



**CIVIL AVIATION AUTHORITY OF SRI LANKA
AVIATION SAFETY NOTICE**

ASN No 130	Ref No: ATS/2010/22	File Ref: AS/33/01
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- Recipients : Airport & Aviation Services (SL) Ltd.
- 01.Subject : **Criteria to be followed to establishment of Aerodrome operating minima in development of Instrument Flight Procedures**
- 02.Nature : Compulsory
- 03.Issue no : 01
- 04.Status : New
05. Effective date : With immediate effect
06. Validity : Until Further Notice
- 07.Contact person : For more details / clarifications about this ASN please contact Deputy Director (Aerodrome & Navigation Services) Civil Aviation Authority, No.64, Galle Road, Colombo 03, Sri Lanka. Telephone: +94 11 2436324. E-mail:ddans@caa.lk
- 08.Availability : Copy of this document is available on web site- **www.caa.lk** and the technical library of Civil Aviation Authority. Copies can be collected at reproduction cost from the library.
- 09.Applicability : Flight Procedure Designers in Sri Lanka.
- 10.Comments : Comments (if any) on the contents of this Aviation Safety Notice (ASN) may be forwarded to the contact person. However the Aviation Safety Notice will come into effect on the date shown therein notwithstanding any objection or comment made by any person or party unless and until an amendment to the Aviation Safety Notice is issued afresh by the Director General of Civil Aviation.
- 11.Notice : Instrument Flight Procedure Designers in Sri Lanka shall be established of aerodrome operating minima in development of Instrument flight procedures for Non-precision approaches and Precision approaches- Instrument Landing System Category I, in accordance with the criteria given in this ASN.

12. History of Revision : none
13. Related ASNs : -
14. Action Required : 1) For strict compliance by the Instrument Flight Procedure Designers in Sri Lanka.
2) Acknowledge the receipt of this ASN.
15. Check list : List of current ASN nos are as follows

ASN No	Issue No	Date of Applicability	Remarks
ASN002	02	23.09.2010	Replaced ASN no 002 issue no 01
ASN004	01	13.02.2001	nil
ASN005	01	26.03.2001	nil
ASN007	01	15.09.2001	nil
ASN008	02	16.11.2006	Replaced ASN no 008 issue no 01
ASN009	01	18.02.2002	nil
ASN010	01	18.02.2002	nil
ASN011	01	18.02.2002	nil
ASN012	01	18.02.2002	nil
ASN013	01	08.02.2002	nil
ASN014	01	01.03.2002	nil
ASN015	01	01.03.2002	nil
ASN016	01	01.03.2002	nil
ASN017	02	10.03.2005	Replaced ASN no 017 issue no 01
ASN018	01	20.03.2002	nil
ASN019	01	01.04.2002	nil
ASN021	01	01.04.2002	nil
ASN022	01	08.04.2002	nil
ASN023	02	20.09.2010	Replaced ASN no 023 issue no 01 and Replaced ASN no 003
ASN024	01	02.09.2002	nil
ASN025	03	15.10.2010	Replaced ASN no 001 and Replaced ASN no 025 issue no 002
ASN026	01	15.10.2002	nil
ASN027	01	20.12.2002	nil
ASN028	02	20.09.2010	Replaced ASN no 028 issue no 01
ASN029	01	21.03.2002	nil
ASN030	01	10.07.2002	nil
ASN031	01	15.07.2003	Replaced ASN no 006
ASN032	01	25.07.2003	nil
ASN033	02	25.08.2005	Replaced ASN no 033 issue no 01
ASN034	01	11.09.2003	nil
ASN035	01	12.09.2003	nil
ASN036	02	25.08.2010	Replaced ASN no 036 issue no 01
ASN037	01	13.10.2003	nil
ASN038	02	30.06.2010	Replaced ASN no 038 issue no 01
ASN039	04	19.08.2008	Replaced ASN no 039 issue no 03
ASN040	01	07.06.2004	nil
ASN041	01	16.06.2004	nil
ASN042	07	04.10.2010	Replaced ASN no 042 issue no 06 and Replaced ASN no 050
ASN043	02	12.08.2004	Amendment to ASN no 013
ASN044	03	24.05.2010	Replaced ASN no 044 issue no 02
ASN045	02	05.01.2007	Replaced ASN no 045 issue no 01
ASN046	03	10.06.2010	Replaced ASN no 046 issue no 02
ASN047	04	24.05.2010	Replaced ASN no 047 issue no 03
ASN048	03	04.10.2010	Replaced ASN no 048 issue no 02
ASN049	02	04.10.2010	Replaced ASN no 049 issue no 01

ASN051	02	10.06.2010	Replaced ASN no 051 issue no 01
ASN052	02	04.10.2010	Replaced ASN no 052 issue no 01
ASN053	05	10.06.2010	Replaced ASN no 053 issue no 04 and ASN no 64
ASN054	05	01.10.2010	Replaced ASN no 054 issue no 04
ASN055	04	17.07.2009	Replaced ASN no 055 issue no 03
ASN056	02	20.07.2009	Replaced ASN no 056 issue no 01
ASN057	03	01.09.2010	Replaced ASN no 057 issue no 02
ASN058	03	21.07.2009	Replaced ASN no 058 issue no 02
ASN059	02	16.12.2009	Replaced ASN no 059 issue no 01
ASN060	03	20.09.2010	Replaced ASN no 060 issue no 02
ASN061	02	05.08.2005	Replaced Page no 01 of the attachment to the ASN no 061 issue no 01
ASN062	02	30.09.2010	Replaced ASN no 062 issue no 01
ASN063	01	20.12.2004	nil
ASN065	01	06.04.2005	nil
ASN066	01	16.05.2005	nil
ASN067	01	16.05.2005	nil
ASN068	01	18.05.2005	nil
ASN069	01	18.05.2005	nil
ASN070	01	18.05.2005	nil
ASN071	01	18.05.2005	nil
ASN072	01	19.05.2005	nil
ASN073	01	19.05.2005	nil
ASN074	01	19.05.2005	nil
ASN075	01	19.05.2005	nil
ASN076	01	16.06.2005	nil
ASN077	02	01.06.2009	Replaced ASN no 077 issue No. 01
ASN078	01	21.12.2005	nil
ASN079	02	17.06.2010	Replaced ASN no 079 issue No. 01
ASN080	02	01.07.2010	Replaced ASN no 080 issue No. 01
ASN081	05	10.06.2010	Replaced ASN no 081 issue No. 04
ASN082	01	23.11.2005	nil
ASN083	01	01.12.2005	nil
ASN084	01	16.12.2005	nil
ASN085	01	05.01.2006	nil
ASN086	03	12.07.2010	Replaced ASN no 086 issue No. 02
ASN089	01	10.05.2006	nil
ASN090	04	12.10.2010	Replaced ASN no 090 issue No. 03
ASN091	04	18.11.2010	Replaced ASN no 091 issue No. 03
ASN092	01	09.11.2007	nil
ASN093	02	18.11.2010	Replaced ASN no 093 issue No. 01
ASN094	01	02.06.2006	nil
ASN095	01	25.09.2006	nil
ASN096	02	28.10.2010	Replaced ASN no 096 issue No. 01
ASN097	02	20.01.2010	Replaced ASN no 097 issue No. 01
ASN099	02	25.05.2010	Replaced ASN no 099 issue No. 01
ASN100	04	19.08.2010	Replaced ASN no 100 issue No. 03
ASN101	01	28.01.2008	nil
ASN102	01	04.03.2008	nil
ASN103	01	01.08.2008	nil
ASN104	01	28.08.2008	nil
ASN105	01	07.08.2008	nil
ASN106	01	03.12.2008	nil
ASN107	01	12.01.2009	nil
ASN108	02	04.10.2010	Replaced ASN no 108 issue No. 01
ASN109	01	07.09.2009	nil
ASN110	01	08.09.2009	nil
ASN111	02	15.10.2010	Replaced ASN no 111 issue No. 01
ASN112	02	15.09.2010	Replaced ASN no 112 issue No. 01

ASN113	01	03.03.2010	nil
ASN114	01	04.03.2010	nil
ASN115	01	06.04.2010	nil
ASN116	01	06.04.2010	nil
ASN117	01	21.05.2010	nil
ASN118	01	24.05.2010	nil
ASN119	02	26.10.2010	Replaced ASN no 119 issue No. 01
ASN120	01	02.07.2010	nil
ASN121	01	08.07.2010	nil
ASN122	01	25.09.2010	nil
ASN123	01	15.10.2010	nil
ASN124	01	23.07.2010	nil
ASN125	01	15.09.2010	nil
ASN126	01	15.09.2010	nil
ASN127	01	10.10.2010	nil
ASN128	01	12.10.2010	nil
ASN129	01	26.10.2010	nil

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Criteria for the establishment of Aerodrome operating minima for the Instrument flight procedures

Following criteria shall be followed for establishment of aerodrome operating minima when developing Instrument flight procedures for Non-precision approaches and Instrument Landing System Category I (ILS CAT I) approaches.

1. Non-Precision Approaches

1.1 Non precision Aligned straight-in approach

The Obstacle Clearance Height/Altitude (OCA/H) for a straight-in, non-precision approach where the angle between the track and the extended runway centre line does not exceed 5 degrees shall provide the following minimum obstacle clearance (MOC) over the obstacles in the final approach area:

- a) 246 ft (75 m) with Final Approach Fix; and
- b) 295 ft (90 m) without Final Approach Fix.

The OCA/H shall also ensure that missed approach obstacle clearance is provided. A straight-in OCA/H shall not be published where final approach alignment or descent gradient criteria in PANS-OPS Doc8168 Vol II is not met. In this case, only circling OCA/H shall be published.

1.2 Non precision non Aligned straight-in approach

For a final approach where the track intersects the extended runway centre line, OCA/H varies according to the intersection angle. The OCH of the procedure shall be equal to or greater than the lower limits shown in Table-1.2.1.

Table-1.2.1: Lower limit on OCH.

Aircraft category	Lower limit on OCH (ft (m))	
	Intersection angle (θ) is between 5 ⁰ and 15 ⁰	Intersection angle (θ) is between 15 ⁰ and 30 ⁰
A	340 (105)	380 (115)
B	380 (115)	410 (125)
C	410 (125)	
D	430 (130)	
E	480 (145)	

1.3 Remote altimeter setting source (RASS) in mountainous areas

The use of RASS in mountainous areas requires additional calculations to determine the correct OCA/H. The calculation uses the formula;

$$OCA/H = 2.3x + 0.14z \text{ (ft)}$$

Where: OCA/H is the RASS increased altitude/height value (ft);

x is the distance from the RASS to the landing area (Nautical Miles (NM)); and

z is the difference in elevation between the RASS and the landing area (m/ft).

These formulas are used where no intervening terrain adversely influences atmospheric pressure patterns. The use of this criteria is limited to a maximum distance of 75 NM laterally or an elevation differential of 6 000 ft between the RASS and the landing area

2. Precision Approach

2.1 Instrument Landing Systems Category I

Establishment of minima shall be done by assessing Obstacle Assessment Surfaces (OAS) as derived through following the criteria in PANS-OPS Doc8168 Vol II.

The OCA/H for CAT I is defined by the aircraft category margins(refer table 2.1.1) . If the OAS are penetrated, then an aircraft category-related margin is added to the height of the highest approach obstacle, or to the adjusted height of the largest missed approach penetration, whichever is greater. This value becomes the OCA/H. Height adjustments to the missed approach obstacles shall be done according to the criteria in PANS-OPS Doc 8168 Vol II. It is recommended to use ICAO PANS-OPS OAS software to derive OAS coordinates.

Collision Risk Model (CRM) is employed either as an alternative to the use of the OAS criteria, or when the obstacle density below the OAS is considered to be the excessive. The CRM accepts all objects as an input and assesses, for any specific OCA/H value, both the risk due to individual obstacles and the accumulate risk due to all the obstacles. It is intended to assist operational judgment in the choice of an OCA/H value.

Table .2.1.1 – Aircraft Category Margins

Aircraft Category	Margin (ft)	Margin (m)
A	130	40
B	142	43
C	150	46
D	161	49

3. Publication of OCA/H.

An OCA and/or an OCH shall be published for each instrument approach. For non-precision approach procedures, either value shall be expressed in 10-ft increments by rounding up as appropriate.

The OCA/H for each aircraft category shall be published in the minimum box on the chart. Where an OCA/H is predicated on a specific navigation aid (e.g. stepdown fixes), this shall be clearly identified.

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