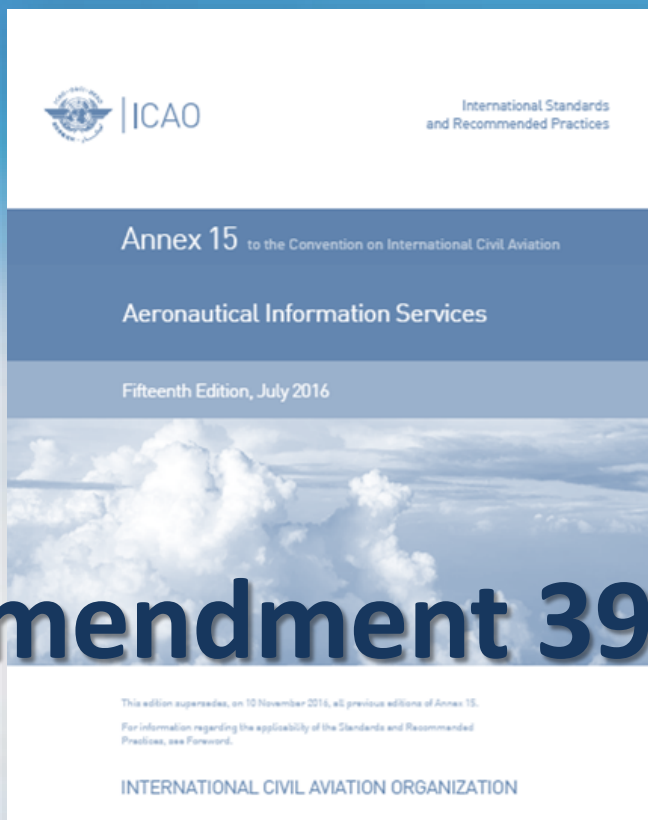




ICAO

CAPACITY & EFFICIENCY



Amendment 39 to Annex 15



Abbas NIKNEJAD

Regional Officer, AIM/ATM

Alexis CLINET

Aerodrome Operations Officer

Interregional EUR/MID Workshop on PANS AIM
(Paris, France, 10-12 July 2018)



General provisions

Amendment 39 arises from:

- Recommendations of the third meeting of the Aerodrome Panel (AP/3) relating to the publication of information on runway end safety area (RESA) and arresting system in the aeronautical information publication (AIP)
- Recommendations of the twelfth meeting of the Instrument Flight Procedures Panel (IFPP/12) relating to en-route airway directional use restrictions
- Recommendations of the second meeting of the Operational Data Link Panel (OPLINKP/2) relating to performance-based communication and surveillance (PBCS) and satellite voice communications (SATVOICE); and
- Recommendations of the Friction Task Force of the Aerodrome Design and Operations Panel (ADOP) relating to the ***use of a global reporting format for assessing and reporting runway surface conditions.***

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject</i>	<i>Adopted/Approved Effective Applicable</i>
39-A	Third meeting of the Aerodrome Panel (AP/3); Twelfth meeting of the Instrument Flight Procedures Panel (IFPP/12); Second meeting of the Operational Data Link Panel (OPLINKP/2)	Amendment concerning: <ul style="list-style-type: none"> a) publication of information on runway end safety area (RESA) and arresting system in the aeronautical information publication (AIP); b) en-route airway directional use restrictions; and c) performance-based communication and surveillance (PBCS) and satellite voice communications (SATVOICE) 	22 February 2016 11 July 2016 10 November 2016

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject</i>	<i>Adopted/Approved Effective Applicable</i>
39-B	Friction Task Force of the Aerodrome Design and Operations Panel (ADOP)	Amendment concerning the use of a global reporting format for assessing and reporting runway surface conditions	22 February 2016 11 July 2016 5 November 2020

Major changes

(39A; applicable 10 November 2016)

- Ch.1 object of AIS: added PBC, PBS and SATVOICE
- ENR 3.1, 3.2, 3.3 and 3.4: added RCP, RSP and SATVOICE
- Table AD 2.12:
 - adding dimensions of runway end safety areas
 - adding location (which runway end) and description of arresting system (if any).
- Table AD 2.18: added SATVOICE number, if available.

Major changes

(39B; applicable 5 November 2020)

- SNOWTAM Definition & Provisions
- SNOWTAM Format (reporting format for assessing and reporting runway surface conditions has changed)

Assessment and reporting of the runway surface condition

- A globally-harmonized methodology for runway surface conditions assessment and reporting to provide reports that are directly related to the performance of aeroplanes:
 - **Aerodrome operator** assess the runway surface conditions, including contaminants, for each third of the runway length, and report it by mean of a uniform runway condition report (RCR);
 - **Air traffic services (ATS)** provide the information received via the RCR to end users (radio, ATIS) and received special air-reports;
 - **Aeronautical information services (AIS)** provide the information received in the RCR to end users (SNOWTAM);
 - **Aircraft operators** utilize the information in conjunction with the performance data provided by the aircraft manufacturer to determine if landing or take-off operations can be conducted safely and provide runway braking action special air-report (AIREP).

Scope of provisions

- Provisions outlined by amendments in the following documents:
 - **Annex 14, Volume 1 and PANS-Aerodromes:** elaboration of the information;
 - **Annex 6, Parts I and II:** assessment by the pilot-in-command of the landing performance and report for commercial air transport operations;
 - **Annex 8:** nature of the information provided by the aircraft manufacturers;
 - **Annex 3:** removal of the runway state group for METAR/SPECI;
 - **Annex 15 and PANS-AIM:** syntax and format used for dissemination;
 - **PANS-ATM:** communication of special air-reports concerning runway braking action and transmission of the runway condition report with a harmonized phraseology.
- Review of the guidance material:
 - Aerodrome Design Manual – Part 3 – *Pavements* (Doc 9157);
 - Circular 329: *Assessment, Measurement and Reporting of Runway Surface Conditions*;
 - Aeroplane Performance Manual (Doc 10064).

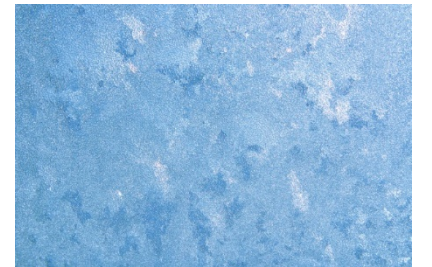
Runway Condition Report (RCR)

- Established by the aerodrome operator.
- The RCR consists of two sections:
 - aeroplane take-off and landing performance calculations; and
 - situational awareness of the surface conditions on the runway, taxiways and aprons.
- The RCR shall be established when a significant change in runway surface condition occurs due to water, snow, slush, ice or frost (and should continue to reflect significant changes until the runway is no longer contaminated).
- Significant change:
 - any change in the runway condition code, type and depth of contaminant or in reportable contaminant coverage; and
 - any other information (e.g. a pilot report of runway braking action).

Dissemination of information

- **Through the AIS and ATS 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.
- **Through the ATS only:** when the runway is wet, not associated with the presence of standing water, snow, slush, ice or frost.
- Description of the runway surface condition are defined in Annex 14:
 - *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.
 - *Wet runway.* The runway surface is covered by any visible dampness or water up to and including 3 mm deep within the intended area of use.
 - *Slippery wet runway.* A wet runway where the surface friction characteristics of a significant portion of the runway has been determined to be degraded.
 - *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.

- **SNOWTAM.** A special series NOTAM given in a standard format providing a surface condition report notifying the presence or removal cessation of hazardous conditions due to snow, ice, slush, frost, or standing water or water associated with snow, slush and, ice, or frost on the movement area, by means of a specific format.
- 5.2.3 Information concerning snow, slush, ice and standing water on aerodrome/heliport pavements shall, when reported, frost, standing water, or water associated with snow, slush, ice or frost on the movement area shall be disseminated by means of a SNOWTAM, and contain the information in the order shown in the SNOWTAM Format in Appendix 2.





- “Assessment” instead of “Observation”
- The letters used to indicate items in SNOWTAM (A, B, C, ...) are only used for reference purpose and should not be included in the messages.
- The maximum validity of SNOWTAM is 8 hours (not 24 hours).
- A SNOWTAM cancels the previous SNOWTAM
- New SNOWTAM shall be issued whenever a new Runway Condition Report (RCR) is received.
- Mandatory information:
 - i) AERODROME LOCATION INDICATOR
 - ii) DATE AND TIME OF ASSESSMENT
 - iii) LOWER RUNWAY DESIGNATOR NUMBER
 - iv) RUNWAY CONDITION CODE FOR EACH RUNWAY THIRD
 - v) CONDITION DESCRIPTION FOR EACH RUNWAY THIRD (when runway condition code is reported 1- 5)

Example - NEW

GC EADBRZ07Y EADN 07Y EADSZ 07
 07 4 07Y Y
 SWEA0149 EADD 02170345
 (SNOWTAM 0152
 EADD 02170345 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET
 EADD 02170134 09R 5/4/3 100/50/75 NR/06/06 WET/SLUSH/SLUSH
 EADD 02170225 09C 3/2/1 75/100/100 06/12/12 SLUSH/WET
 SNOW/WET SNOW 35
 DRIFTING SNOW. RWY 09L LOOSE SAND. RWY 09R
 CHEMICALLY TREATED. RWY 09C CHEMICALLY TREATED.)

Example - OLD

GC EADBRZ07Y EADN 07Y EADSZ 07
 07 4 07Y Y
 SWEA0149 EADD 02170345
 (SNOWTAM 0149
 A) LSZH
 B) 11070620 C) 02 D)...P)
 B) 11070600 C) 09 D)...P)
 B) 11070700 C) 12 D)...P)
 R) NO S) 11070920
 T) DEICING



New SNOWTAM Format

- The new SNOWTAM has 2 sections
- The new SNOWTAM is conform to the Runway Condition Report (RCR) in content and format

1: Aeroplane performance Section

- Item A - Aerodrome location indicator
- Item B - Date and time of assessment
- Item C - Lower runway designator number
- Item D - Runway condition code (each runway third)
- Item E - Per cent coverage (each runway third)
- Item F - Depth of loose contaminant (each runway third)
- Item G - Condition description for each third
- Item H - Width of RWY to which the RWYCCs apply

2: Situational Awareness Section

- Item I - Reduced runway length
- Item J - Drifting snow on the runway
- Item K - Loose sand on the runway
- Item L - Chemical treatment on RWY
- Item M - Snow banks on the runway
- Item N - Snow banks on the taxiway
- Item O - Snow banks adjacent to the runway
- Item P - Taxiway conditions
- Item R - Apron conditions
- Item S - Measured friction coefficient
- Item T - Plain language remarks



(COM heading)	(PRIORITY INDICATOR)	(ADDRESSES)	
	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)	
(Abbreviated heading)	(SWAA* SERIAL NUMBER)	(LOCATION INDICATOR)	(OPTIONAL GROUP)
S W * * *			
SNOWTAM	(Serial number)		
Aeroplane performance section			
(AERODROME LOCATION INDICATOR)	M	A)	
(DATE/TIME OF ASSESSMENT (Time of completion of assessment in UTC))	M	B)	
(LOWER RUNWAY DESIGNATORS)	M	C)	
RUNWAY CONDITION CODE ON EACH THIRD OF RUNWAY (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 8)	M	D) / /	
PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD	C	E) / /	
DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH THIRD OF RUNWAY	C	F) / /	
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH (Observed on each third of the runway, starting from threshold having the lower runway designation number))	M	G) / /	
COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLUSH STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE			
(WIDTH OF RUNWAY TO WHICH THE RWYCCs 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 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 ADJACENT TO THE RUNWAY	O	N)	
(SNOWBANKS ON A TAXIWAY (If present, distance from the edge of runway (m) followed by "L", "R" or "LR" as applicable))		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.			

→ GG EADBZQZX EADNZQZX EADSZQZX

→ 070645 EADDYNYX

→ SWEA0149 EADD 02170345

→ (SNOWTAM 0152

→ EADD 02170225 09C 3/2/1 75/100/100
06/12/12 SLUSH/SNOW/SNOW 35

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

Implementation task list

- updating State's regulatory framework
 - updating National regulations (transposition of ICAO provisions to the national regulations)
 - filing differences in EFOD / publishing significant differences in AIP (if required)
- establishment of a national implementation plan that takes into account the modified ICAO provisions;
- notification to affected aerodromes, ATS units and Users (operators/airlines) of the new requirements and changes (through circular, etc.);
- revision/updating of the software/templates used to issue/recieve SNOWTAM (NOTAM/SNOWTAM system); and
- updating the formal arrangements between the aerodrome and the AIS.

Impact assessment for Annex 14, Vol I and Annex 15

- *Safety impact:*

Runway surface conditions have contributed to many safety events and investigations have revealed shortfalls in the accuracy and timeliness of assessment and reporting methods. The proposed global reporting format is designed to report runway surface conditions in a standardized manner such that flight crew are able to accurately determine aeroplane take-off and landing performance, **resulting in a global reduction in runway excursion incidents/accidents.**

- *Financial impact:*

For States, the financial cost will be limited to generating a series of regulatory amendments, training CAA inspectors and implementing a robust oversight process. For aerodrome operators, the financial cost will mainly be in the areas of training of staff (runway assessors) exposed to the change. **For AIS providers and information users, there will be a cost to make changes to automated systems. The actual cost will vary with the nature and age of the systems currently implemented.**

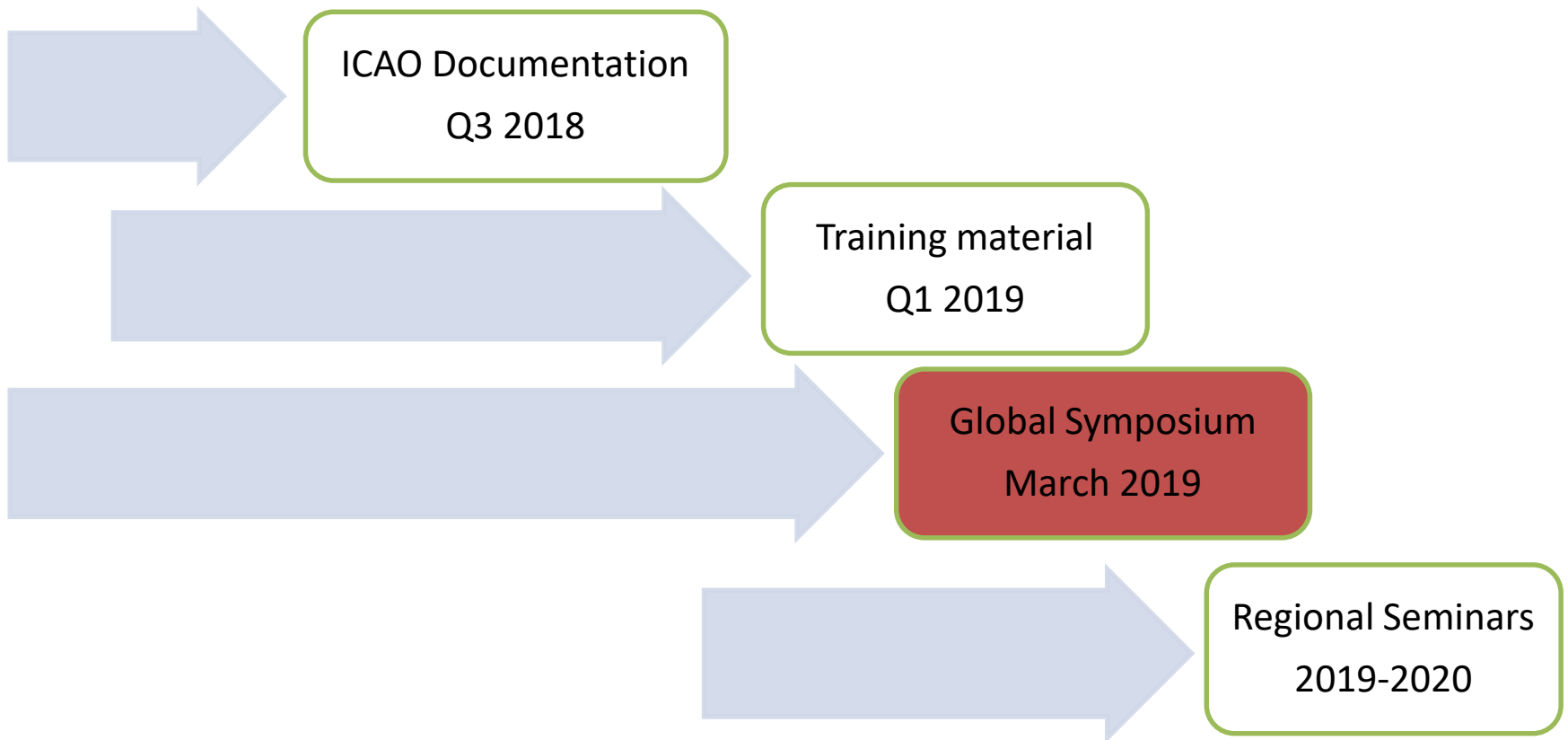
- *Efficiency impact:*

Accurate and timely runway state information provided by aerodromes and adjusted to the operational need and promulgated/disseminated according to defined terminology and procedures will have a positive impact on the efficiency of the air transportation system. Occurrences of excursions, disruptions to aerodrome and air traffic operations such as, but not limited to, the removal of aircraft disabled at an aerodrome, are expected to be reduced.

- *Expected implementation time:*

Between two to five years (**at least from one to two years for Annex 15**).

Deployment





ICAO/ACI Symposium on Implementation of the New Global Reporting Format for Runway Surface Condition (GRF2019)

- Montreal, 26-28 March 2019
- Main objectives of the symposium:
 - increase global awareness and knowledge;
 - ensure an understanding of ICAO SARPs requirements and guidance material;
 - establish the role for ICAO, its regional offices, international organisations and industry in the harmonized and global implementation;
 - develop an understanding of the training and awareness needs;
 - develop an awareness of implementation challenges and opportunities;
 - facilitate an exchange of industry best practices associated with awareness, training and implementation.
- Supported by training workshop
- Subsequent regional seminars to follow between March 2019 and November 2020 (applicability date).

Appendices:

- Adoption of amendment 39 to Annex 15
- Runway surface condition assessment and reporting (PANS Aerodrome)



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Tel.: +1 514-954-8219 ext. 6718

Ref.: AN 2/2.4-16/18

1 April 2016

Subject: Adoption of Amendment 39 to Annex 15

Action required: a) Notify any disapproval before 11 July 2016; b) Notify any differences and compliance before 10 October 2016 and 5 October 2020; c) Consider the use of the Electronic Filing of Differences (EFOD) System for notification of differences and compliance

Sir/Madam,

1. I have the honour to inform you that Amendment 39 to the *International Standards and Recommended Practices, Aeronautical Information Services* (Annex 15 to the Convention on International Civil Aviation) was adopted by the Council at the fifth meeting of its 207th Session on 22 February 2016. Copies of the Amendment and the Resolution of Adoption are available as attachments to the electronic version of this State letter on the ICAO-NET (<http://portal.icao.int>) where you can access all other relevant documentation.

2. When adopting the amendment, the Council prescribed 11 July 2016 as the date on which it will become effective, except for any part concerning which a majority of Contracting States have registered their disapproval before that date. In addition, the Council resolved that Amendment 39, to the extent it becomes effective, will become applicable on 10 November 2016¹.

3. Amendment 39 arises from:

- a) recommendations of the third meeting of the Aerodrome Panel (AP/3) relating to the publication of information on runway end safety area (RESA) and arresting system in the aeronautical information publication (AIP);
- b) recommendations of the twelfth meeting of the Instrument Flight Procedures Panel (IFPP/12) relating to en-route airway directional use restrictions;

¹ 5 November 2020 for Amendment 39-B

- c) recommendations of the Friction Task Force of the Aerodrome Design and Operations Panel (ADOP) relating to the use of a global reporting format for assessing and reporting runway surface conditions; and
- d) recommendations of the second meeting of the Operational Data Link Panel (OPLINKP/2) relating to performance-based communication and surveillance (PBCS) and satellite voice communications (SATVOICE).

4. The amendment concerning publication of RESA and arresting system is a consequential amendment to enhance safety of aerodrome operations in Annex 14 — *Aerodromes*, Volume I — *Aerodrome Design and Operations*. The proposed amendment requires data concerning arresting system to be measured, described and promulgated in addition to information related to runway end safety area.

5. The amendment arising from IFPP/12 clarifies requirements with respect to en-route airway directional use restrictions. Conflicting information in ICAO provisions has led to confusion on how it is depicted in State AIPs. The amendment to Annex 15 along with consequential amendments to Annex 4 — *Aeronautical Charts* and the *Aeronautical Information Services Manual* (Doc 8126) will resolve this issue and present the necessary changes to remove any confusion.

6. The amendment concerning PBCS is a consequential amendment to support provisions for PBCS in Annex 11 — *Air Traffic Services* regarding prescription of required communication performance (RCP)/required surveillance performance (RSP) specification(s). The proposed amendment is to ensure that RCP and/or RSP specifications are listed in a standardized format in a State's AIP. The amendment concerning SATVOICE includes a provision in the AIP for SATVOICE number(s) so that they are easily accessible to the flight operations personnel.

7. The amendment concerning enhanced global reporting format for assessing and reporting runway surface conditions is designed to report runway surface conditions in a standardized manner such that flight crew are able to accurately determine aeroplane take-off and landing performance, resulting in a global reduction in runway excursion incidents/accidents. The proposal provides a solution to a long outstanding issue of relating aeroplane performance to runway state information in a more objective way. The amendment is part of a major revision to several Annexes.

8. The subject is given in the amendment to the Foreword of Annex 15, a copy of which is in Attachment A.

9. In conformity with the Resolution of Adoption, may I request:

- a) that before 11 July 2016 you inform me if there is any part of the adopted Standards and Recommended Practices (SARPs) amendments in Amendment 39 (i.e., Amendments 39-A and 39-B) concerning which your Government wishes to register disapproval, using the form in Attachment B for this purpose. Please note that only statements of disapproval need be registered and if you do not reply it will be assumed that you do not disapprove of the amendment;
- b) that before 10 October 2016² you inform me of the following, using the Electronic Filing of Differences (EFOD) System or the form in Attachment C for this purpose:

² 5 October 2020 for Amendment 39-B

- 1) any differences that will exist on 10 November 2016³ between the national regulations or practices of your Government and the provisions of the whole of Annex 15, as amended by all amendments up to and including Amendment 39, and thereafter of any further differences that may arise; and
- 2) the date or dates by which your Government will have complied with the provisions of the whole of Annex 15, as amended by all amendments up to and including Amendment 39.

10. With reference to the request in paragraph 9 a) above, it should be noted that a registration of disapproval of Amendment 39 or any part of it in accordance with Article 90 of the Convention does not constitute a notification of differences under Article 38 of the Convention. To comply with the latter provision, a separate statement is necessary if any differences do exist, as requested in paragraph 9 b) 1). It is recalled in this respect that international Standards in Annexes have a conditional binding force, to the extent that the State or States concerned have not notified any difference thereto under Article 38 of the Convention.

11. With reference to the request in paragraph 9 b) above, it should be also noted that the ICAO Assembly, at its 38th Session (24 September to 4 October 2013) resolved that Member States should be encouraged to use the EFOD System when notifying differences (Resolution A38-11 refers). The EFOD System is currently available on the Universal Safety Oversight Audit Programme (USOAP) restricted website (<http://www.icao.int/usoap>) which is accessible by all Member States. You are invited to consider using this for notification of compliance and differences.

12. Guidance on the determination and reporting of differences is given in the Note on the Notification of Differences in Attachment D. Please note that a detailed repetition of previously notified differences, if they continue to apply, may be avoided by stating the current validity of such differences.

13. I would appreciate it if you would also send a copy of your notifications, referred to in paragraph 9 b) above, to the ICAO Regional Office accredited to your Government.

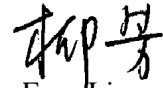
14. At the fifth meeting of its 204th Session, the Council requested that States, when being advised of the adoption of an Annex amendment, be provided with information on implementation and available guidance material, as well as an impact assessment. This is presented for your information in Attachments E and F, respectively.

15. As soon as practicable after the amendment becomes effective, on 11 July 2016, replacement pages incorporating Amendment 39 (i.e., Amendments 39-A and 39-B) will be forwarded to you.

16. Please note that Amendment 39-B concerning the use of a global reporting format for assessing and reporting runway surface conditions has an applicability date of 5 November 2020. It should be noted that the time between the effective date and the applicability date is longer than usual due to the nature and complexity of the proposal.

³ 5 November 2020 for Amendment 39-B

Accept, Sir/Madam, the assurances of my highest consideration.



Fang Liu

Secretary General

Enclosures:

- A — Amendment to the Foreword of Annex 15
- B — Form on notification of disapproval of all or part of Amendment 39 to Annex 15
- C — Form on notification of compliance with or differences from Annex 15, Amendment 39
- D — Note on the Notification of Differences
- E — Implementation task list and outline of guidance material in relation to Amendment 39 to Annex 15
- F — Impact assessment in relation to Amendment 39 to Annex 15

ATTACHMENT A to State letter AN 2/2.4-16/18

AMENDMENT TO THE FOREWORD OF ANNEX 15

Add the following at the end of Table A:

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject</i>	<i>Adopted/Approved Effective Applicable</i>
39-A	Third meeting of the Aerodrome Panel (AP/3); Twelfth meeting of the Instrument Flight Procedures Panel (IFPP/12); Second meeting of the Operational Data Link Panel (OPLINKP/2)	Amendment concerning: a) publication of information on runway end safety area (RESA) and arresting system in the aeronautical information publication (AIP); b) en-route airway directional use restrictions; and c) performance-based communication and surveillance (PBCS) and satellite voice communications (SATVOICE)	22 February 2016 11 July 2016 10 November 2016

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject</i>	<i>Adopted/Approved Effective Applicable</i>
39-B	Friction Task Force of the Aerodrome Design and Operations Panel (ADOP)	Amendment concerning the use of a global reporting format for assessing and reporting runway surface conditions	22 February 2016 11 July 2016 5 November 2020

**NOTIFICATION OF DISAPPROVAL OF ALL OR PART OF
AMENDMENT 39 TO ANNEX 15**

To: The Secretary General
International Civil Aviation Organization
999 Robert-Bourassa Boulevard
Montreal, Quebec
Canada H3C 5H7

(State) _____ hereby wishes to disapprove the following parts of
Amendment 39 to Annex 15:

Signature _____

Date _____

NOTES

- 1) If you wish to disapprove all or part of Amendment 39 to Annex 15, please dispatch this notification of disapproval to reach ICAO Headquarters by 11 July 2016. If it has not been received by that date it will be assumed that you do not disapprove of the amendment. **If you approve of all parts of Amendment 39, it is not necessary to return this notification of disapproval.**
- 2) This notification should not be considered a notification of compliance with or differences from Annex 15. Separate notifications on this are necessary. (See Attachment C.)
- 3) Please use extra sheets as required.

ATTACHMENT C to State letter AN 2/2.4-16/18

**NOTIFICATION OF COMPLIANCE WITH OR DIFFERENCES FROM ANNEX 15
(including all amendments up to and including Amendment 39)**

To: The Secretary General
International Civil Aviation Organization
999 Robert-Bourassa Boulevard
Montréal, Québec
Canada H3C 5H7

1. No differences will exist on _____ between the national regulations and/or practices of **(State)** _____ and the provisions of Annex 15, including all amendments up to and including Amendment 39.

2. The following differences will exist on _____ between the regulations and/or practices of **(State)** _____ and the provisions of Annex 15, including Amendment 39 (Please see Note 2) below.)

a) Annex Provision	b) Details of Difference	c) Remarks
(Please give exact paragraph reference)	(Please describe the difference clearly and concisely)	(Please indicate reasons for the difference)

(Please use extra sheets as required)

3. By the dates indicated below, **(State)** _____ will have complied with the provisions of Annex 15, including all amendments up to and including Amendment 39 for which differences have been notified in 2 above.

a) Annex Provision (Please give exact paragraph reference)	b) Date	c) Comments
--	----------------	--------------------

(Please use extra sheets as required)

Signature _____

Date _____

NOTES

- 1) If paragraph 1 above is applicable to your State, please complete paragraph 1 and return this form to ICAO Headquarters. If paragraph 2 is applicable to you, please complete paragraphs 2 and 3 and return the form to ICAO Headquarters.
- 2) A detailed repetition of previously notified differences, if they continue to apply, may be avoided by stating the current validity of such differences.
- 3) Guidance on the notification of differences is provided in the Note on the Notification of Differences and in the *Manual on Notification and Publication of Differences* (Doc 10055).
- 4) Please send a copy of this notification to the ICAO Regional Office accredited to your Government.

ATTACHMENT D to State letter AN 2/2.4-16/18

NOTE ON THE NOTIFICATION OF DIFFERENCES
(Prepared and issued in accordance with instructions of the Council)

1. *Introduction*

1.1 Article 38 of the *Convention on International Civil Aviation* (“Convention”) requires that a Contracting State notify ICAO any time it does not comply with a Standard in all respects, it does not bring its regulations or practices into full accord with any Standard, or it adopts regulations or practices differing in any particular respect from the Standard.

1.2 The Assembly and the Council, when reviewing the notification of differences by Contracting States in compliance with Article 38 of the Convention, have repeatedly noted that the timeliness and currency of such notifications is not entirely satisfactory. Therefore, this note is issued to reiterate the primary purpose of Article 38 of the Convention and to facilitate the determination and notification of differences.

1.3 The primary purpose of the notification of differences is to promote safety, regularity and efficiency in air navigation by ensuring that governmental and other agencies, including operators and service providers, concerned with international civil aviation are made aware of all national regulations and practices in so far as they differ from those prescribed in the Standards contained in Annexes to the Convention.

1.4 Contracting States are, therefore, requested to give particular attention to the notification of differences with respect to Standards in all Annexes, as described in paragraph 4 b) 1) of the Resolution of Adoption.

1.5 Although differences from Recommended Practices are not notifiable under Article 38 of the Convention, the Assembly has urged Contracting States to extend the above considerations to Recommended Practices contained in Annexes to the Convention, as well.

2. *Notification of differences from Standards and Recommended Practices (SARPs)*

2.1 Guidance to Contracting States in the notification of differences to Standards and Recommended Practices (SARPs) can only be given in very general terms. Contracting States are further reminded that compliance with SARPs generally extends beyond the issuance of national regulations and requires establishment of practical arrangements for implementation, such as the provision of facilities, personnel and equipment and effective enforcement mechanisms. Contracting States should take those elements into account when determining their compliance and differences. The following categories of differences are provided as a guide in determining whether a notifiable difference exists:

- a) *A Contracting State’s requirement is more exacting or exceeds a SARP (Category A)*. This category applies when the national regulation and practices are more demanding than the corresponding SARP, or impose an obligation within the scope of the Annex which is not covered by the SARP. This is of particular importance where a Contracting State requires a higher standard which affects the operation of aircraft of other Contracting States in and above its territory;

- b) *A Contracting State's requirement is different in character or the Contracting State has established other means of compliance (Category B)**. This category applies, in particular, when the national regulation and practices are different in character from the corresponding SARP, or when the national regulation and practices differ in principle, type or system from the corresponding SARP, without necessarily imposing an additional obligation; and
- c) *A Contracting State's requirement is less protective, partially implemented or not implemented (Category C)*. This category applies when the national regulation and practices are less protective than the corresponding SARP; when no national regulation has been promulgated to address the corresponding SARP, in whole or in part; or when the Contracting State has not brought its practices into full accord with the corresponding SARP.

These categories do not apply to Not Applicable SARP. Please see the paragraph below.

2.2 **Not Applicable SARP.** When a Contracting State deems a SARP concerning aircraft, operations, equipment, personnel, or air navigation facilities or services to be not applicable to the existing aviation activities of the State, notification of a difference is not required. For example, a Contracting State that is not a State of Design or Manufacture and that does not have any national regulations on the subject, would not be required to notify differences from Annex 8 provisions related to the design and construction of an aircraft.

2.3 **Differences from appendices, tables and figures.** The material comprising a SARP includes not only the SARP itself, but also the appendices, tables and figures associated with the SARP. Therefore, differences from appendices, tables and figures are notifiable under Article 38. In order to file a difference against an appendix, table or figure, States should file a difference against the SARP that makes reference to the appendix, table or figure.

2.4 **Differences from definitions.** Contracting States should notify differences from definitions. The definition of a term used in a SARP does not have independent status but is an essential part of each SARP in which the term is used. Therefore, a difference from the definition of the term may result in there being a difference from any SARP in which the term is used. To this end, Contracting States should take into consideration differences from definitions when determining compliance or differences to SARPs in which the terms are used.

2.5 The notification of differences should be not only to the latest amendment but to the whole Annex, including the amendment. In other words, Contracting States that have already notified differences are requested to provide regular updates of the differences previously notified until the difference no longer exists.

* The expression "different in character or other means of compliance" in b) would be applied to a national regulation and practice which achieve, by other means, the same objective as that of the corresponding SARPs or for other substantive reasons so cannot be classified under a) or c).

2.6 Further guidance on the identification and notification of differences, examples of well-defined differences and examples of model processes and procedures for management of the notification of differences can be found in the *Manual on Notification and Publication of Differences* (Doc 10055).

3. *Form of notification of differences*

3.1 Differences can be notified:

- a) by sending to ICAO Headquarters a form on notification of compliance or differences; or
- b) through the Electronic Filing of Differences (EFOD) System at www.icao.int/usoap.

3.2 When notifying differences, the following information should be provided:

- a) the number of the paragraph or subparagraph which contains the SARP to which the difference relates*;
- b) the reasons why the State does not comply with the SARP, or considers it necessary to adopt different regulations or practices;
- c) a clear and concise description of the difference; and
- d) intentions for future compliance and any date by which your Government plans to confirm compliance with and remove its difference from the SARP for which the difference has been notified.

3.3 The differences notified will be made available to other Contracting States, normally in the terms used by the Contracting State when making the notification. In the interest of making the information as useful as possible, Contracting States are requested to ensure that:

- a) statements be as clear and concise as possible and be confined to essential points;
- b) the provision of extracts from national regulations not be considered as sufficient to satisfy the obligation to notify differences; and
- c) general comments, unclear acronyms and references be avoided.

— — — — —

* This applies only when the notification is made under 3.1 a).

**IMPLEMENTATION TASK LIST AND OUTLINE OF GUIDANCE
MATERIAL IN RELATION TO AMENDMENT 39 TO ANNEX 15**

1. IMPLEMENTATION TASK LIST

**1.1 Essential steps to be followed by a State in order to
implement the proposed amendment**

***Publication of information on runway end safety area (RESA) and
arresting system in the aeronautical information publication (AIP)***

1.1.1 Essential steps to be followed by a State in order to implement the proposed amendment to Annex 15:

- a) identification of the rule-making process necessary to transpose the modified ICAO provisions into the national regulations;
- b) establishment of a national implementation plan that takes into account the modified ICAO provisions;
- c) drafting of the modification to the national regulations and means of compliance;
- d) official adoption of the national regulations and means of compliance;
- e) filing of State differences with ICAO, if necessary;
- f) publication of significant differences in the AIP;
- g) notification to effected aerodromes of the requirement for additional information;
- h) preparation of revised AIP templates by the State authorized AIS; and
- i) updating the formal arrangements between the aerodrome and the AIS (pursuant to Annex 15, paragraph 2.1.5).

En-route airway directional use restrictions

1.1.2 Essential steps to be followed by a State in order to implement the proposed amendment to Annex 15:

- a) identification of the rule-making process necessary to transpose the modified ICAO provisions into the national regulations;
- b) establishment of a national implementation plan that takes into account the modified ICAO provisions;

- c) drafting of the modification to the national regulations and means of compliance;
- d) official adoption of the national regulations and means of compliance;
- e) filing of State differences with ICAO, if necessary;
- f) publication of significant differences in the AIP;
- g) identification of the originator of the information to be included in the AIP and updating the formal arrangements between the aerodrome and the AIS (pursuant to Annex 15, paragraph 2.1.5); and
- h) preparation of revised AIP templates by the State authorized AIS.

Use of an enhanced global reporting format for assessing and reporting runway surface conditions

1.1.3 Essential steps to be followed by a State in order to implement the proposed amendment to Annex 15:

- a) identification of the rule-making process necessary to transpose the modified ICAO provisions into the national regulations;
- b) establishment of a national implementation plan that takes into account the modified ICAO provisions;
- c) drafting of the modification to the national regulations and means of compliance;
- d) official adoption of the national regulations and means of compliance;
- e) filing of State differences with ICAO, if necessary;
- f) publication of significant differences in the AIP;
- g) notification to effected aerodromes of the requirement for additional information;
- h) advanced notification to NOTAM users of an upcoming change in the reporting of runway surface conditions;
- i) revision of the software templates used to format SNOWTAM on the NOTAM circuit by the State authorized AIS; and
- j) updating the formal arrangements between the aerodrome and the AIS (pursuant to Annex 15, paragraph 2.1.5).

***Performance-based communication and surveillance (PBCS)
Satellite voice communications (SATVOICE)***

1.1.4 Essential steps to be followed by a State in order to implement the proposed amendment to Annex 15:

- a) identification of the rule-making process necessary to transpose the modified ICAO provisions into the national regulations;
- b) establishment of a national implementation plan that takes into account the modified ICAO provisions;
- c) drafting of the modification to the national regulations and means of compliance;
- d) official adoption of the national regulations and means of compliance;
- e) filing of State differences with ICAO, if necessary;
- f) publication of significant differences in the AIP;
- g) identification of the originator of the information to be included in the AIP and updating the formal arrangements between the aerodrome and the AIS (pursuant to Annex 15 paragraph 2.1.5); and
- h) preparation of revised AIP templates by the State authorized AIS.

2. STANDARDIZATION PROCESS

2.1 Effective date: 11 July 2016

2.2 Applicability dates: 10 November 2016 for elements concerning en-route direction use restrictions; performance-based communication and surveillance (PBCS); satellite voice communications (SATVOICE); and publication of information on runway end safety area (RESA) and arresting system in the aeronautical information publication (AIP); and 5 November 2020 for the element concerning the use of a global reporting format for assessing and reporting runway surface conditions.

2.3 Embedded applicability date(s): N/A

3. SUPPORTING DOCUMENTATION

3.1 ICAO documentation

Title	Type (PANS/TI/Manual/Cir)	Planned publication date
<i>Aeronautical Information Services Manual</i> (Doc 8126)	Manual	October 2016
<i>Performance-based Communication and Surveillance Manual</i> (Doc 9869)	Manual	November 2016
<i>Satellite Voice Operations Manual</i> (Doc 10038)	Manual	November 2016

3.2 External documentation

Title	External Organization	Publication date
None		

4. IMPLEMENTATION ASSISTANCE TASKS

Type	Regional
Regional workshop on implementation of global reporting format	ICAO Regional Offices

5. UNIVERSAL SAFETY OVERSIGHT AUDIT PROGRAMME (USOAP)

5.1 The content of this paper may require an amendment of the USOAP CMA protocol questions in the area of ANS to assess effective implementation by States. Existing protocol questions may need amendment or new protocol questions may be required. This will be assessed during the next amendment cycle of the protocol questions.

ATTACHMENT F to State letter AN 2/2.4-16/18

**IMPACT ASSESSMENT IN RELATION TO AMENDMENT 39 TO
ANNEX 15**

1. **INTRODUCTION**

1.1 Amendment 39 to Annex 15 is intended to:

- a) make available information with respect to the presence and dimensions of the runway end safety areas (RESA) including arresting system;
- b) clarify the publication of en-route airway directional use restrictions;
- c) implement revised runway condition reporting;
- d) make available information with respect to performance-based communication and surveillance; and
- e) make available information with respect to satellite voice communications.

2. **IMPACT ASSESSMENT**

Publication of information on runway end safety area (RESA) and arresting system in the aeronautical information publication (AIP)

2.1 *Safety impact:* Improved information on runway end safety area (RESA) and arresting system will enhance users' situational awareness.

2.2 *Financial impact:* The costs of implementing a change to the publication format of the AIP will be insignificant in the short term and is part of the normal maintenance of the document.

2.3 *Security impact:* No security impact is expected with this proposal.

2.4 *Environmental impact:* No environmental impact is expected with this proposal.

2.5 *Efficiency impact:* No efficiency impact is expected with this proposal.

2.6 *Expected implementation time:* Implementation time will normally be one publication cycle. Once AIS is receiving the information, some additional time may be necessary to adjust software templates used to compile the AIP.

En-route airway directional use restrictions

2.7 *Safety impact:* More transparency with respect to existing Annex 15 requirements will avoid misinterpretation by the users and support an effective implementation of the criteria, resulting in increased safety.

2.8 *Financial impact:* Negligible costs are expected as a result of updating the provisions for both States and industry.

2.9 *Security impact:* No security impact is expected with this proposal.

2.10 *Environmental impact:* No environmental impact is expected with this proposal.

2.11 *Efficiency impact:* No efficiency impact is expected with this proposal.

2.12 *Expected implementation time:* Implementation time will normally be one publication cycle. Once AIS is receiving the information, some additional time may be necessary to adjust software templates used to compile the AIP.

Use of an enhanced global reporting format for assessing and reporting runway surface conditions

2.13 *Safety impact:* Safety will be enhanced due to the improved information provided to support aircraft operations, in particular during inclement weather.

2.14 *Financial impact:* There will be a cost for AIS providers and information users to make changes to automated systems. The actual cost will vary with the nature and age of the systems currently implemented.

2.15 *Security impact:* No security impact is expected with this proposal

2.16 *Environmental impact:* No environmental impact is expected with this proposal.

2.17 *Efficiency impact:* No efficiency impact is expected with this proposal.

2.18 *Expected implementation time:* At least from one to two years.

Performance-based communication and surveillance (PBCS)

2.19 *Safety impact:* Safety will be enhanced due to the improved information provided to support ATM operations.

2.20 *Financial impact:* The costs of implementing a change to the publication format of the AIP will be insignificant in the short term and is part of the normal maintenance of the document.

2.21 *Security impact:* No security impact is expected with this proposal.

2.22 *Environmental impact:* No environmental impact is expected with this proposal.

2.23 *Efficiency impact:* The proposal will have a positive impact on efficiency as it supports the implementation of PBCS which enables more efficient use of the airspace, an increase in user preferred routes, and more efficient and coordinated airborne re-routing.

2.24 *Expected implementation time:* Implementation time will normally be one publication cycle. Once AIS is receiving the information, some additional time may be necessary to adjust software templates used to compile the AIP.

Satellite voice communications (SATVOICE)

2.25 *Safety impact:* Safety will be enhanced due to the improved information provided to support ATM operations.

2.26 *Financial impact:* The costs of implementing a change to the publication format of the AIP will be insignificant in the short term and is part of the normal maintenance of the document.

2.27 *Security impact:* No security impact is expected with this proposal.

2.28 *Environmental impact:* No environmental impact is expected with this proposal.

2.29 *Efficiency impact:* No efficiency impact is expected with this proposal.

2.30 *Expected implementation time:* Implementation time will normally be one publication cycle. Once AIS is receiving the information, some additional time may be necessary to adjust software templates used to compile the AIP.

AMENDMENT No. 39-A

TO THE

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

**AERONAUTICAL INFORMATION
SERVICES**

ANNEX 15

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

The amendment to Annex 15 contained in this document was adopted by the Council of ICAO on **22 February 2016**. Such parts of this amendment as have not been disapproved by more than half of the total number of Contracting States on or before **11 July 2016** will become effective on that date and will become applicable on **10 November 2016** as specified in the Resolution of Adoption. (State letter AN 2/2.4-16/18 refers.)

FEBRUARY 2016

INTERNATIONAL CIVIL AVIATION ORGANIZATION

AMENDMENT 39 TO THE INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

ANNEX 15 — AERONAUTICAL INFORMATION SERVICES

RESOLUTION OF ADOPTION

The Council

Acting in accordance with the Convention on International Civil Aviation, and particularly with the provisions of Articles 37, 54 and 90 thereof,

1. *Hereby adopts* on 22 February 2016 Amendment 39 to the International Standards and Recommended Practices contained in the document entitled *International Standards and Recommended Practices, Aeronautical Information Services* which for convenience is designated Annex 15 to the Convention;
2. *Prescribes* 11 July 2016 as the date upon which the said amendment shall become effective, except for any part thereof in respect of which a majority of the Contracting States have registered their disapproval with the Council before that date;
3. *Resolves* that the said amendment or such parts thereof as have become effective shall become applicable on 10 November 2016¹;
4. *Requests the Secretary General:*
 - a) to notify each Contracting State immediately of the above action and immediately after 11 July 2016 of those parts of the amendment which have become effective;
 - b) to request each Contracting State:
 - 1) to notify the Organization (in accordance with the obligation imposed by Article 38 of the Convention) of the differences that will exist on 10 November 2016¹ between its national regulations or practices and the provisions of the Standards in the Annex as hereby amended, such notification to be made before 10 October 2016², and thereafter to notify the Organization of any further differences that arise;
 - 2) to notify the Organization before 10 October 2016² of the date or dates by which it will have complied with the provisions of the Standards in the Annex as hereby amended;
 - c) to invite each Contracting State to notify additionally any differences between its own practices and those established by the Recommended Practices, following the procedure specified in subparagraph b) above with respect to differences from Standards.

¹ 5 November 2020 for paragraph 1.1 Definitions SNOWTAM; paragraphs 5.2.2, 5.2.3, 7.1.1.2; Appendix 2. SNOWTAM format, Instructions for the Completion of the SNOWTAM format and Example of Completed SNOWTAM Format

² 5 October 2020 for paragraph 1.1 Definitions SNOWTAM; paragraphs 5.2.2, 5.2.3, 7.1.1.2; Appendix 2. SNOWTAM format, Instructions for the Completion of the SNOWTAM format and Example of Completed SNOWTAM Format

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TEXT OF AMENDMENT 39-A TO THE

INTERNATIONAL STANDARDS

AND RECOMMENDED PRACTICES

AERONAUTICAL INFORMATION

SERVICES

ANNEX 15

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

CHAPTER 1. GENERAL

Note 1.— The object of the aeronautical information service (AIS) is to ensure the flow of aeronautical data and aeronautical information necessary for global air traffic management (ATM) system safety, regularity, economy and efficiency in an environmentally sustainable manner. The role and importance of aeronautical data and aeronautical information changed significantly with the implementation of area navigation (RNAV), performance-based navigation (PBN), airborne computer-based navigation systems, performance-based communication (PBC), performance-based surveillance (PBS), and data link systems and satellite voice communications (SATVOICE). Corrupt, erroneous, late, or missing aeronautical data and aeronautical information can potentially affect the safety of air navigation.

...

1.1 Definitions

When the following terms are used in the Standards and Recommended Practices for aeronautical information services, they have the following meanings:

...

Performance-based communication (PBC). Communication based on performance specifications applied to the provision of air traffic services.

Note.— An RCP specification includes communication performance requirements that are allocated to system components in terms of the communication to be provided and associated transaction time, continuity, availability, integrity, safety and functionality needed for the proposed operation in the context of a particular airspace concept.

...

Performance-based surveillance (PBS). Surveillance based on performance specifications applied to the provision of air traffic services.

Note.— An RSP specification includes surveillance performance requirements that are allocated to system components in terms of the surveillance to be provided and associated data delivery time, continuity, availability, integrity, accuracy of the surveillance data, safety and functionality needed for the proposed operation in the context of a particular airspace concept.

...

Required communication performance (RCP) specification. A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication.

Required surveillance performance (RSP) specification. A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance.

...

APPENDIX 1. CONTENTS OF THE AERONAUTICAL INFORMATION PUBLICATION (AIP) (see Chapter 4)

...

PART 2 — EN-ROUTE (ENR)

...

ENR 2.1 FIR, UIR, TMA and CTA

Detailed description of flight information regions (FIR), upper flight information regions (UIR), and control areas (CTA) (including specific CTA such as TMA), including:

...

4) frequencies, and if applicable SATVOICE number, supplemented by indications for specific purposes; and

...

ENR 3. ATS ROUTES

Note 1.— Bearings, tracks and radials are normally magnetic. In areas of high latitude, where it is determined by the appropriate authority that reference to Magnetic North is impractical, another suitable reference, i.e. True North or Grid North, may be used.

Note 2.— Changeover points established at the midpoint between two radio navigation aids, or at the intersection of the two radials in the case of a route which changes direction between the navigation aids, need not be shown for each route segment if a general statement regarding their existence is made.

Note 3.— Guidance material on the organization of ATS Route publication is contained in the Aeronautical Information Services Manual (Doc 8126).

ENR 3.1 Lower ATS routes

Detailed description of lower ATS routes, including:

- 1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;

...

- 7) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

...

ENR 3.2 Upper ATS routes

Detailed description of upper ATS routes, including:

- 1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;

...

- 7) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

...

ENR 3.3 Area navigation routes

Detailed description of PBN (RNAV and RNP) routes, including:

- 1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;

...

- 7) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

...

ENR 3.4 Helicopter routes

Detailed description of helicopter routes, including:

- 1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;

...

- 6) remarks, including an indication of the controlling unit, and its operating channel; and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

...

PART 3 — AERODROMES (AD)

...

AD 2. AERODROMES

...

**** AD 2.12 Runway physical characteristics

Detailed description of runway physical characteristics, for each runway, including:

...

- 8) dimensions of stopway (if any) to the nearest metre or foot;
- 9) dimensions of clearway (if any) to the nearest metre or foot;
- 10) dimensions of strips;
- 11) dimensions of runway end safety areas;
- 12) location (which runway end) and description of arresting system (if any);
- 13) the existence of an obstacle-free zone; and
- 14) remarks.

...

**** AD 2.18 Air traffic services communication facilities

Detailed description of air traffic services communication facilities established at the aerodrome, including:

- 1) service designation;

8

- 2) call sign;
- 3) channel(s);
- 4) SATVOICE number(s), if available;
- 5) logon address, as appropriate;
- 6) hours of operation; and
- 7) remarks.

...

— END —

AMENDMENT No. 39-B

TO THE

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

**AERONAUTICAL INFORMATION
SERVICES**

ANNEX 15

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

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FEBRUARY 2016

INTERNATIONAL CIVIL AVIATION ORGANIZATION

AMENDMENT 39 TO THE INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

ANNEX 15 — AERONAUTICAL INFORMATION SERVICES

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¹ 5 November 2020 for paragraph 1.1 Definitions SNOWTAM; paragraphs 5.2.2, 5.2.3, 7.1.1.2; Appendix 2. SNOWTAM format, Instructions for the Completion of the SNOWTAM format and Example of Completed SNOWTAM Format

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**TEXT OF AMENDMENT 39-B TO THE
INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES
AERONAUTICAL INFORMATION SERVICES**

**ANNEX 15
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION**

...

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

...

CHAPTER 5. NOTAM

...

5.2 General specifications

...

5.2.2 Text of NOTAM shall be composed of the significations/uniform abbreviated phraseology assigned to the ICAO NOTAM Code complemented by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language.

Note 1.— Detailed guidance material covering NOTAM, SNOWTAM, ASHTAM and PIB production is contained in Doc 8126.

Note 2.— Additional procedures covering the reporting of runway surface conditions is contained in PANS-Aerodromes (Doc 9981).

...

5.2.3 Information concerning snow, slush, ice and standing water on aerodrome/heliport pavements shall, when reported, frost, standing water, or water associated with snow, slush, ice or frost on the movement area shall be disseminated by means of a SNOWTAM, and contain the information in the order shown in the SNOWTAM Format in Appendix 2.

Note.— The origin and order of the information is a result of assessment processes and procedures prescribed in PANS-Aerodromes (Doc 9981).

...

CHAPTER 7. AERONAUTICAL INFORMATION CIRCULARS (AIC)

7.1 Origination

...

7.1.1.2 The snow plan published under AD 1.2.2 of Appendix 1 shall be supplemented by seasonal information, to be issued well in advance of the beginning of each winter — not less than one month before the normal onset of winter conditions — and shall contain information such as that listed below:

- a) a list of aerodromes/heliports where snow, slush, ice or frost clearance is expected to be performed during the coming winter:

...

APPENDIX 2. SNOWTAM FORMAT

(see Chapter 5, 5.2.3)

{COM heading}	{PRIORITY INDICATOR}		{ADDRESSES}										≡←			
	{DATE AND TIME OF FILING}					{ORIGINATOR'S INDICATOR}					≡←					
{Abbreviated heading}	{SWAA* SERIAL NUMBER}					{LOCATION INDICATOR}		DATE-TIME OF OBSERVATION					{OPTIONAL GROUP}		≡←(
	S	W	*	*												
SNOWTAM		{Serial-number}			≡←											
{AERODROME LOCATION INDICATOR}												A)	≡←			
{DATE-TIME OF OBSERVATION (Time of completion of measurement in UTC)}												B)	≡→			
{RUNWAY DESIGNATOR}												C)	≡→			
{CLEARED RUNWAY LENGTH, IF LESS THAN PUBLISHED LENGTH (m)}												D)	≡→			
{CLEARED RUNWAY WIDTH, IF LESS THAN PUBLISHED WIDTH (m; if offset left or right of centre line add "L" or "R")}												E)	≡→			
{DEPOSITS OVER TOTAL RUNWAY LENGTH (Observed on each third of the runway, starting from threshold having the lower runway designation number)												F)/...../.....				
— NIL — CLEAR AND DRY — 1 — DAMP — 2 — WET — 3 — RIME OR FROST COVERED (depth normally less than 1 mm) — 4 — DRY SNOW — 5 — WET SNOW — 6 — SLUSH — 7 — ICE — 8 — COMPACTED OR ROLLED SNOW — 9 — FROZEN RUTS OR RIDGES)												≡→				
{MEAN DEPTH (mm) FOR EACH THIRD OF TOTAL RUNWAY LENGTH}												G)/...../.....	≡→			
{ESTIMATED SURFACE FRICTION ON EACH THIRD OF RUNWAY}												H)/...../.....				
— ESTIMATED SURFACE FRICTION — GOOD ————— 5 — MEDIUM/GOOD ————— 4 — MEDIUM ————— 3 — MEDIUM/POOR ————— 2 — POOR ————— 1 (The intermediate values of "MEDIUM/GOOD" and "MEDIUM/POOR" provide for more precise information in the estimate when conditions are found to be between medium and either good or poor.)												≡→				
{CRITICAL SNOWBANKS (If present, insert height (cm)/distance from the edge of runway (m) followed by "L", "R" or "LR" if applicable)}												J)	≡→			

{RUNWAY LIGHTS (If obscured, insert "YES" followed by "L", "R" or both "LR" if applicable)}	K)	→
{FURTHER CLEARANCE (If planned, insert length (m)/width (m) to be cleared or if to full dimensions, insert "TOTAL")}	L)	→
{FURTHER CLEARANCE EXPECTED TO BE COMPLETED BY ... (UTC)}	M)	→
{TAXIWAY (If no appropriate taxiway is available, insert "NO")}	N)	→
{TAXIWAY SNOW/BANKS (If higher than 60 cm, insert "YES" followed by the lateral distance apart, m)}	P)	⇐
{APRON (If unusable insert "NO")}	R)	→
{NEXT PLANNED OBSERVATION/MEASUREMENT IS FOR} (month/day/hour in UTC)	S)	→
{PLAIN LANGUAGE REMARKS (Including contaminant coverage and other operationally significant information, e.g. sanding, de-icing, chemicals)}	T))⇐
NOTES: 1. *Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2. 2. Information on other runways, repeat from B to P. 3. Words in brackets () not to be transmitted.		

SIGNATURE OF ORIGINATOR (not for transmission)

(COM heading)	(PRIORITY INDICATOR)	(ADDRESSES)	⇐		
	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)	⇐		
(Abbreviated heading)	(SWAA* SERIAL NUMBER)	(LOCATION INDICATOR)	DATE/TIME OF ASSESSMENT	(OPTIONAL GROUP)	⇐
	S W * *				
SNOWTAM	(Serial number)	→	⇐		
Aeroplane performance section					
(AERODROME LOCATION INDICATOR)	M	A)			⇐
(DATE/TIME OF ASSESSMENT (Time of completion of assessment in UTC))	M	B)			
(LOWER RUNWAY DESIGNATORS)	M	C)			
RUNWAY CONDITION CODE ON EACH THIRD OF RUNWAY (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)	M	D)	/ /		
PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD	C	E)	/ /		
DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH THIRD OF RUNWAY	C	F)	/ /		
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH (Observed on each third of the runway, starting from threshold having the lower runway designation number)	M	G)	/ /		
COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLUSH STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE					
(WIDTH OF RUNWAY TO WHICH THE RWYCCs 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 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 ADJACENT TO THE RUNWAY	O	N)
(SNOWBANKS ON A TAXIWAY (If present, distance from the edge of runway (m) followed by "L", "R" or "LR" as applicable))		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.		

SIGNATURE OF ORIGINATOR (not for transmission)

INSTRUCTIONS FOR THE COMPLETION OF THE SNOWTAM FORMAT

Note.— Origin of data, assessment process and the procedures linked to the surface conditions reporting system are prescribed in the PANS-Aerodromes (Doc 9981).

1. General

- a) When reporting on more than one runway, repeat Items B to P inclusive H (the Aeroplane performance section).
- b) ~~Items together with their indicator must be dropped completely, where no information is to be included.~~ The letters used to indicate items are only used for reference purpose and should not be included in the messages. The letters, M (mandatory) C (conditional) and O (optional) mark the usage and information shall be included as explained below.
- c) Metric units ~~must~~ shall be used and the unit of measurement not reported.
- d) The maximum validity of SNOWTAM is ~~24-8~~ hours. New SNOWTAM ~~must~~ shall be issued whenever ~~there is a significant change in conditions. The following changes relating to runway conditions are considered as significant:~~ a new runway condition report is received.
 - 1) ~~a change in the coefficient of friction of about 0.05;~~
 - 2) ~~changes in depth of deposit greater than the following: 20 mm for dry snow, 10 mm for wet snow, 3 mm for slush;~~
 - 3) ~~a change in the available length or width of a runway of 10 per cent or more;~~
 - 4) ~~any change in the type of deposit or extent of coverage which requires reclassification in Items F or T of the SNOWTAM;~~

~~5) when critical snow banks exist on one or both sides of the runway, any change in the height or distance from centre line;~~

~~6) any change in the conspicuity of runway lighting caused by obscuring of the lights;~~

~~7) any other conditions known to be significant according to experience or local circumstances.~~

e) A SNOWTAM cancels the previous SNOWTAM.

e-f) The abbreviated heading “TTAAiiii CCCC MMYGGg (BBB)” is included to facilitate the automatic processing of SNOWTAM messages in computer data banks. The explanation of these symbols is:

TT = data designator for SNOWTAM = SW;

AA = geographical designator for States, e.g. LF = FRANCE, EG = United Kingdom (see *Location Indicators* (Doc 7910), Part 2, Index to Nationality Letters for Location Indicators);

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

CCCC = four-letter location indicator of the aerodrome to which the SNOWTAM refers (see *Location Indicators* (Doc 7910));

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

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

YY = day of the month

GGg = time in hours (GG) and minutes (g) UTC;

(BBB) = optional group for:

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

Note 1.— Brackets in (BBB) are used to indicate that this group is optional.

Note 2.— When reporting on more than one runway and individual dates/times of observation/measurement are indicated by repeated Item B, the latest date/time of observation/measuring is inserted in the abbreviated heading (MMYYGGg).

Example: Abbreviated heading of SNOWTAM No. 149 from Zurich, measurement/observation of 7 November at 0620 UTC:

SWLS0149 LSZH 11070620

Note.— The information groups are separated by a space, as illustrated above.

~~f) The text “SNOWTAM” in the SNOWTAM Format and the SNOWTAM serial number in a four digit group shall be separated by a space, for example: SNOWTAM 0124.~~

g) For readability purposes for the SNOWTAM message, include a line feed after the SNOWTAM serial number, after Item A, after the last item referring to the runway (e.g. Item P) and after Item S and after the aeroplane performance section.

h) 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.

i) Mandatory information is:

- i) AERODROME LOCATION INDICATOR
- ii) DATE AND TIME OF ASSESSMENT
- iii) LOWER RUNWAY DESIGNATOR NUMBER
- iv) RUNWAY CONDITION CODE FOR EACH RUNWAY THIRD
- v) CONDITION DESCRIPTION FOR EACH RUNWAY THIRD (when runway condition code is reported 1- 5)

~~2. Item A — Aerodrome location indicator (four letter location indicator).~~

~~3. Item B — Eight figure date/time group — giving time of observation as month, day, hour and minute in UTC; this item must always be completed.~~

~~4. Item C — Lower runway designator number.~~

~~5. Item D — Cleared runway length in metres, if less than published length (see Item T on reporting on part of runway not cleared).~~

~~6. Item E — Cleared runway width in metres, if less than published width; if offset left or right of centre line, add (without space) “L” or “R”, as viewed from the threshold having the lower runway designation number.~~

~~7. Item F — Deposit over total runway length as explained in SNOWTAM Format. Suitable combinations of these numbers may be used to indicate varying conditions over runway segments. If more than one deposit is present on the same portion of the runway, they should be reported in sequence from the top (closest to the sky) to the bottom (closest to the runway). Drifts, depths of deposit appreciably greater than the average values or other significant characteristics of the deposits may be reported under Item T in plain language. The values for each third of the runway shall be separated by an oblique stroke (/), without space between the deposit values and the oblique stroke, for example: 47/47/47.~~

~~— Note. — Definitions for the various types of snow are given at the end of this Appendix.~~

~~8. Item G — Mean depth in millimetres deposit for each third of total runway length, or “XX” if not measurable or operationally not significant; the assessment to be made to an accuracy of 20 mm for dry snow, 10 mm for wet snow and 3 mm for slush. The values for each third of the runway shall be separated by an oblique stroke (/), without space between the values and the oblique stroke, for example: 20/20/20.~~

~~9. Item H — Estimated surface friction on each third of the runway (single digit) in the order from the threshold having the lower runway designation number.~~

~~Friction measurement devices can be used as part of the overall runway surface assessment. Some States may have developed procedures for runway surface assessment which may include the use of information obtained from friction measuring devices and the reporting of quantitative values. In such~~

cases, these procedures should be published in the AIP and the reporting made in Item (T) of the SNOWTAM format.

The values for each third of the runway are separated by an oblique stroke (/), without space between the values and the oblique stroke, for example: 5/5/5.

10. *Item J* — Critical snow banks. If present insert height in centimetres and distance from edge of runway in metres, followed (without space) by left (“L”) or right (“R”) side or both sides (“LR”), as viewed from the threshold having the lower runway designation number.
11. *Item K* — If runway lights are obscured, insert “YES” followed (without space) by “L”, “R” or both “LR”, as viewed from the threshold having the lower runway designation number.
12. *Item L* — When further clearance will be undertaken, enter length and width of runway or “TOTAL” if runway will be cleared to full dimensions.
13. *Item M* — Enter the anticipated time of completion in UTC.
14. *Item N* — The code (and combination of codes) for Item F may be used to describe taxiway conditions; enter “NO” if no taxiways serving the associated runway are available.
15. *Item P* — If snow banks are higher than 60 cm, enter “YES” followed by the lateral distance parting the snow banks (the distance between) in metres.
16. *Item R* — The code (and combination of codes) for Item F may be used to describe apron conditions; enter “NO” if the apron is unusable.
17. *Item S* — Enter the anticipated time of next observation/measurement in UTC.
18. *Item T* — Describe in plain language any operationally significant information but always report on length of uncleared runway (Item D) and extent of runway contamination (Item F) for each third of the runway (if appropriate) in accordance with the following scale:

RWY CONTAMINATION 10 PER CENT — if 10% or less of runway contaminated
 RWY CONTAMINATION 25 PER CENT — if 11–25% of runway contaminated
 RWY CONTAMINATION 50 PER CENT — if 26–50% of runway contaminated
 RWY CONTAMINATION 100 PER CENT — if 51–100% of runway contaminated.

2. *Aeroplane performance calculation section*

Item A — Aerodrome location indicator (4-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])

Note. — Only one runway designator is inserted for each runway and always the lowest number.

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

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).

Note 1.— This information is 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.

Note 2.— When the conditions are not reported, this will be signified by the insertion of “NR” for the appropriate runway third.

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).

Note 1.— This information is only provided for the following contamination types:

Standing water, values to be reported 04, then assessed value. Significant changes 3 mm up to and including 15 mm.

Slush, values to be reported 03, then assessed value. Significant changes 3 mm up to and including 15 mm.

Wet snow, values to be reported 03, then assessed value. Significant changes 5 mm.

Dry snow, values to be reported 03, then assessed value. Significant changes 20 mm.

Note 2.— When the conditions are not reported, this will be signified by the insertion of “NR” for the appropriate runway third.

Item G — Condition description for each third. Insert any of the following condition descriptions for each runway third separated by an oblique stroke.

COMPACTED SNOW

DRY SNOW

DRY SNOW ON TOP OF COMPACTED SNOW

DRY SNOW ON TOP OF ICE

FROST

ICE

SLUSH

STANDING WATER

WATER ON TOP OF COMPACTED SNOW

WET ICE

WET SNOW

WET SNOW ON TOP OF COMPACTED SNOW

WET SNOW ON TOP OF ICE

DRY (only reported when there is no contaminant)

Note.— When the conditions are not reported, this will be signified by the insertion of “NR” for the appropriate runway third.

Item H — Width of RWY to which the RWYCCs apply. Insert the width in metres if less than the published runway width.

3. *Situational awareness section*

Note 1.— Elements in the situational awareness section end with a full stop.

Note 2.— Elements in the situational awareness section for which no information exists, or where the conditional circumstances for publication is not fulfilled, are left out completely.

Item I — Reduced runway length. Insert the applicable runway designator and available length in meters (example: RWY nn [L] or nn [C] or nn [R] REDUCED TO [n]nn).

Note.— 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, insert DRIFTING SNOW.

Item K — Loose sand on the runway. When loose sand is reported on the runway, insert the lowest runway designator and with a space “LOOSE SAND” (example: RWY nn or RWY nn[L] or nn[C] or nn[R] LOOSE SAND).

Item L — Chemical treatment on RWY. When chemical treatment has been reported applied, insert the lowest runway designator and with a space “CHEMICALLY TREATED” (example: RWY nn or RWY nn[L] or nn[C] or nn[R] CHEMICALLY TREATED).

Item M — Snow banks on the runway. When critical snow banks are reported present on the runway, insert the runway designator and with a space “SNOWBANK” and with a space left “L” or right “R” or both sides “LR”, followed by the distance in metres from centreline separated by a space FM CL (example: RWY nn or RWY nn[L] or nn[C] or nn[R] SNOWBANK Lnn or Rnn or LRnn FM CL).

Item N — Snow banks on the taxiway. When critical snow banks are present on a taxiway, insert the taxiway designator and with a space “SNOWBANK” and with a space left “L” or right “R” or both sides “LR”, followed by the distance in metres from centreline separated by a space FM CL (example: TWY [nn]n SNOWBANK Lnn or Rnn or LRnn FM CL).

Item O — Snow banks adjacent to the runway. When snow banks are reported present penetrating the height profile in the aerodrome snow plan, insert lowest runway designator and “ADJ SNOWBANKS” (example: 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 insert taxiway designator followed by a space “POOR”. (example: TWY [n or nn] POOR or ALL TWY POOR).

Item R — Apron conditions. When apron conditions are reported slippery or poor insert apron designator followed by a space “POOR” (example: APRON [nnnn] POOR or ALL APRONS POOR).

Item S — Measured friction coefficient. Where reported, insert the measured friction coefficient and friction measuring device.

Note.— This will only be reported for those States that have an established program of runway friction measurement using State approved friction measuring equipment.

Item T — Plain language remarks.

EXAMPLE OF COMPLETED SNOWTAM FORMAT

GG EHAMZQZX EDDFZQZX EKCHZQZX
 070645 LSZHNYX
 SWLS0149 LSZH 11070700
 (SNOWTAM 0149
 A) LSZH
 B) 11070620 ————— C) 02 ————— D)...P)
 B) 11070600 ————— C) 09 ————— D)...P)
 B) 11070700 ————— C) 12 ————— D)...P)
 R) NO ————— S) 11070920
 T) DEICING

Example SNOWTAM 1

GG EADBZQZX EADNZQZX EADSZQZX
 070645 EADDYNYX
 SWEA0149 EADD 02170055
 (SNOWTAM 0149
 EADD 02170055 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET
)

Example SNOWTAM 2

GG EADBZQZX EADNZQZX EADSZQZX
 070645 EADDYNYX
 SWEA0149 EADD 02170135
 (SNOWTAM 0150
 EADD 02170055 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET
 EADD 02170135 09R 5/4/3 100/50/75 NR/06/06 WET/SLUSH/SLUSH
)

Example SNOWTAM 3

GG EADBZQZX EADNZQZX EADSZQZX
 070645 EADDYNYX
 SWEA0149 EADD 02170225
 (SNOWTAM 0151
 EADD 02170055 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET
 EADD 02170135 09R 5/4/3 100/50/75 NR/06/06 WET/SLUSH/SLUSH
 EADD 02170225 09C 3/2/1 75/100/100 06/12/12 SLUSH/WET SNOW/WET SNOW
 RWY 09L SNOWBANK R20 FM CL. RWY 09R ADJ SNOWBANKS. TWY B POOR. APRON
 NORTH POOR)

Example SNOWTAM 4

GG EADBZQZX EADNZQZX EADSZQZX
 070645 EADDYNYX
 SWEA0149 EADD 02170345
 (SNOWTAM 0152
 EADD 02170345 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET
 EADD 02170134 09R 5/4/3 100/50/75 NR/06/06 WET/SLUSH/SLUSH
 EADD 02170225 09C 3/2/1 75/100/100 06/12/12 SLUSH/WET SNOW/WET SNOW 35
 DRIFTING SNOW. RWY 09L LOOSE SAND. RWY 09R CHEMICALLY TREATED. RWY 09C
 CHEMICALLY TREATED.)

Note.— See the Aeronautical Information Services Manual (Doc 8126) for additional SNOWTAM examples incorporating different runway conditions.

Definitions of the various types of snow

Slush. ~~Water saturated snow which with a heel and toe slap down motion against the ground will be displaced with a splatter; specific gravity: 0.5 up to 0.8.~~

~~———— *Note.*— Combinations of ice, snow and/or standing water may, especially when rain, rain and snow, or snow is falling, produce substances with specific gravities in excess of 0.8. These substances, due to their high water/ice content, will have a transparent rather than a cloudy appearance and, at the higher specific gravities, will be readily distinguishable from slush.~~

Snow (on the ground).

- ~~a) *Dry snow.* Snow which can be blown if loose or, if compacted by hand, will fall apart again upon release; specific gravity: up to but not including 0.35.~~
- ~~b) *Wet snow.* Snow which, if compacted by hand, will stick together and tend to or form a snowball; specific gravity: 0.35 up to but not including 0.5.~~
- ~~c) *Compacted snow.* Snow which has been compressed into a solid mass that resists further compression and will hold together or break up into lumps if picked up; specific gravity: 0.5 and over.~~

— END —

PART II – AERODROME OPERATIONAL MANAGEMENT

Chapter 1

(applicable on 5 November 2020)

REPORTING FORMAT USING STANDARD RUNWAY CONDITION REPORT

1.1 RUNWAY SURFACE CONDITION ASSESSMENT AND REPORTING

1.1.1 General

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

1.1.1.1 Assessing and reporting the condition of the movement area and related facilities is necessary in order to provide the flight crew with the information needed for safe operation of the aeroplane. The runway condition report (RCR) is used for reporting assessed information.

1.1.1.2 On a global level, movement areas are exposed to a multitude of climatic conditions and consequently a significant difference in the condition to be reported. The RCR describes a basic structure applicable for all these climatic variations. Assessing runway surface conditions rely on a great variety of techniques and no single solution can apply to every situation.

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

1.1.1.3 The philosophy of the RCR is that the aerodrome operator assesses the runway surface conditions whenever water, snow, slush, ice or frost are present on an operational runway. From this assessment, a runway condition code (RWYCC) and a description of the runway surface are reported which can be used by the flight crew for aeroplane performance calculations. This format, based on the type, depth and coverage of contaminants, is the best assessment of the runway surface condition by the aerodrome operator; however, all other pertinent information will be taken into consideration and be kept up to date and changes in conditions reported without delay.

1.1.1.4 The RWYCC reflects the runway braking capability as a function of the surface conditions. With this information, the flight crew can derive, from the performance information provided by the aeroplane manufacturer, the necessary stopping distance of an aircraft on the approach under the prevailing conditions.

1.1.1.5 The operational requirements in 1.1.1.3 stem from Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes* and Annex 8 — *Airworthiness of Aircraft* with the objective of achieving the desired level of safety for the aeroplane operations.

1.1.1.6 Annex 14, Volume I contains high-level SARPs related to the assessment and reporting of runway surface condition. Associated objectives and operational practices are described in 1.1.2 and 1.1.3.

1.1.1.7 The operational practices are intended to provide the information needed to fulfil the syntax requirements for dissemination and promulgation specified in Annex 15 — *Aeronautical Information Services* and the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444).

Note.— For practical reasons, the RCR information string has been provisionally incorporated in Annex 15 as a revision of the SNOWTAM format.

1.1.1.8 When the runway is wholly or partly contaminated by standing water, snow, slush, ice or frost, or is wet associated with the clearing or treatment of snow, slush, ice or frost, the runway condition report should be disseminated through the AIS and ATS services. When the runway is wet, not associated with the presence of standing water, snow, slush, ice or frost, the assessed information should be disseminated using the runway condition report through the ATS only.

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

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

- a) aeroplane take-off and landing performance calculations:
 - i) dispatch — pre-planning before commencement of flight:
 - take-off from a runway; and
 - landing on a destination aerodrome or an alternate aerodrome;
 - ii) in flight — when assessing the continuation of flight; and
 - before landing on a runway; and
- b) situational awareness of the surface conditions on the taxiways and aprons.

1.1.2 Objectives

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

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

1.1.2.2 The assessment process shall include:

- a) assessing and reporting the condition of the movement area;
- b) providing the assessed information in the correct format; and
- c) reporting significant changes without delay.

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

- a) aeroplane performance calculation section; and
- b) situational awareness section.

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

- a) aeroplane performance calculation section:
 - i) aerodrome location indicator;
 - ii) date and time of assessment;
 - iii) lower runway designation number;
 - iv) RWYCC for each runway third;
 - v) per cent coverage contaminant for each runway third;
 - vi) depth of loose contaminant for each runway third;
 - vii) condition description for each runway third; and
 - viii) width of runway to which the RWYCCs apply if less than published width.
- b) situational awareness section:
 - i) reduced runway length;
 - ii) drifting snow on the runway;
 - iii) loose sand on the runway;
 - iv) chemical treatment on the runway;
 - v) snowbanks on the runway;
 - vi) snowbanks on the taxiway;
 - vii) snowbanks adjacent to the runway;
 - viii) taxiway conditions;
 - ix) apron conditions;
 - x) State-approved, and published use of, measured friction coefficient; and
 - xi) plain language remarks.

1.1.2.5 The syntax for dissemination as described in the RCR template in Annex 15, Appendix 2, is determined by the operational need of the flight crew and the capability of trained personnel to provide the information arising from an assessment.

Note.— For practical reasons, the RCR information string has been provisionally incorporated in Annex 15 — Aeronautical Information Services as a revision of the SNOWTAM format.

1.1.2.6 The syntax requirement in 1.1.2.5 shall be strictly adhered to when providing the assessed information through the RCR.

1.1.3 Operational practices

Note.— This section covers the specific operational practices and the ways in which they are applied in order to achieve the basic principles defined in 1.1.2 — Objectives.

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

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

1.1.3.3 A change in the runway surface condition used in the runway condition report is considered significant whenever there is:

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

Runway Condition Report — Aeroplane performance calculation section

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

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

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

This information is mandatory.

Format: nnnn
Example: ENZH

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

This information is mandatory.

Format: MMDDhhmm

Example: 09111357

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

This information is mandatory.

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

Example: 09L

- d) **Runway condition code for each runway third:** a one-digit number identifying the RWYCC assessed for each runway third. The codes are reported in a three-character group separated by a “/” for each third. The direction for listing the runway thirds shall be in the direction as seen from the lower designation number.

This information is mandatory.

When transmitting information on runway surface conditions by ATS to flight crews, the sections are, however, referred to as the first, second or third part of the runway. The first part always means the first third of the runway as seen in the direction of landing or take-off as illustrated in Figures II-1-1 and II-1-2 and detailed in PANS-ATM (Doc 4444).

Format: n/n/n

Example: 5/5/2

Note 1.— A change in RWYCC from, say, 5/5/2 to 5/5/3 is considered significant. (See further examples below).

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

Note 3.— Procedures for assigning a RWYCC are available in 1.1.3.12 to 1.1.3.16.

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

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

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

Example: 25/50/100

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

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

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

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

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

- f) **Depth of loose contaminant: dry snow, wet snow, slush or standing water for each runway third:** a two- or three-digit number representing the assessed depth (mm) of the contaminant for each runway third. The depth is reported in a six to nine character group separated by a “/” for each runway third as defined in Table II-1-2. The assessment is based upon an even distribution within the runway thirds as assessed by trained personnel. If measurements are included as part of the assessment process, the reported values are still reported as assessed depths, as the trained personnel have placed their judgment upon the measured depths to be representative for the runway third.

Format: [n]nn/[n]nn/[n]nn
 Examples: 04/06/12 [STANDING WATER]
 02/04/09 [SLUSH]
 02/05/10 [WET SNOW or WET SNOW ON TOP OF ...]
 02/20/100 [DRY SNOW or DRY SNOW ON TOP OF]
 NR/NR/100 [DRY SNOW in the last third only]

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

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

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

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

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

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

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

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

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

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

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

Example: /NR/

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

Note.— In this context a significant variation in depth in the lateral direction is more than twice the depth indicated in column 3 of Table II-1-2. Further information is available in Circular 329 — Assessment, Measurement and Reporting of Runway Surface Conditions.

- g) **Condition description for each runway third:** to be reported in capital letters using terms specified in 2.9.5 of Annex 14, Volume I. These terms have been harmonized with the terms used in the Standards and Recommended Practices in Annexes 6, 8, 11 and 15. The condition type is reported by any of the following condition type descriptions for each runway third and separated by an oblique stroke “/”.

This information is mandatory.

COMPACTED SNOW
 DRY
 DRY SNOW
 DRY SNOW ON TOP OF COMPACTED SNOW
 DRY SNOW ON TOP OF ICE
 FROST
 ICE
 SLUSH
 STANDING WATER
 WATER ON TOP OF COMPACTED SNOW
 WET
 WET ICE
 WET SNOW
 WET SNOW ON TOP OF COMPACTED SNOW
 WET SNOW ON TOP OF ICE

Format: nnnn/nnnn/nnnn

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

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

This information is optional.

Format: nn

Example: 30

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

Runway condition report — Situational awareness section:

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

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

a) **Reduced runway length**

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

Format: Standardized fixed text

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

Example: RWY 22L LDA REDUCED TO 1450.

b) **Drifting snow on the runway**

This information is optional.

Format: Standardized fixed text

Example: DRIFTING SNOW.

c) **Loose sand on the runway**

This information is optional.

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

Example: RWY 02R LOOSE SAND.

d) **Chemical treatment on the runway**

This information is mandatory.

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

Example: RWY 06 CHEMICALLY TREATED.

e) **Snowbanks on the runway**

This information is optional.

Left or right distance in metres from centre line.

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

Example: RWY 06L SNOWBANK LR19 FM CL.

f) **Snowbanks on taxiway**

This information is optional.

Left or right distance in metres from centre line.

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

Example: TWY A SNOWBANK LR20 FM CL.

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

This information is optional.

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

Example: RWY 06R ADJACENT SNOWBANKS.

h) Taxiway conditions

This information is optional.

Format: TWY [nn]n POOR

Example: TWY B POOR.

i) Apron conditions

This information is optional.

Format: APRON [nnnn] POOR

Example: APRON NORTH POOR.

j) State-approved and published use of measured friction coefficient

This information is optional.

Format: *[State set format and associated procedures]*

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

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

Where possible, standardized text should be developed.

This information is optional.

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

Allowable characters:

A B C D E F G H I J K 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]

Complete information string

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

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

GG EADBZQZX EADNZQZX EADSZQZX

070645 EADDYNYX

SWEA0151 EADD 02170055

SNOWTAM 0151

[Aeroplane performance calculation section]

EADD 02170055 09L 5/5/5 100/100/100 NR/NR/NR WET/WET/WET
 EADD 02170135 09R 5/4/3 100/50/75 NR/06/06 WET/SLUSH/SLUSH
 EADD 02170225 09C 3/2/1 75/100/100 06/12/12 SLUSH/WET SNOW/WET SNOW

[Situational awareness section]

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

Assessing a runway and assigning a runway condition code

1.1.3.7 The assessed RWYCC to be reported for each third of the runway is determined by following the procedure described in 1.1.3.12 to 1.1.3.16.

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

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

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

1.1.3.10 A description of the runway surface condition is provided using the contamination terms described in capital letters in Table II-1-3 — *Assigning a runway condition code (RWYCC)*.

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

1.1.3.12 The RWYCC is determined using Table II-1-3.

1.1.3.13 The variables, in Table II-1-3, that may affect the runway condition code are:

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

Note.— *At air temperatures of plus 3 degrees Celsius and below, with a dew point spread of 3 degrees Celsius or less, the runway surface condition may be more slippery than indicated by the runway condition code assigned by Table II-1-3. The narrow dew point spread indicates that the air mass is relatively close to saturation which is often associated with actual precipitation, intermittent precipitation, nearby precipitation or fog.*

This may depend on its correlation with precipitation but it may also, at least in part, depend on the exchange of water at the air-ice interface. Due to the other variables involved, such as surface temperature, solar heating and ground cooling or heating, a small temperature spread does not always mean that the braking action will be more slippery. The observation should be used by aerodrome operators as an indicator of slippery conditions but not as an absolute.

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

1.1.3.15 An assigned RWYCC 1 or 0 can be upgraded using the following procedures (but see also 1.1.3.16):

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

1.1.3.16 Upgrading of RWYCC 1 or 0 using the procedures in 1.1.3.15 shall not be permitted to go beyond a RWYCC 3.

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

1.1.3.18 The RWYCC determined from Table II-1-3 should be appropriately downgraded considering all available means of assessing runway slipperiness, including the criteria given in Table II-1-4.

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

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

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

Note 2.— Procedures for downgrading reported RWYCC can be found in 1.1.3.23 including the use of Table II-1-5 runway condition assessment matrix (RCAM).

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

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

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

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

1.1.3.22 Table II-1-4 shows the correlation of pilot reports of runway braking action with RWYCCs.

1.1.3.23 Table II-1-3 and Table II-1-4 combined form the runway condition assessment matrix (RCAM) in Table II-1-5. The RCAM is a tool to be used when assessing runway surface conditions. It is not a standalone document and shall be used in compliance with the associated procedures of which there are two main parts:

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

1.2 AERODROME MOVEMENT AREA MAINTENANCE

(Guidance on surface friction characteristics and States' responsibilities, including examples of States' good practices, are currently being developed.)

LIST OF TABLES AND FIGURES

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

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

Table II-1-2. Depth assessment for contaminants

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

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

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

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

Table II-1-3. Assigning a runway condition code (RWYCC)

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

Table II-1-4. Correlation of runway condition code and pilot reports of runway braking action

<i>Pilot report of runway braking action</i>	<i>Description</i>	<i>Runway condition code (RWYCC)</i>
N/A		6
GOOD	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal	5
GOOD TO MEDIUM	Braking deceleration OR directional control is between good and medium	4
MEDIUM	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced	3
MEDIUM TO POOR	Braking deceleration OR directional control is between medium and poor	2
POOR	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced	1
LESS THAN POOR	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain	0

Table II-1-5. Runway condition assessment matrix (RCAM)

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

¹ Runway surface temperature should preferably be used where available.

² The aerodrome operator may assign a higher runway condition code (but no higher than code 3) for each third of the runway, provided the procedure in 1.1.3.15 is followed.

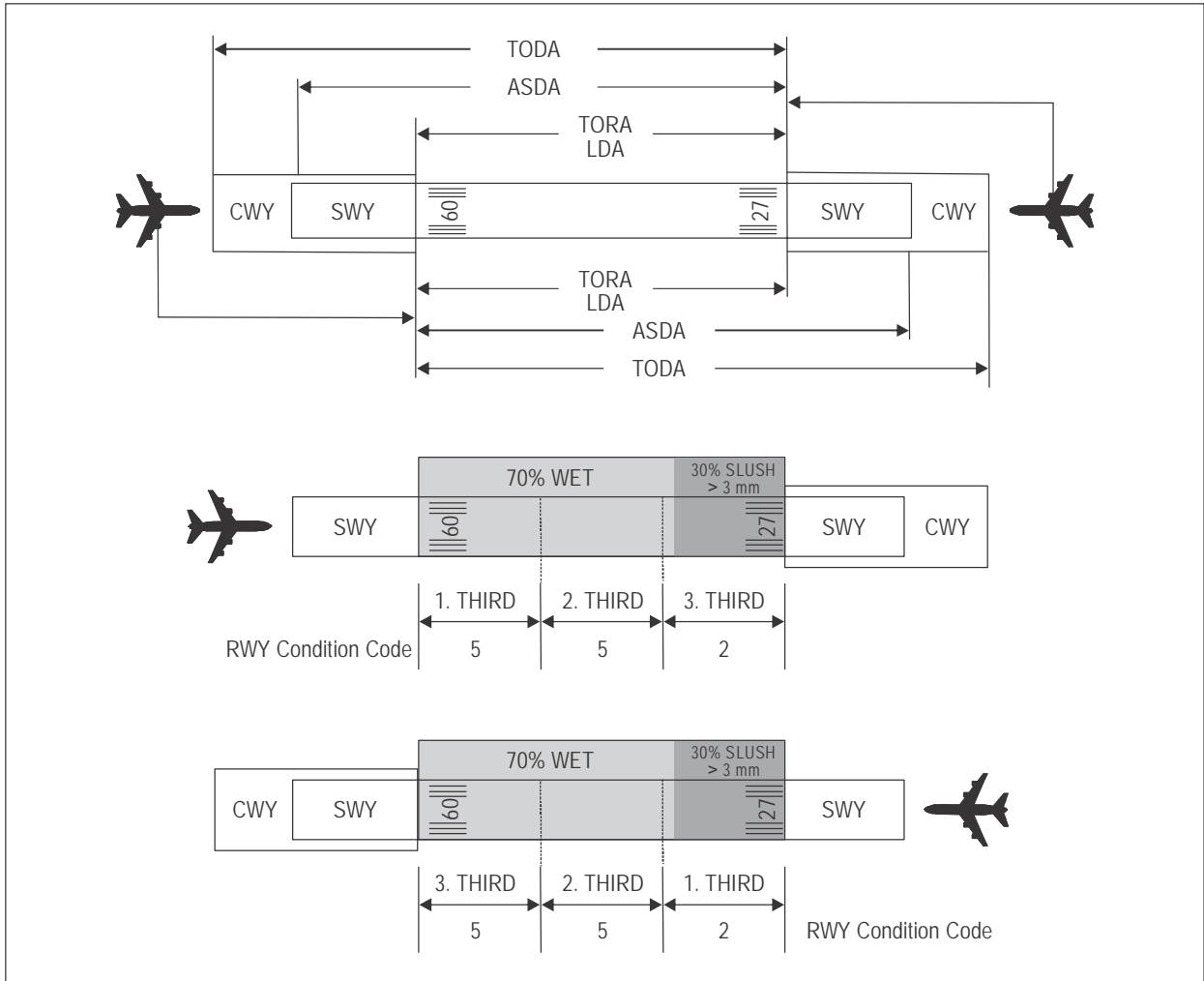


Figure II-1-1. Reporting of runway condition code from ATS to flight crew for runway thirds

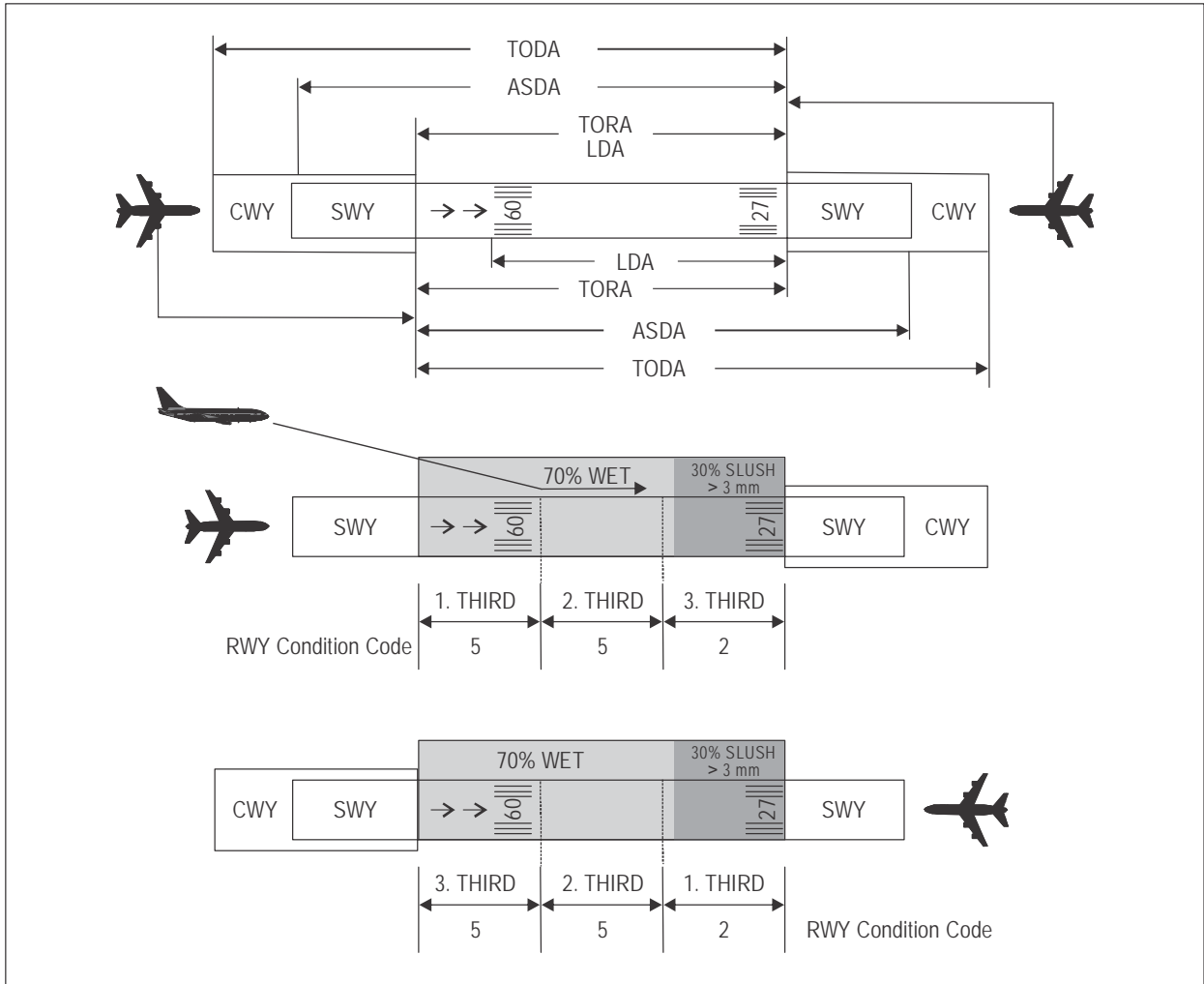


Figure II-1-2. Reporting of runway condition code for runway thirds from ATS to flight crew on a runway with displaced threshold

Attachment A to Chapter 1
(applicable 5 November 2020)

METHODS OF ASSESSING RUNWAY SURFACE CONDITION

		<i>ANNEX 14, Volume I, 7th Edition, July 2016</i>	<i>REMARK</i>
DESIGN AND CONSTRUCTION	Slope	3.1.13 Longitudinal slopes 3.1.19 Transverse slopes	
	Texture	3.1.26 Recommendation. —The average surface texture depth of a new surface should be not less than 1.0 mm.	
	Minimum friction level set by the State	3.1.23 A paved runway shall be so constructed or resurfaced as to provide surface friction characteristics at or above the minimum friction level set by the State.	The State set criteria for surface friction characteristics and output from State set or agreed assessment methods form the reference from which trend monitoring are performed and evaluated.
	Polishing	3.1.23 A paved runway shall be so constructed or resurfaced as to provide surface friction characteristics at or above the minimum friction level set by the State.	Polished Stone Value. (PSV-value) is a measure of skidding resistance on a small sample of stone surface, having being subjected to a standard period of polishing.

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

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

— END —

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