International Civil Aviation Organization

Ninth Meeting of the Aerodromes Operations and Planning Sub-Group (AOP/SG/9)

Bangkok, Thailand, 30 June to 4 July 2025

Agenda Item 4: Provision of AOP in the Asia/Pacific Region

REPORT ON THE SIXTH MEETING OF THE ASIA/PACIFIC AERODROME DESIGN AND OPERATIONS TASK FORCE (AP-ADO/TF/6)

(Presented by Chairperson of AP-ADO/TF)

SUMMARY

This paper presents the Report of the Sixth Meeting of the Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF/6).

This paper relates to –

Strategic Objectives:

A: ***Safety*** *–Enhanced global civil aviation safety*

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

1. INTRODUCTION

1.1 The Sixth Meeting of the Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF/6) was held in Aloft Hotel, Langkawi, Malaysia on 18 - 21 February 2025. 76 participants from 16 Member States, 1 Special Administration Region of China, 2 International Organization attended the Meeting.

1.2 There were 22 Working Papers, 4 Information Papers, 3 Presentations and 1 Flimsy considered by the Meeting.

1.3 The full report of the meeting is posted on the ICAO APAC Office website and can be accessed through the following link:
https://www.icao.int/APAC/Meetings/Pages/2025-Workshop-on-Transposition-of-Annex-14-SARPs-and-AP-ADO-TF-6-Meeting.aspx

1.4 **Appendices** referred to in this Working Paper carry the same Appendix numbers as those in the Report of the AP-ADO/TF/6 Meeting for easy reference.

2. DISCUSSION

2.1 Some important discussions of the AP-ADO/TF/6 Meeting are summarized below:

Outcomes of the Workshop on Transposition of Annex 14 SARPs into National Aerodrome Standards

2.2 The Workshop was conducted on 17 February 2025 in Langkawi, Malaysia and considered seventeen (17) presentations provided by the participating experts from States and International Organization.

2.3 AP-ADO/TF/6 endorsed 9 key takeaways of the Workshop for consideration by AOP/SG/9 as follows:

1) Global uniformity will facilitate and improve air navigation; and this uniformity is achieved by integrating the SARPs into the national legal framework and practices of the Contracting States and by implementing them in a timely manner for the safety, regularity and efficiency of air navigation worldwide.

2) Annex 14, Volume I contains minimum SARPs (specifications) for aerodrome design and operations.

3) States may have different procedures and processes for rule making, including the assessment of applicability taking into account different considerations. However, in transposing new or amended SARPs into the national regulations, the primary consideration should be given to safety.

4) Implementation of ICAO Annex 14 Recommendations is important in the interest of aviation safety.

5) The ultimate responsibility of ensuring aviation safety rests with States. Articles 37 and 38 mandate systematic management of differences. Through digital transformation, transitioning to Electronic Filling of Differences (EFOD) streamlines compliance processes, which supports harmonization and enhances aviation safety worldwide.

6) Engage key stakeholders (civil aviation authorities, airport operators, airlines, air navigation service providers, and industry representatives) from the outset. Involve/include/consult industry experts and professional bodies for technical input and adaptation. Consider institutionalizing or establishing governance bodies with appropriate stakeholders (e.g. Aviation Safety Advisory Panel and Technical Working Groups).

7) Explain the scope and impact of the new regulations (the potential operational, economic, and environmental impact of transposing Annex 14). Consider the use of online tools and establishing open channels (e.g., Consultation Hub/Online webinars) for feedback and regular updates.

8) In parallel, develop guidance materials to support buy-in, compliance, and timeliness of implementation. Organize workshops, seminars, and training for regulators, airport operators, and industry stakeholders.

9) Safety risk assessment is crucial for both states and airport operators to find practical solutions to address deviations without compromising safety.

2.4 AP-ADO/TF/6 agreed with the key takeaways of the workshop and formulated the following Draft Conclusion for adoption by AOP/SG/9:

<table>
<tr><td colspan="3">Draft Conclusion AP-ADO/TF/6 – 1: Workshop on Transposition of Annex 14 SARPs into National Aerodrome Standards</td></tr>
<tr><td colspan="2">What: That, key takeaways of the Workshop on Transposition of Annex 14, Volume I, SARPs into National Aerodrome Standards be circulated to Asia/Pacific States/Administrations for information</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: For transparency and to be noted by States/Administrations.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 4-Jul-25</td><td colspan="2">Status: Draft to be adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ ICAO HQ ☐Other: XXXX</td></tr>
</table>

Obstacle Limitation Surfaces: Safety Oversight Program for Controlling Obstacle in the Vicinity of an Aerodrome

2.5 AP-ADO/TF/6 noted the concern raised by Malaysia regarding the need for further deliberation on Airport Service Manual (Doc 9137), Part 6, Control of Obstacle, clause 2.2.4, where it was identified that the ultimate responsibility for limitation and control of obstacles must, in practice, rest with the airport operator.

2.6 Discussion was held to ascertain whether the limitation and control of obstacles must rest with the airport operator as mentioned in the clause above, and whether this should include areas beyond the airport boundaries. For instance, the role of limitation and control of obstacles included actions that required the ability to give authorizations for development, whether it is a government or privately owned project, and such impact should be under the purview of the State. Thus, in the matter of best practices, only obstacles within the airport boundaries should fully be the responsibility of the airport operator.

2.7 AP-ADO/TF/6 invited States/Administration to share their practice and experience on the surveillance of obstacles in the vicinity of an aerodrome, and any enforcement procedures.

Establishment of a Minimum Conspicuity Standard for Runway Markings in ICAO Annex 14, Volume I

2.8 AP-ADO/TF/6 noted the proposal submitted by Malaysia for the establishment of **measurable** conspicuity standards for aerodrome runway markings in ICAO Annex 14, Volume I to enhance safety and visibility. Malaysia also suggested introducing minimum retro-reflectivity thresholds — 100 mcd/m²/lx for runway markings (dry) and 70 mcd/m²/lx (wet), alongside coverage area requirements, ensuring that at least 50% of a marking's original visibility being maintained. These standards would provide objective evaluation criteria, enabling regulators and aerodrome operators to assess marking effectiveness consistently. Additionally, standardizing conspicuity requirements would promote proactive maintenance strategies, encouraging timely repainting, cleaning, and material improvements to sustain visibility in varied operational conditions.

2.9 The proposed measurable standards aimed to enhance runway safety, reduce risks associated with low visibility operations, and mitigate potential runway incursions or navigational errors.

2.10 AP-ADO/TF/6 agreed to form a small working group to be led by Malaysia and supported by India, Thailand, Vietnam and ACI to develop measurable conspicuity standards for runway and taxiway markings to provide aerodrome operators and regulators with clear, objective criteria for evaluating marking effectiveness and included in the AP-ADO/TF Task List as Task 6/1.

Clarification of Clause Interpretations in ICAO Annex 14 Volume I

2.11 AP-ADO/TF/6 discussed on ICAO Annex 14 Volume I Clause 5.2.2.6 regarding "Form and Proportions of Numbers and Letters for Runway Designation Marking" and Clauses 5.4.3.32 and 5.4.3.34 (c) regarding the term "location taxiway".

2.12 AP-ADO/TF/6 noted that the "Form and Proportions of Numbers and Letters for Runway Designation Marking" (Clause 5.2.2.6), which lacks clear guidance on gap dimensions for combinations of the number "1" with other numbers wider than 3.0 meters, as well as for combinations where the numbers are 3.0 meters or wider. AP-ADO/TF suggested ICAO provide visual guidance for both cases and standardize the gap dimension to 2.2 meters for the second case.

2.13 The second clause involves the term "location taxiway," used in clauses 5.4.3.32 and 5.4.3.34 (c). AP-ADO/TF/6 concluded that there was no ambiguity regarding the "location taxiway" as stated in Clause 5.4.3.32 of ICAO Annex 14 Volume I. However, ICAO HQs would investigate if any amendment would be required to provide more clarity on this clause.

2.14 AP-ADO/TF/6 agreed to the following Draft Conclusion for consideration by AOP/SG/9:

<table>
<tr><td colspan="3">Draft Conclusion AP-ADO/TF/6 – 2: Clarification of Clause Interpretations in ICAO Annex 14 Volume I</td></tr>
<tr><td colspan="2">What: That, AP-ADO/TF/6 – WP/08 be forwarded to ICAO Air Navigation Bureau for its review of specification 5.2.2.6 (Figure 5 -3) and consideration of the recommendation as proposed in the WP/08.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To avoid confusion and provide clear guidance on gap between combination of any two numbers and number and letter as illustrated in Figure 5 – 3 of Annex 14, Volume I</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 04 July 2025</td><td colspan="2">Status: Draft to be adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☒ICAO HQ ☐Other: XXXX</td></tr>
</table>

Tolerance in Aerodrome Physical Characteristics and Addressing Inconsistencies in ICAO Annex 14 Volume I

2.15 AP-ADO/TF/6 discussed on Malaysia's proposal to address the acceptable tolerances in the visual aids of aerodromes (Markings, Runway and Taxiway Edge Lights and Wind Direction Indicator's Circular Band), with the goal of enhancing operational efficiency without compromising

safety or performance standards taking references from ICAO annex 14, Volume I SARPs, FAA and UK CAA Standards.

2.16 Key discussions and recommendations included:

1) Markings: AP-ADO/TF supported adopting a ±5% tolerance for runway and taxiway markings, referencing both the ICAO Aerodrome Design Manual Part 4 in comparison with FAA guidelines. This tolerance was recommended to improve safety, operational efficiency and regulatory compliance.

2) Aeronautical Ground Lights:

- Runway Edge Lights: Proposal for reviewing the permissible tolerance for runway edge light spacing to enhance operational safety taking into consideration of ICAO SARPs, with additional analysis based on the requirements outlined in CAA UK CAP168 Licensing of Aerodromes and FAA 150/5340-30J on Design and Installation Details for Airport Visual Aids. This analysis provided a comparative perspective on spacing and installation criteria for runway edge lights, for improving safety, particularly under low-visibility conditions.
- Taxiway Edge Lights: Similar to runway edge lights, it was recommended to conduct the further study on taxiway edge light spacing. FAA Advisory Circular 150/5340-30J specified the spacing for taxiway edge lights, which is determined based on the taxiway configuration to ensure better compliance with international standards.

3) Wind Direction Indicator's Circular Band: Malaysia suggested a ±5% tolerance for the circular band of wind direction indicators to maintain consistency and minimize disruptions caused by construction or maintenance activities.

2.17 AP-ADO/TF/6 agreed to the following Draft Conclusion for consideration by AOP/SG/9:

<table>
<tr><td colspan="3">Draft Conclusion AP-ADO/TF/6 – 3: Tolerance on marking of wind direction indicator's circular band, and runway and taxiway edge lights</td></tr>
<tr><td colspan="2">What: That, AP-ADO/TF/6 – WP/09 be forwarded to ICAO Air Navigation Bureau for its review and consideration of the tolerance in the design and implementation of the marking of wind direction indicator's circular band, and runway and taxiway edge lights.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To ensure compliance with international standards, improve operational safety and optimize the effectiveness of lighting systems in guiding aircraft especially during low-visibility conditions.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 04 July 2025</td><td colspan="2">Status: Draft to be adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☒ICAO HQ ☐Other: XXXX</td></tr>
</table>

Potential Misinterpretation on the Terms "Defined Runway and Taxiway Pavement Edges to the Near Side of Sign"

2.18 AP-ADO/TF/6 discussed on the potential misinterpretation of the term "from the defined runway and taxiway pavement edges to the near side of sign" in ICAO Annex 14 Volume I, Table 5-5. The ambiguity in defining the reference point for sign placement has led to inconsistencies among airport designers, aerodrome operators, and regulatory bodies, potentially affecting safety and compliance.

2.19 AP-ADO/TF/6 discussed the implications of different interpretations, including challenges for pilots, safety risks, regulatory non-compliance, and additional costs for airports needing to relocate mispositioned signs. Case studies from Malaysian airports illustrated the impact of these inconsistencies.

2.20 To address this, Malaysia proposed that ICAO provide clearer guidance, including graphical illustrations, to ensure uniform understanding and compliance across airports. AP-ADO/TF/6 was invited to consider the issue and provide additional guidance.

2.21 India, Nepal, New Zealand (Wellington International Airport) and Vietnam supported Malaysia's proposal.

2.22 AP-ADO/TF/6 agreed to the following Draft Conclusion for consideration by AOP/SG/9:

<table>
<tr><td colspan="3">Draft Conclusion AP-ADO/TF/6 – 4: Provision of Graphical Illustrations for the Placement of Signs in ICAO Design Manual (Doc 9157), Part 4 Visual Aids</td></tr>
<tr><td colspan="2">What: That, AP-ADO/TF/6 – WP/10 be forwarded to ICAO Air Navigation Bureau for inclusion of the Graphical illustrations of the placement of the signs in ICAO Design Manual (Doc 9157), Part 4 Visual Aids.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To enhance clarity and support more consistent application of the requirement across the globe.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 04 July 2025</td><td colspan="2">Status: Draft to be adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☒ICAO HQ ☐Other: XXXX</td></tr>
</table>

Addressing Glare Issues from Solar Panels at Airport Terminal

2.23 AP-ADO/TF discussed the challenges posed by glare from photovoltaic (PV) solar panels installed at airport terminals, which could impact pilots, air traffic controllers, and ground personnel.

2.24 Studies conducted at Senai International Airport (Malaysia) identified moderate glare issues affecting the air traffic control tower but not flight paths. To mitigate these risks, it was recommended optimizing panel orientation, applying anti-reflective coatings, using light simulation tools, and incorporating glare monitoring into routine aerodrome inspections.

2.25 While ICAO Annex 14, Chapter 5.3.24.2 addressed glare management, it does not provide specific guidance on mitigating risks from solar panel installations at airports.

2.26 AP-ADO/TF/6 discussed the need to develop guidance materials specifically addressing glare risks from solar panels and encouraged States to share best practices and lessons learned from implementing solar panels at airports.

2.27 AP-ADO/TF/6 agreed to form a Small Working Group consisting of subject matter experts from Malaysia (Lead), India, Philippines and Sri Lanka to develop a regional guidance on the assessment and mitigation of glare and glint from solar panels installed at or in the vicinity of the aerodrome and included in AP-ADO/TF Task List as Task 6/2. It was also suggested to invite Singapore for their contribution to this task.

Significance of Frangibility Requirements for Navigational Aids on the Runway Strip and RESA

2.28 AP-ADO/TF/6 discussed the significance of frangibility requirements for navigational aids installed on runway strips and Runway End Safety Areas (RESA).

2.29 Visual and non-visual aids (e.g., approach lighting supports, meteorological equipment, radio navigational aids) required for safe take-off and landing of aircraft were often located near runways and taxiways. All such equipment and their supports shall be frangible and mounted as low as possible. However, due to various unknown reasons, several equipment and installations at some airports were found on the runway strip or RESA which may potentially cause significant damage to aircraft including sever injuries to passengers in the event of runway excursion and if such installations were mounted without meeting frangibility requirements.

2.30 AP-ADO/TF/6 encouraged all certified and registered aerodromes to remove or correct the non-frangible hazards from the runway and taxiway strip and RESA.

2.31 AP-ADO/TF/6 agreed to develop regional guidance to provide interrelationship between ICAO Annex 10 Volume I, ICAO Annex 14 volume I and Aerodrome Design Manual (DOC. 9157) Part 6 for visual and non-visual aids installation on runway and taxiway strips and RESA. This Task would be conducted by Nepal (Lead), Fiji (TBC), India and China (TBC)

2.32 New Zealand (Wellington International Airport) informed the Meeting that at Wellington International Airport GP and ILS Localizer huts were built underground due to the land constraints at the Airport.

Review Options of Standardizing the Approach Lighting Circuit Design against the Switch Over Time Requirements to Ensure the Operational Requirements are met with respect to Precision Approach Cat II/III Operations

2.33 AP-ADO/TF/6 discussed on the existing switch over time requirements for the approach lighting system for precision approach CAT II/III as per Annex 14, Volume I, Table 8-1 (Figure 1). The present concern of dividing the approach lighting system into two parts as inner approach (first 300 m) and outer approach (from 300 – 900 m), while the interleaving circuits for the inner/outer approach areas combined controls the entire section. Hence, separate switchover times for the inner and outer approach was not practically possible was fundamentally agreed by the Task Force Meeting.

Precision approach category I	Approach lighting system	15 seconds
	Runway edge[d]	15 seconds
	Visual approach slope indicators[a, d]	15 seconds
	Runway threshold[d]	15 seconds
	Runway end	15 seconds
	Essential taxiway[a]	15 seconds
	Obstacle[a]	15 seconds
Precision approach category II/III	Inner 300 m of the approach lighting system	1 second
	Other parts of the approach lighting system	15 seconds
	Obstacle[a]	15 seconds
	Runway edge	15 seconds
	Runway threshold	1 second
	Runway end	1 second
	Runway centre line	1 second
	Runway touchdown zone	1 second
	All stop bars	1 second
	Essential taxiway	15 seconds

Figure 1. Extract from Table 8-1 from ICAO Annex 14, Volume I

2.34 AP-ADO/TF discussed two options to review and take the action appropriately.

2.35 As in general, the airport usually operates in CAT I and CAT II/III conditions. With this option, even in CAT I conditions the switch-over time would be one second. Even in CAT II/III operations, the entire approach lighting system would be with one second switch over time, opting a better situation in terms of safety of the operations. Option 1 of providing switch over time for entire approach lighting system was supported by Nepal considering the technical difficulties to achieve separate switchover times for the inner and outer parts of the approach lighting system.

Figure 2: Provision of one second switch over time for entire approach lighting system
(Option 1)

2.36 Option 2 of providing separate circuits for other parts of approach lighting system from 300 – 900 m to meet the existing ICAO provisions was estimated to cost a huge amount and also not advisable owing to the technical aspects as these might lead to disturbance in the visual field.

Figure 3: Required circuit design with inner 300 m switch-over time one second, side row barrette lighting (**2 circuits**) & inner main approach lighting system (**2 circuits**) and approach lighting system after 300 m **(2 circuits**) as per present standards referring to Table 8-1
(Option 2)

2.37 AP-ADO/TF/6 agreed to the following Draft Conclusion for consideration by AOP/SG/9:

Draft Conclusion AP-ADO/TF/6 – 5: Review of Switch-over time requirements for Outer Part (from 300 – 900 m) of the CAT II/III Approach Lighting System	
What: That, AP-ADO/TF/6 – WP/13 be forwarded to ICAO Air Navigation Bureau for review of switch-over time requirements for outer part (from 300 – 900 m) of the CAT II/III Approach Lighting System by Visual Aids Working Group.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: As separate switchover times for the inner and outer parts of the approach lighting system was not practically possible.	Follow-up: ☐ Required from States
When: 04 July 2025	Status: Draft to be adopted by Subgroup
Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☒ICAO HQ ☐Other: XXXX	

Managing Safety Risks to a Live Aerodrome under a Mega Airfield Expansion Project: Experience from the Hong Kong International Airport Three-Runway System Project

2.38 AP-ADO/TF/6 noted the successful experiences of Hong Kong International Airport (HKIA) in ensuring safety at a live aerodrome during their mega airfield expansion project in transforming the airport from a Two-Runway System to a Three-Runway System.

2.39 AP-ADO/TF/6 also noted the efforts of Hong Kong, China in managing safety risks to the live operations of the HKIA throughout various stages of construction using a multi-pronged approach, which included physical segregation between operational and non-operational areas, provision of unambiguous visual aids, advanced operational planning, and close communication with stakeholders.

Addressing Aiming Point Marking Issues on a 30-Meter-Wide Runway

2.40 AP-ADO/TF/6 discussed the issue of overlapping of aiming point and runway side stripe markings on 30-meter-wide runways, which could create misleading visual cues for pilots during landings, especially in low visibility.

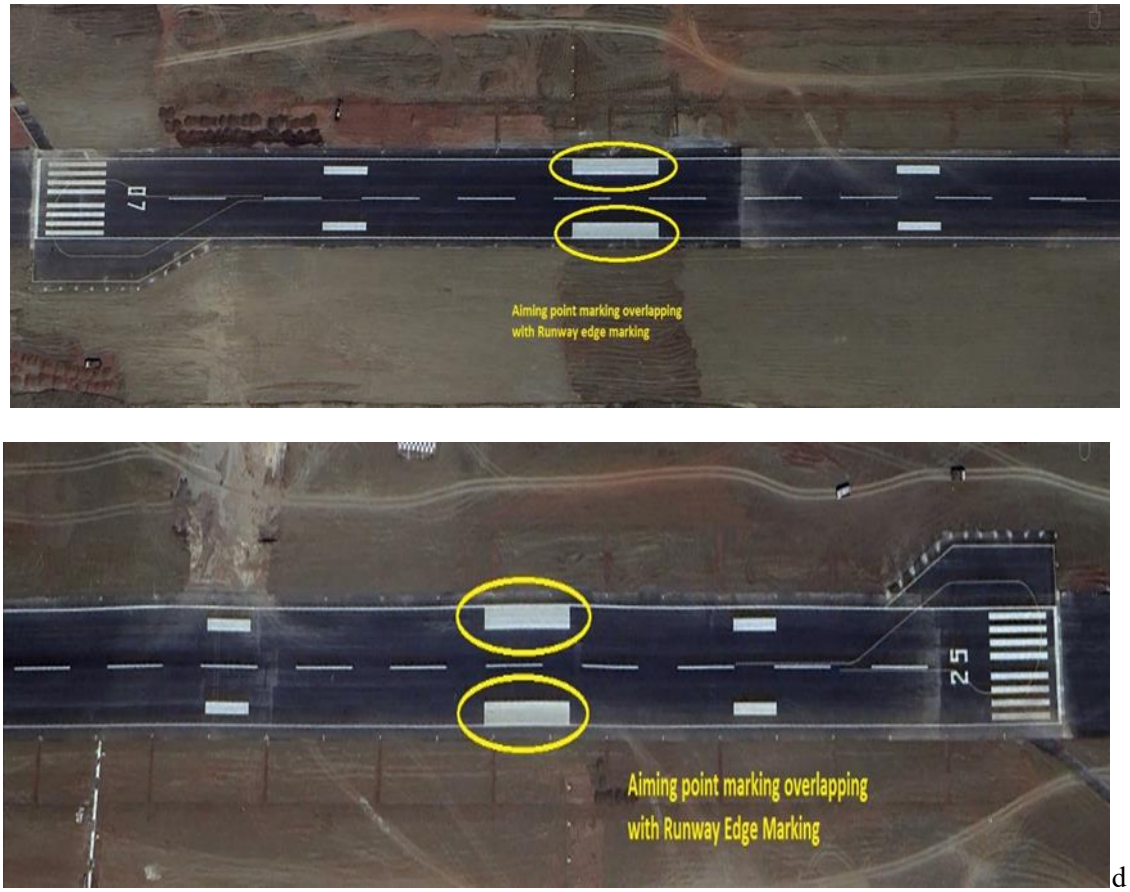

Figure 4: Overlapping of Aiming Point Marking and Runway Side Stripe Marking

2.41 In order to mitigate/eliminate the risk associated, India proposed that the width and lateral spacing between the inner edges of the aiming point marking should be in accordance with the runway width and where a touchdown zone marking is provided, as it was done for runway threshold marking. Further it was mentioned that as per FAA AC No. 150/5540-1M the Aiming Point marking for a narrower runway i.e. (100 feet or 30.5m width), there is 0.9 m clearance on each side of the Aiming Point marking.

2.42 AP-ADO/TF/6 suggested India to conduct a survey with pilots operating at aerodromes with 30 m wide runways regarding any issues/difficulty they have faced in identifying aiming point marking during landing due to overlapping of these markings at 30 m wide runway and present the outcomes of the survey at the next Meeting of the Task Force in 2026.

2.43 The Secretariat expressed the need to examine if pilots could still see the 0.9 m gap, if provided, between the runway aiming point marking and runway side stripe marking from air while on final approach for landing. It was also discussed whether an addition to the Footnote of the Table 5-1 of Annex 14, Volume I with the text such as “The later spacing may be reduced at runways with 30 m width” would solve the issue after India would present the outcomes of the survey as per paragraph above.

The Use of Term “As Far as Practicable” in Annex 14 Volume I SARPs

2.44 AP-ADO/TF/6 discussed the challenges and risks posed by the phrase "as far as practicable" in ICAO Annex 14 Volume I. While intending to offer flexibility in implementing SARPs, the texts “as far as practicable" could create confusion that could result in inconsistent application and compliance. Consequently, such discrepancies might lead to differing interpretations among different parties.

2.45 Malaysia proposed a need for clearer guidelines alongside a standardized interpretation framework to ensure regulatory consistency and effective decision-making. Additionally, establishing minimum safety thresholds could enhance aviation safety and promote harmonization across States practices.

2.46 The Secretariat informed the Meeting that historically the texts “as far as practicable and/or wherever practicable” were used in ICAO Annex 14, Volume I SARPs for flexibility in their implementation by States with aerodromes located/ or to be built in places with difficult topographical challenges (mountainous areas, close to sea, etc.) and should be used by States to interpret in good faith.

2.47 AP-ADO/TF/6 agreed to form a SWG consisting of SMEs from Nepal (Lead) supported by Australia, Malaysia, Welington International Airport (New Zealand) and Pakistan to develop a generic guidance for circumstances/situations where the phrase “as far as practicable and/or wherever practicable” would be needed for flexibility of the implementation of SARPs based on experiences and best practices of APAC States from different geographical regions and decided to add into the AP-ADO/TF Task List as Task 6/3.

Provision of Guidance Material for Assessing the Risk associated with the Non-Aeronautical Ground Lights within the Aerodrome and addressing the same appropriately

2.48 AP-ADO/TF/6 discussed on the practical approach towards reducing the risks associated with the non-aeronautical ground lights while understanding the glare concepts and different possibilities of glare. The Task Force also discussed the methods to reduce the common sources of glare or discomfort due to non-aeronautical ground lights.

2.49 As glare is variable dependent on several conditions, practical approach of identifying the risk index would be more appropriate. The risk assessment methodology of the glare was proposed and discussed for airports to try and revert for understanding the effectiveness and further refining the risk assessment process for the benefit of the airports.

2.50 Nepal, Australia and Pakistan also emphasized the necessity to addressing the risks associated with the non-aeronautical ground lights and expressed the need for guidance on this issue.

2.51 The Secretariat suggested India to further refine on the guidance on this issue and discuss it under Task 5/4 of AP-ADO/TF Task List within SWG consist of Republic of Korea (Lead) supported by India, Nepal and Thailand and present to SWG Meeting.

2.52 Australian Examples on “Zone requirements for lighting” provided by the CASA, Australia was sent to the SWG through the Secretariat for review and reference for developing the regional guidance.

Guidance Material on the Transposition of Annex 14 SARPs

2.53 AP-ADO/TF/6 reviewed the Draft Guidance on Transposition of ICAO Annex 14 SARPs into National Standards developed by the SWG led by Malaysia and supported by Australia, Thailand and ACI which aims to promote a risk-based approach for adapting Annex 14 SARPs and includes examples from several Asia/Pacific States on best practices.

2.54 The guidance document was structured into 17 Chapters and 1 Appendix covering general information, proposals for new SARPs, industry engagement, adoption of SARPs, regulatory development, and notification procedures. It was developed for reference to APAC States, and adaption with proper customisation, if they have yet to develop one for them.

2.55 AP-ADO/TF/6 endorsed the draft guidance material and recommended for submission to AOP/SG/9 for approval. APAC States and industry would be invited to provide feedback after it's publication on ICAO APAC Website at e-Documents and after approval by AOP/SG/9. AP-ADO/TF/6 formulated the following Draft ~~Decision~~ Conclusion for consideration by AOP/SG/9:

<table>
<tr><td colspan="3">Draft ~~Decision~~ Conclusion AP-ADO/TF/6 – 6: Guidance on Transposition of Annex 14 SARPs into National Standards</td></tr>
<tr><td colspan="2">What: That the Guidance Material on Transposition of Annex 14 SARPs into National Standards be adopted by AOP/SG/9 and published on ICAO APAC website.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: For reference by APAC States/Administrations.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 04 Jul. 2025</td><td colspan="2">Status: Draft to be adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other: XXXX</td></tr>
</table>

Asia Pacific Regional Guidance on Strength Assessment and Classification of Unpaved and Grassed Runway Surfaces

2.56 AP-ADO/TF/6 reviewed the draft "Asia/Pacific Guidance on Strength Assessment and Classification of Unpaved and Grassed Runway Surfaces" (**Appendix C** to the Report of the AP-ADO/TF/6) developed by Papua New (Lead) Guinea, Australia, New Zealand and Nepal under AP-ADO/TF Task List 5/5 and noted that the Final Draft of the Guidance Material would be expected to be completed by December 2025 and the SWG would present to the next Meeting of the Task Force.

Task List of AP-ADO/TF

2.57 AP-ADO/TF/6 reviewed and updated the task list as provided in **Appendix D** to the Report of the AP-ADO/TF/6. The Task Force agreed to carry out 4 new tasks (Tasks 6/1 to 6/4) to be delivered as per the timeline indicated in the Task List.

USOAP-CMA AUDIT Experience Sharing by CAAC AGA Team

2.58 AP-ADO/TF/6 noted China's experience of 2024 USOAP-CMA audit conducted by ICAO and lessons learned. AP-ADO/TF/6 also noted that China achieved an EI score of 94.7% in AGA area. The overall EI score of the USOAP-CMA audit for China was 90.19%.

Information Papers and Presentations

2.59 The following Information Papers and Flimsy were considered by AP-ADO/TF/6:

1) Papua New Guinea's Update on the Implementation of Annex 14 SARPS (IP/03);
2) Challenges of Maintaining Flexible Pavement Rutting/Slippage/Cracks at Taxilanes and Static Load Areas of Aerodrome (IP/04);
3) Expansion of Tribhuvan International Airport (PPT/01);
4) Challenges/Ambiguities During Planning of Airside Infrastructure (PPT/02)
5) Suvarnabhumi Airport Development Plan (PPT/03)

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the summary of the Report of the AP-ADO/TF/6 presented in this paper;

b) review the **Draft Conclusions** (AP-ADO/TF/6 – 1 to 6) presented in Paragraphs 2.4, 2.14, 2.17, 2.22, 2.37 and 2.55 for endorsement by AOP/SG/9;

c) discuss any relevant matters as appropriate.

— — — — — — — —

INTERNATIONAL CIVIL AVIATION ORGANIZATION

ASIA PACIFIC REGIONAL GUIDANCE ON STRENGTH ASSESSMENT AND CLASSIFICATION OF UNPAVED AND GRASSED RUNWAY SURFACES

[FIRST DRAFT]

VERSION 1.0 – DECEMBER 20..

This guidance material was developed by the Asia Pacific Aerodrome Design and Operation Task Force (AP-ADO/TF).

It was approved by AOP/SG/(XX – XX December 20xx) and published by ICAO Asia and Pacific Office, Bangkok.

Comments on this guidance material may be sent to ICAO Asia and Pacific Office at apac@icao.int.

RECORD OF AMENDMENTS

AMENDMENTS				AMENDMENTS			
No	Date applicable	Date entered	Entered by	No	Date applicable	Date entered	Entered by

Table of Contents

1. FOREWORD

1.1 Introduction

1.1.1 At the Seventh Meeting of Aerodrome Operations and Planning Sub-group (AOP/SG/7) held in Bangkok on 3 – 6 July 2025 New Zealand presented a paper regarding the strength assessment guidance for unpaved runways in New Zealand and the challenges of promulgating a strength classification for a grass runway. The paper highlighted a lack of ICAO guidance on strength assessment for unpaved runways and invited the meeting to consider the need for the establishment of recommended practices regarding unpaved runways. AOP/SG/7 agreed to assign this special task to the Asia Pacific Aerodrome Design and Operation Task Force.

1.1.2 The 5th Meeting of the Asia Pacific Aerodrome Design and Operation Task Force (AP-ADO/TF/5) recognised the importance of assessment and classifying the strength of unpaved and grassed runway surfaces. AP-ADO/TF/5 endorsed the decision to form a Small Working Group (SWG) comprised of Australia, Nepal and Papua New Guinea to develop a *Guidance on Strength Assessment and Classification of Unpaved and Grassed Runway Surfaces* for use as a reference document in Asia Pacific Region.

1.1.3 In evaluating pavements meant for light aircraft — 5 700 kg mass and less — it is unnecessary to consider the geometry of the undercarriage of aircraft or how the aircraft load is distributed among the wheels. Thus, subgrade class and pavement type need not be reported, and only the maximum allowable aircraft mass and maximum allowable tire pressure need to be determined and reported.

1.1.4 Classification of pavement bearing strength by the ACR-PCR method is intended for aircraft of mass greater than 5 700 kg and considers the bearing strength of the underlying pavement subgrade. On the contrary, the load from aircraft of mass equal to or less than 5 700 kg has minimal impact on the subgrade and only affects the pavement surface. However, there is a lack of ICAO guidance on strength assessment for unpaved runway surfaces.

1.1.5 The Asia/Pacific Regional Guidance on Strength Assessment and Classification of Unpaved and Grassed Runway Surfaces was developed by the AP-ADO/TF SWG using information derived from Annex 14 Volume I – Aerodrome Design and Operations, Aerodrome Design Manual (Doc 9157), Part 3 — Pavements, CASA Australia AC139.C-07V1.0 Strength Rating of Aerodrome Pavements.

1.1.6 This guidance should be read in conjunction with Chapter 3 of Annex 14, Volume I. It is expected that these requirements should be complied with for unpaved surfaces wherever practicable.

1.2 Background

1.2.1 In some cases, physical attributes of an aerodrome may not be paved but must still be capable of supporting the occasional passage of an aircraft. The natural ground in these instances may not have sufficient bearing strength to handle the aircraft, and therefore

special preparation may be necessary. Adequate strength is required in order to ensure that no structural damage is sustained by an aircraft veering off onto the unpaved surface. The unpaved surface must also be capable of supporting any ground vehicles that may occasionally operate on the area.

1.2.2 The guidance provided in this section is geared toward the physical attributes most commonly left unpaved at an aerodrome. Specifically, these are runway and taxiway shoulders, runway end safety areas (RESAs) and runway strips outside the runway shoulder area. The guidance does not apply to unpaved runways themselves, since the strength requirements for a runway are much more stringent.

1.2.3 For any unpaved surface, the ingestion or jet blast of foreign object debris by aircraft turbine engines is an important consideration. The protection of the surface to ensure no loose material is allowed is the responsibility of the aerodrome. Some type of chemical treatment or the use of turf may be required for the unpaved surface, along with visual inspections, to ensure that foreign object debris is not present.

1.2.4 Attention is drawn to the fact that any bearing strength-related guidance provided in this chapter should in no way be interpreted as a design requirement. Such guidance is only to support the judgment of the engineer when no specific data is available.

1.3 Scope and purpose

1.3.1 The scope of this guidance on the strength assessment and classification of runway surfaces, is limited to aerodromes having unpaved and grassed runways intended for light aircraft of mass equal to or less than 5 700 kg.

1.3.2 The purpose of this manual is to provide guidance on the strength assessment and classification of unpaved and grassed runway surfaces.

1.3.3 This guidance does not include paved surfaces, pavements, ice, compacted snow, or water as surface types.

2. ACRONYMS AND ABBREVIATIONS

ACR — Aircraft Classification Rating

AFM — Aircraft Flight Manual

AIP — Aeronautical Information Publication

NOTAM — Notice to Airmen

PCR — Pavement Classification Rating

POH — Pilots Operating Handbook

RTF — Radiotelephony

3. DEFINITIONS

When the following terms are used in this manual they have the following meanings:

Natural Surface — undisturbed ground surface before excavation or construction

Subgrade — a surface of earth or rock leveled off to receive a foundation

Using Aircraft — the expected capability of the aircraft using the unpaved surface

Using Aircraft Experience — capability

4. CLASSIFICATION OF RUNWAY SURFACE TYPE

4.1.1 The description of the type of runway surface is required to be reported for use by pilots to correct the effective operational length.

4.1.2 The following is a list of the standard terminology to be used in describing an unpaved runway surface. Only one term can be used when reporting the description of an unpaved runway surface:

Surfaces	**Abbreviation**	**Note**
Coral	CR	
Firm Grass	GR(f)	
Grass	Gr/GRASS	
Gravel	GRVL	
Gravel (stabilised)	GRVL(st)	
Primed gravel	PRIME	Bitumen, oil or tar bound pavements with no stone cover.
Natural Ground Surface	NS	undisturbed ground surface before excavation or construction
Sand	SA	
Soft Grass	GR(s)	
Snow and compacted snow	SN	

5. ASSESSMENT OF BEARING CAPABILITY OF UNPAVED RUNWAY SURFACE

5.1 Strength of runways

5.1.1 Annex 14 Volume I, paragraph 3.1.21 recommends that the runway should be capable of withstanding the traffic of aeroplanes the runway is intended to serve.

5.1.2 The following subsections provide three methods which may be applied to an unpaved runway surface. It is up to the responsible state or aerodrome operator to determine which method, or an alternative means, is most suitable for the intended operation.

5.2 Using aircraft experience (intended aircraft)

5.2.1 This method relies upon the operational experience of aircraft utilizing an existing runway surface.

5.2.2 Note: This method is very simple to use however the limitations below need to be understood first before it is applied

5.2.3 This method is not recommended for aircraft with an apron (ramp) mass greater than 5 700 kg. In these cases, a technical evaluation should be used to more accurately define the bearing strength properties of the surface. Refer subsection 5.4.

5.2.4 This method also relies upon previous experience which may not be reflective of future performance. For example, an existing aircraft type may have successfully used an unpaved surface however its strength may have been compromised through repeated use. Environmental conditions, the absorption of water, temperature variability, soil reactivity and other factors such as any depression, distress and undulation of the surface could make a previously suitable surface no longer serviceable for the intended operation.

5.2.5 Aircraft factors, including its mass, tyre pressure, braking application and takeoff/landing speeds can also impact upon the performance of the unpaved runway surface and need to be considered.

5.2.6 To mitigate against this potential hazard, regular inspections should be undertaken of the surface. Refer subsection 6.1.

5.2.7 To use this method:

5.2.8 **Step 1:** Select the intended aircraft type based upon the desired or expected use of the existing unpaved runway surface.

5.2.9 **Step 2:** Obtain the maximum take-off weight and tyre pressure(s) for the selected aircraft. This information can generally be located from the Pilots Operating Handbook (POH), the Aircraft Flight Manual (AFM) or officially published technical data from the aircraft manufacturer.

5.2.10 **Step 3:** Publish these technical parameters for the unpaved runway surface in Aeronautical Information Publication (AIP) or another suitable document.

5.2.11 This method can also be used in conjunction with the vehicle-based method, or other evaluative or empirical methods.

5.3 Vehicle-based method

5.3.1 An aircraft can land anywhere between the cone markers, not necessarily along the centre-line. If the aircraft strikes a soft spot at high speed it is most likely to lose directional control or front wheel assembly will be torn off and result in nosing over.

5.3.2 The vehicle-based assessment method for indicating the bearing capability of a runway surface involves the simulation of impact an aircraft may cause to the runway surface by using a test vehicle of correlating weight as shown in the table below.

Type of aircraft	**Test vehicle**
Light single aircraft Bonanzas, Cessnas etc	Light laden 3 tonne truck with repetitive passes in wet areas
Medium twins such as Aero Commander, Baron Twin-otter, Cessna 421, Kingair etc.	Fully laden 3 tonne truck with repetitive passes in wet and moist areas associated with your experience of aircraft using the aerodrome
Heavier aircraft such as F27, Caribou, DC3 etc	Fully laden 5 tonne truck with repetitive passes in moist and wet areas

5.3.3 A test vehicle as indicated should be driven in a zigzag pattern at a speed not exceeding 15 km/hr for the full length and width of the runway. Particular attention should be paid to suspect areas with possibly three passes of the test vehicle over these areas. If tyre imprints exceed a depth of 25mm, the surface is not suitable for aircraft operations particular to the test vehicle. Unnecessary cutting up of the surface is to be avoided because imprints are hard to remove when the surface has dried out. In some instances, the surface may be unsafe with a lesser imprint and this is at the discretion of the inspecting officer.

5.3.4 Remember that the above test may leave wheel ruts, which will need to filled in later before the runway can be reopened for aircraft movement.

5.3.5 Because the 5 700 kg limit for light aircraft represents pavement loads only two-thirds or less of common highway loads, the assessment of traffic using pavements should extend to consideration of heavy ground vehicles, such as fuel trucks, fire trucks, snow ploughs,

service vehicles, etc. These must also be controlled in relation to load limited pavements *(Doc 9157 Aerodrome Design Part 3 – Pavements, clause 3.5.12).*

5.3.6 To test for slippery condition, any 4-wheel drive vehicle may be used, but it is necessary to use the same or similar vehicle throughout the test. During dry conditions the vehicle is driven over the runway at 50 km/hr and the brakes applied to lock all four wheels. The length of skid is measured and recorded. During wet conditions the operation is repeated and the length of skid measured. If this dimension exceeds 1.5 times the recorded dry skid distance the surface is considered to be unacceptably slippery.

5.3.7 The test for rough surface condition is to drive a stiffly sprung vehicle such as a Land Rover, without discomfort to the passengers, at a speed not less than 75 km/hr for the central 30m, and not less than 50 km/hr for the remainder of the runway strip. The maximum allowable width of cracks and size of stones permitted is 25mm within the central 30m and 50mm for the remainder. If there is a soft wet condition within the runway strip area, the entire direction must be closed if it is unacceptably rough.

5.4 Empirical method

Paved surfaces

5.4.1 The bearing strength of a pavement intended for aircraft of apron (ramp) mass equal to or less than 5 700 kg shall be made available by reporting the following information *(Annex 14 Volume I, 2.6.8)*:

a) maximum allowable aircraft mass; and
b) maximum allowable tire pressure.

Example: 4 000 kg/0.50 MPa

5.4.2 Light aircraft are those having a mass of 5 700 kg or less. These aircraft have pavement requirements less than that of many highway trucks. Technical evaluations of those pavements can be made but an evaluation based on “using aircraft” is satisfactory. It is worth noting that, at some airports, service vehicles such as fire trucks, fuel trucks or snow ploughs may be more critical than aircraft. Since nearly all light aircraft have single-wheel undercarriage legs, there is no need for reporting subgrade categories. However, since some helicopters and military trainer aircraft within this mass range have quite high tire pressures, limited quality pavements may need to have tire pressure limits established *(Doc 9157 Aerodrome Design Part 3 – Pavements, clause 3.3.6).*

5.4.3 In evaluating pavements meant for light aircraft — 5 700 kg mass and less — it is unnecessary to consider the geometry of the undercarriage of aircraft or how the aircraft load is distributed among the wheels. Thus, subgrade class and pavement type need not be reported, and only the maximum allowable aircraft mass and maximum allowable tire pressure need to be determined and reported. For these, the foregoing guidance on techniques for “using aircraft” evaluation should be followed *(Doc 9157 Aerodrome Design Part 3 – Pavements, clause 3.5.11).*

Unpaved surfaces

5.4.4 Due to the nature of unpaved surfaces, an empirical method for assessing the bearing capability has inherent limitations. An unpaved or natural surface may not have a consistent bearing capability across the entire surface; therefore, consideration should be made for developing a process that considers the capability of the surface so far as reasonably practicable. Additionally, prevailing weather conditions may significantly affect the capability of the runway.

5.4.5 One example of a bearing capability assessment is the use of a Dynamic Cone Penetrometer[1] which can generate a strength estimate of the surface.

5.4.6 An aerodrome operator should develop an assessment process that includes sufficient measurements to develop an appreciation of the capability of the entirety of the unpaved runway and the associated surfaces that should be load-bearing.

5.4.7 An aerodrome operator should engage with aircraft operators to ensure aircraft operators understand the capability data of the runway, and the conditions in which the measurements were taken. With the assistance of subject-matter experts, operators should agree the criteria under which the runway is considered usable for a design aircraft, or for aircraft specific to operators.

[1] https://apps.dtic.mil/sti/pdfs/ADA281985.pdf

6. INSPECTION AND REPORTING PROCESS

6.1 Inspections of unpaved surfaces

6.1.1 Inspections of the movement area should be planned to ensure that an appropriate level of vigilance is maintained at all times.

6.1.2 The inspection of unpaved surfaces should cover, at a minimum, the following items:

a) the runway;

b) the remaining manoeuvring area, including taxiways and adjacent areas;

c) the apron and service areas as applicable;

6.1.3 During the inspection, particular attention should be given to:

a) surface conditions including signs of damage or distress;

b) detection of FOD or other surface contamination

c) detection of surface depressions, rutting or undulation

d) detection of areas with a weaker surface strength including mud, sinkholes, standing water, erosion, etc.

e) The general condition of the surface grass/vegetation, particularly any areas of blast. Rotor wash or prop wash erosion

f) the grass length including any weed growth.

6.1.4 Ideally, a first inspection should be conducted prior to daily operations. Subsequent inspections should also be undertaken in the event of:

a) Significant precipitation or snow;

b) High winds;

c) Otherwise following an extreme or seasonally uncommon weather event.

6.1.5 A log should be kept recording the results of the inspection.

6.2 Reporting of unpaved surface condition

6.2.1 If a dangerous or otherwise hazardous unserviceability is discovered during an inspection it should be immediately reported.

6.2.2 If a NOTAM service is available at the aerodrome, it should be used to advise aircraft operators and other stakeholders of the change to aerodrome condition or capability.

6.2.3 If a radiotelephony (RTF) service is available and the reporter is sufficiently qualified and experienced to use such equipment, the provision of advice via RTF to any arriving or departing aircraft should be considered.

6.2.4 The entity in charge of aerodrome operations should also be informed.

6.2.5 Consideration should also be given to updating any published information, such as in AIP or other operational documents.

7. RISK MITIGATION

7.1.1 If there is any doubt as to the serviceability of an unpaved runway surface, appropriate mitigation options should be immediately considered to protect aircraft operations.

7.1.2 This may include but not be limited to the following:

a) The affected runway, taxiway and/or apron should be restricted or closed to aircraft operations until the conditions improve.

b) Visual aids in the form of unserviceability markers should be used to alert pilots of the restricted or closed portion of the movement areas.

c) If the unpaved surface is available for nighttime operations, any lighted visual aids should be extinguished or covered so that they are no longer visible.

d) Vehicles and person should avoid driving on the unserviceable areas as they may become stranded or may exacerbate the surface condition.

7.1.3 Once the conditions return to a serviceable state, the closed or restricted areas can be returned to service, visual aids removed/reinstated and appropriate reports made as to the aerodrome condition.

REFERENCES

1) ICAO Annex 14, Volume I

2) PANS-Aerodromes (Doc 9981)

3) Aerodrome Design Manul (Doc 9157), Part 3

4) CASA Australia AC139.C-07V1.0 Strength Rating of Aerodrome Pavements

5) New Zealand ……

AP-ADO/TF TASK LIST
(Updated by AP-ADO/TF/6)

	ACTION ITEM/PLANNED ACTIVITIES	RESPONSIBLE PARTY	TIME FRAME	STATUS	REMARKS
1/1	Identify experts in various AOP fields and maintain a database for the Asia/Pacific Region	States – nomination of experts Secretariat – maintaining database	Continuous	Open	From TOR
1/2	Draft regional guidance for the design and operations of:				From AP-ADO/TF/1 AP-ADO/TF/2 - WP/13
	(a) Altiports	Nepal to lead; assisted by China, Fiji, India and Indonesia	December 2021 Final Draft to be submitted to AOP/SG/8	~~Ongoing~~ Completed	Modified in AP-ADO/TF/2 AP-ADO/TF/3-WP/09 - First draft of the GM AP-ADO/TF/4-WP/09 – Second Draft of the GM AP-ADO/TF/5-WP/11 – Third Draft of the GM

	ACTION ITEM/PLANNED ACTIVITIES	RESPONSIBLE PARTY	TIME FRAME	STATUS	REMARKS
1/3	- Study and discuss aerodrome SARPs and guidance materials related to aerodrome planning, design and operations including PANS-Aerodromes; and	States and AP-ADO/TF	Continuous	Ongoing	
	- 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. [Reference: From TOR]	AP-ADO/TF and Secretariat	Continuous	Ongoing	
1/4	- Review and discuss AOP parts of the Asia/Pacific ANP and Seamless ANS Plan; and	AP-ADO/TF	Continuous	Ongoing	~~PfAs for six States have been completed in 2023. Processing of PfAs submitted by two other States are in progress.~~
	- Formulate amendment proposals to the APAC ANP Table AOP I - 1 and Table AOP II – 1 as necessary. [Reference: From TOR]	States and Secretariat	Continuous	Ongoing	PfA submitted by Sri Lanka in progress.

	ACTION ITEM/PLANNED ACTIVITIES	RESPONSIBLE PARTY	TIME FRAME	STATUS	REMARKS
2/1	Conduct seminars / workshops for aerodrome regulatory and aerodrome operator staff in APAC Region		Continuous	Ongoing	Conducted GRF Webinars in 2021 in coordination with: – FTF, ACI, IFALPA, IFATCA and IFAIMA – Japan incorporating winter operations
3/1	Technical assistance/Workshop for APAC States that have yet to implement GRF	United States FAA (upon request and on case by case basis)	Continuous	Ongoing	Nil request received from States
3/2	GRF Seminar	China (Lead), ACI & ICAO	Q3, 2022	Completed	Seminar on GRF - *Ten Months into GRF, Challenges Met and Lessons Learnt in Asia-Pacific* conducted by ICAO jointly with China and ACI on 29 Sep. 2022
AP-ADO/TF/4					
4/1	Workshop on Aerodrome Pavement Design and Evaluation including ICAO ACR-PCR Method in Reporting Pavement Strength for Asia and Pacific Regions	With FAA support and Secretariat	Q1, 2024	Completed	Aerodrome Pavement Workshop conducted from 7 to 9 Feb. 2024
AP-ADO/TF/5					
5/1	Develop Regional guidance material on the transposition of Annex 14 ICAO SARPs	**Malaysia** (Lead), ROK, Nepal, PNG, Australia, Thailand & ACI,	By November 2024	Completed	Submitted the draft Guidance Material on the Transposition of Annex 14 SARPs with AP-ADO/TF/6-**WP/17** for endorsement by the Task Force.

	ACTION ITEM/PLANNED ACTIVITIES	RESPONSIBLE PARTY	TIME FRAME	STATUS	REMARKS
5/2	Organize workshops on the transposition of Annex 14 SARPs into National Standards	**Malaysia** (Lead), ACI and Secretariat	In conjunction with AP-ADO/TF/6 in Jan/Feb 2025	Completed	Workshop was conducted on 17 February 2025.
5/3	Organize workshops for States and aerodrome operators to share experience in AGA audit area of USOAP CMA especially on alternative means of compliance with AGA related SARPs as advocated for in DGCA/58/DP3/01	**Pakistan** (Lead – TBC by AOP/SG/8), Australia, China (TBC by AOP/SG/8), India, Secretariat	In conjunction with AOP/SG/9 in July 2025		Vietnam shared their experience at AOP/SG/8. China shared at AP-ADO/TF/6.
5/4	Regional Guidance on Risk Assessment for Lights with the Hazardous Effects	**ROK** (Lead), India Nepal, Thailand	~~Dec 2025~~ Dec 2026	Ongoing	AP-ADO/TF - WP/16
5/5	Regional Guidance for Strength assessment and classification for grass and unpaved runway [Task 7/2 from AOP/SG/7]	**PNG** (Lead), Nepal, Australia	Dec 2025	Ongoing	The First Draft was submitted to AP-ADO/TF/6 for review and comments along with WP/18
AP-ADO/TF/6					
6/1	Conduct research and analysis to develop measurable conspicuity standards for runway and taxiway markings to provide aerodrome operators and regulators with clear, objective criteria for evaluating marking effectiveness	Malaysia (Lead), India, Thailand, Vietnam and ACI	Dec 2027		
6/2	Develop a regional guidance on the assessment and mitigation of glare and glint from solar panels installed at or in the vicinity of the aerodrome	Malaysia (Lead), India, Philippines and Sri Lanka	Dec 2027		

	ACTION ITEM/PLANNED ACTIVITIES	RESPONSIBLE PARTY	TIME FRAME	STATUS	REMARKS
6/3	Develop a generic guidance for circumstances/situation where the phrase "**as far as practicable and/or wherever practicable**" would be needed for flexibility of the implementation of SARPs based on experiences and best practices of APAC States from different geographical regions.	Nepal (Lead), Australia, Malaysia, Wellington Airport (New Zealand), Pakistan	Dec 2027		
6/4	Develop regional guidance to provide interrelationship between ICAO Annex 10 Volume I, ICAO Annex 14 volume I and Aerodrome Design Manual (DOC. 9157) Part 6 for visual and non-visual aids installation on runway and taxiway strips and RESA (Action by the meeting proposed by WP/12 refers)	Nepal (Lead), Fiji (TBC), India, China (TBC)	Dec 2027		