INTERNATIONAL CIVIL AVIATION ORGANIZATION

FINAL REPORT

FOURTH MEETING OF THE ASIA/PACIFIC AERODROME DESIGN AND OPERATIONS TASK FORCE (AP-ADO/TF/4)

HYBRID MEETING, CHIANG RAI, THAILAND, 10 TO 13 JANUARY 2023

The views expressed in this Report should be taken as those of the Meeting and not the Organization

Approved by the Meeting and published by the
ICAO Asia and Pacific Office, Bangkok

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INTRODUCTION

1. Meeting

1.1 The Fourth Meeting of Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF/4) was held as a Hybrid Meeting in Chiang Rai, Thailand from 10 to 13 January 2023.

2. Attendance

2.1 93 participants from 20 Member States, 1 Special Administrative Region and Pacific Aviation Safety Office attended the meeting.

2.2 The List of Participants is placed at **Attachment 1** to the Report.

3. Opening of the meeting

3.1 Dr. Punya Raj Shakya, Regional Officer/AGA welcomed the participants of the meeting. Sqn. Ldr. Dr. Somchanok Tiamtiabrat, Chairperson of AP-ADO/TF provided opening remarks.

4. Officers and Secretariat

4.1 Sqn. Ldr. Dr. Somchanok Tiamtiabrat, Chairperson of AP-ADO/TF presided over the meeting. Dr. Punya Raj Shakya, Regional Officer/AGA, ICAO Asia/Pacific Office was the Secretary of the Meeting.

5. Language and Documentation

5.1 The working language of the meeting and all documentation was in English. There were 13 Working Papers, 4 Information Papers and 2 Presentations considered by the Meeting. A List of Papers and Presentations is included at **Attachment 2** to this Report.

6. Draft Conclusions, Draft Decisions and Decisions – Definition

6.1 The AP-ADO/TF recorded its actions in the form of Draft Conclusions, Draft Decisions and Decisions within the following definitions:

a) **Draft Conclusions** deal with matters that, according to APANPIRG Terms of Reference, require the attention of States, or action by the ICAO in accordance with established procedures;

b) **Draft Decisions** deal with the matters of concern only to APANPIRG and its contributory bodies; and

c) **Decisions** of the AP-ADO/TF relate solely to matters dealing with the internal working arrangements of the AP-ADO/TF.

7. Terms of Reference of AP-ADO/TF

7.1 The Terms of Reference of AP-ADO/TF, with an amendment approved by the Fifth Meeting of the Aerodrome Operations and Planning Subgroup (AOP/SG/5) (VTC, 29 June to 2 July 2021), includes inter alia the following:

TERMS OF REFERENCE
ASIA/PACIFIC AERODROME DESIGN AND OPERATIONS TASK FORCE (AP-ADO/TF)

Objective:

The main purpose of the AP-ADO/TF is to achieve some specific deliverables of the AOP/SG through the systematic works of the Task Force.

Scope of works:

To meet the above objective the AP-ADO/TF shall carry out the following tasks:

(1) **Study and discuss** aerodrome SARPs and guidance materials related to aerodrome planning, design and operations including PANS-Aerodromes and provide expert advice and clarification to APAC States on any issues related to the implementation of the requirement specified in the SARPs and guidance materials.

(2) **Review and discuss** AOP parts of the Asia/Pacific ANP and Seamless ANS Plan and formulate amendment proposals to the APAC ANP Table AOP I - 1 and Table AOP II – 1 as necessary.

(3) **Review** provisions of facilities and services at international aerodromes specified in AOP Table of ANP through monitoring the following information published in the AIP and other official documents of the States:

- Obstacle limitation surfaces;
- visual aids;
- rescue and firefighting services and emergency planning;
- assessment and reporting of the runway surface condition;
- preventive maintenance programme;
- runway safety programme including establishment of a runway safety team at international aerodromes.

(4) **Assist in conducting** seminars/workshops/trainings for the aerodrome regulatory and aerodrome operator staff in APAC Region;

(5) **Identify** experts in various AOP fields and **maintain** Asia/Pacific database;

(6) **Participate** in ICAO's activities/initiatives in aerodromes, if necessary.

Composition: The Task Force is composed of subject matter experts nominated by APAC States/Administrations and International Organization satisfying the criteria:

(1) Minimum 3 years of experience in Aerodrome Regulatory functions of CAA or in Aerodrome Operations at international airports or in the International Organizations;
(2) Familiar with Annex 14 and its guidance materials, GANP, GASP, APAC Seamless ANS Plan, APAC ANP; and
(3) The nominated expert would continue to be a member for a minimum of three consecutive years.

Additional membership could be invited from other regions, if required.

Working Methods: The Task force will hold at least one face-to-face meeting a year. Video teleconference may be held in lieu of face-to-face meeting when travel restrictions are in place. The work would be carried out through electronic correspondences and web conference as far as practicable.

Time frame: The tenure of the Task Force would last until September 2023.

8. List of Draft Conclusions, Draft Decisions and Decisions

<table>
<tr><td colspan="3">Draft Conclusion AP-ADO/TF/4 – 1: Runway Turn Pad Design and Marking</td></tr>
<tr><td colspan="2">What: That, the design of runway and taxiway widths is linked to the outer main gear wheel span (OMGWS) of the design aircraft and the size of the runway turn pad depends on aircraft wheel base, OMGWS and maximum nose wheel steering angle. On the other hand, SARPs on runway turn pad markings are linked to aerodrome reference code (ARC) numbers (5.2.9 of Annex 14, Volume I refer). Therefore, ICAO is requested to review:

1) Annex 14, volume I SARPs 3.3.1 & 3.3.2, where they have provided reference to ARC (code letters);

2) Figure 1-3 of Aerodrome Design Manual (ADM), Part 2 and Figure 4-1 of Aerodrome Design Manual, Part 1 for consistency with Annex 14, Volume I SARPs as specified in 5.2.9 (5.2.9.3 & 5.2.9.7 refer) regarding the runway turn pad marking.</td><td>Expected impact:
☒ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To review Annex 14, Volume I SARPs 3.3.1 & 3.3.2 and Figure 4-1 of ADM, Part 2 and Figure 1-3 of ADM, Part 1 by ICAO Aerodrome Design Group of Aerodrome Design and Operation Panel</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 13-Jan-23</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☒ICAO HQ ☐Other: XXXX</td></tr>
</table>

<table>
<tr><td colspan="3">Draft Decision AP-ADO/TF/4-2: Proposal for Amendment to AP-ADO/TF's TOR</td></tr>
<tr><td colspan="2">What: That, the Terms of Reference of the Asia/Pacific Aerodrome Design and Operations Task Force be amended as in Appendix D to the Report of the AP-ADO/TF/4.</td><td>Expected impact:
☐Political / Global
☐Inter-regional
☐Economic
☐Environmental
☒Ops/Technical</td></tr>
<tr><td>Why: To allow additional three years of time (until September 2026) to complete the work as per initial and additional scope of the work and assigned tasks and to provide some flexibility in the mode of meetings amid the aftermath of pandemic.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 13-Jan-23</td><td colspan="2">Status: Draft to be adopted by Subgroup</td></tr>
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</table>

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Adoption of Provisional Agenda (WP/01)

The Provisional Agenda was adopted by the Meeting without amendment.

Agenda Item 1:	Review Outcome of Relevant Meetings
Agenda Item 2:	Planning, Design and Construction of Aerodromes
Agenda Item 3:	Regional Air Navigation Plan, Part II, Tables AOP I-1 & II-1
Agenda Item 4:	Seamless ANS Plan
Agenda Item 5:	AP-ADO/TF Task List
Agenda Item 6:	Any other business
Agenda Item 7:	Provisional Agenda, Date and Venue for the Next Meeting

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Agenda Item 1: Review Outcome of Relevant Meetings

Relevant Outcomes of AOP/SG/6 (WP/02)

1.1 The Secretariat presented the outcomes of the Sixth Meeting of the Aerodromes Operations and Planning Sub-group (AOP/SG/6, video teleconference, 27 to 30 June 2022) relevant to aerodrome design and operations.

1.2 AP-ADO/TF/4 noted that the following regional guidance materials had been approved by AOP/SG/6:

i) *Generic Surveillance Programme for Certified Aerodromes* developed by the Asia/Pacific Aerodrome Assistance Working Group;

ii) *Asia Pacific Regional Guidance on Development and Implementation of Wildlife Hazard Management Programme* developed by the Asia/Pacific Wildlife Hazard Management Working Group

and both documents had been published on the ICAO Asia/Pacific Regional Office eDocuments webpage: https://www.icao.int/APAC/Pages/eDocs.aspx under AGA heading.

1.3 AP-ADO/TF/4 also noted that the AOP/SG/6 had adopted two Conclusions, as below:

i) *Conclusion AOP/SG/6 – 7: State's Actions on USOAP CMA On-line Framework (OLF);* and

ii) *Conclusion AOP/SG/6 – 9 (AAITF/17-3): Revalidation of Coordinate Data*

1.4 The Final Report of AOP/SG/6 published at https://www.icao.int/APAC/Meetings/Pages/2022-AOP-SG6.aspx provided the detailed descriptions of the above Conclusions.

Relevant Outcomes of APANPIRG/33 (WP/03)

1.5 WP/03 provided a summary of the outcomes of the 33rd Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/33) which was held at the Trans Resort Bali, Indonesia from 22 to 24 November 2022 as a hybrid event.

1.6 AP-ADO/TF/4 noted that APANPIRG/33 had adopted the following Conclusions related to aerodrome design and operations:

i) *Conclusion APANPIRG/33/1: Proposal for Amendment to Asia/Pacific ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1*

ii) *Conclusion APANPIRG/33/2: Publication of procedures for reporting of runway condition report and issuance of the SNOWTAM in AIP*

iii) *Conclusion APANPIRG/33/3: Assistance to APAC States that require assistance in AGA area including certification and surveillance of aerodromes*

iv) *Conclusion APANPIRG/33/4: State Action Plan for Establishment and Implementation of WHMP - Generic Template*

v) *Conclusion APANPIRG/33/14 – Update of Information in APANPIRG Air Navigation Deficiencies Reporting Form*

1.7 The Final Report of APANPIRG/33 published at https://www.icao.int/APAC/Meetings/Pages/2022-APANPIRG33.aspx provided the detailed descriptions of the above Conclusions.

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Agenda Item 2: Planning, Design and Construction of Aerodromes

Runway Turn Pad Specifications (WP/04)

2.1 Presented by India WP/14 discussed the discrepancies on the specifications of Runway Turn Pads as provided in Annex 14 Volume I, Aerodrome Design Manuals Parts 1 and 2.

Annex 14, Volume I Specifications and Aerodrome Design Manual (Doc 9157), Part 1

2.2 Initially runway turn pad was based on the Aerodrome reference code in accordance with Annex 14, Volume I, Table1-1, later in 2018, with the introduction of OMGWS and amendment to Annex 14, Volume I, Table1-1 in 2018, the turn pad should have been delinked from Aerodrome Reference Code (ARC); however, the existing SARPs 3.3.1 and 3.3.2 were still aligned with the ARC.

2.3 The design consideration for the runway turn pad was provided in Aerodrome Design Manual Part 1, Chapter 3; examples of the pavement required for a Code letter "A to F" aircraft to complete a 180-degree turn were given in Figures A4-2 to A4-7. Even though the code letters were mentioned in the figures A4-2 to A4-7 for design criteria, the design was predominantly based on OMGWS and wheelbase. Therefore, the linking of runway turn pad should have been reviewed with respect to ARC.

Markings

2.4 Annex 14, Volume I, Recommendation 5.2.9.3 required that runway turn pad marking should extended parallel to the runway centre line marking for a distance of at least 60 m beyond the point of tangency where the code number is 3 or 4, and for a distance of at least 30 m where the code number is 1 or 2. However, the Figure 1-3 of the Aerodrome Design Manual (Doc 9157) Part 2 depicted the runway turn pad marking as stripe-gap combination and overlapping with the runway centerline marking (Aerodrome operator painted the incorrect markings accordingly)

2.5 Annex 14, Volume I, Standards 5.2.9.7 requires that runway turn pad marking shall be at least 15 cm in width and continuous in length. However, Figure 4-1 in Aerodrome Design Manual (Doc 9157) Part 1 depicted the marking as stripe-gap combination. (Aerodrome operator painted the incorrect markings accordingly).

2.6 Considering the inconsistency observed in Annex 14 Volume I and Aerodrome Design Manual (Doc 9157) Part 1 regarding the basis taken for runway turn pad design (ARC letter versus OMGWS) and ambiguity created by markings of turn pad as shown in Aerodrome Design Manual (Doc 9157) Part 1 and Part 2 (which was actually shown as aircraft cockpit track but misinterpreted/misunderstood by some aerodrome operators as marking), the AP-ADO/TF endorsed the following Draft Conclusion:

Draft Conclusion AP-ADO/TF/4 – 1: Runway Turn Pad Design and Marking	
What: That, the design of runway and taxiway widths is linked to the outer main gear wheel span (OMGWS) of the design aircraft and the size of the runway turn pad depends on aircraft wheel base, OMGWS and maximum nose wheel steering angle. On the other hand, SARPs on runway turn pad markings are linked to aerodrome reference code (ARC) numbers (5.2.9 of Annex 14, Volume I refer). Therefore, ICAO is requested to review: 3) Annex 14, volume I SARPs 3.3.1 & 3.3.2, where they have provided reference to ARC (code letters);	Expected impact: ☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical

4) Figure 1-3 of Aerodrome Design Manual (ADM), Part 2 and Figure 4-1 of Aerodrome Design Manual, Part 1 for consistency with Annex 14, Volume I SARPs as specified in 5.2.9 (5.2.9.3 & 5.2.9.7 refer) regarding the runway turn pad marking.	
Why: To review Annex 14, Volume I SARPs 3.3.1 & 3.3.2 and Figure 4-1 of ADM, Part 2 and Figure 1-3 of ADM, Part 1 by ICAO Aerodrome Design Group of Aerodrome Design and Operation Panel	Follow-up: ☐Required from States
When: 13-Jan-23	Status: Draft to be adopted by PIRG
Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☒ICAO HQ ☐Other: XXXX	

Review on Requirement of Intermediate Holding Position Lights During CAT I Conditions (WP/05)

2.7 India presented the WP/05 which provided the analysis on the requirement of intermediate holding position (IHP) lights during various conditions. Intermediate holding position lights at airports were provided at an intermediate holding position intended for use in runway visual range (RVR) conditions less than 350 m. The IHP lights being switched on along with the taxiway centre line lighting. However, at several airports where taxiway centre line lighting was provided even during CAT I conditions (in lieu of taxiway edge lights), IHP lights were not required to be provided as per Annex 14, Volume I Standards and Recommended Practices (SARPs).

2.8 The WP/05 explained the difficulties from pilot perspective in identification of the IHP position when taxiway centreline lights (TCLs) are operated in CAT I conditions. When the TCLs were switched on, the tendency of the pilot in focusing on the green lights and difficulty in sudden switchovers of identifying the IHP marking were detailed. Difficulties in identification of the transverse IHP marking in the above scenario could be a challenge.

2.9 The difficulties in achieving the balance required in the elements of visual aids, in this case the marking and the lights (longitudinal lighting vs transverse marking), had been discussed in detail. The impact on the historical and the experience factors of the pilot in such situations was also discussed. Based on above discussion points, the Paper strongly recommended that the Intermediate holding position lights be mandatorily provided whenever TCLs were operated.

2.10 The second part of the proposal included a recommendation to provide IHP lights when the airport had only taxiway edge lights and signs. The paper explained the benefits, such as, early information about a junction, less installation cost as configuration requires only 3 lights, increase of situational awareness as identification of IHP marking still could be a challenge from a long distance etc., The issues with the IHP markings had also been detailed, supporting the recommendations for provision of IHP lights in CAT I conditions. However, in such a case, it was proposed to have a light distribution similar to TCL's with RVR conditions > 350 m.

2.11 After discussion on the WP/05 and suggestions received from Pakistan and Nepal, the meeting agreed to send the WP/05 (Revision 1) to ICAO HQ Visual Aids Group for further review and study incorporating the changes in the WP/05 after Paragraph 4.1 b) as follows:

- in 5.3.21.3 added the text in bold font "**at intermediate holding position**" before the text "..... irrespective of runway visual range conditions" and deleted completely 5.3.21.5 as the provision mentioned here was in existence in 5.3.21.6 (renumbered).

Development of fully integrated safeguarding surfaces to uphold flight safety while facilitating pressing needs of infrastructure/building developments in Hong Kong, China (WP/06)

2.12 Hong Kong China shared the successful experience in making use of advanced computer modelling to proactively develop integrated safeguarding surfaces for CNS equipment, aerodrome and flight procedures, and publish them under a regulatory framework to uphold flight safety while minimising constraints to infrastructure/building developments to cope with the pressing needs for lands for developments in the Hong Kong territories. Hong Kong China had revamped the existing CNS safeguarding surfaces based on comprehensive computer modelling for each CNS equipment against the environment in which the equipment operates utilising a state-of-the-art 3-dimensional (3D) computer modelling solution. The CNS safeguarding surfaces derived in a 3D manner were highly accurate to provide sufficient safeguarding protection while minimising constraints to building heights. Resulting of the highly accurate computer simulation, coverage and limiting the height of the revamped safeguarding surfaces could be less stringent as compared with the existing ones.

2.13 Besides, Hong Kong China also integrated all safeguarding surfaces through a highly complex and iterative process with a high degree of accuracy in formulating a combined set of the most limiting surfaces, which were published as *"Airport Height Restriction Plan" (AHRP)* under the *Hong Kong Airport (Control of Obstructions) Ordinance* with effect from 31 May 2022. This gave the AHRP a firm legal footing by incorporation into the laws of Hong Kong China, that also help the potential infrastructure/building developments to comply with the law. Such a comprehensive and systematic approach was considered beneficial to all stakeholders, including Civil Aviation Authorities/Air Navigation Service Providers, airport operators, lands planners, property owners/developers etc., to facilitate development and future aerodrome planning without jeopardising flight safety.

2.14 States/Administrations were encouraged to be fully aware of the potential risks induced by the protrusion of safeguarding surfaces and take proactive steps to engage advanced computer modelling to develop integrated safeguarding with high accuracy and publish them under a regulatory framework to uphold flight safety while facilitating pressing needs of infrastructure/building developments.

2.15 Furthermore, a service provider, ESRI China (Hong Kong), provided a solution for integrating safeguarding surfaces in Hong Kong China. The aviation geographic information system experts from ESRI conducted an online demonstration of integrating the safeguarding surfaces to derive the lowest limiting surface. The model could be verified using captured flight data to understand and demonstrate the surface design in practice. The combined data layers could be exported to a 3D model database or shared as a web application, allowing complex geographic information to be simplified and shared with users.

Review on Requirement of Sequenced Flashing Lights (SFL) for the Barrette Approach Lighting System in CAT I/II/III Conditions (WP/07)

2.16 Presented by India, the WP/07 provided the review on requirement of sequenced flashing lights (SFL) for the barrette approach lighting systems in CAT I/II/III conditions**.**

Precision Approach CAT I Lighting System

2.17 As per Annex 14 Volume I, SFL should be provided for the barrette approach lighting system taking into consideration of the characteristics of the system and the nature of meteorological conditions, which is applicable for both precision approach CAT I and precision approach CAT II/III lighting systems. While for Category I approach lighting system SFL to be provided for every barrette i.e., from the first barrette to the end of the approach lighting system and for Category II/III approach lighting system the SFL to be provided beyond 300 m.

2.18 To understand the problem, the WP/07 provided a detailed analysis on the landing phase of the aircraft, the complexities in the landing phases and the importance of standardization has been explained.

2.19 The concern explained was the deviation in general understanding of AGL system pattern in different categories and elements guiding the expectations of the pilots. In AGL system with the reduction in the visibility the spacing reduces, the supplementary system would be added to configuration or there may not be any change. It is quite unconventional that a section of the system is reduced when the CAT II/III operations are in place. Several references have been made in understanding the importance of the pattern recognition and standardization.

2.20 The WP/07 provided following explanations to justify the proposal of removing the SFL for section from the threshold lights to 300 m for CAT I approach lighting system:

a) SFL function is to provide centreline guidance, which is already met well before 300 m.

b) In CAT I conditions, RVR > 550 m. From a distance of 300 m, pilot can visualize and process the visual aids such as Threshold lighting/Threshold wing bar lighting, the 300 m cross bar and barrettes at every 30 m.

c) Availability of the decision bar at 300 m.

d) Probable distraction of SFL in FOG for the first 300 m. Also, stress has been laid on the depth perception issues after experiencing glare or from being flash blinded by approach or runway lights.

e) Balance of elements and dark adaptation issues.

f) FAA and Canadian standards for the SFL component of the approach lighting system consistently require installing the SFL only after the 300 m cross bar, if available, but never from the first barrette after threshold lights.

g) When a runway provided with both CAT I and CAT II/III barrette approach lights. The probability that the pilot would expect the complete stretch of SFL even for CAT II/III, when the pilot often used to land on CAT I conditions. This could lead an ambiguity for the pilot in a crucial state of landing.

2.21 Considering the detailed explanation provided above and thereby expressing the concern over the provision of SFL lights for the section from threshold lights to 300 m in the CAT I conditions, the WP/07 proposed to amend the Recommendation 5.3.4.17 of Annex 14, Volume I as below:

> 5.3.4.17 **Recommendation:—** *If the centre line consists of barrettes as described in 5.3.4.14 b) or 5.3.4.15 b), each barrette beyond 300 m should be supplemented by a flashing light, except where such lighting is considered unnecessary taking into account the characteristics of the system and the nature of the meteorological conditions.*
>
> *Precision Approach CAT II and III Lighting System*

2.22 The second part of the concern was for the CAT II/III approach lighting system. 5.3.4.34 of Annex 14, Volume I, as appended below:

> 5.3.4.34 **Recommendation.** — *If the centre line beyond 300 m from the threshold consists of barrettes as described in 5.3.4.31 a) or 5.3.4.32 a), each barrette beyond*

300 m should be supplemented by a flashing light, except where such lighting is considered unnecessary taking into account the characteristics of the system and the nature of the meteorological conditions.

2.23 This was explained stating that the CAT II/III condition itself warrants that the meteorological conditions are impaired. Therefore, the WP/07 proposed to make two changes in 5.3.4.34 of Annex 14, Volume I:

a) change from recommendation to standard, as without SFL lights identifying the approach lights would be tough task; and

b) in CAT II/III condition, both the characteristics of system perceivability and meteorological conditions are affected, the reference of the same is not required.

2.24 Based on the explanation above, the paper proposed the changes to 5.3.4.34 of Annex 14, Volume I as below:

5.3.4.34 ~~**Recommendation:** —~~ *If the centre line beyond 300 m from the threshold consists of barrettes as described in 5.3.4.31 a) or 5.3.4.32 a), each barrette beyond 300 m ~~should~~ shall be supplemented by a flashing light.~~, except where such lighting is considered unnecessary taking into account the characteristics of the system and the nature of the meteorological conditions~~*

2.25 After deliberation, the meeting agreed that the WP/07 should be forwarded to ICAO HQ Visual Aids Working Group for further review and study.

ICAO HQ Update on AGA Matters (IP/03)

2.26 Secretariat from ICAO, HQ, updated the meeting with information related to aerodrome activities carried out recently in the Airport Operations and Infrastructure Section, Air Navigation Bureau, ICAO Montreal. The IP/03 provided the recent amendments to Annex 14 Vol I, including updates on guidance materials; outcomes of the discussions at the fourth meeting of the Aerodrome Design and Operations (ADOP/4); details of the upcoming amendment proposals in Annex 14, Volume I & II and PANS-Aerodromes; ongoing work of the ADOP-RPASP Joint Task Force; and brief update on the 41st ICAO Assembly.

2.27 In response to USA's query, the Secretariat clarified that all certificated heliports open for international operations shall have safety management system implemented.

Introduction of Chengdu Tianfu International Airport (IP/04)

2.28 As an international aviation hub in western China, Chengdu Tianfu International Airport played a vital role in connecting China to the world. The airport covers 126,000 square meters and the first phase of construction took 6 years to finish. So far it has already completed 3 runways, 2 terminals with 83 contact gates and 240 stands in the apron area, integrated transportation containing High-speed Railway, metro line and the Airport Expressway. In the future, the airport would be designed to serve 150 million passengers annually and would continue to build 3 more runways and 2 terminals, which would contribute a great social and economic influence.

Embracing the Change – OLS Transformation (PPT/01)

2.29 Secretariat from ICAO, HQ, made a presentation on the upcoming amendment proposals related to Obstacle Limitation surfaces in Annex 14, Volume I and other documents. A brief outline on the proposed changes to Chapter 4 of Annex 14, Vol I and on a new chapter in PANS-

Aerodromes (Doc 9981) was provided. A complete modification and rewrite of Chapter 4 with the introduction of the twofold concept of Obstacle free surface (OFS) and Obstacle evaluation surface (OES) was explained. The introduction of the Aeroplane design group (ADG) in Chapter 1 of Annex 14, Volume I, that consists of a combination of indicated airspeed at threshold and wingspan for extensive usage in Chapter 4, was elaborated. The new chapter in PANS- Aerodromes will contain provisions related to adjustment of surfaces based on operational requirements and the conduct of aeronautical study.

2.30 The meeting was informed that a State Letter for consultation on these amendment proposals expected to be issued by the end of April 2023 and the effective and applicability dates for the OLS amendments would be July 2025 and November 2028 respectively.

ICAO ACR-PCR Procedure of Reporting Airport Pavement Strength – Introduction to FAA AC 150/5335-5D (PPT/02)

2.31 USA made a presentation on ICAO *ACR-PCR Procedure of Reporting Airport Pavement Strength – Introduction to FAA AC 150/5335-5D.*

2.32 The meeting was informed that on 9 March 2020 an *Amendment 15 to Annex 14, Volume 1 to the Convention on International Civil Aviation* was adopted by the Council at the fourth meeting of its 219th Session. Amendment 15 adopted the Aircraft Classification Rating-Pavement Classification Rating (ACR-PCR) as the new ICAO standard method of reporting airport pavement strength. The Amendment became effective on 20 July 2020 with an applicability date of 28 November 2024, and on or before this date the member States must have transitioned to the new method. This amendment culminated nearly a decade of development of the ACR-PCR method by the Airfield Pavement Expert Group (APEG) ACN-PCN Task Force. The system replaces the previous Aircraft Classification Number – Pavement Classification Number method which had been the ICAO standard method of reporting pavement strength since the early 1980s.

2.33 In 2022, Aerodrome Design Manual (Doc 9157) Part 3 – Pavements, Third Edition was published providing details on the ACR-PCR method along with recommendations on how member States would be able to adopt the ACR-PCR method as their new standard method of reporting pavement strength. The ACR-PCR method provides a standardized method to develop ACRs for aircraft based on aircraft characteristics such as gear configuration, tire pressure, load distribution and center of gravity. All aircraft manufacturers would develop ACRs using the ICAO standard method. ICAO had also developed a model procedure for computing PCRs using the Cumulative Damage Factor (CDF) concept. ICAO would allow member States to develop their own PCR procedure using the ICAO model procedure, so long as it utilizes the CDF concept. The ICAO PCR procedure did not dictate the use of a preferred subgrade failure/damage model, nor a method for treating the multi-axle loading of complex aircraft landing gear. This allowed member States to adopt the same models that were used in their existing pavement design and evaluation methodologies.

2.34 The FAA issued Advisory Circular (AC) 150/5335-5D Standardized Method of Reporting Airport Pavement Strength – PCR in April 2022. With the publication of this AC the FAA officially adopted the ICAO ACR-PCR Method as the FAA's new standard method of reporting pavement strength. The AC provides guidance on FAA procedures to compute the PCR using its FAARFIELD 2.0 pavement design and evaluation software. The AC also provides guidance on how PCRs would be reported on runways in the Airport Master Record. The FAA had established a deadline of 30 September 2024, for Part 139 Certificated airports to report PCR on paved runways. During the transition period PCNs and PCRs may be reported in an Airport Master Record; however, both values could not be reported for the same runway. After the ICAO implementation deadline of 28 November 2024, the FAA would phase out the reporting of PCNs in master records.

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Agenda Item 3: Regional Air Navigation Plan, Part II, Tables AOP I-1 & II-1

Asia/Pacific Air Navigation Plan (WP/08)

3.1 The Secretariat presented the structure of the Asia/Pacific Air Navigation Plans (APAC ANPs) and the procedures for the amendment of these Plans. All three Volumes of Asia/Pacific Air Navigation Plan and the template of Proposal for Amendments (PfA) to APAC ANPs provided at https://www.icao.int/APAC/Pages/APAC-eANP.aspx.

3.2 The meeting was informed that APAC Office had completed processing of PfAs for five States/Administrations (Hong Kong, China, New Zealand, Nepal, Pakistan and Cook Island) in 2022 and APAC ANP Volumes I & II had been amended accordingly.

3.3 AP-ADO/TF noted that among **354** international aerodromes in Asia and Pacific Regions only **269** international aerodromes had been listed in Asia/Pacific Region ANP Volume I by 2022. The detailed information of aerodromes yet to be listed in APAC ANP by Asia Pacific States/Administrations provided in **Appendix A** to the AP-ADO/TF/4 Report.

3.4 AP-ADO/TF/4 recalled the *Conclusion APANPIRG/33/1* adopted by APANPIRG/33 (22 to 24 November 2022, Bali Indonesia):

Conclusion APANPIRG/33/1: Proposal for Amendment to Asia/Pacific ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1

That, Asia Pacific States/Administrations are urged to:

a) review the aerodromes listed in APAC ANP Volume I, Table AOP I-1;

b) review the ANP Volume II, Table AOP II-1 for the list of facilities and services to be provided by the State concerned at each aerodrome that is listed in Table AOP I-1; and

c) *initiate and send to ICAO APAC Office proposals for amendment to APAC ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1 in accordance with the template provided in* ***Appendix B to the Report on Agenda Item 3.1****, if their international aerodromes are not yet listed in Table AOP I-1 or require any amendments to update the information provided in Tables AOP I-1 and AOP II-1.*

3.5 States and Administrations were reminded of the following items when preparing the Proposal for Amendment to Table AOP II-1 of APAC ANP Volume II:

a) the required level of protection expressed by means of an aerodrome rescue and firefighting (RFF) category number, determined in accordance with *Annex 14, Volume I, 9.2*, would be provided under column 2;

b) changes in the level of protection normally available at an aerodrome for RFF should not be detailed in this Table, but should be notified to the appropriate air traffic services unit and aeronautical information services units, in accordance with *Annex 14, Volume I, 2.11.3* and *2.11.4*. Further guidance is available in *ICAO Doc 9137 Airport Services Manual, Part 1 – Rescue and Firefighting, Chapter 16*;

c) the aerodrome reference code (RC) selected for aerodrome planning purposes in accordance with *Annex 14, Volume I, 1.6* should be provided under column 3; and

d) the critical design aircraft selected for determining RC, RFF category and pavement strength should be provided under column 6. Only one critical aircraft type should be shown, if it was used to determine all three elements. Otherwise, different critical aircraft types should be shown for different elements.

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Agenda Item 4: Seamless ANS Plan

NIL

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Agenda Item 5: AP-ADO/TF Task List

Draft Regional Guidance for Design and Operations of Altiport (WP/09)

5.1 China, Fiji, India, Indonesia and Nepal prepared and presented the second draft of the *Regional Guidance for Design and Operations of Altiport*.

5.2 It was noted that altiports in the mountainous areas for the operation of aircrafts with short take-off and landing (STOL) performances defy the standards and recommended practices of *Annex 14, Aerodromes, Volume I – Aerodrome Design and Operations* as well as guidelines provided in *Stolport Manual (Doc 9150)* due to topographical challenges and financial constraints, especially in terms of steep longitudinal slope, inadequate runway strip, infringement by obstacles etc. Furthermore, there were no specific international and globally harmonized guidelines for design, construction and operations of altiports.

5.3 The meeting reviewed in detail the *Draft Regional Guidance for Design and Operations of Altiport*. The *Draft Regional Guidance for Design and Operations of Altiport,* provided in **Appendix B** to this Report was also posted separately on ICAO Meeting Webpage at https://www.icao.int/APAC/Meetings/Pages/2023-AP-ADO-TF4.aspx as **Attachment** to WP/09 in word format for comments by States/Administrations for further improvement. The meeting also noted that the work in drafting the *Regional Guidance for Design and Operations of Altiport* was in progress and expected to be completed by the next meeting of the Task Force (AP-ADO/TF/5)

5.4 In response to the query from India, the Secretariat explained that in one of the States where STOL aircrafts were operating at altiports had a minimum visibility requirement of 5 km for landing and take-off as per their National Regulations. The national requirements, which stipulated other flight safety requirements for operations of aircraft by domestic carriers at altiports was also provided in the draft guidance document as one of the Attachments as a State good practices (*Attachment B – STOL Fields Clearance Requirements - CAA Nepal Practices* of the *Draft Regional Guidance for Design and Operations of Altiport* refer*)*.

5.5 In response to query on lead-in lighting system installation and airfield lighting at altiports, the Secretariat clarified that these technical matters were discussed with instructor pilots who had extensive experience in operating STOL aircrafts at altiports and they expressed that these installations would not give any benefits to airlines as they had to operate in VMC conditions and during day light.

Task List of AP-ADO/TF (WP/10)

5.6 WP/10 provided the task list of AP-ADO/TF for review and update by the meeting.

5.7 The meeting agreed with the US proposal to organise a "*Workshop on Aerodrome Pavement Design and Evaluation including ICAO ACR-PCR Method in Reporting Pavement Strength"* back-to-back with next AP-ADO/TF Meeting in Jan/Feb 2024 or as standalone workshop as appropriate at the convenient dates for Asia and Pacific States and to be supported by FAA.

5.8 The meeting updated the task list of AP-ADO/TF and the updated task list provided in **Appendix C.**

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Agenda Item 6: Any Other Business

Aerodrome Activity in the Pacific (WP/11)

6.1 WP/11 presented by the Pacific Aviation Safety Office (PASO) provided the meeting an overview of aerodrome and ground aids activity undertaken by the Pacific Aviation Safety Office since 2020 for the ten Pacific States which PASO provides regulatory services. The paper acknowledged the funding support from the Australian Department of Foreign Affairs and Trade to continue regulatory audits and surveillance as States have reduced aviation income due to border closures from COVID-19. The work included assisting on ICAO matters including Global Reporting Format training and implementation.

6.2 The development of an offsite certification audit process funded by the World Bank was highlighted. This process enabled States to continue to get PASO support for audits and inspections whilst the State borders were closed due to COVID-19 preventing onsite access by inspectors. The paper outlined challenges Pacific aerodromes face especially in regard to Annex 14 compliance, aerodrome certification and aerodrome operations. The meeting noted PASO's involvement with States to get all international aerodromes, where PASO provides assistance, to be certificated and removed current State aerodrome deficiencies identified by ICAO.

Proposal for Amendment to AP-ADO/TF TOR (WP/12)

6.3 The Secretariat presented a proposal for an amendment to the current terms of reference of AP-ADO/TF.

6.4 Due to COVID-19 pandemic, States and Administrations had re-organized their priorities. In addition, the travel restrictions implemented by States and Administrations had made the face-to-face meeting impossible and necessitated the need for additional time to fulfil the objective of the TOR as envisaged. Moreover, the special task entrusted to the Task Force by the AOP/SG for the development of the *Regional Guidance on Design and Operations of Altiports* was still in progress.

6.5 As a result, the TOR was proposed to be amended to include in its scope the topics, such as, Surface Movement Guidance and Control System (SMGCS) and Advanced SMGCS (A-SMGCS), Aerodrome Operations (AOP), Aerodrome Operation Centre (AOPC) and Total Airport Management (TAM) provisions of GANP and upcoming new concept of obstacle limitation surfaces (OLS) and runway strength reporting (ACR/PCR) as shown in **Appendix D** to the Report of the AP-ADO/TF/4. The proposed amendment to the TOR would allow additional time for this Task Force to complete the work related to initial as well as additional scope of work and assigned tasks, and to provide some flexibility in the mode of meetings.

6.6 Therefore, AP-ADO/TF/4 endorsed the following Draft Decision for consideration by AOP/SG/7:

Draft Decision AP-ADO/TF/4-2: Proposal for Amendment to AP-ADO/TF's TOR	
What: That, the Terms of Reference of the Asia/Pacific Aerodrome Design and Operations Task Force be amended as in **Appendix D** to the Report of the AP-ADO/TF/4.	Expected impact: ☐Political / Global ☐Inter-regional ☐Economic ☐Environmental

			☒Ops/Technical
Why: To allow additional three years of time (until September 2026) to complete the work as per initial and additional scope of the work and assigned tasks and to provide some flexibility in the mode of meetings amid the aftermath of pandemic.		Follow-up:	☐Required from States
When:	13-Jan-23	Status:	Draft to be adopted by Subgroup
Who:	☒Sub groups ☐APAC States ☒ICAO APAC RO ☐ICAO HQ ☒Other: AP-ADO/TF		

Election of the Chairperson

6.7 Dr. Punya Raj Shakya, Secretary of the AP-ADO/TF, invited the meeting to provide a nomination to the position of the Chairperson of the Task Force. The post would take effect from AP-ADO/TF/5 onwards.

6.8 The Head of Delegation from Bhutan, Mr. Sangay Wangdi proposed Squadron Leader Dr Somchanok Tiamtiabrat, General Manager of Chiang Rai International Airport, Airports of Thailand (AOT), to be the Chairperson of AP-ADO/TF for next four-year term. Mr. Wangdi provided a brief resume of Dr Somchanok's illustrious career achievements, wide management experience and expressed confidence that Dr Somchanok would be able to provide an effective leadership to AP-ADO/TF in its current challenging environment. This was supported by the Heads of Delegation from Nepal and India. The meeting unanimously elected Dr Somchanok as the Chairperson for the next four-year terms.

6.9 Dr Somchanok thanked the meeting for re-electing him as a Chairperson of AP-ADO/TF for the next four years and expressed appreciation for the tremendous support he received from States/Administrations.

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Agenda Item 7: Provisional Agenda, Date and Venue for the Next Meeting

Provisional Agenda, Date and Venue of Next Meeting (WP/13)

7.1 AP-ADO/TF/4 reviewed the draft agenda proposed by the Secretariat and agreed on the following Provisional Agenda for the AP-ADO/TF/5:

AP-ADO/TF/5

PROVISIONAL AGENDA

Agenda Item 1:	Adoption of Provisional Agenda
Agenda Item 2:	Review Outcome of Relevant Meetings
Agenda Item 3:	Global and Regional Air Navigation Plans
Agenda Item 4:	Planning, Design and Construction of Aerodromes
Agenda Item 5:	Asia and Pacific Regional Guidance on Design and Operations of Altiports
Agenda Item 6:	Airport Innovation
Agenda Item 7:	AP-ADO/TF Task List
Agenda Item 8:	Any other business
Agenda Item 9:	Provisional Agenda, Date and Venue for the Next Meeting

7.2 The next AP-ADO/TF Meeting would be held in January/February 2024 for three to five days. The venue proposed was ICAO APAC Office, Bangkok; however, State/Administration interested to host the meeting was requested to contact the Secretariat. The venue of the meeting would be communicated to States/Administrations through ICAO APAC Invitation Letter for AP-ADO/TF/5 Meeting.

Closing of the Meeting

7.3 Dr. Somchanok, Chairperson of AP-ADO/TF thanked all participants and members of the Task Force attended the AP-ADO/TF/4 Meeting in-persons and virtually for their valuable contribution and cooperation to the Meeting.

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