



SIERRA LEONE CIVIL AVIATION AUTHORITY

ADVISORY CIRCULAR

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GUIDANCE ON THE ISSUANCE OF SNOWTAM

A handwritten signature in blue ink, appearing to read 'M. Ban', is positioned to the left of the official seal.



Director General

Sierra Leone Civil Aviation Authority

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1. GENERAL

The Sierra Leone Civil Aviation Authority's Advisory Circulars contains information about standards, practices and procedures that the Authority has found to be an Acceptable Means of Compliance (AMC) with the associated Regulations.

An AMC is not intended to be the only means of compliance with a Regulation, and consideration will be given to other methods of compliance that may be presented to the Authority

Information considered directive in nature is described in this AC in terms such as "shall" and "must", indicating the actions are mandatory. Guidance information is described in terms such as "should" and "may" indicating the actions are desirable or permissive, but not mandatory

1.1 Purpose

This Advisory Circular (AC) provides guidance on the dissemination of information of contaminants on the movement area and this information will be made available to flight operations personnel, including flight crews and services responsible for pre-flight information and explains the forthcoming Sierra Leone implementation of the International Civil Aviation Organization (ICAO) Global Reporting Format (GRF) for runway condition reporting.

1.2 Applicability

The guidance in this AC is applicable to Air Navigation Services Provider (ANSP) and Aerodrome Operator.

1.3 Description of Changes

This AC is the first to be issued on this subject

1.4 References

- (a) SLCAR Part 15- Aeronautical Information Services
- (b) SLCAR Part 14A- Aerodrome Design and Operations
- (c) IACO Annex 15 – Aeronautical Information Services
- (d) ICAO Annex 14 – Aerodrome Design and Operations
- (e) ICAO DOC.10066 – PANS- AIM
- (f) ICAO DOC.9981– PANS – Aerodromes
- (g) ICAO DOC.8126– AIS Manual
- (h) ICAO DOC.7910– Location Indicators
- (i) ICAO Circular 355– Assessment, Measurement and Reporting of Runway Surface Conditions

1.5 Cancelled Documents

Not Applicable

2. FLOW OF INFORMATION

2.1 Collection of information

Aerodrome operator is responsible to assess the condition of the runway for each third of the runway and issue a Runway Condition Report (RCR). This report contains the RWYCC (Runway Condition Code) and information which describes the runway surface condition: type of contamination, depth, coverage for each third of the runway, etc. and other relevant information.

This code is derived from the Runway Condition Assessment Matrix (RCAM) and associated procedures for downgrading and upgrading.

Runway condition assessment matrix (RCAM)			
Assessment		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><i>Up to and including 3 mm depth:</i></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><i>-15°C and Lower outside air temperature:</i></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><i>More than 3 mm depth:</i></p> <ul style="list-style-type: none"> • DRY SNOW • WET SNOW <p><i>Higher than -15°C outside air temperature:</i></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><i>More than 3 mm depth of water or slush:</i></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 	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 • WATER ON TOP OF COMPACTED SNOW • DRY SNOW or WET SNOW ON TOP OF ICE 	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	LESS THAN POOR

Note – Details of the Global Reporting Format is contained in the Procedures for Air Navigation Services (PANS) — Aerodromes (PANS-Aerodromes, Doc 9981) and ICAO Circular 355 (Assessment, Measurement and Reporting of Runway Surface Conditions).

2.2 Dissemination of information

(a) *Aeronautical information services (AIS)* provide the information received in the RCR to end users through SNOWTAM in the new format.

Note – Details of the new SNOWTAM format is contained in the Procedures for Air Navigation Services (PANS) — Aeronautical Information Management (PANS-AIM, Doc 10066).

(b) *Air traffic services (ATS)* provide the information received via the RCR to end users through radio, ATIS, etc. and received special air-reports.

2.3 Using the information

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).

3. GENERAL PROVISIONS OF SNOWTAM

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

3.1. Metric units shall be used in SNOWTAM and the unit of measurement (e.g. mm, cm, m, etc.) should not be reported.

Example: **09/15/30** (item F): means that the depth of the contaminant in the first part of runway is 9mm, in the second part 15mm and in the third part 30mm. Units of measurement are metric but is not reported in the message.

3.2. As of 4 November 2021, the maximum validity of SNOWTAM is 8 hours.

Note 1 – when no SNOWTAM is issued after 8 hours of a previous SNOWTAM for an aerodrome, the old SNOWTAM is expired and it is assumed that there is no more significant runway surface condition to be reported.

3.3. New SNOWTAM shall be issued whenever a new runway condition report (RCR) is received from the aerodrome operator.

Note 1 – prior arrangement between AIS (NOTAM Office) and the aerodrome authority is required to specify the means and process of submission of the Runway Condition Report (RCR)/initiation of SNOWTAM.

Note 2 – If there is a valid SNOWTAM in the old format (with 24 hours validity) issued on 3 November 2021, it is recommended to issue a new SNOWTAM with the new format, right after 0000 UTC on 4 November 2021 to replace the old format SNOWTAM.

- 3.4. A SNOWTAM cancels the previous SNOWTAM. When a new SNOWTAM is issued for a specific aerodrome that has another valid SNOWTAM, the new one automatically replaces the older SNOWTAM (there is no need to reference the older SNOWTAM in the new SNOWTAM, as what we do for NOTAM).
- 3.5. With reference to the SNOWTAM template (see paragraph 4), the letters used to indicate items (A to T; third column of the SNOWTAM template) are only used for reference purpose and should not be included in the messages. The letters, M (mandatory), C (conditional) and O (optional) (second column of the SNOWTAM template) mark the usage and information.

Example: items B) to G) below without the letters indicating items (separated by one space):

01150915 12L 5/2/2 100/50/75 NR/06/06 WET/SLUSH/SLUSH

- 3.6. The abbreviated heading "TTAAiiii CCCC MMYGGgg (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 (ICAO 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 (ICAO Doc 7910));

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

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

YY = day of the month ¹

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

(BBB) = optional group for correction, in the case of an error, to a SNOWTAM message previously disseminated with the same serial number = COR.

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/assessment are indicated by repeated Item B, the latest date/time of observation/assessment is inserted in the abbreviated heading (MMYYGGgg).

Example: Abbreviated heading of SNOWTAM No. 149 from Zurich, measurement/observation of 7 November at 0620 UTC: **SWLS0149 LSZH 11070620**

Note 3. — The information groups are separated by a space, as illustrated above.

- 3.7. 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**.

Note 1.— The SNOWTAM serial number resets at the beginning of each calendar year (begins with SNOWTAM 0001 on January 1 at 0000 UTC).

- 3.8. **Repeating information in the aeroplane performance calculation section for more than one runway:** when a SNOWTAM is reporting on more than one runway of the aerodrome for which the SNOWTAM is issued, Items B to H (aeroplane performance calculation section) should be repeated.

Example:

```
02170135 09R 5/2/2 100/75/75 NR/06/06 WET/SLUSH/SLUSH
02170225 09C 2/3/3 75/100/100 06/12/12 SLUSH/WET SNOW/WET SNOW
35
02170225 09L 3/3/3 50/50/75 08/15/10 WET SNOW/WET SNOW/WET
SNOW 40
```

- 3.9. **Repeating information in the situational awareness section:** When reported, the information in the situational awareness section could be repeated, as applicable, for each runway, taxiway and apron.

Note 1.— Option 1: it is recommended that the items of situational awareness section be kept in alphabetical order when repeated (item I to S)). It means that item I) should be repeated for several runways (if applicable) and then item J), then item K), etc. and item T) ends the SNOWTAM message. Example:

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

Note 2. — Option 2: repeat all relevant items of the same runway (item I) to M)) for each runway, then to continue with the rest of the items (item N) to T)). Example:

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

Note 3— since there is no specific guideline/rule for repeating items in the situational awareness section, NOTAM systems should be flexible to receive and process situational awareness information in any order.

Note 4.— items in the situational awareness section are separated by a full stop and a space (item L. item M. item N. etc.).

Guidance on the Issuance of SNOWTAM

3.10. For readability purposes of the SNOWTAM message, include a line feed after the SNOWTAM serial number, after Item A, and after the aeroplane performance calculation section.

3.11. Mandatory information in SNOWTAM is:

- (a) AERODROME LOCATION INDICATOR;
- (b) DATE AND TIME OF ASSESSMENT;
- (c) LOWER RUNWAY DESIGNATOR NUMBER;
- (d) RUNWAY CONDITION CODE FOR EACH RUNWAY THIRD; and
- (e) CONDITION DESCRIPTION FOR EACH RUNWAY THIRD (when runway condition code (RWYCC) is reported 1–5)

Note 1.— 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/).

Example: a SNOWTAM with the minimum (mandatory) information

EADBZTZX ...

111045 EADDYNYX

SWEA0124 EADD 01111035

(SNOWTAM 0124

EADD

01111035 09R 5/5/5 NR/NR/NR NR/NR/NR FROST/FROST/FROST)

4. DESCRIPTION OF SNOWTAM ITEMS

This section provides description and examples for each item of the SNOWTAM format, as shown in the following template:

(COM heading)	(PRIORITY INDICATOR)	(ADDRESSES)			⊲
	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)			⊲
(Abbreviated heading)	(SW* SERIAL NUMBER)		(LOCATION INDICATOR)	DATE/TIME OF ASSESSMENT	(OPTIONAL GROUP)
	S	W	*	*	⊲
SNOWTAM →	(Serial number)	⊲			
Aeroplane performance calculation section					
(AERODROME LOCATION INDICATOR)	M	A)	⊲		
(DATE/TIME OF ASSESSMENT (<i>Time of completion of assessment in UTC</i>))	M	B)	→		
(LOWER RUNWAY DESIGNATION NUMBER)	M	C)	→		
(RUNWAY CONDITION CODE (RWYCC) ON EACH RUNWAY THIRD) (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)	M	D)	/ /	→	
(PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD)	C	E)	/ /	→	
(DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH RUNWAY THIRD)	C	F)	/ /	→	
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH) (Observed on each runway third, starting from threshold having the lower runway designation number)	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 RUNWAY CONDITION CODES APPLY, IF LESS THAN PUBLISHED WIDTH)	O	H)	⊲		
Situational awareness section					
(REDUCED RUNWAY LENGTH, IF LESS THAN PUBLISHED LENGTH (m))	O	I)	→		
(DRIFTING SNOW ON THE RUNWAY)	O	J)	→		
(LOOSE SAND ON THE RUNWAY)	O	K)	→		
(CHEMICAL TREATMENT ON THE RUNWAY)	O	L)	→		
(SNOWBANKS ON THE RUNWAY) (If present, distance from runway centre line (m) followed by "L", "R" or "LR" as applicable)	O	M)	→		
(SNOWBANKS ON A TAXIWAY)	O	N)	→		
(SNOWBANKS ADJACENT TO THE RUNWAY)	O	O)	→		
(TAXIWAY CONDITIONS)	O	P)	→		
(APRON CONDITIONS)	O	R)	→		
(MEASURED FRICTION COEFFICIENT)	O	S)	→		
(PLAIN-LANGUAGE REMARKS)	O	T))		
NOTES: 1. *Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2 or otherwise applicable aerodrome identifier. 2. Information on other runways, repeat from B to H. 3. Information in the situational awareness section repeated for each runway, taxiway and apron. Repeat as applicable when reported. 4. Words in brackets () not to be transmitted. 5. For letters A) to T) refer to the <i>Instructions for the completion of the SNOWTAM Format</i> , paragraph 1, item b).					

SIGNATURE OF ORIGINATOR (not for transmission)

4.1 Aeroplane Performance Calculation Section

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

Example: **LFPG** = Paris/Charles du Gaulle

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

Example: **12040638**

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

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

Note.1 — Only one runway designator is inserted for each runway and always the lower number.

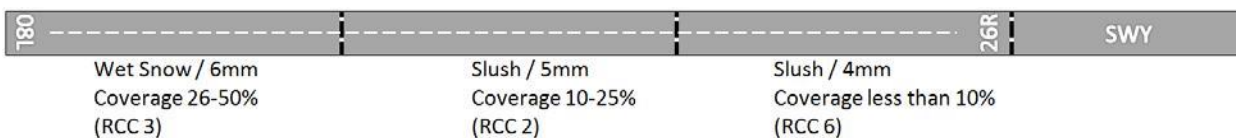
Example: **08L** for RWY08L/26R, 08L should be reported (08<26)



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

Example: **3/2/6**: runway condition code for the first part of runway 08L is 3, for the second part 2 and for the third parts is 6.

Note – Since less than 10% coverage of slush exist on the third part, RWYCC is reported 6 and the condition description will be reported Dry).



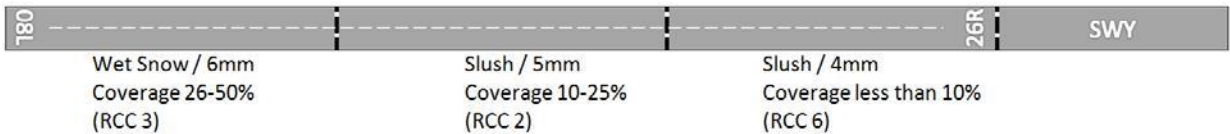
Item E — Per cent coverage is reported as NR (less than 10% or DRY), 25 (10-25 %), 50 (26-50 %), 75 (51-75 %) or 100 (76-100 %) for each runway third, separated by an oblique stroke ([n]nn/[n]nn/[n]nn).

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(s).

Note 3.— When the runway condition is “DRY” or the coverage is less than 10%, item E shall be reported by inserting “NR”.

Example: **50/25/NR** : percentage of coverage at the first runway third of RWY 08L is 50 % (between 26 to 50%), at the second part of the runway is 25 % (between 10 to 25 %) and the coverage is less than 10 % at the third part of the runway.



Item F — Depth of loose contaminant for each runway third. When provided, insert in millimetres for each runway third, separated by an oblique stroke (nn/nn/nn or nnn/nnn/nnn). Depth should be reported in 2 or 3 digits (i.e. 05 for 5mm, 115 for 115mm, etc.) and the units of measurement (mm) is not reported/inserted.

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

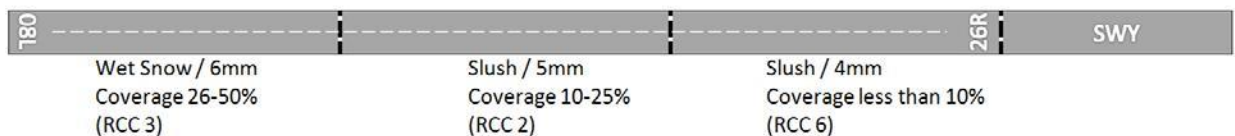
- standing water, values to be reported 04, then assessed value;
- slush, values to be reported 03, then assessed value;
- wet snow, values to be reported 03, then assessed value; and
- dry snow, values to be reported 03, then assessed value.

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

Note 3.— NR also includes the situations when the depth of the contaminant is less than the minimum values to be reported (as indicated above) or that part of runway is dry, etc.

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

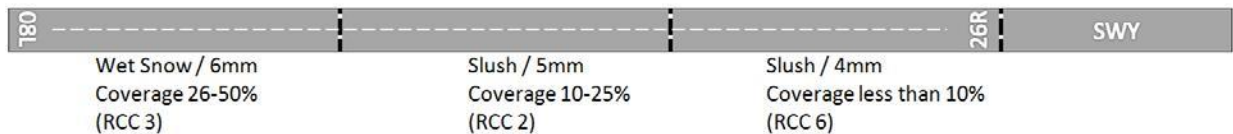


Item G — Condition description for each runway third. Insert any of the following condition descriptions for each runway third, separated by an oblique stroke:

- 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
- 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 1.— When the conditions are not reported, this will be signified by the insertion of “NR” for the appropriate runway third(s).

Example: **WET SNOW/SLUSH/DRY** : condition description is “Wet snow” for the first part of runway, “Slush” for the second and “Dry” for the third parts of runway (since the coverage of slush on the third part is less than 10%, it is reported as Dry).



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

Example: **35**: published width of RWY 08L/26R is 45m and the RCR applies to 35m of it.

4.2 Situational Awareness

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 are not fulfilled, are left out completely.

Note 3. — The situational awareness section shall be separated from the aeroplane performance calculation section by an empty line.

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]nnn).

Note 1. — This information is conditional when a NOTAM has been published with a new set of declared distances, i.e. when the runway length is reduced, this item should be included in the SNOWTAM and a NOTAM should also be issued with the new available declared distances (TORA, TODA, ASDA and LDA).

Example: **RWY 08L REDUCED TO 2800.**

Item J — Drifting snow on the runway. When reported, insert “DRIFTING SNOW”.

Example: **DRIFTING SNOW.**

Note 1.— Drifting snow is an ensemble of snow particles raised by the wind to small heights above the ground (WMO definition).

Note 2. – Drifting snow in the SNOWTAM format refers to the airport (the whole movement area), not a specific runway. However, for large airports with several runways where drifting snow could exist in one or some runways (not all), item J) might be reported with relevant runway designator, e.g. **RWY 08 DRIFTING SNOW**

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

Example: **RWY 08L LOOSE SAND.**

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

Example: **RWY 08L CHEMICALLY TREATED.**

Item M — Snow banks on the runway. When snow banks are present on the runway, insert the lower runway designator and with a space "SNOW BANK" and with a space left "L" or right "R or both sides "LR", followed by the distance in metres from centre line separated by a space FM CL (RWY nn or RWY nn[L] or nn[C] or nn[R] SNOW BANK Lnn or Rnn or LRnn FM CL).

Example: **RWY 08L SNOW BANK L12 FM CL.**

Item N — Snow banks on a taxiway. When snow banks are present on a taxiway, insert the taxiway designator and with a space "SNOW BANK" (TWY [nn]n SNOW BANK).

Example: **TWY B SNOW BANK.**

Note 1.— when there are snow banks on every taxiway, "ALL TWYS SNOWBANKS" might be used.

Item O — Snow banks adjacent to the runway. When snow banks are present penetrating the height profile in the aerodrome snow plan, insert the lower runway designator and "ADJ SNOW BANKS"(RWY nn or RWY nn[L] or nn[C] or nn[R] ADJ SNOW BANKS).

Example: **RWY 08R ADJ SNOW BANKS.**

Item P — Taxiway conditions. When taxiway conditions are reported as poor, insert the taxiway designator followed by a space "POOR" (TWY [n or nn] POOR or ALL TWYS POOR).

Example: **TWY C POOR.**

Item R — Apron conditions. When apron conditions are reported as poor, insert the apron designator followed by a space "POOR" (APRON [nnnn] POOR or ALL APRONS POOR).

Note 1.— Aprons are named differently in different aerodromes (e.g. Apron 1, Cargo Apron, Apron Main, Apron XXX, Military Ramp, etc.). The Apron designator/name in the SNOWTAM should be the one indicated in the Aerodrome Chart and/or AIP.

Example: **APRON 1 POOR.**

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

Note 1.— This item is optional and will only be reported for States that have an established programme of runway friction measurement using a State-approved friction measuring device.

Item T — plain language remarks.