Australian Government
Civil Aviation Safety Authority

SUMMARY OF CONSULTATION

Proposed amendments to Part 91 MOS - danger areas and landing minima visibility

Project number: OS 99/08 **File ref:** D24/340244

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1 Overview

Part 91 of the *Civil Aviation Safety Regulations 1998* (CASR) establishes a set of general operating and flight rules for all pilots of Australian aircraft and certain foreign aircraft.

The Part 91 Manual of Standards (MOS) contains detailed technical material, specifications and requirements associated with particular Part 91 regulations.

On 13 August 2024 we asked for your feedback via consultation regarding 30 proposed amendments to the Part 91 MOS. The consultation closed on 27 August 2024.

The consultation contained specific questions around 3 main topic areas:

- 28 minor corrections
- Danger Areas and Military Operating Areas (MOAs)
- corrections to landing minima, including the related AMC/GM Approach Types Summary table and accompanying notes.

Contents

Acknowledgement of Country

The Civil Aviation Safety Authority (CASA) respectfully acknowledges the Traditional Custodians of the lands on which our offices are located and their continuing connection to land, water and community, and pays respect to Elders past, present and emerging.

Artwork: James Baban.

2 Reference material

2.1 Acronyms

The acronyms and abbreviations used in this SPC are listed in the table below.

Table 1: Acronyms

Acronym	Description
CAR	Civil Aviation Regulations 1988
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations 1998
SOC	Summary of consultation

2.2 References

Legislation

Legislation is available on the Federal Register of Legislation website https://www.legislation.gov.au/

Table 2: Legislation references

Document	Title
Manual of Standards Part 173	Standards Applicable to Instrument Flight Procedure Design

3 Respondents

CASA received 8 responses in total. Four of the responses were from individuals while the other 4 represented organisations.

It was not mandatory to answer any or all questions. None of the responses completely answered all 3 topic areas.

CASA values the contributions made by all respondents. Where permission to publish has been granted by the respondent, individual consultation responses can be found at Proposed amendments to Part 91 MOS – danger areas and landing minima visibility - (CD 2405OS) - Civil Aviation Safety Authority - Citizen Space.

3.1 Summary of feedback

Regarding the minor corrections, 6 responses were received, none of which identified any issues. Six out of 6 responses agreed with the 28 minor corrections.

Regarding the Military Operating Areas (MOAs), 6 responses were received, 5 agreed with the proposed change. The sixth response identified that similar wording should also be used in Part 173 MOS, specifically subsection 8.1.1.5. The sixth response did not identify any issue with proposed wording for use in the Part 91 MOS.

Regarding the Landing Minima, 6 responses were received, all of which agreed with the intent of the proposed change to section 15.10. Five out of 6 responses agreed with the proposed wording. One of the responses raised 4 issues with the proposed wording (being 2 separate issues raised twice each), where each issue can be addressed with revised wording.

Additionally, the embedded question related to the AMC/GM Approach Types Summary table received only 1 response which identified 4 issues with the specific wording within the table and notes.

There were 4 other comments that were outside the scope of this consultation and won't be addressed by this consultation. See section 3.2.5 below for details.

3.2 Summary of comments

3.2.1 28 minor corrections

No comments were received regarding these minor corrections.

3.2.2 Dangerous Areas and Military Operating Areas (MOAs)

Only one comment was provided regarding this topic. It did not involve any change to proposed wording in the Part 91 MOS, but recommended using the same terminology in the Part 173 MOS.

3.2.3 Landing minima

Only one response contained comments regarding this topic, which identified 4 issues with the proposed wording in section 15.10 of the Part 91 MOS.

Issue 1

The first issue raised was the use of 'altitude' to describe both DA and DH in paragraph 15.10 (1)(a) of the Part 91 MOS. This is a valid issue, as altitude by definition is above mean sea level, as is DA. While DH is defined as above ground level. As such referring to the minimum altitude as either DA or DH is technically incorrect. It is noted that this terminology was existing and was not the result of these proposed changes.

The solution to correct this is to refer to 'altitude or height', not just altitude, as follows:

> 15.10 Landing minima
>
> (1) For a PA — the minimum altitude **or height** must be at least the highest of the following:
>
> (a) the DA or DH specified on the instrument approach chart for the IAP being conducted.

This issue occurs four (4) times in total, in 15.10 (1), (3), (5) and (7), where (3), (5) and (7) will be similarly corrected.

Issue 2

The respondent identified that the corrections proposed in paragraph 15.10 (2)(f) of the Part 91 MOS can potentially result in corrections to the required visibility that are greater than what the runway would have required if an ALS was not installed. This seems to be an incorrect outcome when the scenario in paragraph 15.10 (2)(f) is for complete ALS failure which should result in visibility requirements the same as not having an ALS installed.

CASA was aware of this situation before commencing the consultation. It occurs because the pilot does not know which design requirement resulted in the charted visibility; hence it is not always possible for the pilot to reverse the design scenario to where the ALS was not installed.

If the charted vis came from Part 173 MOS 8.1.6.1B (a) then 91 MOS 15.10 (2)(f)(i) is the appropriate correction.

If the charted vis came from Part 173 MOS 8.1.6.1B (b) then 91 MOS 15.10 (2)(f)(ii) is the appropriate correction.

The IAP does not indicate which design rule was the greater during design, as such the pilot cannot determine which correction to use, hence the ‘always’ safe solution is to use the greater of paragraphs 15.10 (2)(f)(i) and (2)(f)(ii). Additionally, it is noted that the proposed paragraph 15.10 (2)(f)(i) wording should also include rounding up to the nearest 100 ft to avoid having pilot corrections being below the theoretical values calculated by design rules.

The known consequence that in some situations the correction will be more than what could be theoretically calculated by the design rules for the same scenario without an ALS installed but should never be below the theoretical nil ALS (NALS) scenario.

The following examples show the typical extent of the differences involved with pilot corrections verse the theoretical NALS designed values, and give an indication of the complexity involved with pilot corrections of visibility:

Example 1

Brisbane ILS RWY 19L, DH 209 ft, TCH (RDH) 50ft, VPA (GP) 3deg, ALS 900 m, charted visibility 0.8km or RVR 550 m.

If the existing ALS fails, the Part 91 MOS proposed changes do the following, the greater of:

- paragraph 15.10 (2)(f)(i) results in 1700 m (0.8+ALS)

- paragraph 15.10 (2)(f)(ii) results in 1500 m

therefore the Part 91 MOS calculated result would be **1700 m.**

If designed without an ALS, the Part 173 MOS does the following, the greater of:

- paragraph 8.1.6.1B (a) results in 1100 m, or

- paragraph 8.1.6.1B (b) results in 1500 m

therefore the Part 173 MOS calculated result would be 1500 m.

(**Pilot correction in excess**).

Example 2

Canberra ILS-Y RWY 35, DH 301 ft, TCH (RDH) 50ft, VPA (GP) 3deg, ALS 900 m, charted visibility 0.8km or RVR 750m.

If the existing ALS fails, the Part 91 MOS proposed changes do the following, the greater of:

- paragraph 15.10 (2)(f)(i) results in 1700m (0.8+ALS), or

- paragraph 15.10 (2)(f)(ii) results in 1500 m

therefore the Part 91 MOS calculated result would be **1700 m**.

If designed without an ALS, the Part 173 MOS does the following, the greater of:

- paragraph 8.1.6.1B (a) results in 1620 m (1700 m rounded), or

- paragraph 8.1.6.1B (b) results in 1500 m

therefore the Part 173 MOS calculated result would be **1700 m**.

(**Pilot correction identical**).

Example 3

Hobart ILS-Y RWY 12, DH 308ft, TCH (RDH) 52ft, VPA (GP) 3 deg, ALS 850 m, charted visibility 0.8 km.

If the existing ALS fails, the Part 91 MOS proposed changes do the following, the greater of:

- paragraph 15.10 (2)(f)(i) results in 1650 m (0.8+ALS), **rounded to** 1700 m, or

- paragraph 15.10 (2)(f)(ii) results in 1500 m.

therefore the Part 91 MOS calculated result would be **1700 m**.

If designed without an ALS, the Part 173 MOS does the following, the greater of:

- paragraph 8.1.6.1B (a) results in 1649 m (1700 m rounded), or

- paragraph 8.1.6.1B (b) results in 1500 m

therefore the Part 173 MOS calculated result would be **1700 m**.

(**Theoretical design larger, until pilot correction rounded, then identical**).

Issue 3

This issue is identical to Issue 1 but is about paragraph 15.10 (3). See issue 1.

Note that paragraphs 15.10 (5) and (7) were not identified by the respondent as containing the same issue but will also be corrected.

Issue 4

Same as issue 2, but for APV and NPA approaches.

Theoretically it is possible that slightly more accurate corrections could be made, but these alternative corrections are too complex for inflight use and not realistically possible as pilots don't have knowledge of ALS 'types' or the application of Part 173 MOS.

To conduct these more complex corrections, the pilot would need to:

- identify the 'type' of ALS installed - FALS/IALS/BALS/NALS
- compare the charted visibility with the minimum visibility for that 'type' of ALS from Table 8-1 in Part 173 MOS 8.1.6.1B (b)
- if the charted visibility is the same as the minimum visibility for that 'type' of ALS from Table 8-1, then apply the correction in 15.10 (4)(e)(ii) [or similarly (2)(f)(ii)], which is in effect applying the minimum visibility associated with NALS in Column 4 from Table 8-1 in Part 173 MOS 8.1.6.1B (b)
- otherwise apply the correction in paragraph 15.10 (4)(e)(i) [or similarly paragraph 15.10 (2)(f)(i)], which is in effect applying the formula in Part 173 MOS 8.1.6.1B (a), where the value for APLL would be zero, but is applied to a rounded charted visibility, which introduces an unknown difference to what would be determined in design.

Realistically these calculations should be undertaken by the aerodrome operator when an ALS failure occurs, and the pilot advised of the ALS failure and corrected visibility required. Ideally the pilot would correct the visibility required due to any aircraft equipment failures, while the aerodrome operator would advise of any aerodrome infrastructure failures along with the corrected visibility required.

CASA has noted that aerodrome infrastructure failures and required corrections are logically the responsibility of aerodrome operators to advise, but currently this would require multiple changes to various regulations and MOSs that is outside the immediate scope of these Part 91 MOS amendments.

CASA will review this issue at a more appropriate time in the future.

Considering the above, the most expedient and appropriate solution is to apply the proposed changes to paragraphs 15.10 (2)(f) and (4)(e) with the addition of a requirement to round up to the nearest 100 ft, and then accept that the pilot corrections, while not as accurate as what can be achieved by designers, are appropriate for operational use.

The following examples show the typical extent of the errors involved with pilot corrections versus the theoretical NALS designed values, and give an indication of the complexity involved with pilot corrections of visibility:

Example 1

Sydney RNP RWY 34R, DH 537ft, TCH (RDH) 50 ft, VPA (GP) 3 deg, ALS 347 m, charted visibility 2.7 km (LNAV used).

If the existing ALS fails, the Part 91 MOS proposed changes do the following, the greater of:

- paragraph 15.10 (4)(e)(i) results in 3047 m (2.7+ALS), rounded to 3100 m, or

- paragraph 15.10 (4)(e)(ii) results in 1500 m.

therefore the Part 91 MOS calculated result would be **3100 m**.

If designed without an ALS, the Part 173 MOS does the following, the greater of:

- paragraph 8.1.6.1B (a) results in 2992 m (3000 m rounded), or

- paragraph 8.1.6.1B (b) results in 1500 m

therefore the Part 173 MOS calculated result would be 3000 m.

(**Pilot correction in excess**).

Example 2

Cairns RNP Z RWY 15, DH 100ft, TCH 50ft, VPA (GP) 3 deg, ALS 900 m, charted visibility 4.8 km (LNAV/VNAV 2.5% MAP used).

If the existing ALS fails, the Part 91 MOS proposed changes do the following, the greater of:

- paragraph 15.10 (4)(e)(i) results in 5700 m (4.8+ALS), or

- paragraph 15.10 (4)(e)(ii) results in 1500 m.

therefore the Part 91 MOS calculated result would be **5700 m**.

If designed without an ALS, the Part 173 MOS does the following, the greater of:

- paragraph 8.1.6.1B (a) results in 5691 m (5700 m rounded), or

- paragraph 8.1.6.1B (b) results in 1500 m

therefore the Part 173 MOS calculated result would be **5700 m**.

(**Pilot correction identical**).

Example 3

Sydney RNP RWY 34R, DH 457ft, TCH (RDH) 50ft, VPA (GP) 3 deg, ALS 347 m, charted visibility 2.2km (LNAV/VNAV used).

If the existing ALS fails, the Part 91 MOS proposed changes do the following, the greater of:

- paragraph 15.10 (4)(e)(i) results in 2547 m (2.2+ALS), **rounded to** 2600 m, or

- paragraph 15.10 (4)(e)(ii) results in 1500 m.

therefore the Part 91 MOS calculated result would be **2600 m**.

If designed without an ALS, the Part 173 MOS does the following, the greater of:

- paragraph 8.1.6.1B (a) results in 2527 m (2600 m rounded), or

- paragraph 8.1.6.1B (b) results in 1500 m

therefore the Part 173 MOS calculated result would be **2600 m**.

(**Theoretical design larger, until pilot correction rounded, then identical**).

3.2.4 AMC/GM Approach Types Summary table

Only one response contained comments regarding this topic, which identified 3 issues with the proposed AMC/GM Approach Types Summary table.

The 3 issues with the specific wording within the table and notes were:

- including the 'Runway type' column could imply that the following columns define the runway type, which they don't, as the runway type is determined by what runway infrastructure is available for the runway, where certain approaches need appropriate runway types
- in note 3, the respondent read the note as type B operation type only includes ILSs, whereas type B includes any approach with a decision height below 250 ft
- in note 5, it is misleading to refer to an LPV IAP as LPV is minima type not an approach classification.

3.2.5 Outside of Scope Comments

There were 4 other comments that were outside the scope of this consultation:

- Glider separation standards. (General comment not covered in this consultation).
- Feedback on excessive cost to maintain qualifications and overuse of new terminology. (General comment not related to this consultation).

- Reduce AIP size and improve ease of reading. (General comment not related to this consultation).
- Visibility correction for aircraft automation failures, specifically 15.10(2)(e)(i) for flight director, a HUD or an autopilot. (Similar wording existed since 2011, existing wording not changed in this proposal, outside current scope of consultation).

4 Future direction

4.1 28 minor corrections

These proposed corrections and additions to the Part 91 MOS will be implemented unchanged.

4.2 Danger Areas and Military Operating Areas (MOAs)

These proposed corrections and additions to the Part 91 MOS will be implemented unchanged.

4.3 Landing minima

The proposed section 15.10 of Part 91 MOS will be implemented with corrections for:

- issue 1 and 3, in paragraphs 15.10 (1), (3), (5) and (7), by referring to 'altitude or height' not just 'altitude'
- issue 2 and 4, in paragraphs 15.10 (2)(f) and (4)(e), by adding rounding up and accepting that pilot corrections, while not always returning the theoretical visibility that could be calculated by designers, are appropriate for operational use.

4.4 AMC/GM Approach Types Summary table

The proposed AMC/GM Approach Types Summary table will be implemented with the following changes:

- runway type column will be deleted as not needed by pilots.
- note 3 will be reworded to clarify any approach with a DH below 250 ft is a type B operation.
- note 5 and all other notes will be reworded to remove 'LPV IAP' or similar terminology and replace with 'APV with LPV minima' or similar terminology.
- other minor rewording has occurred to clarify intended meaning.

The amended table and notes below show these changes.

Note: The initial intent was to replace the existing Figure 4 in the GM 91.307 entry of the Part 91 AMC/GM document.

Alternatively, this table will be used where it is best suited to clarify this topic for the reader and may be used in another location within the CASA suite of guidance material.

Approach procedure types and classifications are described in multiple ways. The purpose of the table below is to link these different descriptions together in an informative way.

Table 3: Approach Types Summary table

Operation Type	Operation Method	Procedure Classification	Approach Procedure Technology	Procedure Minima Type10		
Type A[2]	2D	Non-precision approach (NPA)	Conventional Ground Based[4]	VOR (MDA/H)	NDB (MDA/H)	LOC (MDA/H)
			PBN: (RNP APCH)	LNAV (MDA/H)	LP (MDA/H)[7]	
	3D	Approach procedure with vertical guidance (APV)		LNAV/VNAV (DA/H)[5]	LPV (DH at or above 250ft) (DA/H)[7]	
			PBN: (RNP AR APCH)	RNP (0.x) (DA/H)[6]		
Type B[3&9]		Precision approach (PA) procedure	PBN: (RNP APCH)	LPV (DH below 250 ft) (DA/H)[7&8]		
			Conventional Ground Based	ILS (DA/H)[9]		
			GNSS Based	GLS (DA/H)[9]		

Notes:

1. This table should be read from left to right and shows IAP terminology interrelationships.
2. Type A: a minimum descent height or decision height at or above 250 ft.
3. Type B: a decision height below 250 ft.
4. DME or GNSS arrivals are technically classified as NPA but will only have circling minima published.
5. Barometric input is needed to compute the VNAV component in LNAV/VNAV procedures, hence they are sometimes referred to as BARO VNAV procedures.
6. For a RNP AR APCH procedure the minima are represented as RNP 0.x where 0.x refers to the RNP value specific to the final approach segment (for example: 0.3). RNP AR APCH procedures are for use by CASA approved operators only.

7. IAPs with LP and LPV minima are not currently available in Australia as they rely on the availability of an SBAS (satellite-based augmentation system). An SBAS is expected to be available for Australian IAPs in late 2028 via the Australia / New Zealand Southern Positioning Augmentation Network (SouthPAN).

8. SBAS is required for all IAP's with LPV minima and can potentially provide minima similar to ILS CAT I minima. Hence an IAP with LPV minima below 250 ft are sometimes referred to as SBAS Cat I procedures.

9. Obstructions and/or lack of infrastructure (for example related to non-precision approach runways as defined in the Part 139 MOS) may limit ILS or GLS PA to a decision height of 250 ft or above. In these situations, the procedure classification is still a PA but the operation type is Type A.

10. Multiple minima types may be included on the same chart when the procedure technology for the IAP allows. This can occur for ILS with LOC, ILS with multiple CAT I, II or III minima, LNAV with LNAV/VNAV, RNP AR APCH with multiple RNP values and any RWY approach with circling minima.

5 Impact for pilots

For the 28 minor corrections there should be no operational change for pilots. The corrections mirror what is commonly understood by industry.

For the Danger Areas and Military Operating Areas (MOAs) Part 91 MOS sections 11.22 and 11.23 corrections, there should be no operational change for pilots. The corrections mirror what is commonly understood by industry.

For the landing minima corrections to Part 91 MOS section 15.10, there are changes to how pilots currently calculate the required visibility when or if the approach lighting system partially or completely fails. The consultation proposal will be amended as follows:

a. by adding reference to height in paragraphs 15.10 (1), (3), (5) and (7). (No operational change for pilots)

b. the proposed changes to visibility corrections when ALS has failed will be modified so that visibility corrections will be:

   i. arranged under NPA, APV and PA approach procedure classifications

   ii. grouped according to if, or if not, the final approach track is within the 'visible approach lighting splay'

   iii. correctly related to the visibility required during design for full, intermediate, basic and nil approach lighting systems

   iv. for failed approach lighting systems - rounded up to the nearest 100 metres.

Example 1

Brisbane RNP Z RWY 01R using LNAV/VNAV capability

Minima is 350 (338-1.0)

RWY 01R HIAL 900 m

Current 91 MOS 15.10	vs	New 91 MOS 15.10
If ALS fails to only 419m		If ALS fails to only 419m
(2)(d)(ii) required vis is 800m		(4)(d) required vis is 1200m
(less than charted value)		(more than charted value)
If ALS completely fails		or If ALS completely fails
(2)(f) required vis is 1500m		(4)(e)(i) required vis is 1.0km + 900m = 1.9km

Example 2

Melbourne ILS-Y RWY 16

Minima is 640 (208-0.8) 550 RVR

RWY 16 HIAL 900 m

Current 91 MOS 15.10	vs	New 91 MOS 15.10
If ALS fails to only 419m		If ALS fails to only 419m
(2)(d)(ii) required vis is 800m		(2)(e)(iv) required vis is 1200m
(equal to the charted value)		(more than charted value)
If ALS completely fails		or If ALS completely fails
(2)(f) required vis is 1500m		(2)(f)(i) required vis is 0.8km + 900m = 1.7km

Note: Pilots need to be familiar with the new 91 MOS 15.10, when published, for corrections to required visibility for landing in the event of partial or complete ALS failure. See Appendix A for proposed wording of section 15.10 of the 91 MOS.

For the proposed Approach Types Summary table guidance material, there is no operational change for the pilots. This guidance material clarifies the interrelation of technical terms for the industry.

Appendix A Proposed Section 15.10

The content below illustrates the likely wording of Part 91 MOS section 15.10 arising from this consultation. The proposed changes due to feedback from the consultation are in purple.

15.10 Landing minima

(1) For a PA — the minimum **altitude** or **height** must be at least the highest of the following:

(a) the DA or DH specified on the instrument approach chart for the IAP being conducted;

(b) the relevant minima specified in the AFM;

(c) the relevant minima specified in the operator's exposition or operations manual.

Note But see subsection (7).

(2) For a PA — the minimum **visibility** must be at least the greatest of the following:

(a) the RVR or visibility specified on the instrument approach chart for the IAP being conducted;

(b) relevant minima specified in the AFM;

(c) relevant minima specified in the operator's exposition or operations manual;

(d) 800 m — but only if:

(i) the TDZ RVR report is not available; or

(ii) the approach lighting system normally available at and beyond 720 m from the runway threshold is inoperative;

(e) 1 200 m — but only if:

(i) the approach cannot be flown to at least the landing minima using a flight director, a HUD or an autopilot; or

(ii) the aircraft is not equipped with an operative failure warning system for the primary attitude and heading reference systems; or

(iii) high intensity runway edge lighting is not in operation; or

(iv) the approach lighting system normally available at and beyond 420 m from the runway threshold is inoperative;

(f) if the approach lighting system normally available at and beyond 210 m from the runway threshold is inoperative, or the whole approach lighting system is inoperative, the greater of:

(i) the visibility specified on the instrument approach chart plus a value equivalent to the published length of the approach lighting system rounded up to the nearest 100m; and

(ii) 1 500m;

(g) the greater of either1.5 times the RVR or 1.5 times the visibility specified on the instrument approach chart for the IAP being conducted — but only if:

(i) a lighting failure has occurred on a runway at a controlled aerodrome; and

(ii) doubled spacing of runway edge lights results.

Note 1 At a controlled aerodrome, in the event of failure of 1 electrical circuit on a runway equipped with interleaved circuitry lighting, pilots will be notified of a doubled spacing of runway edge lights, that is, from 60 m spacing to 120 m spacing.

Note 2 The length of any installed approach lighting system (ALS) is used in the IAP design and may reduce the visibility required. Where this has occurred the pilot needs to correct the visibility required when the ALS is partially or fully inoperative.

Note But see subsection (8).

(3) For a straight-in approach that is an APV or an NPA with the final approach track **aligned** within the visible approach lighting splay — the minimum **altitude** or **height** must be at least the highest of the following:

(a) the DA or DH, or the MDA or MDH, specified on the instrument approach chart for IAP being conducted;

(b) the relevant minima specified in the AFM;

(c) the relevant minima specified in the operator's exposition or operations manual.

Note But see subsection (7).

(4) For a straight-in approach that is an APV or an NPA with the final approach track **aligned** within the visible approach lighting splay — the minimum **visibility** must be at least the greatest of the following:

(a) the visibility specified on the instrument approach chart for IAP being conducted;

(b) relevant minima specified in the AFM;

(c) relevant minima specified in the operator's exposition or operations manual;

(d) 1 200 m — but only if the approach lighting system normally available at and beyond 420 m from the runway threshold is inoperative;

(e) if the approach lighting system normally available at and beyond 210 m from the runway threshold is inoperative, or the whole approach lighting system is inoperative, the greater of:

(i) the visibility specified on the instrument approach chart plus a value equivalent to the published length of the approach lighting system rounded up to the nearest 100m; and

(ii) 1 500m.

Note 1 The length of any installed approach lighting system (ALS) is used in the IAP design and may reduce the visibility required. Where this has occurred the pilot needs to correct the visibility required when the ALS is partially or fully inoperative.

Note 2 But see subsection (8).

(5) For a straight-in approach that is an APV or a NPA with the final approach track **not aligned** within the visible approach lighting splay, or with **no** approach lighting system installed — the minimum **altitude or height** must be at least the highest of the following:

(a) the DA or DH, or the MDA or MDH, specified on the instrument approach chart for the IAP being conducted;

(b) the relevant minima specified in the AFM;

(c) the relevant minima specified in the operator's exposition or operations manual.

Note But see subsection (7).

(6) For a straight-in approach that is an APV or a NPA with the final approach track **not aligned** within the visible approach lighting splay, or with **no** approach lighting system installed — the minimum **visibility** must be at least the greatest of the following:

(a) the visibility specified on the instrument approach chart for the IAP being conducted;

(b) the relevant minima specified in the AFM;

(c) the relevant minima specified in the operator's exposition or operations manual.

Note But see subsection (8).

(7) Despite subsections (1), (3), and (5), if an aircraft is conducting a circling manoeuvre from **any** approach — the minimum **altitude or height** must be at least the highest of the following:

(a) the circling minimum altitude specified on the instrument approach chart for the IAP being conducted;

(b) the relevant minima specified in the AFM;

(c) the relevant minima specified in the operator's exposition or operations manual.

(8) Despite subsections (2), (4), and (6), if an aircraft is conducting a circling manoeuvre from **any** approach — the minimum **visibility** must be at least the greatest of the following:

(a) the circling minimum visibility specified on the instrument approach chart for the IAP being conducted;

(b) the relevant minima specified in the AFM;

(c) the relevant minima specified in the operator's exposition or operations manual.

Note DME or GNSS arrivals, while using NDB or VOR for lateral tracking and DME or GNSS for distance information, are only published with circling minima. As such, only subsections (7) and (8) apply to DME or GNSS approaches.

(9) For an aerodrome **without** an authorised IAP, the minimum **altitude** must be at least the altitude at which the flight can comply with the requirements relating to visual approach procedures published in the authorised aeronautical information for the purposes of subparagraph 91.305 (3) (b) (i).

(10) For an aerodrome **without** an authorised IAP, the minimum **visibility** must be at least the flight visibility specified in Table 2.07 (3) for the type of aircraft, the class of airspace, and the height.

Note Table 2.07 (3) specifies the VMC criteria. The effect of this paragraph is that flight visibility must be at least the greatest flight visibility relevant to the aircraft if it were required to maintain VMC during the flight to the aerodrome.