

**Australian Government** 

# **Civil Aviation SafetyAuthority**

I, JONATHAN ALECK, Acting Director of Aviation Safety, on behalf of CASA, make this instrument under paragraph 9 (1) (c) of the *Civil Aviation Act 1988* and regulations 139.015, 171.017, 172.022 and Part 173 of the *Civil Aviation Safety Regulations 1998*.

#### **[Signed Jonathan Aleck]** Jonathan Aleck Acting Director of Aviation Safety

11 January 2016

# Manual of Standards Parts 139, 171, 172 and 173 Amendment Instrument 2016 (No. 1)

## 1 Name of instrument

This instrument is the Manual of Standards Parts 139, 171, 172 and 173 Amendment Instrument 2016 (No. 1).

#### 2 Commencement

This instrument commences on 3 March 2016.

# 3 Amendment of the Manual of Standards Part 139 Schedule 1 amends the Manual of Standards (MOS) – Part 139 Aerodromes.

# 4 Amendment of the Manual of Standards Part 171

Schedule 2 amends the Manual of Standards (MOS) – Part 171.

# 5 Amendment of the Manual of Standards Part 172 Schedule 3 amends the Manual of Standards (MOS) – Part 172.

# 6 Amendment of the Manual of Standards Part 173 Schedule 4 amends the *Manual of Standards (MOS) Part 173 – Standards*

Applicable to the Provision of Instrument Flight Procedure Design.

#### Schedule 1 Amendments — MOS Part 139

[1] After subsection 2.1.9A

insert

#### 2.1.10 Runways Used for Special Authorisation Category I instrument Approach Operations

**Note:** Special Authorisation Category I instrument approach operation is defined in AIP.

- 2.1.10.1 A runway is not suitable to be used for a Special Authorisation (**SA**) Category I instrument approach operation unless all of the requirements in paragraphs 2.1.10.2 to 2.1.10.10 are met.
- 2.1.10.2 The aerodrome at which the runway is located must be a controlled aerodrome.

**Note:** Aircraft operators will not be permitted to conduct SA Category I instrument approach operations unless aerodrome control is in operation.

- 2.1.10.3 Subject to paragraph 2.1.10.11, the runway must meet the standards in this MOS for a precision approach runway.
- 2.1.10.4 The runway must have electronic RVR equipment in the touchdown zone of the runway.

**Note:** The runway may have electronic RVR equipment in the other zones of the runway.

- 2.1.10.5 The aerodrome operator must confirm with the ATS provider that the control tower has suitable RVR display equipment.
- 2.1.10.6 The runway must have a declared landing distance available of at least 1,524 m.
- 2.1.10.7 The runway must have, or be qualified for, a precision approach Category I ILS procedure.
- 2.1.10.8 An OFZ must be established for the runway.
- 2.1.10.9 In consultation with the ATS provider and the relevant aeronautical telecommunications service and radio navigation service provider, the relevant ILS equipment critical and sensitive areas must be determined, documented and associated protection requirements defined in the aerodrome's low visibility procedures.
- 2.1.10.10 The aerodrome operator must confirm with the relevant aeronautical telecommunications service and radio navigation service provider that the runway is equipped with a suitable precision approach aid.
- 2.1.10.11 Despite Chapter 9, a runway used for an SA Category I instrument approach operation is not required to have an approach lighting system extending over a distance of 900 m from the runway threshold.

**Notes:** 1: A runway with an existing Category II, Category III or SA Category II precision approach procedure is automatically eligible for SA Category I instrument approach operations.

> 2: Where possible, the runway should be equipped with an approach lighting system extending over a distance of at least 720 m from the runway threshold, which is either a precision approach Category I lighting system or a precision approach Category II and III lighting system.

> 3: The operating minima in each case are dictated by the available lighting facilities. Absence of an approach lighting system or a shorter approach lighting system will result in higher RVR minima. See the *Manual of Standards* (MOS) Part 173 – Standards Applicable to the Provision of Instrument Flight Procedure Design for specific details.

## 2.1.11 Runways Used for Special Authorisation Category II Instrument Approach Operations

**Note:** Special Authorisation Category II instrument approach operation is defined in AIP.

- 2.1.11.1 A runway is not suitable to be used for an SA Category II instrument approach operation unless all of the requirements in paragraphs 2.1.11.2 to 2.1.11.8 are met.
- 2.1.11.2 The aerodrome at which the runway is located must be a controlled aerodrome.

**Note:** Aircraft operators will not be permitted to conduct SA Category II instrument approach operations unless aerodrome control is in operation.

- 2.1.11.3 Subject to paragraph 2.1.11.9, the runway must meet all of the standards in this MOS for a precision approach runway Category II.
- 2.1.11.4 The runway must have electronic RVR equipment in the touchdown zone and at least 1 other zone of the runway.
- 2.1.11.5 The aerodrome operator must confirm with the ATS provider that the control tower has suitable RVR display equipment.
- 2.1.11.6 The runway must have a declared landing distance available of at least 1,830 m.
- 2.1.11.7 In consultation with the ATS provider and the relevant aeronautical telecommunications service and radio navigation service provider, the relevant ILS equipment critical and sensitive areas must be determined, documented and associated protection requirements defined in the aerodrome's low visibility procedures.
- 2.1.11.8 The aerodrome operator must confirm with the relevant aeronautical telecommunications service and radio navigation service provider that the runway is equipped with a suitable precision approach aid.

- 2.1.11.9 Despite Chapter 9, a runway used for an SA Category II instrument approach operation is not required to have a precision approach Category II and Category III lighting system extending over a distance of 900 m from the runway threshold, runway centreline lighting or touchdown zone lighting.
  - **Notes:** 1: A runway with an existing Category II or Category III precision approach procedure is automatically eligible for SA Category II instrument approach operations.

2: Where possible, the runway should be equipped with an approach lighting system extending over a distance of at least 720 m from the runway threshold which is either a precision approach Category I lighting system or a precision approach Category II and III lighting system.

3: The operating minima in each case are dictated by the available lighting facilities. Absence of runway centreline lighting, touchdown zone lighting or an approach lighting system will result in higher RVR minima. Also, a shorter approach lighting system will result in higher operating minima. See the *Manual of Standards (MOS) Part 173 – Standards Applicable to the Provision of Instrument Flight Procedure Design* for specific details.

## [2] Paragraph 6.2.21.1

omit

Category II and III

insert

SA Category I, SA Category II, Category II and Category III

# [3] Paragraph 6.2.21.1, Note

omit

Cat II and III

insert

SA Category I, SA Category II, Category II and Category III

# [4] Paragraph 7.2.4.2

- 7.2.4.2 Unless the same relevant information is provided in the Aerodrome Terrain and Obstacle Chart ICAO (Electronic) in accordance with ICAO Annex 4, a Precision Approach Terrain Chart ICAO must be made available for each precision approach runway:
  - (a) Category II and Category III; or
  - (b) that has, or is intended to have, an SA Category I or SA Category II procedure.

## [5] Subparagraph 10.17.2.1 (c) (i)

substitute

(i) the specific circumstances in which LVP measures are to be initiated, fully implemented and terminated;

## [6] Subparagraph 10.17.2.1 (c) (vi)

omit

aids.

insert

aids;

#### [7] Paragraphs 10.17.3.1 and 10.17.3.2 (excluding Notes)

substitute

- 10.17.3.1 When meteorological conditions are such that all or part of the manoeuvring area cannot be visually monitored from the control tower, the aerodrome operator must co-operate with ATC to initiate measures in accordance with the aerodrome's LVP.
- 10.17.3.2 The aerodrome operator must co-operate with ATC to ensure that LVP are fully implemented before:
  - (a) for approach operations the earlier of the following:
    - the reported cloud ceiling falls below the precision approach Category I decision height published in the AIP for the runway to be used;
    - the visibility falls below the precision approach Category I RVR minimum published in the AIP for the runway to be used; and
  - (b) for take-off operations the reported visibility or RVR on the runway to be used falls below 550 m.

## [8] Paragraph 10.17.3.2, Note 3

omit

precision approach Category II or III operations

insert

instrument approach operations with minima less than precision approach Category I

#### [9] After paragraph 10.17.3.2, Note 3

insert

4. ATC will normally inform the aerodrome operator when LVP measures must be implemented.

## [10] After paragraph 10.17.3.2 (including Notes)

insert

10.17.3.3 The aerodrome operator must advise ATC when all aerodrome operator preparations relevant to LVP are complete.

# Schedule 2 Amendments — MOS Part 171

# [1] Paragraph 1.1.2.1

#### substitute

- 1.1.2.1 The document hierarchy consists of:
  - (a) the Civil Aviation Act 1988 (the Act); and
  - (b) relevant Civil Aviation Safety Regulations (CASRs); and
  - (c) the Manual of Standards (MOS); and
  - (d) Advisory Circulars (ACs).

# [2] After paragraph 1.1.2.1

#### insert

1.1.2.2A The **Act** establishes the Civil Aviation Safety Authority (CASA) with safety-related functions relating to civil aviation and, in particular, the safety regulation of civil air operations in Australian territory.

# [3] Paragraph 1.1.2.4

#### substitute

1.1.2.4 The **MOS** comprises specifications (Standards) prescribed by CASA, of uniform application, determined to be necessary for the safety of air navigation. In those parts of the MOS where it is necessary to establish the context of standards to assist in their comprehension, the sense of parent regulations has been reiterated. The MOS is a disallowable legislative instrument. This means that it is an instrument that is not enforceable unless it is registered on the Federal Register of Legislative Instruments (FRLI). It must be tabled in both Houses of the Parliament within 6 sitting days after registration on FRLI, and is subject to scrutiny and disallowance by either House of the Parliament.

# [4] Paragraphs 1.1.5.1 and 1.1.5.2

#### substitute

- 1.1.5.1 Responsibility for the technical content of the MOS resides with the relevant technical area within Flight Standards Branch, Standards Division of CASA.
- 1.1.5.2 This document is issued and amended under the authority of the Director of Aviation Safety.
- 1.1.5.2A Suggested changes to this MOS must be directed to the Manager, Air Traffic Management Systems Standards Section, Flight Standards Branch, Standards Division of CASA.

## [5] Subparagraph 3.2.1.4 (a)

omit

regulation 171.250

insert

regulation 11.060

#### [6] After Chapter 9

insert

# Chapter 10 Standards for facilities and equipment

CASR reference: paragraph 171.017 (1) (b)

# Section 10.1 Landing system facilities suitable for Special Authorisation Category I and II operations

#### **10.1.1 Special Authorisation Category I operations**

- 10.1.1.1 The landing system facilities on a runway are suitable for Special Authorisation Category I instrument approach operations if all of the following requirements are met:
  - (a) the runway has:
    - (i) an ILS that is a dual transmitter facility classified at least I/T/1; or
    - (ii) if the requirement in sub-subparagraph (i) is not met and the runway is to be used by only HUD-equipped aircraft an ILS certified and maintained to meet ICAO Annex 10, Volume I requirements for Category I ILS to at least ILS Point "C"; or
    - (iii) taking into account any associated operating limitation, a precision approach facility that has performance characteristics at least equivalent to an ILS mentioned in sub-subparagraph (i) or (ii);
  - (b) if 2 separate ILS facilities serve opposite ends of the runway a system is in operation to ensure that only the localiser serving the approach direction in use will radiate;
  - (c) the controlling ATC element has facilities to remotely monitor the operational status of the precision approach facility.
- 10.1.1.2 If the service provider informs a certified designer or authorised designer that the landing system facilities on a runway are suitable for Special Authorisation Category I operations, the provider must also inform the designer whether the precision approach facility, because of its performance classification, is suitable for only HUD-equipped aircraft.

*Note* The terms *certified designer* and *authorised designer* are defined in regulation 173.010 of CASR.

## 10.1.2 Special Authorisation Category II operations

- 10.1.2.1 The landing system facilities on a runway are suitable for Special Authorisation Category II instrument approach operations if all of the following requirements are met:
  - (a) the runway has:
    - (i) an ILS classified at least II/D/2; or
    - (ii) taking into account any associated operating limitation, a precision approach facility that has performance characteristics at least equivalent to an ILS mentioned in sub-subparagraph (i);
  - (b) if 2 separate ILS facilities serve opposite ends of the runway a system is in operation to ensure that only the localiser serving the approach direction in use will radiate;
  - (c) any ILS facility has an ILS frequency-paired DME.

# Schedule 3 Amendments — MOS Part 172

[1] Subsection 10.3.1.1

substitute

- **10.3.1.1 Use of other than nominated runways.** Controllers must not nominate a particular runway for use if an alternative runway is available, when:
  - (a) for runway conditions that are completely dry, either:
    - (i) the cross-wind component for the particular runway, including gusts, exceeds 20 knots; or
    - (ii) the downwind component for the particular runway, including gusts, exceeds 5 knots;
  - (b) for runway conditions that are not completely dry, either:
    - (i) the cross-wind component for the particular runway, including gusts, exceeds 20 knots; or
    - (ii) there is a downwind component for the particular runway.

# [2] Subsection 10.3.2.5

omit

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paragraph 10.3.2.5 (g)
```

insert

paragraph 10.3.2.4 (g)

## [3] Subsection 10.3.3, heading

substitute

## **10.3.3 Procedures for Low Visibility Operations**

## [4] Subsections 10.3.3.1 and 10.3.3.3

- 10.3.3.1 When meteorological conditions are such that all or part of the manoeuvring area of a controlled aerodrome cannot be visually monitored from the control tower, ATC must co-operate with the aerodrome operator to initiate measures in accordance with the aerodrome's low visibility procedures (*LVP*).
- 10.3.3.2 Subject to subsection 10.3.3.3, for a controlled aerodrome, ATC must co-operate with the aerodrome operator to ensure that LVP are fully implemented if either of the following is to take place at the aerodrome:
  - (a) an instrument approach operation when either:
    - the reported cloud ceiling is less than the precision approach Category I decision height published in the AIP for the runway to be used; or
    - the visibility is less than the precision approach Category I RVR minimum published in the AIP for the runway to be used;

(b) a take-off operation when the reported visibility or RVR on the runway to be used is less than 550 m.

**Note** When LVP are implemented, the aerodrome operator is required to complete all operator preparations relevant to LVP to commence, and confirm to ATC that these preparations are complete. See also subsection 10.17.3 of Manual of Standards (MOS) – Part 139 Aerodromes.

- 10.3.3.3 ATC must inform pilots that LVP are in force, but only after:
  - (a) ATC has verified that LVP at the aerodrome are fully implemented; and
  - (b) for an aerodrome that supports instrument approach operations with minima less than precision approach Category I procedures are in place to safeguard the ILS critical or sensitive areas as required for the classification on the ILS and in accordance with subsection 10.3.4.6; and
  - (c) for an aerodrome that supports localiser-guided take-offs procedures are in place to safeguard the localiser critical and sensitive areas as required for the classification on the ILS and in accordance with subsection 10.3.4.7.

#### [5] Subparagraph 10.3.4.3 (b) (ii)

omit

4 nm

*insert* 4 NM

#### [6] Paragraph 10.3.4.4 (b)

omit

4 nm

insert

4 NM

## [7] Subsection 10.3.4.6

- 10.3.4.6 If:
  - (a) an instrument approach operation with minima less than precision approach Category I is conducted at an aerodrome; and
  - (b) either:
    - the reported cloud ceiling is less than the instrument approach Category I decision height published in the AIP for the runway to be used; or
    - the visibility is less than the precision approach Category I RVR minimum published in the AIP for the runway to be used;

then:

- (c) for the ILS critical area once an arriving aircraft has passed the ILS outer marker or, if an outer marker is not available, is within 4 NM of the landing runway threshold, ATC must not permit other aircraft or any vehicle within the relevant ILS localiser or glidepath critical areas; and
- (d) for the ILS sensitive area once an arriving aircraft is within 2 NM of the landing runway threshold, ATC must not permit other aircraft or any vehicle within the relevant ILS sensitive area.

#### [8] Subsection 10.3.5.2

- 10.3.5.2 The operations are the following:
  - (a) any approach with minima less than precision approach Category I;
  - (b) autoland procedures;
  - (c) localiser-guided take-off;
  - (d) an operation similar to 1 mentioned in paragraphs (a) to (c).

# Schedule 4 Amendments — MOS Part 173

# [1] Paragraph 8.1.4.1

omit

minimum OCH for straight-in procedures required

insert

minimum obstacle clearance height (OCH) for straight-in procedures required

# [2] Paragraph 8.1.6.1

omit

precision approach Category II or III

insert

instrument approach procedures with minima less than precision approach Category I

# [3] Paragraph 8.1.6.2

omit

precision approach Category II or III

insert

instrument approach procedures with minima less than precision approach Category I

## [4] Before paragraph 8.1.6.2A

insert

**Note:** Visibility values for Special Authorisation Category I and Special Authorisation Category II procedures can be found in paragraphs 8.1.14 and 8.1.15.

# [5] Paragraph 8.1.6.2A (including Table 8-1A)

#### substitute

8.1.6.2A **Minimum Values for Precision Approach Category II and III procedures.** For an approach type mentioned in column 1 of Table 8-1A, the minimum visibility values approved for precision approach Category II or III procedures are those in column 2 of the Table which, subject to the runway capability conditions mentioned in column 3 of the Table, correspond to the approach type.

Approach type	Minimum runway visual range (RVR) (metres)	Runway capability			
Precision approach Category II	350	Precision approach runway Category II. Precision approach Category II and III lighting system. Touchdown Zone (TDZ) Runway Visual Range (RVR) sensor and at least 1 RVR sensor at either the MID point or END zone.			
	300	In addition to the runway capability requirements for operations with a minimum RVR of 350 m, the runway has: (a) runway centreline lighting with a longitudinal spacing that applies to a runway intended for use in RVR conditions less than a value of 350 m; and (b) either: (i) an ILS classified at least II/D/2; or (ii) taking into account any associated operating limitation, a precision approach facility that has performance characteristics at least equivalent to an ILS classified at least II/D/2.			
Precision approach Category IIIA	175	Precision approach runway Category III.			
Precision approach Category IIIB	75	Precision approach Category II and III lighting system. RVR sensors at all zones.			
Precision approach Category IIIC	Not applicable in the Australian environment.				

Table 8-1A: Category II and III minimum visibility based on runway capability

# [6] Paragraph 8.1.7.1 (a)

substitute

- (a) for RVR values up to 400 m, the calculated values must be rounded to the nearest multiple of 25 m;
- (aa) for RVR values greater than 400 m and up to 800 m, the calculated values must be rounded to the nearest multiple of 50 m;

# [7] Paragraph 8.1.7.1

omit

paragraph 8.1.6.2

insert

paragraphs 8.1.6.2, 8.1.6.2A, 8.1.14 and 8.1.15

# [8] Paragraph 8.1.7.2

substitute

- 8.1.7.2 **DA/MDA.** The State DA/MDA must not be less than any of the following:
  - (a) the OCA determined in accordance with ICAO PANS-OPS Vol II or ICAO Doc 9905 for RNP AR APCH and paragraph 8.1.5;
  - (b) the visual segment limitations contained in paragraph 8.1.4;
  - (c) the OCA plus any margin deemed necessary to account for poor ground equipment performance or local conditions;
  - (d) for Category I operations threshold elevation plus 200 ft;
  - (e) for SA Category I operations threshold elevation plus 150 ft;
  - (f) for Category II and SA Category II operations threshold elevation plus 100 ft.
- 8.1.7.3 **RA Height.** A radio altimeter (RA) height must be determined and published for each SA Category I, SA Category II and Category II instrument flight procedure.

**Note:** A DH or RA height is not required for Category III procedures. If an operator's approval requires use of a DH for a particular Category III operation, the flight crew will apply the DH specified in the approval.

## [9] Paragraph 8.1.11.2

omit

approved Category 1

insert

approved Category I

## [10] Paragraph 8.1.11.2

omit

**ILS Category 1** 

insert

ILS Category I

# [11] Paragraph 8.1.11.5, Note 2.a.

omit

the CASA

insert

CASA

# [12] Paragraph 8.1.11.5, Note 2.b.

omit

the CASA

insert

CASA

# [13] Paragraph 8.1.11.5, Note 4

omit

of his pre-flight

insert

of the pre-flight

## [14] After paragraph 8.1.13.1

insert

## 8.1.14 Special Authorisation Category I Approach Procedures

- 8.1.14.1 **Scope.** Paragraph 8.1.14 provides the requirements for designing and publishing an SA Category I approach procedure at a runway with reduced lighting with:
  - (a) a DH of 150 ft or higher; and
  - (b) a visibility minimum of 450 m or longer RVR.
- 8.1.14.2 **Air Traffic Control.** The aerodrome at which the runway is located must be a controlled aerodrome.

**Note:** Aircraft operators will not be permitted to conduct SA Category I instrument approach operations unless aerodrome control is in operation.

- 8.1.14.3 **Runway Eligibility.** An SA Category I approach procedure must not be designed for a runway unless:
  - (a) the runway has, or is qualified for, a precision approach Category I ILS procedure; and
  - (b) the aerodrome operator has given the designer information that the runway meets the requirements of the Manual of Standards (MOS) – Part 139 Aerodromes for SA Category I, SA Category II, Category II or Category III instrument approach operations.

Note: The specifications for a runway suitable for supporting SA Category I and SA Category II instrument approach operations can be found in Chapter 2 of the Manual of Standards (MOS) – Part 139 Aerodromes.

- 8.1.14.4 **Precision Approach Facilities.** The relevant aeronautical telecommunications service and radio navigation service provider must have given the designer information that the runway has precision approach facilities suitable for SA Category I operations, including information about whether the precision approach aid is suitable for only HUD-equipped aircraft.
- 8.1.14.5 **Instrument Approach Procedure.** The approach procedure must be designed in accordance with the standards PANS-OPS Category I or II criteria, using the Height loss/altimeter margin for radio altimeters.
- 8.1.14.6 The SA Category I DH minimum must be the higher of the following:
  - (a) 150 ft;
  - (b) the calculated OCH.
- 8.1.14.7 The RA and DA minima must be calculated directly from the calculated DH value without rounding.
- 8.1.14.8 The SA Category I RVR minima must be derived in accordance with Table 8-4, taking into account the type and length of the approach lighting system (ALS) and the DH.

DH (ft)	Type of approach lighting system						
	FALS	IALS	BALS	NALS			
	RVR (m)						
150 – 170	450	550	650	800			
171 – 185	500	600	700	900			
186 – 200	500	600	750	900			

Table 8-4: SA Category I operation RVR minima

where:

*FALS* means a full ALS with a Category I, or Category II and III, lighting system that is at least 720 m long.

IALS means an intermediate ALS with:

- (a) a simple approach lighting system; or
- (b) a Category I lighting system; or
- (c) a Category II and III lighting system;

that is at least 420 m and less than 720 m long.

**BALS** means a basic ALS that is at least 210 m and less than 420 m long.

*NALS* means no approach lights, or an ALS that is less than 210 m long.

- 8.1.14.9 **Instrument Approach Chart.** On the instrument approach chart for SA Category I approach procedures:
  - (a) the SA Category I minima must be associated with a chart note stating 'Special aircrew and aircraft certification required' or similar words to that effect; and
  - (b) for procedures that are limited to HUD-only operations a method must be used to clearly indicate this limitation.

# 8.1.15 Special Authorisation Category II Approach Procedures

- 8.1.15.1 **Scope.** Paragragh 8.1.15 provides the requirements for designing and publishing an SA Category II approach procedure with:
  - (a) a DH of 100 ft or higher; and
  - (b) a visibility minimum of 350 m or longer RVR.
    - **Note:** As detailed below, for an SA Category II approach procedure, the landing system and some ground facilities must meet all Category II requirements. However, Category II and III approach lighting, TDZ lighting and runway centreline lighting is not necessarily required.
- 8.1.15.2 **Air Traffic Control.** The aerodrome at which the runway is located must be a controlled aerodrome.

**Note:** Aircraft operators will not be permitted to conduct SA Category II instrument approach operations unless aerodrome control is in operation.

- 8.1.15.3 **Runway Eligibility.** An SA Category II approach procedure must not be designed for a runway unless:
  - (a) the runway has, or is qualified for, a precision approach Category I ILS procedure; and
  - (b) the aerodrome operator has given the designer information that the runway meets the requirements of the Manual of Standards (MOS) – Part 139 Aerodromes for SA Category II, Category II or Category III instrument approach operations.
    - **Note:** The specifications for a runway suitable for supporting SA Category II instrument approach operations can be found in Chapter 2 of the Manual of Standards (MOS) Part 139 Aerodromes.
- 8.1.15.4 **Precision Approach Facilities.** The relevant aeronautical telecommunications service and radio navigation service provider must have given the designer information that the runway has precision approach facilities suitable for SA Category II operations.

- 8.1.15.5 **Instrument Approach Procedure.** The SA Category II DH minimum must be the higher of the following:
  - (a) 100 ft;
  - (b) the calculated OCH.
- 8.1.15.6 The RA and DA minima must be calculated directly from the calculated DH value without rounding.
- 8.1.15.7 The SA Category II RVR minima must be the longest of the following:
  - (a) for a runway with TDZ lights and no runway centreline lights 400 m;
  - (b) for a runway with no TDZ lights and no runway centreline lights 450 m;
  - (c) the distance derived in accordance with Table 8-5, taking into account the type and length of the ALS, the aircraft category and the DH.

Type of ALS	FALS		IALS	BALS	NALS	
Aircraft category	A – C	D	A – D	A – D	A – D	
DH (ft)	RVR (m)					
100 – 120	350	400	450	600	700	
121 – 140	400	450	500	600	700	
141 – 160	400	500	500	600	750	
161 – 199	400	500	550	650	750	

Table 8-5: SA Category II operation RVR minima

where *FALS*, *IALS*, *BALS* and *NALS* have the meanings given by paragraph 8.1.14.8.

8.1.15.8 **Instrument Approach Chart.** On the instrument approach chart for SA Category II approach procedures, the SA Category II minima must be associated with a chart note stating 'Special aircrew and aircraft certification required' or similar words to that effect.