

# Assessment, Measurement and Reporting of Runway Surface Conditions for Certificated Aerodromes (Applicable 4 November 2021)

CAP 2173

**Published by the Civil Aviation Authority, 2021**

Civil Aviation Authority  
Aviation House  
Gatwick Airport South  
West Sussex  
RH6 0YR

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First published 2021

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## ADR.OPS.A.057 Origination of NOTAM

- (a) The aerodrome operator shall:
- (1) establish and implement procedures in accordance with which it originates a NOTAM issued by the relevant aeronautical information services provider:
    - (i) that contains information on the establishment, condition, or change of any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel involved with flight operations;
    - (ii) that contains information of a temporary nature and of short duration or that concerns operationally significant permanent changes or temporary changes of long duration that are made at short notice, except for extensive text or graphics, or both;
  - (2) designate aerodrome personnel, who have successfully completed relevant training and demonstrated their competence, to originate NOTAM and provide relevant information to the aeronautical information service providers with which it has arrangements;
  - (3) ensure that all other aerodrome personnel whose duties involve the use of NOTAM have successfully completed relevant training and demonstrated their competence to do so.
- (b) The aerodrome operator shall originate a NOTAM when it is necessary to provide the following information:
- (1) establishment of, closure of, or significant changes in the operation of aerodromes or heliports or runways;
  - (2) establishment of, withdrawal of, or significant changes in the operation of the aerodrome services;
  - (3) establishment of, withdrawal of, or significant changes in the operational capability of radio navigation and air-ground communication services for which the aerodrome operator is responsible;
  - (4) unavailability of backup and secondary systems, having a direct operational impact;
  - (5) establishment of, withdrawal of, or significant changes to visual aids;
  - (6) interruption of, or return to operation of, major components of aerodrome lighting systems;
  - (7) establishment of, withdrawal of, or significant changes to procedures for air navigation services for which the aerodrome operator is responsible;
  - (8) occurrence or correction of major defects or impediments in the manoeuvring area;
  - (9) changes to, and limitations on, the availability of fuel, oil and oxygen;
  - (10) establishment of, withdrawal of, or return to, operation of hazard beacons marking obstacles to air navigation;
  - (11) planned laser emissions, laser displays and search lights in the aerodrome surroundings, if pilots' night vision is likely to be impaired;

- (12) erecting or removal of, or changes to, obstacles to air navigation in the takeoff, climb, missed approach, approach areas, as well as on the runway strip;
  - (13) changes in aerodrome or heliport rescue and firefighting category;
  - (14) presence of, removal of, or significant changes in, hazardous conditions due to snow, slush, ice, radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area;
  - (15) presence of a runway or portion thereof which is slippery wet;
  - (16) presence of a runway which is not available due to runway marking works; or information about the time lag required for making the runway available, if the equipment used for such works can be removed, when necessary;
  - (17) presence of hazards that affect air navigation, including presence of wildlife, obstacles, displays and major events.
- (c) For the purposes of point (b), the aerodrome operator shall ensure that:
- (1) NOTAM is originated with sufficient lead time for the affected parties to take any required action, except in the case of unserviceability, release of radioactive material, toxic chemicals and other events that cannot be foreseen;
  - (2) a NOTAM notifying unserviceability of associated facilities, services and navigation aids at the aerodrome, provides an estimate of the unserviceability period or of the time at which restoration of service is expected;
  - (3) within three months from the issuance of a permanent NOTAM, the information contained in the NOTAM is included in the aeronautical information products affected;
  - (4) within three months from the issuance of a temporary NOTAM of long duration, the information contained in the NOTAM is included in an AIP supplement;
  - (5) when a NOTAM with an estimated end of validity unexpectedly exceeds the three-month period, a replacement NOTAM is originated unless the condition is expected to last for a further period of more than three months; in that case, the aerodrome operator shall ensure that the information is published in an AIP supplement.
- (d) In addition, the aerodrome operator shall ensure that:
- (1) except as provided for in point (d)(4), each NOTAM it originates contains the applicable information in the order shown in the NOTAM Format set out in Appendix 1 to this Annex;
  - (2) NOTAM text is composed of the significations or uniform abbreviated phraseology assigned to the ICAO NOTAM Code, complemented by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language;
  - (3) a NOTAM is originated in the English language or the national language, as agreed with the relevant aeronautical information services provider;
  - (4) information concerning snow, slush, ice, frost, standing water or water associated with snow, slush, ice or frost on the movement area is disseminated by means of SNOWTAM and contains the information in the order shown in the SNOWTAM Format set out in Appendix 2 to this Annex;

- (5) when an error has occurred in a NOTAM, a NOTAM with a new number is originated to replace the erroneous NOTAM or the erroneous NOTAM is cancelled and a new NOTAM is originated;
  - (6) when a NOTAM is originated to cancel or replace a previous NOTAM:
    - (a) the series and number/year of the previous NOTAM are indicated;
    - (b) the Location Indicators and subject of both NOTAM are the same;
  - (7) only one NOTAM is cancelled or replaced by a new NOTAM;
  - (8) each originated NOTAM deals with only one subject and one condition of the subject;
  - (9) each originated NOTAM is as brief as possible and compiled so that its meaning is clear without the need to refer to another document;
  - (10) an originated NOTAM containing permanent or temporary information of long duration includes appropriate references to the AIP or AIP supplement;
  - (11) the ICAO Location Indicator included in the text of an originated NOTAM for the aerodrome is the one contained in the Location Indicators. A curtailed form of such indicators shall not be used.
- (e) The aerodrome operator shall, following the publication of a NOTAM that it has originated, review its content to ensure its accuracy, and ensure the dissemination of the information to all relevant aerodrome personnel and organisations at the aerodrome.
- (f) The aerodrome operator shall maintain records:
- (1) of the NOTAM it originated and those that were issued;
  - (2) regarding the implementation of points (a)(2) and (3).';

## **AMC1 ADR.OPS.A.057(a)(1) Origination of NOTAM**

### **GENERAL**

The procedures should as a minimum:

- (a) define the way and means that the aerodrome operator may use to request the issuance of a NOTAM, in accordance with the arrangements that the aerodrome operator has with the aeronautical information service (AIS) provider(s). The procedures should clearly indicate the names of the aerodrome operator's personnel that have the authority to originate a NOTAM, and which should be included in the arrangements with the AIS provider.
- (b) contain instructions regarding the:
  - (1) cases where a NOTAM should be originated by the aerodrome operator;
  - (2) cases where a NOTAM should not be originated by the aerodrome operator; and
  - (3) completion of the NOTAM form (including the use of relevant electronic applications, if applicable) by the personnel designated by the aerodrome operator as NOTAM originators;

- (c) specify the cases in which coordination with the competent authority is needed prior to the origination of the NOTAM, and the way to inform the competent authority about the issuance of a NOTAM.

### **AMC1 ADR.OPS.A.057(a)(2);(3) Origination of NOTAM**

#### **INITIAL TRAINING FOR AERODROME PERSONNEL INVOLVED IN NOTAM ORIGATION AND OTHER AERODROME PERSONNEL**

- (a) The theoretical part of the training of a person to be designated as a NOTAM originator should, as a minimum, cover the following areas:
- (1) regulatory framework governing NOTAM origination and issuance, and its relationship with other aeronautical data products, including:
    - (i) cases where the origination of a NOTAM is required;
    - (ii) cases where a NOTAM should not be originated.
  - (2) NOTAM form completion, including word abbreviations and phrase contractions applicable to NOTAMs;
  - (3) NOTAM types and understanding of NOTAM;
  - (4) use of electronic applications for initiating a NOTAM (if applicable); and
  - (5) aerodrome procedures for origination and internal dissemination of a NOTAM.
- The theoretical training should be followed by an assessment of the trainees (see AMC1 ADR.OR.D.017(c)).
- (b) Following the successful completion of the theoretical training, the practical part of the training should, as a minimum, include familiarisation with the origination of NOTAM and implementation of the relevant aerodrome operating procedures for the persons to be designated as NOTAM originators. Upon completion of the practical training, and the successful competency assessment of the trainee in practical terms, the person may be designated as a NOTAM originator.
- (c) For other aerodrome personnel, whose duties require only the understanding of a NOTAM, the theoretical part of the training should be adjusted to their needs and need not include (a)(4) and (a)(5) above, while the practical training should include practical examples to assess the level of their understanding. Both the theoretical and the practical training should be followed by an assessment of the person concerned (see AMC1 ADR.OR.D.017(c)).

### **GM1 ADR.OPS.A.057(a)(2);(3) Origination of NOTAM**

#### **RECURRENT, REFRESHER AND CONTINUATION TRAINING**

ADR.OR.D.017 point (d) regulates the provision of training following the completion of the initial training, as part of the aerodrome operator's training programme. For the process that needs to be followed to ensure the continued competence of the personnel involved in NOTAM origination and use, see ADR.OR.D.017(d) and AMC1 ADR.OR.D.017(d).



## GM1 ADR.OPS.A.057(c) Origination of NOTAM

### NON-ORIGINATION OF NOTAM

Promulgation of information through NOTAM is required under certain circumstances. In such cases, the responsible organisation (e.g. competent authority, aerodrome operator, ATS provider, etc.) originates a NOTAM, which is finally issued by the AIS provider. ADR.OPS.A.057 defines the responsibilities of the aerodrome operator with respect to the NOTAM origination process, while its point (c) requires the origination of a NOTAM by the aerodrome operator in the cases prescribed in it.

On the other hand, for a variety of reasons (e.g. prevention of information overflow), not all kind of information is eligible for promulgation through NOTAM.

To avoid such situations, the aerodrome operator needs:

- (a) to ensure that the relevant aerodrome operator's personnel are adequately trained in the relevant regulatory framework regarding both the origination and issuance of NOTAM;
- (b) develop robust procedures regarding NOTAM origination by its personnel; and
- (c) maintain close cooperation with the relevant AIS provider.

The following are example cases where the aerodrome operator should not originate a NOTAM:

- (a) routine maintenance work on aprons and taxiways that does not affect the safe movement of aircraft;
- (b) temporary obstructions in the vicinity of aerodromes/heliports that do not affect the safe operation of aircraft;
- (c) partial failure of aerodrome/heliport lighting facilities where such a failure does not directly affect aircraft operations;
- (d) partial temporary failure of air-ground communications when suitable alternative frequencies are available and are operative;
- (e) lack of apron marshalling services, road traffic closures, limitations and control;
- (f) unserviceability of location, destination or other instruction signs on the aerodrome movement area;
- (g) training activities performed by ground units;
- (h) unavailability of backup and secondary systems if these systems do not have an operational impact;
- (i) limitations to aerodrome facilities or general services with no operational impact;
- (j) announcements or warnings about possible/potential limitations with no operational impact;
- (k) general reminders on already published information;
- (l) availability of equipment for ground units, without information on the operational impact on airspace and facility users;
- (m) information about laser emissions with no operational impact and about fireworks below the minimum flying heights;

- (n) closure of parts of the movement area in connection with locally coordinated, planned work of duration of less than one hour;
- (o) closure, changes, unavailability in the operation of aerodrome(s)/heliport(s) other than in the aerodrome(s)/heliport(s) operation hours; and
- (p) other non-operational information of a similar temporary nature.

Information which relates to an aerodrome and its vicinity and which does not affect its operational status may be distributed locally during pre-flight or in-flight briefing or other local contact with flight crews. Thus, in case of need, the aerodrome operator may disseminate such type of information through the AIS provider it has arrangements with.

## **GM2 ADR.OPS.A.057(c) Origination of NOTAM**

### **PRESENCE OF WILDLIFE**

The permanent presence of wildlife is to be contained in the AIP, whereas the notification of hazardous wildlife activity at short notice needs to be promulgated by NOTAM.

When originating such a NOTAM, specific bird-related abbreviations should be avoided to facilitate readability and to prevent queries.

## **GM1 ADR.OPS.A.057(d)(1) Origination of NOTAM**

### **NOTAM FORMAT**

Information on the completion of a NOTAM format may be found in Chapter 6 of the ICAO Aeronautical Information Services Manual (Doc 8126).

Information on the ICAO NOTAM code and abbreviations to be used may be found in the ICAO Procedures for Air Navigation Services - ICAO Abbreviations and Codes (PANS ABC - Doc 8400).

## **GM1 ADR.OPS.A.057(d)(4) Origination of NOTAM**

### **SNOWTAM FORMAT**

The way to complete correctly a SNOWTAM format when initiating a SNOWTAM is indicated below.

#### **1. General**

- (a) When reporting on more than one runway, repeat Items B to H (aeroplane performance calculation section).
- (b) The letters used to indicate items are only used for reference purposes and should not be included in the messages. The letters M (mandatory), C (conditional) and O (optional) mark the usage and information and should be included as explained below.
- (c) Metric units should be used, and the unit of measurement shall not be reported.
- (d) The maximum validity of SNOWTAM is 8 hours. A new SNOWTAM should be issued whenever a new RCR is received.
- (e) A SNOWTAM cancels the previous SNOWTAM.

- (f) The abbreviated heading 'TTAAiiii CCCC MMYYGg (BBB)' is included to facilitate the automatic processing of SNOWTAM messages in computer databanks. The explanation of these symbols is:

TT = data designator for SNOWTAM = SW;

AA = geographical designator for Member States, e.g. LF = FRANCE, EG = United Kingdom;

iiii = SNOWTAM serial number in a four-digit group;

CCCC = four-letter location indicator of the aerodrome to which the SNOWTAM refers;

MMYYGg = date/time of observation/measurement, whereby:

MM = month, e.g. January = 01, December = 12;

YY = day of the month;

Gg = time in hours (GG) and minutes (gg) UTC;

(BBB) = optional group for:

Correction, in the case of an error, to a SNOWTAM message previously disseminated with the same serial number = COR.

Brackets in (BBB) should be used to indicate that this group is optional.

When reporting on more than one runway and individual dates/times of observation/assessment are indicated by repeated Item B, the latest date/time of observation/assessment should be inserted in the abbreviated heading (MMYYGg).

- (g) The text 'SNOWTAM' in the SNOWTAM Format and the SNOWTAM serial number in a four-digit group should be separated by a space, e.g. SNOWTAM 0124.
- (h) For readability purposes for the SNOWTAM message, a linefeed should be included after the SNOWTAM serial number, after Item A, and after the aeroplane performance calculation section.
- (i) When reporting on more than one runway, repeat the information in the aeroplane performance calculation section from the date and time of assessment for each runway before the information in the situational awareness section.
- (j) Mandatory information is:
- (1) AERODROME LOCATION INDICATOR;
  - (2) DATE AND TIME OF ASSESSMENT;
  - (3) LOWER RUNWAY DESIGNATOR NUMBER;
  - (4) RUNWAY CONDITION CODE FOR EACH RUNWAY THIRD; and
  - (5) CONDITION DESCRIPTION FOR EACH RUNWAY THIRD (when RWYCC is reported 1-5)

## 2. Aeroplane performance calculation section

Item A — Aerodrome location indicator (four-letter location indicator).

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

Item C — Lower runway designator number (nn[L] or nn[C] or nn[R]).

*Only one runway designator should be inserted for each runway and always the lower number.*

Item D — RWYCC for each runway third. Only one digit (0, 1, 2, 3, 4, 5 or 6) is inserted for each runway third, separated by an oblique stroke (n/n/n).

Item E — Per cent coverage for each runway third. When provided, insert 25, 50, 75 or 100 for each runway third, separated by an oblique stroke ([n]nn/[n]nn/[n]nn).

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

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

Item F — Depth of loose contaminant for each runway third. When provided, insert in millimetres for each runway third, separated by an oblique stroke (nn/nn/nn or nnn/nnn/nnn).

*This information should only be provided for the following contamination types:*

*— standing water, value to be reported 04, then assessed value. Significant changes 3 mm;*

*— slush, value to be reported 03, then assessed value. Significant changes 3 mm;*

*— wet snow, value to be reported 03, then assessed value. Significant changes 5 mm; and*

*— dry snow, value to be reported 03, then assessed value. Significant changes 20 mm.*

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

Item G — Condition description for each runway third. Any of the following condition descriptions for each runway third, separated by an oblique stroke, should be inserted.

COMPACTED SNOW

DRY SNOW

DRY SNOW ON TOP OF COMPACTED SNOW

DRY SNOW ON TOP OF ICE

FROST

ICE

SLIPPERY WET

SLUSH

SPECIALLY PREPARED WINTER RUNWAY

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

DRY (only reported when there is no contaminant)

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

Item H — Width of runway to which the RWYCCs apply. The width in metres if less than the published runway width should be inserted.

### 3. Situational awareness section

Elements in the situational awareness section should end with a full stop.

Elements in the situational awareness section for which no information exists, or where the conditional circumstances for publication are not fulfilled, should be left out completely.

Item I — Reduced runway length. The applicable runway designator and available length in metres should be inserted (e.g. RWY nn [L] or nn [C] or nn [R] REDUCED TO [n]nnn).

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

Item J — Drifting snow on the runway. When reported, the lower runway designator should be inserted with a space 'DRIFTING SNOW' (RWY nn or RWY nn[L] or nn[C] or nn[R] DRIFTING SNOW).

Item K — Loose sand on the runway. When loose sand is reported on the runway, the lower runway designator should be inserted with a space 'LOOSE SAND' (RWY nn or RWY nn[L] or nn[C] or nn[R] LOOSE SAND).

Item L — Chemical treatment on the runway. When application of chemical treatment has been reported, the lower runway designator should be inserted with a space 'CHEMICALLY TREATED' (RWY nn or RWY nn[L] or nn[C] or nn[R] CHEMICALLY TREATED).

Item M — Snowbanks on the runway. When snowbanks are reported present on the runway, the lower runway designator should be inserted with a space 'SNOWBANK' and with a space left 'L' or right 'R' or both sides 'LR', followed by the distance in metres from centre line separated by a space 'FM CL' (RWY nn or RWY nn[L] or nn[C] or nn[R] SNOWBANK Lnn or Rnn or LRnn FM CL).

Item N — Snowbanks on a taxiway. When snowbanks are present on taxiway(s), the taxiway(s) designator(s) should be inserted with a space 'SNOWBANKS' (TWY [nn]n or TWYS [nn]n/[nn]n/[nn]n/... or ALL TWYS SNOWBANKS).

Item O — Snow banks adjacent to the runway. When snowbanks are reported present, penetrating the height profile in the aerodrome snow plan, the lower runway

designator and 'ADJ SNOWBANKS' should be inserted (RWY nn or RWY nn[L] or nn[C] or nn[R] ADJ SNOWBANKS).

Item P — Taxiway conditions. When taxiway conditions are reported slippery or poor, the taxiway designator followed by a space 'POOR' should be inserted (TWY [n or nn] POOR or TWYS [n or nn]/[n or nn]/... POOR or ALL TWYS POOR).

Item R — Apron conditions. When apron conditions are reported slippery or poor, the apron designator followed by a space 'POOR' should be inserted (APRON [nnnn] POOR or APRONS [nnnn]/[nnnn]/... POOR or ALL APRONS POOR).

Item S — NR (not reported)

Item T — Plain-language remarks.

## GM2 ADR.OPS.A.057(d)(4) Origination of NOTAM

### SNOWTAM FORMAT

Below are four examples of completed SNOWTAMs.

Example SNOWTAM 1

```
GG EADBZQZX EADNZQZX EADSZQZX
170100 EADDYNYX
SWEA0149 EADD 02170055
(SNOWTAM 0149
EADD
02170055 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET SNOW)
```

Example SNOWTAM 2

```
GG EADBZQZX EADNZQZX EADSZQZX
170140 EADDYNYX
SWEA0150 EADD 02170135
(SNOWTAM 0150
EADD
02170055 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET SNOW
02170135 09R 5/2/2 100/50/75 NR/06/06 WET/SLUSH/SLUSH)
```

Example SNOWTAM 3

```
GG EADBZQZX EADNZQZX EADSZQZX
170229 EADDYNYX
SWEA0151 EADD 02170225
(SNOWTAM 0151
EADD
02170055 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET SNOW)
```

02170135 09R 5/2/2 100/50/75 NR/06/06 WET/SLUSH/SLUSH

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

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

Example SNOWTAM 4

GG EADBZQZX EADNZQZX EADSZQZX

170350 EADDYNYX

SWEA0152 EADD 02170345

(SNOWTAM 0152

EADD

02170345 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/SLUSH

02170134 09R 5/2/2 100/50/75 NR/06/06 WET/SLUSH/SLUSH

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

DRIFTING SNOW. RWY 09L LOOSE SAND. RWY 09R CHEMICALLY TREATED.  
RWY 09C CHEMICALLY TREATED.)

## ADR.OPS.A.060 Reporting of surface contaminants

The aerodrome operator shall report to the aeronautical information services and air traffic services units on matters of operational significance affecting aircraft and aerodrome operations on the movement area, particularly in respect of the presence of the following:

- (a) water;
- (b) snow;
- (c) slush;
- (d) ice;
- (e) frost;
- (f) anti-icing or de-icing liquid chemicals or other contaminants;
- (g) snowbanks or drifts.

## ADR.OPS.A.065 Reporting of the runway surface condition

- (a) The aerodrome operator shall report the runway surface condition over each third of the runway using a runway condition report (RCR). The report shall include a runway condition code (RWYCC) using numbers 0 to 6, the contaminant coverage and depth, and a description using the following terms:
  - (1) COMPACTED SNOW;
  - (2) DRY;
  - (3) DRY SNOW;
  - (4) DRY SNOW ON TOP OF COMPACTED SNOW;
  - (5) DRY SNOW ON TOP OF ICE;

- (6) FROST;
  - (7) ICE;
  - (8) SLIPPERY WET;
  - (9) SLUSH;
  - (10) SPECIALLY PREPARED WINTER RUNWAY;
  - (11) STANDING WATER;
  - (12) WATER ON TOP OF COMPACTED SNOW;
  - (13) WET;
  - (14) WET ICE;
  - (15) WET SNOW;
  - (16) WET SNOW ON TOP OF COMPACTED SNOW;
  - (17) WET SNOW ON TOP OF ICE;
  - (18) CHEMICALLY TREATED;
  - (19) LOOSE SAND.
- (b) Reporting shall commence when a significant change in runway surface condition occurs due to water, snow, slush, ice or frost.
- (c) Reporting of the runway surface condition shall continue to reflect significant changes until the runway is no longer contaminated. When that situation occurs, the aerodrome operator shall issue an RCR that states that the runway is wet or dry as appropriate.
- (d) Friction measurements shall not be reported.
- (e) When a paved runway or portion thereof is slippery wet, the aerodrome operator shall make such information available to the relevant aerodrome users. That shall be done by originating a NOTAM and shall describe the location of the affected portion.

## **AMC1 ADR.OPS.A.065(a) Reporting of the runway surface condition**

### **REPORTING**

The aerodrome operator should disseminate an RCR through the aeronautical information services and air traffic services, when the runway is wholly or partly contaminated by standing water, snow, slush, ice or frost, or is wet associated with the clearing or treatment of snow, slush, ice or frost. When the runway is wet, not associated with the presence of standing water, snow, slush, ice or frost, the assessed information should be disseminated using the RCR through the air traffic service

## **AMC2 ADR.OPS.A.065(a) Reporting of the runway surface condition**

### **RUNWAY CONDITION REPORT**

- (a) The RCR should consist of the:



- (1) aeroplane performance calculation section; and
  - (2) situational awareness section.
- (b) The information should be included in an information string in the following order:
- (1) aeroplane performance calculation section:
    - (i) aerodrome location indicator;
    - (ii) date and time of assessment;
    - (iii) lower runway designation number;
    - (iv) RWYCC for each runway third;
    - (v) per cent coverage contaminant for each runway third;
    - (vi) depth of loose contaminant for each runway third;
    - (vii) condition description for each runway third; and
    - (viii) width of runway to which the RWYCCs apply if less than the published width.
  - (2) Situational awareness section:
    - (i) reduced runway length;
    - (ii) drifting snow on the runway;
    - (iii) loose sand on the runway;
    - (iv) chemical treatment on the runway;
    - (v) snowbanks on the runway;
    - (vi) snowbanks on the taxiway;
    - (vii) snowbanks adjacent to the runway;
    - (viii) taxiway conditions;
    - (ix) apron conditions; and
    - (x) plain-language remarks.

## **GM1 ADR.OPS.A.065(a) Reporting of the runway surface condition**

### **GENERAL**

- (a) Assessing and reporting the condition of the movement area and related facilities is necessary in order to provide the flight crew with the information needed for safe operation of the aeroplane. The RCR is used for reporting assessed conditions through the issuance of SNOWTAM, when necessary.
- (b) Generally, movement areas are exposed to a multitude of climatic conditions and consequently there is a significant difference in the conditions to be reported. The RCR describes a basic structure applicable for all these climatic variations. Assessing the runway surface condition relies on a great variety of techniques and no single solution can apply to every situation.

- (c) The philosophy of the RCR is that the aerodrome operator assesses the runway surface condition whenever water, snow, slush, ice or frost are present on an operational runway. From this assessment, a RWYCC and a description of the runway surface are reported, which can be used by the flight crew for aeroplane performance calculations. This format, based on the type, depth and coverage of contaminants, is the best assessment of the runway surface condition by the aerodrome operator; however, all other pertinent information is taken into consideration and kept up to date, and changes in conditions are reported without delay.
- (d) The RWYCC reflects the runway braking capability as a function of the surface conditions. With this information, the flight crew can derive, from the performance information provided by the aeroplane manufacturer, the necessary stopping distance of an aircraft on the approach under the prevailing conditions.

## GM2 ADR.OPS.A.065(a) Reporting of the runway surface condition

### RUNWAY CONDITION REPORT

#### AEROPLANE PERFORMANCE CALCULATION SECTION

- (a) The aeroplane performance calculation section is a string of grouped information, separated by a space ' ' ending with a return and a two-line feed '<<≡', in order to distinguish the aeroplane performance calculation section from the following situational awareness section or the following aeroplane performance calculation section of another runway.
- (b) The information to be included in this section consists of the following:
- (1) **Aerodrome location indicator:** a four-letter ICAO location indicator in accordance with ICAO Doc 7910, *Location Indicators*.  
This information is mandatory.  
Format: nnnn
  - (2) **Date and time of the assessment:** date and time (UTC) when the assessment was performed.  
This information is mandatory.  
Format: MMDDhhmm
  - (3) **Lower runway designation number:** a two- or three-character number identifying the runway for which the assessment is carried out and reported.  
This information is mandatory.  
Format: nn[L] or nn[C] or nn[R]
  - (4) **Runway condition code for each runway third:** a one-digit number identifying the RWYCC assessed for each runway third. The codes are reported in a three-character group separated by a '/' for each third. The direction for listing the runway thirds is the direction as seen from the lower designation number.  
This information is mandatory.

When transmitting information on the runway surface condition by air traffic services to flight crews, the sections are, however, referred to as the first, second or third part of the

runway. The first part always means the first third of the runway as seen in the direction of landing or take-off as illustrated in Figures 1 and 2.

Format: n/n/n

Example: 5/5/2

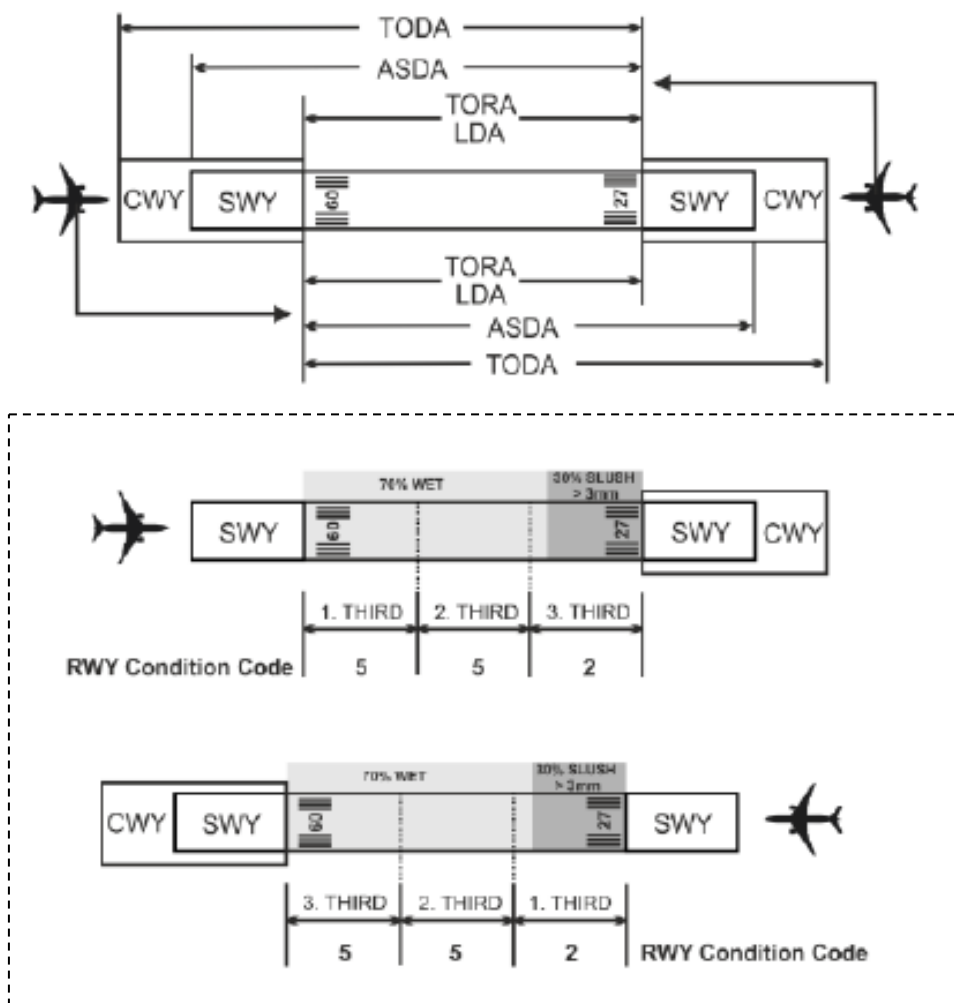


Figure 1 — Reporting of RWYCC from air traffic services to flight crew for runway thirds

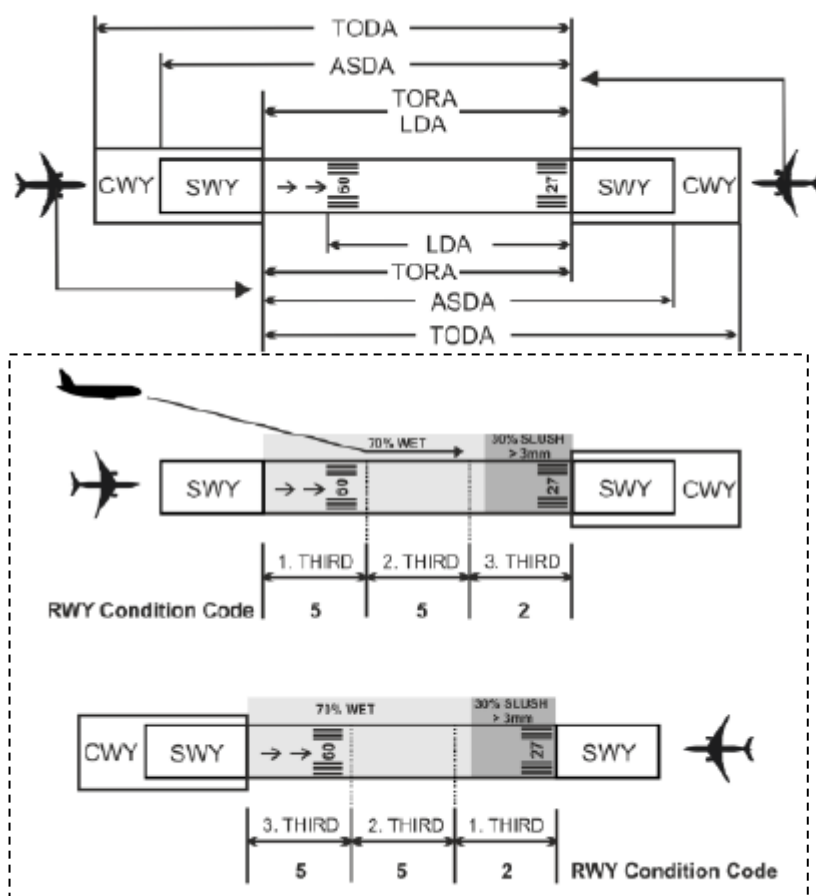


Figure 2 — Reporting of RWYCC for runway thirds from air traffic services to flight crew on a runway with displaced threshold

- (5) **Per cent coverage contaminant for each runway third:** a number identifying the percentage coverage. The percentages are to be reported in an up-to-nine character group separated by a '/' for each runway third. The assessment is based upon an even distribution within the runway thirds using Table 1.

This information is conditional. It is not reported for any runway third that is dry or covered with less than 10 per cent.

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

Example: 25/50/100

In case of uneven distribution of the contaminants, additional information is given in the plain-language remark part of the situational awareness section of the RCR. Where possible, a standardised text is used.

When no information is to be reported, 'NR' is inserted at the relevant position of the message to indicate to the user that no information exists.

- (6) **Depth of loose contaminant: dry snow, wet snow, slush or standing water for each runway third:** a two- or three-digit number representing the assessed depth (mm) of the contaminant for each runway third. The depth is reported in a six- to nine-character group separated by a '/' for each runway third as defined in Table

YYY. The assessment is based upon an even distribution within the runway thirds following an assessment. If measurements are included as part of the assessment process, the reported values are still reported as assessed depths.

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

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

- (7) **Condition description for each runway third:** to be reported in capital letters using the terms specified in ADR.OPS.A.065 point (a). The condition types are separated by an oblique stroke '/'.

This information is mandatory.

Format: nnnn/nnnn/nnnn

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

Format: nn

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

#### SITUATIONAL AWARENESS SECTION

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

- (b) The information to be included in this section consists of the following:

- (1) **Reduced runway length**

The information is conditional when a NOTAM has been published with a new set of declared distances affecting the landing distance available (LDA).

Format: Standardised fixed text – RWY nn [L] *or* nn [C] *or* nn [R] LDA REDUCED TO [n]nnn

- (2) **Drifting snow on the runway**

This information is conditional.

Format: Standardised fixed text – RWY nn [L] *or* nn [C] *or* nn[R] DRIFTING SNOW

- (3) **Loose sand on the runway**

This information is conditional.

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

- (4) **Chemical treatment on the runway**

This information is conditional.

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

- (5) **Snowbanks on the runway**

This information is conditional.

Left or right distance in metres from centre line.

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

- (6) **Snowbanks on taxiway**

This information is conditional.

Format: TWY [nn]n or TWYS [nn]n/[nn]n/[nn]n/... or ALL TWYS SNOWBANKS

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

This information is conditional.

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

**(8) Taxiway conditions**

This information is optional.

Format: TWY [nn]n POOR

**(9) Apron conditions**

This information is conditional.

Format: APRON [nnnn] POOR

**(10) Plain-language remarks using only allowable characters in capital letters**

Where possible, standardised text is used. 'UPGRADED' or 'DOWNGRADED' is used whenever assessed RWYCC differs from what follows directly from RCAM.  
This information is optional.

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

Allowable characters:

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

0 1 2 3 4 5 6 7 8 9

/ [oblique stroke] '.' [period] ' ' [space]

If ICE, SNOW or SNOW ON ICE affects only the runway edge, the following text may be used:

RWY nn[L] or nn[C] or nn[R] ICE or SNOW or SNOW ON ICE Lnn or Rnn or LRnn FM  
EDGE

## GM3 ADR.OPS.A.065(a) Reporting of the runway surface condition

### COMPLETE INFORMATION STRING

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

*COM header and abbreviated header] (Completed by AIS)*

GG EADBZQZX EADNZQZX EADSZQZX

070645 EADDYNYX

SWEA0151 EADD 02170055

SNOWTAM 0151

***[Aeroplane performance calculation section]***

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

EADD 02170135 09R 5/2/2 100/50/75 NR/06/06 WET/SLUSH/SLUSH

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

**[Situational awareness section]**

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

## GM4 ADR.OPS.A.065(a) Reporting of runway surface condition

### REPORTING BY AERODROMES WITH MULTIPLE RUNWAYS

On aerodromes with multiple runways, SNOWTAM should include all the runways, in case that at least one runway is contaminated. This improves pilots' situational awareness and support their decision on the selection of the landing/take-off runway.

## GM1 ADR.OPS.A.065(a)(18);(a)(19) Reporting of the runway surface condition

### REPORTING OF CHEMICALLY TREATED AND LOOSE SAND

The terms 'CHEMICALLY TREATED' and 'LOOSE SAND' do not appear in the aeroplane performance calculation section but are used in the situational awareness section of the RCR.

## AMC1 ADR.OPS.A.065(b);(c) Reporting of the runway surface condition

### SIGNIFICANT CHANGES

A change in the runway surface condition used in the RCR is considered significant whenever there is any:

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

| Assessed per cent | Reported per cent |
|-------------------|-------------------|
| 10-25             | 25                |
| 26-50             | 50                |
| 51-75             | 75                |
| 76-100            | 100               |

Table 1 — Percentage of coverage for contaminants

| Contaminant    | Valid values to be reported | Significant change |
|----------------|-----------------------------|--------------------|
| STANDING WATER | 04, then assessed value     | 3 mm               |
| SLUSH          | 03, then assessed value     | 3 mm               |
| WET SNOW       | 03, then assessed value     | 5 mm               |
| DRY SNOW       | 03, then assessed value     | 20 mm              |

Table 2 – Depth assessments for contaminants

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

*Note 2 — For SLUSH, WET SNOW and DRY SNOW, depths up to and including 3 mm should be reported as 03 (3 mm).*

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

## GM1 ADR.OPS.A.065(b);(c) Reporting of the runway surface condition

### EXAMPLE OF REPORTING DEPTH OF CONTAMINANT WHENEVER THERE IS A SIGNIFICANT CHANGE

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

5/5/5 100/100/100 03/03/03 SLUSH/SLUSH/SLUSH

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

(b) With continuing precipitation, a new RCR is required to be generated as a subsequent assessment reveals the depth of contamination has increased from 3 mm to 5 mm along the entire length of the runway and therefore a change in the RWYCC is needed. A second RCR is therefore created as:

2/2/2 100/100/100 05/05/05 SLUSH/SLUSH/SLUSH

(c) With even more precipitation, a further assessment reveals the depth of contamination has increased from 5 mm to 7 mm along the entire length of the runway. However, a new RCR is not required because the RWYCC has not changed (change in depth is less than the significant change threshold of 3 mm).

(d) A final assessment of the contamination reveals that the depth has increased to 10 mm. A new RWYCC is required because the change in depth from the last RCR (second RWYCC), i.e. from 5 mm to 10 mm is greater than the significant change threshold of 3 mm. A third RCR is thus created as below:

2/2/2 100/100/100 10/10/10 SLUSH/SLUSH/SLUSH



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

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

## GM1 ADR.OPS.A.065(d) Reporting of runway surface condition

### USE OF FRICTION MEASUREMENTS

Friction measurements cannot be used by flight crews to determine landing performance requirements, because there is no correlation between the measurements and aeroplane performance data. Nevertheless, continuous friction measuring devices may be used, together with all other available means, to support upgrade or downgrade of the RWYCC, by using friction measurements in a comparative way and not as absolute values.

## ADR.OPS.B.037 Assessment of runway surface condition and assignment of runway condition code

Whenever the contaminants listed in points ADR.OPS.A.060 (a) to (e) are present on the surface of a runway, the aerodrome operator shall:

- (a) assign a RWYCC based on the type and depth of the contaminant and temperature;
- (b) inspect the runway whenever the runway surface condition may have changed due to meteorological conditions, assess the runway surface condition and assign a new RWYCC;
- (c) use special air-reports to trigger reassessment of RWYCC.

## AMC1 ADR.OPS.B.037(a) Assessment of runway surface condition and assignment of runway condition code

### RUNWAY CONDITION ASSESSMENT MATRIX (RCAM)

The aerodrome operator should use the following RCAM in order to assign the RWYCC:

| Runway Condition Assessment Matrix (RCAM) |  |   |                                       |
|---|--|---|---------------------------------------|
| Assessment criteria                       |  | Downgrade assessment criteria   |                                       |
| Runway condition code                     | Runway surface description   | Aeroplane deceleration or directional control observation               | Pilot report of runway braking action |
| 6   | <ul style="list-style-type: none"> <li>• DRY</li> </ul>  | —————   | —————                                 |
| 5   | <ul style="list-style-type: none"> <li>• FROST</li> <li>• WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth)</li> </ul> | Braking deceleration is normal for the wheel braking effort applied AND | GOOD                                  |

| Runway Condition Assessment Matrix (RCAM) |   |   |                |
|---|---|---|----------------|
| Assessment criteria                       |   | Downgrade assessment criteria   |                |
|   | <p><b>Up to and including 3 mm depth:</b></p> <ul style="list-style-type: none"> <li>• SLUSH</li> <li>• DRY SNOW</li> <li>• WET SNOW</li> </ul>   | directional control is normal.  |                |
| 4   | <p><b>-15°C and Lower outside air temperature:</b></p> <ul style="list-style-type: none"> <li>• COMPACTED SNOW</li> </ul>   | Braking deceleration OR directional control is between Good and Medium.   | GOOD TO MEDIUM |
| 3   | <ul style="list-style-type: none"> <li>• WET (“slippery wet” runway)</li> <li>• DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW</li> </ul> <p><b>More than 3 mm depth:</b></p> <ul style="list-style-type: none"> <li>• DRY SNOW</li> <li>• WET SNOW</li> </ul> <p><b>Higher than -15°C outside air temperature<sup>1</sup>:</b></p> <ul style="list-style-type: none"> <li>• COMPACTED SNOW</li> </ul> | Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.       | MEDIUM         |
| 2   | <p><b>More than 3 mm depth:</b></p> <ul style="list-style-type: none"> <li>• STANDING WATER</li> <li>• SLUSH</li> </ul>   | Braking deceleration OR directional control is between Medium and Poor.   | MEDIUM TO POOR |
| 1   | <ul style="list-style-type: none"> <li>• ICE</li> </ul>   | Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced. | POOR           |
| 0   | <ul style="list-style-type: none"> <li>• WET ICE</li> <li>• WATER ON TOP OF COMPACTED SNOW</li> <li>• DRY SNOW or WET SNOW ON TOP OF ICE</li> </ul>   | Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.           | LESS THAN POOR |

## GM1 ADR.OPS.B.037(a) Assessment of runway surface condition and assignment of runway condition code

### AVAILABLE MEANS USED TO DETERMINE THE RWYCC

(a) The visual inspection of the movement area to assess the surface condition is the core method to determine the RWYCC. An overall assessment however implies more than that. The continuous monitoring of the development of the situation and the prevailing

<sup>1</sup> Runway surface temperature should preferably be used where available.

weather conditions is essential to ensure safe flight operations. Other aspects to be considered in the assessment result are the outside air temperature, the surface temperature, the dew point, the wind speed and direction, the effect of surface treatment, control and deceleration of the inspection vehicle, the special-air-reports of braking action, the output from friction measuring devices, the weather forecast, etc. Due to interaction between them, a deterministic method on how these factors affect the RWYCC to be reported cannot be precisely defined.

- (b) The RCAM supports the classification of runway surface conditions by their effect on aeroplane braking performance using a set of criteria identified and quantified based on the best industry knowledge, built upon dedicated flight testing and in-service experience. The thresholds at which a criterion changes the classification of a surface condition are intended to be reasonably conservative, without being excessively pessimistic.
- (c) The following describes why the primary classification criteria in the RCAM have been set this way, and why it is important for aerodrome personnel to monitor and accurately report conditions when operating close to the boundaries of each RWYCC:

(1) Percentage of coverage with contamination in each runway third

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

(2) Type of contaminant

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

(3) Depth of the contamination

The industry accepts that the threshold for the effect of depth of fluid contaminants on aeroplane performance is at 3 mm. Below this threshold, any type of fluid contaminant can be removed from the tyre/runway contact zone either by forced

drainage or by compressing it into the macrotexture of the surface, thus allowing adhesion between tyre and surface to exist, albeit on less than the full footprint surface area. This is the reason that contamination depths up to 3 mm are expected to provide similar stopping performance as a wet runway. It should be noted that the physical effects causing reduced friction forces begin to take effect from very small film thickness, therefore damp conditions are considered to provide no better braking action than a wet runway. Aerodrome personnel should be aware of the fact that the capability to generate friction in wet (or with thin layers of fluid contaminants) conditions is very dependent upon the inherent qualities of the runway surface (friction characteristics) and may be less than normally expected on poorly drained, polished or rubber contaminated surfaces. Above the 3 mm threshold, the impact on friction forces is more significant, leading to classification in lower RWYCCs. Above this depth, and depending on the density of the fluid, additional drag effects start to apply, due to displacement or compression of the fluid and impingement on the airframe of the aeroplane. These latter effects depend on the depth of the fluid and affect the ability of the aeroplane to accelerate for take-off.

#### (4) Surface or air temperature

It is self-evident that close to the freezing point significant changes in surface conditions can occur very quickly. Surface temperature is more significant for the relevant physical effects, and surface and air temperature may be significantly different due to latency and radiation. However, surface temperature may not be readily available and it is acceptable to use air temperature as a criterion for the contaminant classification. The threshold for the classification of compacted snow in RWYCC 4 (below OAT -15 degrees) or RWYCC 3 (above this temperature) is based on historical North American operational practice and may be very conservative, therefore other assessment means should be used to support the classification. Such assessment means should be based upon specific rationale, specific procedures and substantiating aeroplane data.

### **GM2 ADR.OPS.B.037(a) Assessment of runway surface condition and assignment of runway condition code**

ICE is considered to be untreated ice that covers the runway macrotexture.

### **AMC1 ADR.OPS.B.037(b) Assessment of runway surface condition and assignment of runway condition code**

#### **ASSIGNMENT OF RUNWAY CONDITION CODE**

(a) The aerodrome operator should:

- (1) assign a RWYCC 6, if 25 per cent or less area of a runway third is wet or covered by contaminant;
- (2) describe in the plain-language remarks part of the situational awareness section of the RCR the location of the area that is wet or covered by the contaminant, if the distribution of the contaminant is not uniform;
- (3) assign a RWYCC based on the contaminant that will most likely affect the aeroplane's performance, if multiple contaminants are present and the total coverage

is more than 25 per cent but no single contaminant covers more than 25 per cent of any runway third;

- (4) not upgrade an assigned RWYCC 5, 4, 3, or 2; and
  - (5) not upgrade beyond RWYCC 3 an assigned RWYCC 1 or 0.
- (b) The aerodrome operator may upgrade an assigned RWYCC 1 or 0 when all available means of assessing runway slipperiness, including properly operated and calibrated measuring devices, if available, have been used to support the decision.
  - (c) The aerodrome operator, when RWYCC 1 or 0 is upgraded, should assess the runway surface frequently during the period the higher RWYCC is in effect, to ensure that the runway surface condition does not deteriorate below the assigned code.
  - (d) The aerodrome operator, if sand or other runway treatments are used to support upgrading of the RWYCC, should assess the runway surface frequently to ensure the continued effectiveness of the treatment.
  - (e) The aerodrome operator should appropriately downgrade the RWYCC taking into consideration all available means of assessing runway slipperiness, including special air-reports.

## **GM1 ADR.OPS.B.037(b) Assessment of runway surface condition and assignment of runway condition code**

### **SINGLE AND MULTIPLE CONTAMINANTS**

When single or multiple contaminants are present, the RWYCC for any third of the runway is determined as follows:

- (a) When the runway third contains a single contaminant, the RWYCC for that third is based directly on that contaminant in the RCAM as follows:
  - (1) If the contaminant coverage for that third is less than 10 per cent, a RWYCC 6 is to be generated for that third, and no contaminant is to be reported. If all thirds have less than 10 per cent contaminant coverage, no report is generated; or
  - (2) If the contaminant coverage for that third is greater than or equal to 10 per cent and less than or equal to 25 per cent, a RWYCC 6 is to be generated for that third and the contaminant reported at 25 per cent coverage; or
  - (3) If the contaminant coverage for that third is greater than 25 per cent, the RWYCC for that third is based on the contaminant present.

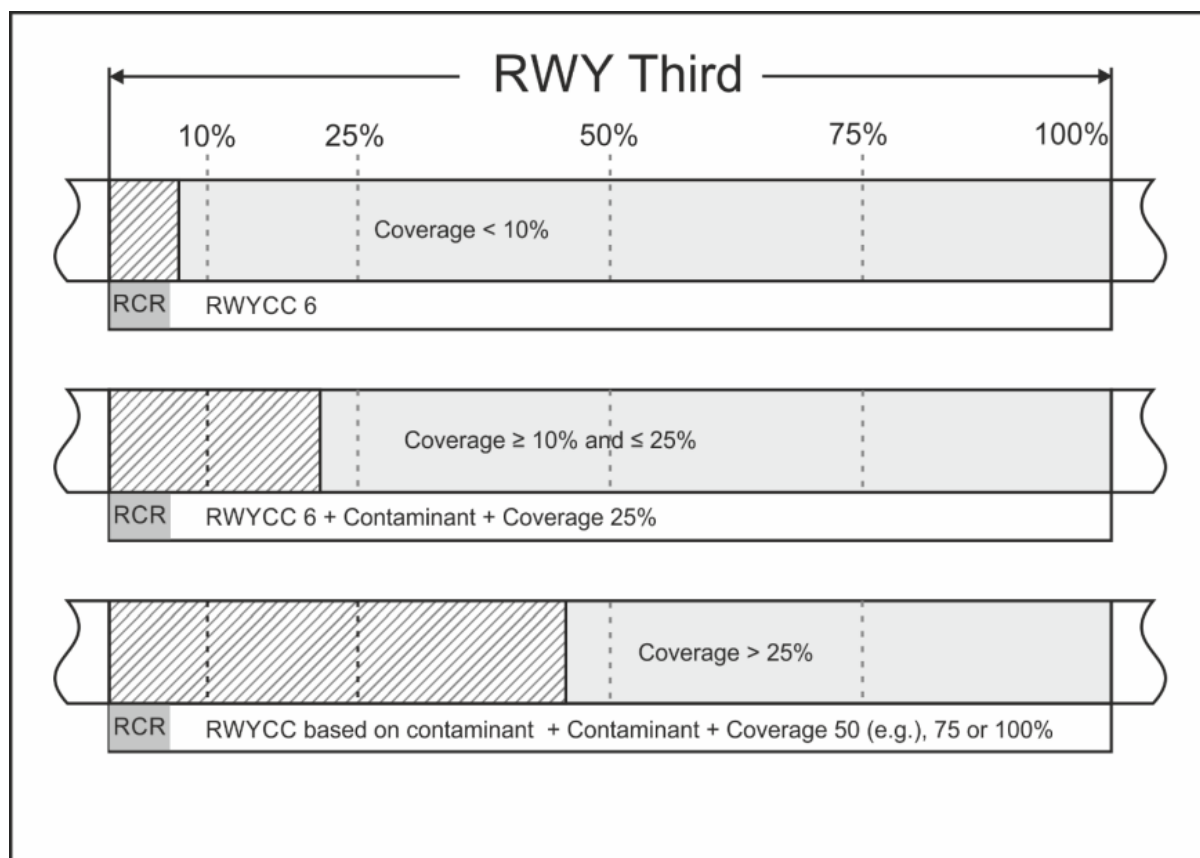


Figure 1 — Single contaminant

- (b) If multiple contaminants are present where the total coverage is more than 25 per cent but no single contaminant covers more than 25 per cent of any runway third, the RWYCC is based upon the judgement of the runway inspector, 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.
- (c) The structure of the RCAM is ranking the contaminants in the column 'Runway surface description' from top to bottom and is having the most slippery contaminants at the bottom. However, this ranking is not an absolute, as the RCAM by design is landing oriented and if judged in a take-off scenario, the ranking could be different due to drag effects of loose contaminants.

## GM2 ADR.OPS.B.037(b) Assessment of runway surface condition and assignment of runway condition code

### DOWNGRADING AND UPGRADING

- (a) The RCAM allows making an initial assessment based on visual observation of contaminants on the runway surface: their type depth and coverage, as well as the outside air temperature. Downgrading and upgrading is an integral part of the assessment process and essential to developing relevant reports of the prevailing runway surface condition. When all other observations, experience and local knowledge indicate that the primary assignment of the RWYCC does not reflect the prevailing conditions accurately, a downgrade or upgrade should be made.

- (b) Examples of aspects to be considered in assessing the runway slipperiness for the downgrade process:
- (1) Prevailing weather conditions
    - (i) stable sub-freezing temperature
    - (ii) dynamic conditions
    - (iii) active precipitation
  - (2) Observations
  - (3) Measurements
    - (i) friction measurements
    - (ii) vehicle behaviour
    - (iii) shoe scraping
  - (4) Experience (local knowledge)
  - (5) Special air-reports
- (c) When the complete removal of contaminants cannot be achieved, but the RWYCC initially assigned does not reflect the real surface condition, the aerodrome personnel may apply the upgrade procedures. Upgrading is applicable only when the initial RWYCC is 0 or 1. Upgrading can only occur up to RWYCC 3.
- (d) When upgrading RWYCC 0 and 1, a preponderance of evidence should exist pointing towards the higher RWYCC.
- (e) When a friction measuring device is used for upgrading purposes, a preponderance of evidence should exist. In order to upgrade a RWYCC 0 or 1 to no higher than RWYCC 3, the friction measuring device should demonstrate an equivalent friction to that of a wet runway (RWYCC 5) or higher.

## **AMC1 ADR.OPS.B.037(c) Assessment of runway surface condition and assignment of runway condition code**

### **USE OF SPECIAL AIR-REPORTS**

- (a) The aerodrome operator should:
- (1) re-assess the runway surface condition if RWYCC 2 or better has been reported and two consecutive special air-reports of POOR runway braking action are received; and
  - (2) re-assess the runway surface condition and consider the suspension of operations on that runway when one pilot has reported a LESS THAN POOR runway braking action.
- (b) The aerodrome operator may use a special air-report of runway braking action for upgrading purposes only if it is used in combination with other information qualifying for upgrading.

## **GM1 ADR.OPS.B.037(c) Assessment of runway surface condition and assignment of runway condition code**

### **USE OF SPECIAL AIR-REPORTS**

Special air-reports typically provide aerodrome personnel and other pilots with an observation that can confirm the ground-based assessment of or alert to degraded conditions experienced in terms of braking capability and/or lateral control during the landing roll. The braking action observed is dependent on the type of aircraft, aircraft weight, runway portion used for braking, and other factors. Pilots will use the terms GOOD, GOOD TO MEDIUM, MEDIUM, MEDIUM TO POOR, POOR and LESS THAN POOR. When receiving a special air-report, the recipient should consider that it rarely applies to the full length of the runway and is limited to the specific sections of the runway surface in which sufficient wheel braking was applied to reach friction limitation. As special air-reports are subjective and contaminated runways may affect the performance of different aeroplane types in a different way, the reported braking action may not be directly applicable to another aeroplane.



Appendix 1

# NOTAM FORMAT

|  |   |            |         |         |       |             |             |                     |  |  |  |               |     |
|--|---|------------|---------|---------|-------|-------------|-------------|---------------------|--|--|--|---------------|-----|
| Priority indicator   |   |            |         |         |       |             |             |                     |  |  |  | →             |     |
| Address  |   |            |         |         |       |             |             |                     |  |  |  |               |     |
|  |   |            |         |         |       |             |             |                     |  |  |  |               |     |
|  |   |            |         |         |       |             |             |                     |  |  |  |               |     |
|  |   |            |         |         |       |             |             |                     |  |  |  |               |     |
| Date and time of filing  |   |            |         |         |       |             |             |                     |  |  |  | →             |     |
| Originator's indicator   |   |            |         |         |       |             |             |                     |  |  |  | <<=           |     |
| Message series, number and identifier  |   |            |         |         |       |             |             |                     |  |  |  |               |     |
| NOTAM containing new information   | ..... NOTAMN<br>(series and number/year)  |            |         |         |       |             |             |                     |  |  |  |               |     |
| NOTAM replacing a previous NOTAM   | ..... NOTAMR.....<br>(series and number/year) (series and number/year of NOTAM to be replaced)  |            |         |         |       |             |             |                     |  |  |  |               |     |
| NOTAM cancelling a previous NOTAM  | ..... NOTAMC.....<br>(series and number/year) (series and number/year of NOTAM to be cancelled) |            |         |         |       |             |             |                     |  |  |  |               | <<= |
| Qualifiers   |   |            |         |         |       |             |             |                     |  |  |  |               |     |
|  | FIR   | NOTAM Code | Traffic | Purpose | Scope | Lower limit | Upper limit | Coordinates, Radius |  |  |  |               |     |
| Q)   |   | Q          |         |         |       |             |             |                     |  |  |  |               | <<= |
| Identification of ICAO Location Indicators in which the facility, airspace or condition reported on is located |   |            |         |         |       |             | A) →        |                     |  |  |  |               |     |
| Period of validity   |   |            |         |         |       |             |             |                     |  |  |  |               |     |
| From (date-time group)   | B)  |            |         |         |       |             |             |                     |  |  |  |               | →   |
| To (PERM or date-time group)   | C)  |            |         |         |       |             |             |                     |  |  |  | EST*<br>PERM* | <<= |
| Time schedule (if applicable)  | D)  |            |         |         |       |             |             |                     |  |  |  | →             |     |
|  |   |            |         |         |       |             |             |                     |  |  |  |               | <<= |
| Text of NOTAM; Plain-language entry (using ICAO abbreviations)   |   |            |         |         |       |             |             |                     |  |  |  |               |     |
| E)   |   |            |         |         |       |             |             |                     |  |  |  |               | <<= |
| Lower limit  | F)  |            |         |         |       |             |             |                     |  |  |  | →             |     |
| Upper limit  | G)  |            |         |         |       |             |             |                     |  |  |  | )<<=          |     |
| Signature  |   |            |         |         |       |             |             |                     |  |  |  |               |     |

\*Delete as appropriate'

# Appendix 2

## SNOWTAM FORMAT

|  |                           |                          |                         |                  |
|--|---------------------------|--------------------------|-------------------------|------------------|
| (COM heading)  | (Priority indicator)      | (Addresses)              |                         | <E               |
|  | (Date and time of filing) | (Originator's indicator) |                         | <E               |
| (Abbreviated heading)  | (SWAA* SERIAL NUMBER)     | (LOCATION INDICATORS)    | DATE-TIME OF ASSESSMENT | (OPTIONAL GROUP) |
| S W * *  |                           |                          |                         | <E(              |
| SNOWTAM →  | (Serial number)           | <E                       |                         |                  |
| <b>Aeroplane performance calculation section</b>   |                           |                          |                         |                  |
| (AERODROME LOCATION INDICATORS)  | M                         | A)                       | <E                      |                  |
| (DATE/TIME OF ASSESSMENT ( <i>Time of completion of assessment in UTC</i> ))   | M                         | B)                       | →                       |                  |
| (LOWER RUNWAY DESIGNATION NUMBER)  | M                         | C)                       | →                       |                  |
| (RUNWAY CONDITION CODE (RWYCC) ON EACH RUNWAY THIRD)<br>(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<br>(Observed on each runway third, starting from threshold having the lower runway designation number)   | M                         | G)                       | //                      |                  |
| COMPACTED SNOW<br>DRY<br>DRY SNOW<br>DRY SNOW ON TOP OF COMPACTED SNOW<br>DRY SNOW ON TOP OF ICE<br>FROST<br>ICE<br>SLIPPERY WET<br>SLUSH<br>SPECIALLY PREPARED WINTER RUNWAY<br>STANDING WATER<br>WATER ON TOP OF COMPACTED SNOW<br>WET<br>WET ICE<br>WET SNOW<br>WET SNOW ON TOP OF COMPACTED SNOW<br>WET SNOW ON TOP OF ICE   |                           |                          |                         | →                |
| (WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITIONS CODES APPLY, IF LESS THAN THE PUBLISHED WIDTH)   | O                         | H)                       | <E                      |                  |
| <b>Situational awareness section</b>   |                           |                          |                         |                  |
| (REDUCED RUNWAY LENGTH, IF LESS THAN THE PUBLISHED LENGTH (m))   | O                         | I)                       | →                       |                  |
| (DRIFTING SNOW ON THE RUNWAY)  | O                         | J)                       | →                       |                  |
| (LOOSE SAND ON THE RUNWAY)   | O                         | K)                       | →                       |                  |
| (CHEMICAL TREATMENT ON RUNWAY)   | O                         | L)                       | →                       |                  |
| (SNOWBANKS ON THE RUNWAY)<br>(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)                       | ) <<E                   |                  |
| NOTES:<br>1. *Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2 or otherwise applicable aerodrome identifier.<br>2. Information on other runways, repeat from B to H.<br>3. Information in the situational awareness section repeated for each runway, taxiway and apron. Repeat as applicable, when reported.<br>4. Words in brackets ( ) not to be transmitted.<br>5. For letters A) to T), refer to the <i>Instructions for the completion of the SNOWTAM format, paragraph 1, item b)</i> . |                           |                          |                         |                  |

SIGNATURE OF ORIGINATOR (*not for transmission*)