



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**THE SECOND MEETING OF THE APANPIRG AERODROMES  
OPERATIONS AND PLANNING – WORKING GROUP (AOP/WG/2)**

Yogyakarta, Indonesia, 3 – 5 June 2014

**Agenda Item 2: Review relevant Action Item of 50<sup>th</sup> DGCA Conference**

**ACTION ITEMS OF 50<sup>th</sup> CONFERENCE OF  
DIRECTORS GENERAL OF CIVIL AVIATION**

(Presented by the Secretariat)

**SUMMARY**

This Paper presents relevant information from the 50<sup>th</sup> Conference of Directors General of Civil Aviation Asia and Pacific Regions (DGCA/50) Meeting, held from 01 to 04 July 2013 at Bangkok, Thailand

This paper relates to –

**Strategic Objectives:**

*A: Safety – Enhance global civil aviation safety*

*B: Air Navigation Capacity and Efficiency – Increase Capacity and improve efficiency of the global civil aviation system*

*D: Economic Development of air transport – Foster the development of a sound and economically viable civil aviation system*

*E: Environmental Protection – Minimize the adverse environmental effects of civil aviation activities*

**1. INTRODUCTION**

1.1 The 50<sup>th</sup> Conference of Directors General of Civil Aviation (DGCA), Asia and Pacific Regions hosted by DGCA Thailand, was held at Royal Orchid Sheraton Hotel in Bangkok, Thailand from 01 to 04 July 2013.

1.2 The Conference was attended by 349 delegates from 34 Asia/Pacific Administrations and 8 International Organizations. The 50<sup>th</sup> DGCA Conference Final Report is available at <http://www.icao.int/APAC/Documents/DGCA/50dgarpt.pdf>

**2. DISCUSSION**

2.1 The DGCA Conference/50 received 61 Discussion Papers and 50 Information Papers under its 8 Agenda Items. The Conference reviewed and discussed APANPIRG/24 outcomes under its Agenda Item 3 – Regulatory Oversight, Capacity, Air Navigation Planning and Implementation.

2.2 The Theme Topic of the 50<sup>th</sup> DGCA Conference was: *‘Innovations and Targets for Increased Safety, Enhanced Security and Sustainability of Asia Pacific Aviation’*.

**Action Items agreed by the Conference:**

2.3 The Conference identified 15 Action Items and requested States/Administrations to act upon the agreed Action Items and provide ICAO APAC Office a status report of implementation by 15 January 2014. The list of Action Items arising from DGCA/50 is appended as **Appendix A**.

2.3.1 India presented a paper DP/3/30 on Provision of Take-off Climb Surface and its Effect on Declared Distances. The Conference noted that ambiguity existed between the text stated in Annex 14, Volume I, Paragraphs 4.2.23 to 4.2.26 and the text stated in Attachment A, Paragraph 3.5. The Conference further noted that as this is global requirement this issue should be referred to ICAO for consideration by Aerodromes Panel. ICAO Regional Office has in IOM ref: AN 3/3 – AP-AGA0009/14 dated 31 January 2014 referred the proposal presented by India to ICAO HQ for consideration.

**Theme Topic for the 51st DGCA Conference:**

2.4 The Theme Topic agreed by the Conference for the 51<sup>st</sup> Conference of DGCA was “Rise to Future Challenges in Aviation through Closer Collaboration and Harmonization”. The 51<sup>st</sup> DGCA Conference will be held from 24 to 27 November in Hong Kong, China. The AOPWG may propose issues in the AGA area to be brought to the attention of 51<sup>st</sup> DGCA Conference.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to

- a) note the information contained in this paper;
- b) review the action items proposed by the 50<sup>th</sup> DGCA Conference.

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## APPENDIX A

LIST OF ACTION ITEMS ARISING FROM THE 50<sup>th</sup> CONFERENCE

Discussion Paper No.	Action Item	Agenda Item 1: Theme Topic
DP/1/4	Action item 50/1	<p>Recognizing the need for collaborative approach to ATM capability development and innovation the Conference :</p> <p>a) urged States in the APAC Region to work together in strengthening ATM development capabilities in anticipation of Seamless ATM implementation of ASBU beyond Block 0;</p> <p>b) urged APANPIRG to develop a common framework on which regional ATM development efforts could be harmonized based on the pooling of appropriate resources for optimal ATM solutions.</p>
<b>Agenda Item 3: Regulatory Oversight, Capacity and Air Navigation Planning and Implementation</b>		
DP/3/17	Action Item 50/2	<p>Recognizing the need for sub regional cooperation in A-CDM/ATFM the Conference</p> <p>a) urged the ICAO Asia Pacific Air Traffic Flow Management Steering Group to develop a common framework and harmonized approach to manage the air traffic flow in the region; and</p> <p>b) urged States/Administrations to participate in the ICAO Asia Pacific ATFM Steering Group and work together towards a common goal to manage air traffic flow in this region.</p>
DP/3/27	Action Item 50/3	<p>Recognizing the Region's overall performance in AIS – AIM Transition, and the critical importance of AIS/AIM to flight safety and air traffic management, the Conference:</p> <p>a) urged States to promote the profile and awareness of AIS/AIM within their States and ANSPs, and commit the necessary direction and resources to ensure compliance with ICAO Annex 15 and implementation of AIS – AIM Roadmap Transition Steps.</p> <p>b) Urged States to note the APANPIRG Conclusion 23/8 and take necessary action to address the causes of non-compliance with the ICAO AIRAC Requirements.</p>

<b>Discussion Paper No.</b>	<b>Action Item</b>	<b>Agenda Item 3: Regulatory Oversight, Capacity and Air Navigation Planning and Implementation (cont'd)</b>
DP/3/41	Action Item 50/4	<p>The Conference noted that the draft Asia/Pacific Seamless ATM Plan has been adopted by APANPIRG/24 and urged States/Administrations to:</p> <ul style="list-style-type: none"> <li>a) review Version 1.0 of the Asia/Pacific Seamless ATM Plan and utilise the Plan to develop planning for State implementation of applicable Seamless ATM elements;</li> <li>b) ensure relevant decision-makers are briefed on the Seamless ATM Plan;</li> <li>c) submit the first Regional Seamless ATM Reporting Form to the ICAO Regional Office by 01 March 2014; and</li> <li>b) where possible, participate and contribute to Seamless ATM system collaborative training and research initiatives.</li> </ul>
DP/3/40	Action Item 50/5	<p>Noting the establishment of Regional Sub Office, the Conference urged States and the industry to continue providing strong support and partnership to ICAO in supporting upcoming activities of the RSO</p>
DP/3/43	Action item 50/6	<p>The Conference noted the outcomes of RASMAG and urged</p> <ul style="list-style-type: none"> <li>c) States/Administrations to improve the safety oversight and the provision of data-link problem reporting and analysis among FIT-Asia States;</li> <li>d) States to address the continuing problem of non-RVSM operations within the RVSM stratum, noting the recommendation to deny entry to operate within RVSM airspace for aircraft confirmed as being non-RVSM;</li> <li>e) States/Administrations to improve LHD safety reporting through the application of an appropriate open reporting culture and measures to encourage reporting, and accelerate AIDC implementation through collaborative projects to minimise LHDs;</li> </ul>
DP/3/53	Action Item 50/7	<p>Recognizing the importance of having a common transition altitude within an FIR which will improve safety and efficiency of flights, the Conference urged States in consultation with users to:</p> <ul style="list-style-type: none"> <li>a) Establish common transition altitude within a FIR; and</li> <li>b) Develop new altimeter setting procedures.</li> </ul>

<b>Discussion Paper No.</b>	<b>Action Item</b>	<b>Agenda Item 4: Economic Development of Air Transport</b>
DP/4/5	Action Item 50/8	<p>The Conference recognized the benefits to be gained from the universal acceptance of the Montreal Convention and urged all Contracting States in Asia and Pacific Regions:</p> <ul style="list-style-type: none"> <li>a) to support and encourage the universal adoption of MC99;</li> <li>b) that have not done so, to ratify MC99 as soon as possible.</li> </ul>
<b>Agenda Item 5: Aviation and Environment</b>		
DP/5/3	Action Item 50/9	<p>Recognizing the immense traffic growth in APAC region and the population affected by aircraft noise the Conference urged States to consider</p> <ul style="list-style-type: none"> <li>a) inviting major airports (i.e. airports with more than 100,000 annual aircraft movements) to develop noise mapping studies, installing permanent noise monitoring systems, and where appropriate formulate action plans, by 2014 in accordance to ICAO's Balanced Approach.</li> <li>b) introduction of noise limits/guidelines and land use plans specific to airport areas by 2018 in line with ICAO's Balanced Approach and their specific conditions.</li> </ul>
<b>Agenda Item 6: Aviation security and Facilitation</b>		
RASCF/1 Meeting Report	Action Item 50/10	The Conference endorsed the RASCF Terms of Reference placed at Attachment A to the Report of RASCF/1 and noted the information contained in RASCF/1 Report.
<b>Agenda Item 7: Technical and Regional Cooperation</b>		
DP/7/1	Action Item 50/11	The Conference recognized the work done by CAPSCA and urged States to support continuation of CAPSCA in the ICAO Assembly especially towards facilitating funding of the CAPSCA Programme by means of voluntary contributions.
DP/7/12	Action Item 50/12	<p>Recognizing the achievements of the CASP AP programme and taking note of the transition of the programme into Phase III, the Conference:</p> <ul style="list-style-type: none"> <li>a) Urged Asia and Pacific Region States to increase their support and use the enormous potential of CASP-AP to fulfil their aviation security requirements, and confirm participation in the CASP-AP Project if not yet members;</li> <li>b) Urged partners and donors to provide financial and in-kind support to CASP-AP Phase III (2014-2019).</li> </ul>
DP/7/4	Action Item 50/13	Acknowledging Technical Co-operation Bureau's long established mechanism for assisting States, the Conference encouraged States/Administrations to give due consideration to the ICAO Technical Cooperation Programme.

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		<b>Regional Aviation Safety Group Meeting Report</b>
RASG/3 Meeting Report DP/3/61	Action Item 50/14	Recognizing that actions are already underway within the RASG-APAC to address the Global Aviation Safety Priorities and Targets specified in the revised Global Aviation Safety Plan, the Conference adopted these Safety Priorities and Safety Targets as well as the target dates for the implementation of related key milestones.
RASG/3 Meeting Report	Action Item 50/15	Recognising the importance of enhancing aviation safety in the region, in line with the GASP, the regional priorities and targets the Conference: urged States and industry to actively participate in implementing the RASG APAC Decision 3/22 and provide expertise to implement the RASG work programmes

**50<sup>th</sup> CONFERENCE OF  
DIRECTORS GENERAL OF CIVIL AVIATION  
ASIA AND PACIFIC REGIONS**

*Bangkok, Thailand  
1 – 4 July 2013*

AGENDA ITEM 3: REGULATORY OVERSIGHT,  
CAPACITY AND AIR NAVIGATION  
PLANNING AND IMPLEMENTATION

**PROVISION OF TAKE-OFF CLIMB SURFACE AND ITS  
EFFECT ON DECLARED DISTANCES**

(Presented by India)

**SUMMARY**

This Discussion Paper highlights the need for additional guidance material in respect of Take-Off Climb Surface in Chapter - 4 of Annex 14, Volume I and calculation of runway declared distances.

## PROVISION OF TAKE-OFF CLIMB SURFACE AND ITS EFFECT ON DECLARED DISTANCES

### 1. INTRODUCTION

1.1 ICAO Annex 14, Volume I, Chapter 4 describe the Obstacle Limitation Surfaces to be maintained for an aerodrome. Further, to describe the method of application of SARPs, the Annex contains material in the form of Attachments.

1.2 While applying the SARPs and its description in the attachments thereto, it is observed that the problem is experienced for calculating the runway declared distances and provisions of Take-off climb surface. This paper highlights the issue and invites the Conference to discuss the matter.

### 2. DISCUSSION

2.1 Para 4.2.22 of Annex 14 Vol-1 describes the specifications of Take-off Climb Surface required for runways meant for take-off as follows: -

#### “Runways meant for take-off

4.2.22 The following obstacle limitation surface shall be established for a runway meant for take-off:

— take-off climb surface.

4.2.23 The dimensions of the surface shall be not less than the dimensions specified in Table 4-2, except that a lesser length may be adopted for the take-off climb surface where such lesser length would be consistent with procedural measures adopted to govern the outward flight of aeroplanes.”

4.2.24 **Recommendation.**— *The operational characteristics of aeroplanes for which the runway is intended should be examined to see if it is desirable to reduce the slope specified in Table 4-2 when critical operating conditions are to be catered to. If the specified slope is reduced, corresponding adjustment in the length of the take-off climb surface should be made so as to provide protection to a height of 300 m.*

*Note.*— *When local conditions differ widely from sea level standard atmospheric conditions, it may be advisable for the slope specified in Table 4-2 to be reduced. The degree of this reduction depends on the divergence between local conditions and sea level standard atmospheric conditions, and on the performance characteristics and operational requirements of the aeroplanes for which the runway is intended.*

4.2.25 New objects or extensions of existing objects shall not be permitted above a take-off climb surface except when, in the opinion of the appropriate authority, the new object or extension would be shielded by an existing immovable object.

*Note.*— *Circumstances in which the shielding principle may reasonably be applied are described in the Airport Services Manual (Doc 9137), Part 6.*

4.2.26 **Recommendation.**— *If no object reaches the 2 per cent (1:50) take-off climb surface, new objects should be limited to preserve the existing obstacle free surface or a surface down to a slope of 1.6 per cent (1:62.5).*



**Table 4-2. Dimensions and slopes of obstacle limitation surfaces**

## RUNWAYS MEANT FOR TAKE-OFF

Surface and dimensions <sup>a</sup>	Code number		
	1	2	3 or 4
(1)	(2)	(3)	(4)
<b>TAKE-OFF CLIMB</b>			
Length of inner edge	60 m	80 m	180 m
Distance from runway end <sup>b</sup>	30 m	60 m	60 m
Divergence (each side)	10%	10%	12.5%
Final width	380 m	580 m	1 200 m 1 800 m <sup>c</sup>
Length	1 600 m	2 500 m	15 000 m
Slope	5%	4%	2% <sup>d</sup>

a. All dimensions are measured horizontally unless specified otherwise.  
b. The take-off climb surface starts at the end of the clearway if the clearway length exceeds the specified distance.  
c. 1 800 m when the intended track includes changes of heading greater than 15° for operations conducted in IMC, VMC by night.  
d. See 4.2.24 and 4.2.26.

2.1.1 Accordingly, a runway meant for take-off requires establishment of take-off climb surface with the specifications mentioned in Table 4-2 of Annex 14. The runways meant for international operations falls in code 3 or 4.

2.1.2 Further, Para 3.5 of the Attachment A to Annex 14 describes that a displaced threshold affects only the LDA for approaches made to that threshold and all declared distances for operation in reciprocal direction remains unaffected. The said para is reproduced below.

*“3.5 Where a runway has a displaced threshold, then the LDA will be reduced by the distance the threshold is displaced, as shown in Figure A-1 (D). A displaced threshold affects only the LDA for approaches made to that threshold; all declared distances for operations in the reciprocal direction are unaffected.”*

2.1.3 While designing the procedures, as per guidelines in Doc 8168 Volume II, the departure turn is initiated at a minimum turn height of 120 m (394 ft) above the elevation of the Departure End of Runway (DER) which could be reached after 600 m from the lift off. In case the TORA is declared till the physical end of the departure runway, the turn cannot be initiated prior to 600m from the end of TORA.

2.1.4 Annex 6 Volume I Aircraft Operations in Chapter 5 has following requirements in respect of obstacles and developing procedures for single engine failure during take-off and clearing the obstacles in the take-off path.

*“5.3.1 Obstacle data shall be provided to enable the operator to develop procedures to comply with 5.2.8.”*

In Attachment C of Annex 6 Volume I, the guidance material for Take-off obstacle clearance limitations are also provided for the aircraft operator.

2.1.5 Annex 14 Volume I in the guidance material at Attachment A has following provision for changing the Approach Slope specifications.

“10.2.4 Notwithstanding the consideration of landing distance available, the selected position for the threshold should not be such that the obstacle free surface to the threshold is steeper than 3.3 per cent where the code number is 4 or steeper than 5 per cent where the code number is 3.”

However, no such guidance material is provided in respect of take-off climb surface.

2.2 The application of the above provisions **creates ambiguity** for an aerodrome operator for calculation of the declared distances particularly for the operation by the critical aircraft for which runway is designed. The same are explained through an example as follows: -

2.2.1 In case, there is an obstacle in the first section of the approach path, infringing by 5m, on the extended centre line of a runway 27. The threshold of the runway 27 shall have to be displaced by 250m to maintain the approach path slope of 2%.

2.2.2 Further, the reciprocal runway i.e. 09 is also being used for take-off and there is no displacement on this side of the runway. Considering the provisions of the para 3.5 of the Attachment A, all declared distances on the reciprocal runway shall remain unaffected. Hence, the TORA, TODA, ASDA and LDA shall be calculated from physical beginning of the runway 09 till physical end of runway 09 i.e. physical beginning of runway 27.

2.2.3 With this calculation, the Take-off Climb surface shall be infringed by the obstacle mentioned above by 5m contrary to the requirement of the take-off climb surface mentioned in Table 4-2.

2.2.4 Therefore, it is considered that keeping in mind the provision of take off climb surface, clarification and guidance material on the method of calculation of the declared distances especially for the runway reciprocal to the displaced threshold needs to be elaborated in Annex 14.

2.3 To overcome the above problem, following aspects needs to be deliberated.

- i. The guidance material for flexibility in Take-off climb surface in line with such material provided for approach surface may be considered.
- ii. The guidance material in para 3.5 of Attachment A may also be reviewed for calculation of declared distances when controlling obstacle is in the close proximity and provision of Para 4.2.23 cannot be applied.

### 3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to note the information contained in this Paper.

- a) Take note of the contents of the paper;
- b) To recommend ICAO for providing additional guidance on provisions in the Annex 14 regarding Take-off Climb surface vis-à-vis calculation of declared distances as per the description given in the Attachment A to the Annex 14.