



# **Amendment 13 to Annex 14, Volume I**

**ICAO MID Seminar on Aerodrome Operational Procedures  
(PANS-Aerodromes)  
Cairo, November 2017**

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# Council Adoption

- 22 February 2016
- Fifth meeting of its 207th Session
- Effective on 11 July 2016
- Applicable on 10 November 2016, except:
- 5 November 2020 for global reporting format provisions for assessing and reporting runway surface conditions
- State letter AN 4/1.2.26-16/19 dated 4 April 2016



# Amendment 12

- New section 1.7, A14VI contains SARPs permitting the use of procedures in Doc 9981, PANS-Aerodromes, 1<sup>st</sup> Edition.
- Doc 9981, §4 contains procedures on how to safely accommodate larger aeroplanes at existing aerodromes



# Amendment 12

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*Insert new text as follows:*

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## **1.7 Specific Procedures for Aerodrome Operations**

*Introductory Note.— This section introduces PANS-AERODROMES (Doc 9981) for the use of aerodromes undertaking an assessment of its compatibility for the type of traffic or operation the aerodrome is intending to accommodate. The material in the PANS-AERODROMES addresses operational issues faced by existing aerodromes and provides the necessary procedures to ensure the continued safety of operations. Where alternative measures, operational procedures and operating restrictions have been developed, these are detailed in the aerodrome manual and reviewed periodically to assess their continued validity. The PANS-AERODROMES do not substitute nor circumvent the provisions contained in this Annex. It is expected that infrastructure on an existing aerodrome or a new aerodrome will fully comply with the requirements in this Annex. See Annex 15, 4.1.2 (c) on States' responsibilities on listing of differences with the related ICAO Procedures in the Aeronautical Information Publication.*

# Amendment 12

1.7.1 When the aerodrome accommodates an aeroplane that exceeds the certificated characteristics of the aerodrome, the compatibility between the operation of the aeroplane and aerodrome infrastructure and operations shall be assessed and appropriate measures be developed and implemented in order to maintain an acceptable level of safety during operations.

*Note.— Procedures to assess the compatibility of the operation of a new aeroplane with an existing aerodrome can be found in the PANS-AERODROMES (Doc 9981).*

1.7.2 Information concerning alternative measures, operational procedures and operating restrictions implemented at an aerodrome arising from 1.7.1 shall be promulgated.

*Note 1.— See Annex 15, Appendix 1, AD 2.20 on the provision of detailed description of local traffic regulations.*

*Note 2.— See PANS-AERODROMES (Doc 9981), Chapter 3, section 3.6 on promulgation of safety information.*





# Amendment 13

## Definitions

- Arresting system
- Autonomous runway incursion warning system (ARIWS)
- Foreign object debris (FOD)



## CHAPTER 1. GENERAL

### 1.1 Definitions

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***Apron management service.*** A service provided to regulate the activities and the movement of aircraft and vehicles on an apron.

***Arresting System.*** A system designed to decelerate an aeroplane overrunning the runway.

***Autonomous runway incursion warning system (ARIWS).*** A system which provides autonomous detection of a potential incursion or of the occupancy of an active runway and a direct warning to a flight crew or a vehicle operator.

***Balked landing.*** A landing manoeuvre that is unexpectedly discontinued at any point below the obstacle clearance altitude/height (OCA/H).

...

~~***Capacitor discharge light.*** A lamp in which high-intensity flashes of extremely short duration are produced by the discharge of electricity at high voltage through a gas enclosed in a tube.~~

...

***Foreign Object Debris (FOD).*** An inanimate object within the movement area which has no operational or aeronautical function and which has the potential to be a hazard to aircraft operations.

...

# Aerodrome data

- Inclusion and publication in the AIP of data for arresting system





## CHAPTER 2. AERODROME DATA

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### 2.5 Aerodrome dimensions and related information

2.5.1 The following data shall be measured or described, as appropriate, for each facility provided on an aerodrome:

- a) runway — true bearing to one-hundredth of a degree, designation number, length, width, displaced threshold location to the nearest metre or foot, slope, surface type, type of runway and, for a precision approach runway category I, the existence of an obstacle free zone when provided;
- b) strip  
runway end safety area } length, width to the nearest metre or  
stopway } foot, surface type; and  
arresting system — location (which runway end) and description;
- c) taxiway — designation, width, surface type;
- d) apron — surface type, aircraft stands;

...



Open-air storm water conveyance on a runway strip



## Open-air storm water conveyance on a runway strip

- May be allowed in the non-graded portion of a runway strip
- Would be placed as far as practicable from the runway



## CHAPTER 3. PHYSICAL CHARACTERISTICS

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### 3.4 Runway Strips

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#### *Objects on runway strips*

*Note.— See 9.9 for information regarding siting of equipment and installations on runway strips.*

**3.4.6 Recommendation.—** *An object situated on a runway strip which may endanger aeroplanes should be regarded as an obstacle and should, as far as practicable, be removed.*

*Note 1.— Consideration will have to be given to the location and design of drains on a runway strip to prevent damage to an aeroplane accidentally running off a runway. Suitably designed drain covers may be required. For further guidance, see the Aerodrome Design Manual (Doc 9157), Part 1.*

*Note 2.— Where open-air or covered storm water conveyances are installed, consideration will have to be given to ensure that their structure does not extend above the surrounding ground so as not to be considered an obstacle. See also Note 1 to 3.4.16.*

*Note 3.— Particular attention needs to be given to the design and maintenance of an open-air storm water conveyance in order to prevent wildlife attraction, notably birds. If needed, it can be covered by a net. Guidance on Wildlife Control and Reduction can be found in the Airport Services Manual (Doc 9137), Part 3.*

...



### 3.4.15 Transverse slopes

...

3.4.16 **Recommendation.**— *The transverse slopes of any portion of a strip beyond that to be graded should not exceed an upward slope of 5 per cent as measured in the direction away from the runway.*

*Note 1.— Where deemed necessary for proper drainage, an open-air storm water conveyance may be allowed in the non-graded portion of a runway strip and would be placed as far as practicable from the runway.*

*Note 2.— The aerodrome RFF procedure would need to take into account the location of open-air water conveyances within the non-graded portion of a runway strip.*

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# Runway-holding position marking

- Enhanced pattern shall be required as of 26 November 2026

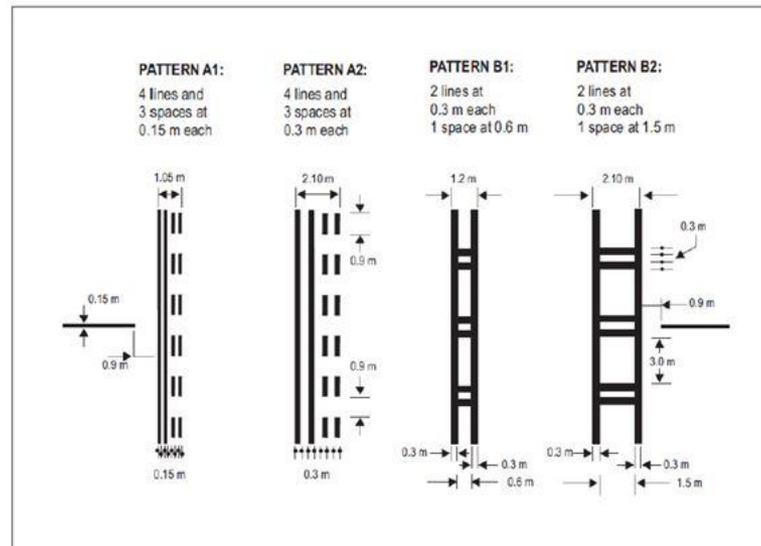


Figure 5-8. Runway-holding position markings

*Note.— Patterns A1 and B1 are no longer valid after 2026.*



## 5.2.10 Runway-holding position marking

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5.2.10.4 The runway-holding position marking displayed at a runway-holding position established in accordance with 3.12.3 shall be as shown in Figure 5-6, pattern A.

5.2.10.5 Until 26 November 2026, the dimensions of runway-holding position markings shall be as shown in figure 5-8, pattern A1 (or A2) or pattern B1 (or B2), as appropriate.

5.2.10.6 As of 26 November 2026, the dimensions of runway-holding position marking shall be as shown in Figure 5-8, pattern A2 or pattern B2, as appropriate.

5.2.10.57 **Recommendation.**— *Where increased conspicuity of the runway-holding position is required, the dimensions of runway-holding position marking should be as shown in Figure 5-8, pattern A2 or pattern B2, as appropriate.*

*Note.*— *An increased conspicuity of the runway-holding position can be required, notably to avoid incursion risks.*

...

5.2.10.79 The runway-holding position marking displayed at a runway/runway intersection shall be perpendicular to the centre line of the runway forming part of the standard taxi-route. The pattern of the marking shall be as shown in Figure 5-8, pattern A2.



# T-VASIS and AT-VASIS

- Recommended to be discontinued as of 1 January 2020

5.3.5.2 The standard visual approach slope indicator systems shall consist of the following:

...

5.3.5.3 PAPI, T-VASIS or AT-VASIS shall be provided where the code number is 3 or 4 when one or more of the conditions specified in 5.3.5.1 exist.

5.3.5.4 **Recommendation.**— *As of 1 January 2020, the use of T-VASIS and AT-VASIS as standard visual approach slope indicator systems should be discontinued.*



## Autonomous runway incursion warning system (ARIWS)

- Not mandatory
- If installed, it shall be compliant with the location and characteristics provisions in the Annex
- Standardized visual aids – runway status lights (RWSL)



### 5.3.30 Runway status lights

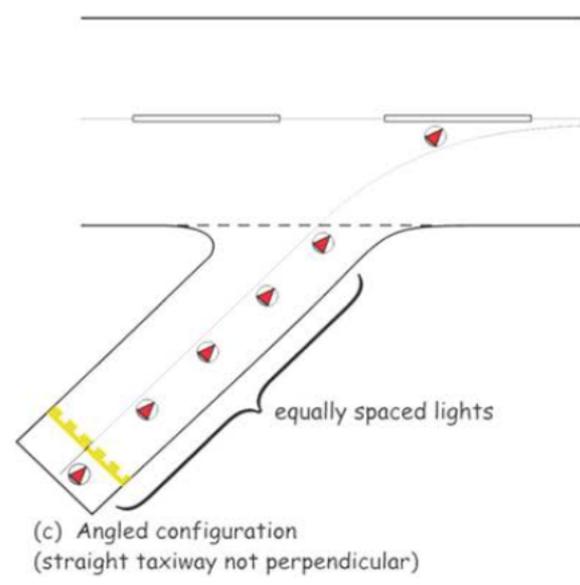
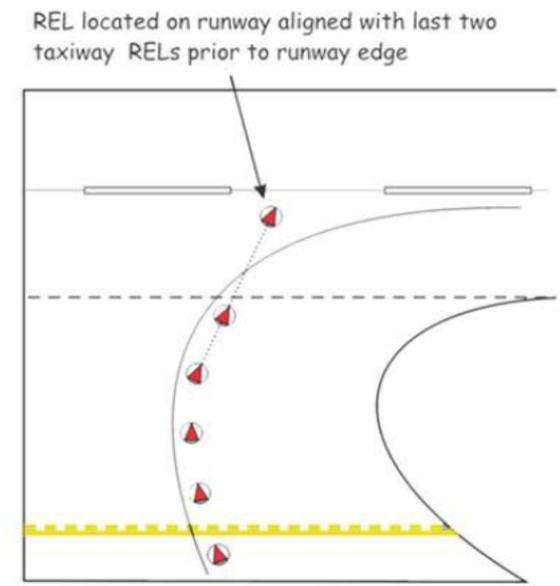
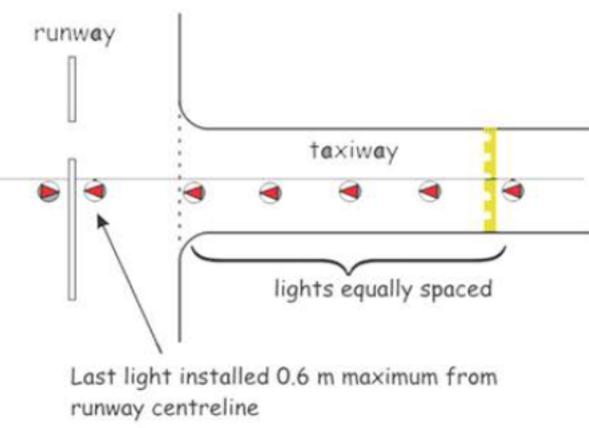
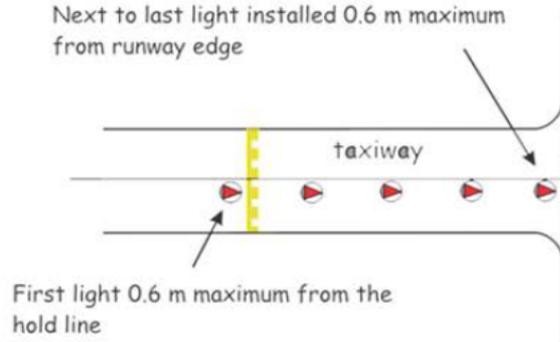
*Introductory Note.— Runway status lights (RWSL) is a type of autonomous runway incursion warning system (ARIWS). The two basic visual components of RWSL are runway entrance lights (RELs) and take-off hold lights (THLs). Either may be installed by itself, but the two components are designed to be complementary to each other.*

## 9.12 Autonomous runway incursion warning system

*Note 1.— The inclusion of detailed specification for an ARIWS in this section is not intended to imply that an ARIWS has to be provided at an aerodrome.*

*Note 2.— The implementation of an ARIWS is a complex issue deserving careful consideration by aerodrome operators, air traffic services, States and in coordination with the aircraft operators.*

*Note 3.— Attachment A, Section 21, provides a description of an autonomous runway incursion warning system (ARIWS) and information on its use.*





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# GLOBAL REPORTING FORMAT

## Runway surface condition assessment and reporting





# Global reporting format for runway surface conditions

- A globally-harmonized methodology for runway surface condition assessment and reporting
- Covers several Annexes, two PANS and some guidance materials.
- Aimed at reducing runway excursions
- Applicable on 5 November 2020



# Global reporting format for runway surface conditions

- Annex 14, Volume I
  - requires the aerodrome operator undertake an *in-situ* assessment of the runway surface conditions
  - Using Runway Condition Assessment Matrix (RCAM) and runway condition code (RWYCC, ranging from 0 to 6)



# Global reporting format for runway surface conditions

- PANS-Aerodromes
  - contains procedures on the assignment of the RWYCC in accordance with the RCAM
- Annex 8
  - contains provisions requiring aircraft manufacturers to use the matrix to determine what data to provide to aeroplane operators and how to calculate the aeroplane performance for specific surface conditions



# Global reporting format for runway surface conditions

- Annex 6
  - Flight crew, using the matrix information supplied by the airport and the associated manufacturer-provided performance data, to conduct performance calculation and to determine if the aircraft can safely land with the conditions present at the airport



# Global reporting format for runway surface conditions

- **Annex 15**
  - Methodology to distribute the runway surface condition information through a revised SNOWTAM format
- **Annex 3**
  - the reporting of the state of the runway in the METAR/SPECI will no longer be required



# Global reporting format for runway surface conditions

- PANS-ATM
  - Alignment and addition of air-ground radiotelephony phraseologies which correlate with the use of the associated terms proposed in Annex 14, Volume I and other documents



## Some other topics

- Guidance material in Attachment A
  - Runway surface evenness
  - Taxiway design guidance for minimizing the potential for runway incursions



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**Thank You**