus the AC guidance. The Part 139 Certificate holder submitter training needs to train users thoroughly enough to enable them to do accurate report entries.

1.3. A HELP window is provided by selecting the text field heading. The HELP text will summarise the intent of the field and operates as per other IFIS HELP windows.

Figure 1: Example of drop-down menus

RWY drop down (for crossing RWYs)	
Rwy CC	
Up/Down (RwyCC Upgrade or Downgrade as per Cir 355/AC 139-3)	
% Coverage	
Depth (mm)	No drop down. Manual entry - either NR or 2-3 digit numeric

Condition Description	

APPENDIX G: Scenarios with examples of RCR, Voice ATIS, D-ATIS and NOTAM

The following are scenarios showing how a runway surface condition assessment produces an RCR which is then submitted into IFIS and passed to ATC for wider dissemination via Voice ATIS, D-ATIS and NOTAM.

***Note**: In all real situations the aerodrome operator is to continuously monitor runway surface conditions to enable them to carry out timely inspections when water may be ponding to more than 3 mm depth or where the runway surface condition may be SLIPPERY WET or CONTAMINATED.*

1. Scenario 1:

Rain is falling fast and heavy at Auckland airport (NZAA 05R/23L). The ATC tower requests a physical runway inspection to determine the changing runway surface conditions. A person or person(s) in a vehicle or vehicle(s) drive the full runway length and on aprons and taxiways to compile and produce the detail below.

ATC have determined that RWY 23L is in use.

Airport	Date &Time UTC or NZT	Lower RWY designator	Runway Condition codes-RWYCC	Percent coverage	Depth in millimetres	Surface condition description
NZAA	As per scenario	05	2/2/2	50/75/100	04/04/04	Standing water/ Standing water/ Standing water
Situational awareness text: Surface water on taxiways and aprons.						

The above detail is then submitted into the IFIS RCR tool to generate Voice ATIS & D-ATIS communications and a NOTAM proposal as follows:

> **V-ATIS -** "Runway 23 left condition report issued at 0220 zulu. Runway condition codes 2, 2, 2. First part 100 percent 4 millimetres standing water. Second part 75 percent 4 millimetres standing water. Third part 50 percent 4 millimetres standing water. Surface water on all taxiways and aprons."
>
> **D-ATIS -** RWY COND: NZAA 09050220 23L 2/2/2 100/75/50 04/04/04 STANDING WATER/STANDING WATER/STANDING WATER
> SFC WATER ON ALL TWY AND APRONS

Runway thirds are communicated to pilots in order of operational runway in use over the radio, ATIS, and D/ATIS Pilots.

NOTAM
(B0000/23 NOTAMN
Q) NZZC/QMRLT/IV/NBO/A
A) NZAA B) 2309050223 C) 2309050623 EST
E) RUNWAY CONDITION REPORT NZAA 09050220 05R 2/2/2 50/75/100 04/04/04

STANDING WATER/STANDING WATER/STANDING WATER
SFC WATER ON ALL TAXIWAYS AND APRONS

Note: *Runway thirds are shown in order of lower runway designator when detailed in NOTAM.*

2. Scenario 2:

Snow is settling on runway 02/20 at Christchurch airport (NZCH). Snow clearing is taking place and snowbanks have been piled. The ATC tower requests a physical runway inspection to determine the changing runway surface conditions. A person or person(s) in a vehicle or vehicle(s) drive the full runway length and on aprons and taxiways to compile and produce the detail below.

ATC have determined that RWY 20 is in use.

Airport	**Date &Time UTC or NZT**	**Lower RWY designator**	**Runway Condition codes-RWYCC**	**Percent coverage**	**Depth in millimetres**	**Surface condition description**
NZCH	As per scenario	02	3/3/3	100/100/100	05/05/05	dry snow/dry snow/dry snow
Situational awareness text: Snow banks 150mm high on apron and taxiway and runway edges. Snow clearing in operation.						

The above detail is then submitted into the IFIS RCR tool to generate Voice ATIS & D-ATIS communications and a NOTAM proposal as follows:

> **V-ATIS -** "Runway 20 condition report issued at 0220 zulu. Runway condition codes 3, 3, 3. First part 100 percent 5 millimetres dry snow. Second part 100 percent 5 millimetres dry snow. Third part 100 percent 5 millimetres dry snow. Snowbanks 150 millimetres high on apron, taxiway, and runway edges. Snow clearing in progress".
>
> **D-ATIS -** RWY COND: NZCH 09050220 20 3/3/3 100/100/100 05/05/05 DRY SNOW/DRY SNOW/DRY SNOW. SN BANKS 150 MM HIGH ON APRON, TWY AND RWY EDGES. SN CLEARING INPR

Note*: Runway thirds are communicated to pilots in order of operational runway in use over the radio, ATIS, and D/ATIS Pilots.*

NOTAM

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(B0000/23 NOTAMN
Q) NZZC/QMRLT/IV/NBO/A
A) NZCH B) 2309050223 C) 2309050623 EST
E) RUNWAY CONDITION REPORT NZCH 09050220 02 3/3/3 100/100/100 05/05/05
DRY SNOW/DRY SNOW/DRY SNOW
SNOW BANKS 150 MILLIMETERS HIGH ON APRN, TWY AND RWY EDGES. SNOW CLEARING
INPR
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Note*: Runway thirds are shown in order of lower runway designator when detailed in NOTAM.*