INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY NINTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/29)

Bangkok, Thailand, 3 to 5 September 2018

Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

3.1: AOP

REPORT ON THE SECOND MEETING OF AOP SUB GROUP

(Presented by the Chairman of AOP/SG)

SUMMARY

This paper presents the outcomes of the Second Meeting of the APANPIRG Aerodrome Operations and Planning Sub Group (AOP/SG/2) for review by APANPIRG/29.

1. INTRODUCTION

1.1 The Second Meeting of the AOP Sub Group (AOP/SG/2) was held from 27 to 29 June 2018 in Bangkok, Thailand.

1.2 The meeting was attended by 83 participants from 17 Administrations, 1 Special Administrative Region of China and 3 International Organizations.

1.3 A total of 23 Working Papers and 20 Information Papers covering 9 Agenda Items were considered by the AOP/SG/2 Meeting.

1.4 Based on the outcome of discussions on various Agenda Items, the meeting adopted 1 Conclusion and 4 Decisions that were of a purely technical or operational nature. The AOP/SG/2 formulated 2 Draft Conclusions for consideration by APANPIRG/29.

1.5 The Report of the AOP/SG/2 has been posted on the ICAO APAC Office website and can be accessed on the following webpage: https://www.icao.int/APAC/Meetings/Pages/2018-AOP-SG2.aspx.

1.6 Appendices used in this Working Paper carry the same Appendix numbers as those in the Report of AOP/SG/2 Meeting for easy reference.

2. DISCUSSION

Outcome of the First Asia/Pacific Ministerial Conference on Civil Aviation (WP/02)

2.1 The AOP/SG/2 meeting noted that a *Declaration on Asia/Pacific Ministerial Conference on Civil Aviation* was endorsed by the First Asia/Pacific Ministerial Conference on Civil Aviation (APAC MC) held in Beijing, China from 31 January to 1 February 2018. The Declaration was named as *Beijing Declaration*.

2.2 In line with *Beijing Declaration* commitments, the AOP/SG/2 meeting urged States to certify all aerodromes used for international operations by 2020 and implement Airport Collaborative Decision-Making (A-CDM) at high-density airports.

Action Items of 54th Conference of Directors General of Civil Aviation (WP/03)

2.3 The AOP/SG/2 meeting reviewed Actions Items of the Fifty-Fourth Conference of Directors General of Civil Aviation Asia and Pacific Regions (DGCA/54, 7 to 11 August 2017, Ulaanbaatar, Mongolia) including Action Items 54/12, 54/21 and 54/23 related to AOP/SG.

Review of APANPIRG/28 Action Plan (WP/04)

2.4 The AOP/SG/2 Meeting reviewed the actions taken by APANPIRG/28 on the Decisions and Conclusions formulated by the First Meeting of Aerodrome Operations and Planning Sub Group (AOP/SG) held in June 2017. The meeting noted with satisfaction that actions on 1 Conclusion and 2 Decisions of APANPIRG/28 in the AOP field were completed.

Outcomes from RASG APAC/7 Meeting (IP/02)

2.5 The AOP/SG/2 meeting noted the outcomes of the Seventh Meeting of the RASG APAC and noted the action to be taken which were relevant to AOP/SG.

Report of the Fourth Coordination Meeting between the Chairpersons of APANPIRG and RASG-APAC (IP/03)

2.6 The AOP/SG/2 meeting was provided a summary of the outcomes of the fourth coordination meeting between APANPIRG & RASG-APAC held on 6 July 2017 in the ICAO APAC Office.

Air Traffic Flow Management Steering Group Outcomes (IP/16)

2.7 The AOP/SG/2 meeting noted the outcomes relevant to AOP/SG from the Eighth Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/8, New Delhi, India, 14 to 18 May 2018), particularly those relating to interoperability with Airport Collaborative Decision-Making (A-CDM) processes and systems, such as, a work being undertaken to develop an extension to the Flight Information Exchange Model (FIXM).

Seamless ATM Plan Implementation Monitoring (WP/06)

2.8 The AOP/SG/2 meeting noted the status of the Seamless ATM Reporting process and the regional picture as of May 2018, reflecting the implementation progress of Air Navigation Improvements in APAC Region against the objectives set out in the Asia/Pacific Seamless ATM Plan V2.0.

2.9 The AOP/SG/2 meeting also noted that a total of 28 States/Administrations, i.e. 65% of the APAC States/Administrations, had submitted one or more report(s) on the ICAO Seamless ATM Reporting portal (accessible through the ICAO Secure Portal). Among those 28 States/Administrations, 22 (51%) updated their progress on a regular basis. A total of 15 States/Administrations had not prepared Seamless ATM reports. A total of 33 States/Administrations (77%) had nominated Point of Contact (POC). A total of 10 States/Administrations had not nominated any Point of Contact.

2.10 The AOP/SG/2 meeting further noted the slow progress of implementation of the 45 Seamless ATM elements, and the following implementation related to AOP elements were noted regionally:

- 70 (Airport Collaborative Decision-Making) – 15.8%;
- 50 (Arrival Management and Departure Management) – 25%; and
- 40 (Safety and Efficiency of Surface Operations) – 38.9%.

Report of the Airport Collaborative Decision-Making (A-CDM) Seminar and the Second Meeting of the Asia Pacific Airport Collaborative Decision Making Task Force (APA-CDM/TF/2) (WP/07)

2.11 The AOP/SG/2 meeting noted the Report of the Airport Collaborative Decision Making (A-CDM) Seminar and the Second Meeting of the Asia Pacific Airport Collaborative Decision Making Task Force (APA-CDM/TF/2) held in Hong Kong China from 29 November to 1 December 2017.

2.12 The meeting noted that the APA-CDM/TF/2 had adopted the following Decision:

Decision — APA-CDM/TF/2-1: Asia/Pacific Regional A-CDM Implementation Plan

That, APA-CDM/TF will draft a Regional A-CDM Implementation Plan to foster harmonized and interoperable A-CDM implementation in the Asia/Pacific Region.

2.13 The Regional A-CDM implementation plan would be drafted offline by the APA-CDM Expert Group, led by India and supported by Singapore, CANSO and IATA, and would include the development of a minimum suite of A-CDM milestones for Regional application.

2.14 The initial draft of the Regional A-CDM implementation plan was presented in APA-CDM/TF/3 meeting held from 13 to 16 August 2018 in Bali, Indonesia.

Report of the Third Meeting of Water Aerodrome Small Working Group (WA SWG/3) (WP/08)

2.15 The AOP/SG/2 meeting noted the Report of the Third Meeting of the Water Aerodromes Small Working Group (WASWG/3) held in Hulhulé, Maldives from 6 to 8 February 2018.

2.16 The AOP/SG/2 meeting reviewed and endorsed the draft regional guidance material prepared by the WASWG which is attached in **Appendix A** of this Working Paper. The AOP/SG/2 meeting also noted that the WASWG had completed all tasks as per its TOR and recommended that the WASWG be dissolved. The AOP/SG/2 formulated the following Draft Conclusion for consideration by APANPIRG/29:

Draft Conclusion AOP/SG/2-1: Asia Pacific Regional Guidance on Requirements for the Design and Operations of Water Aerodromes for Seaplane Operations	
What: That: 1) the Asia Pacific Regional Guidance on Requirements for the Design and Operations of Water Aerodromes for Seaplane Operations at **Appendix A** to the AOP/SG/2 Report is adopted as regional policy and made available on the ICAO APAC website; and	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental

2) the WASWG had completed all tasks as per its TOR and be dissolved.	☒ Ops/Technical

Why: 1) To provide regional guidance material on water aerodromes; and 2) To dissolve the WASWG.	Follow-up: ☐Required from States
When: September 2018	Status: Draft to be adopted by PIRG
Who: ☐Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:	

Report of the First Meeting of the Aerodrome Operational Personnel Competency Small Working Group (AOPC SWG/1) (WP/09)

2.17 The AOP/SG/2 meeting noted the Report of the of the First Meeting of the Aerodrome Operations Personnel Competency Small Working Group (AOPC SWG/1) held in Bangkok, Thailand from 26 to 28 February 2018.

2.18 The AOP/SG/2 meeting noted that the AOPC SWG/1 meeting developed a draft template of the *Aerodrome Operations Personnel Competency Matrix* and members of the Working Group assigned to specific task(s) would use this template to develop matrices in the following areas:

(i) runway surface conditions assessment and reporting;

(ii) inspections of the movement area;

(iii) Work in Progress (WIP) on the airside;

(iv) Foreign Object Debris (FOD);

(v) wildlife hazard management;

(vi) apron safety;

(vii) runway safety; and

(viii) aerodrome driver permit scheme and vehicle/equipment safety requirements.

2.19 The AOP/SG/2 meeting further noted that the timeframe to complete the tasks assigned to the Working Group was recommended to extend until 30 September 2019 by the AOPC SWG/1 meeting and adopted the following Decision formulated by the AOPC SWG/1:

Decision AOP/SG/2-2: Amendment to TOR of the Small Working Group to Develop Guidance on Aerodrome Operations Personnel Competency (AOPC SWG)	
What: That, the proposed amendment to the TOR at **Appendix B** to the AOP/SG/2 Report be adopted.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: To extend the AOPC SWG timeline	Follow-up: ☐Required from States

until 30 September 2019.	
When: 29 June 2018	Status: Adopted by AOP/SG
Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☐ICAO HQ ☒Other: AOPC SWG	

ICAO Universal Safety Oversight Audit Programme – CMA and AGA Findings (WP/ 10)

2.20 The AOP/SG/2 meeting noted the Effective Implementation (EI) results taken from the USOAP CMA online framework and the common AGA findings identified by the USOAP in the APAC Region. APAC average EI in AGA area was 57.87% compared to the global average of 59.50% as of 09 June 2018.

2.21 The meeting urged concerned States to:

a) complete/update the compliance checklist/EFOD and SAAQ;

b) submit/update the Corrective Action Plans (CAPs) through On-line Framework (OLF), informing the ICAO Regional Office when complete and ready for review; and

c) implement CAPs, complete PQ self-assessment, uploading of the evidence documents to report the progress on the OLF (States who have not done so) and inform the ICAO Regional Office when complete and ready for validation.

Implementation of Requirements for Certification of Aerodromes in the Asia Pacific Region (WP/11)

2.22 The AOP/SG/2 meeting reviewed the updated status of certified international aerodromes in the APAC Region and urged the concerned States to provide the ICAO APAC Office the information on implementation of ICAO requirements on certification of aerodromes to update the relevant information, such as, the updated status on regulatory framework, progress of aerodrome certification and SMS implementation.

2.23 The meeting noted a progress achieved in 2018 in certification of aerodromes (CE 6 areas) compare to year 2017 as shown in **Table 1**. Number of States with EI less than 60% of GASP target reduced from 21 in 2017 to 19 in 2018 in aerodrome certification.

Table 1: ICAO USOAP results of June 2018 and May 2017 in certification of aerodromes (CE-6)

Year	**USOAP Results**	**RASG-APAC States Average EI (%)**	**States with EI less than 60% of GASP Target**
June 2018	Aerodrome Certification [CE – 6]	60.45	**19 States**: Bhutan, Cambodia, Fiji, India, Lao PDR, Malaysia, Marshall Islands, Micronesia (Federal States of), Myanmar, Nauru, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tonga and Vanuatu
May 2017	Aerodrome Certification [CE – 6]	59.78	**21 States**: Bhutan, Cambodia, Fiji, India, Indonesia,

			Lao PDR, Malaysia, Marshall Islands, Micronesia (Federal States of), Myanmar, Nauru, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tonga, Vanuatu and Vietnam

2.24 The meeting further noted that approximately 20 % of aerodromes used for international operations (aerodromes listed in Regional Air Navigation Plan) in Asia and Pacific Regions were yet to be certified. The meeting urged States to take necessary measures, including the allocation of adequate resources in order that States could achieve *2020 target* to complete the certification process of the uncertified international aerodromes in accordance with the commitment of the *Beijing Declaration*. The meeting urged Member States, who have not fully met the requirements for certification of aerodromes, to develop action plan and submit it to the APAC Office before APANPIRG/29 meeting scheduled on 3 – 5 September 2018.

2.25 The State letter requesting information on international aerodromes that are yet to be certified, States' action plan on certification of aerodromes to meet the 2020 target of *Beijing Declaration* and assistance required from ICAO or other entities to support States for implementation of State's action plan was sent to the concerned States on 10 August 2018.

2.26 The meeting also noted that the majority of the APAC States have not published in their national AIP the status of certified aerodromes as per ICAO Annexes 14 and 15 requirements and urged Sates to do so.

2.27 The meeting urged States to provide information related to those aerodromes used for international operations to update *Table AOP I - 1: International Aerodromes required in the Asia/Pacific Regions* and *Table AOP II – 1: Requirements and Capacity Assessment in International Aerodromes in the Asia and Pacific Regions* of Asia Pacific Air Navigation Plans Volume I and Volume II.

ICAO Initiatives for Assistance to States in AGA Area (WP/12)

2.28 The AOP/SG/2 meeting noted AGA technical assistance missions conducted to APAC States from 2015 to 2018 under ICAO APAC Combined Action Team (CAT), ICAO Programme for Aviation Volunteers (IPAV) and International Financial Facility for Aviation Safety (IFFAS) initiatives and provided in **Table 2** below:

Table 2: AGA Technical Assistance Missions Conducted to APAC States

2015	2016	2017	2018
ICAO APAC CAT			
	Bangladesh	Bangladesh (Follow-up CAT mission)	
	Cambodia	Indonesia (Follow-up CAT mission)	
	Indonesia	Myanmar (Follow-up CAT mission)	
	Myanmar	Fiji	
	Philippines		
	Papua New Guinea		

2015	2016	2017	2018
	Solomon Islands		
	Thailand		
	Tonga		
IPAV			
		Cambodia	Solomon Islands
		Fiji	
		Timor-Leste	
IFFAS			
Samoa		Solomon Islands	
Solomon Islands		Tonga	
Tonga		Solomon Islands	

2.29 The meeting further noted that as a result of continuous efforts in improving USOAP CMA EI by States and technical assistance extended to Asia Pacific States through various ICAO led initiatives there was an improvement in overall APAC States' average AGA EI, which was 57.87% as of June 2018 compare to 56.29% as of May 2017. Furthermore, the following improvements in EI have been noted pre and post ICVM of the audited States as shown in **Table 3**:

Table 3: USOAP CMA EI in AGA before and after ICVM

S. No		EI as of March 2016 [Pre ICVM]	EI as of June 2018 [Post ICVM]
1	Bangladesh	54.68	65.44
2	Indonesia	44.90	72.73
3	Papua New Guinea	61.59	68.15
4	Philippines	38.13	48.89

2.30 The meeting urged States having AGA experts to volunteer their services to the ICAO APAC CAT initiative, and States with low USOAP EI in AGA to request ICAO for the APAC CAT and IPAV assistance. The meeting also urged International Organization(s) to collaborate with ICAO in capacity building programmes.

Current Development and New Initiatives in the Area of Aerodromes (WP/13)

2.31 The AOP/SG/2 meeting noted that the Amendment 14 to Annex 14 — *Aerodromes*, Volume I — *Aerodrome Design and Operations* and Amendment 8 to Annex 14 Volume II — *Heliports* were adopted by the Council at the sixth meeting of its 213th Session on 9 March 2018, which would become effective on 16 July 2018 and applicable on 8 November 2018. State letters Ref.: AN 4/1.2.27-18/23 (Amendment 14 to Annex 14, Volume I) and AN 4/16.9-18/24 (Amendment 8 to Annex 14 Volume II) dated 29 March 2018 could be found at ICAO secure portal https://portal.icao.int/icao-net/SL2018C/023e.pdf.

2.32 The meeting also noted that ICAO had developed the Second Edition of Doc 9157, Aerodrome Design Manual (ADM) Part 5 Electrical Systems and Amendment 2 to Doc 9157 ADM Part 1 - Runway and Amendment 1 to Doc 9157 ADM Part 2 – Taxiway, Aprons and Holding Bays in support of Amendment 14 to Annex 14 Volume I.

2.33 The Meeting urged States to notify ICAO before 16 July 2018 if any part of the adopted Standards and Recommended Practices (SARPs) amendments in Amendment 14 to Annex 14 Volume I and Amendment 8 to Annex 14 Volume II concerning which the States wishes to register disapproval.

2.34 The meeting urged States to notify ICAO using the Electronic Filing of Differences System before 8 October 2018 any differences that would exist on 8 November 2018 between the national regulations or practices and the provisions of the whole of Annex 14, Volume I and II as amended by all amendments up to and including Amendment 14 with respect to Annex 14 Volume I and Amendment 8 with respect to Annex 14 Volume II and thereafter of any further differences that may arise.

2.35 The meeting urged States to provide the date or dates by which their Administration would have complied with the provisions of the whole of Annex 14, Volume I (as amended by all amendments up to and including Amendment 14) and Volume II (as amended by all amendments up to and including Amendment 8).

Aerodrome Operator Interaction with the State Aeronautical Information Service (WP/14)

2.36 The AOP/SG/2 meeting was briefed on the necessity for close engagement between all originators of aeronautical information or data, including aerodrome authorities, and the State Aeronautical Information Service. Information was provided on the provisions of Annex 14, and of Annex 15 *Aeronautical Information Services* (AIS), particularly relating to Aeronautical Information Regulation and Control (AIRAC), and to the quality management of aeronautical information. It was noted that the Standards and Recommended Practices (SARPS) of Annex 15 applies to anyone that had a role in the definition, update, forwarding, reception, handling and publishing of information in the Aeronautical Information Publication (AIP) of the State.

2.37 The meeting was informed that it was of critical importance that formal agreements be established between the State AIS and aerodrome authorities, to ensure that quality-managed aerodrome data/information was provided in sufficient time for it to be collated, checked, prepared and published by the State AIS.

Establishment of Runway Holding Position on Taxiway (WP/15)

2.38 India presented the analysis of provision in para 3.12.9 of Annex 14 Volume I and purpose of Inner Transitional Surface for establishing the runway holding position on taxiway for runway where an Obstacle Free Zone had been established and a threshold had been displaced from the physical beginning of the runway using a case study for aerodrome reference code 4E where distance between the centerlines of runway and parallel taxiway was taken 182.5 metres (Figure 1).

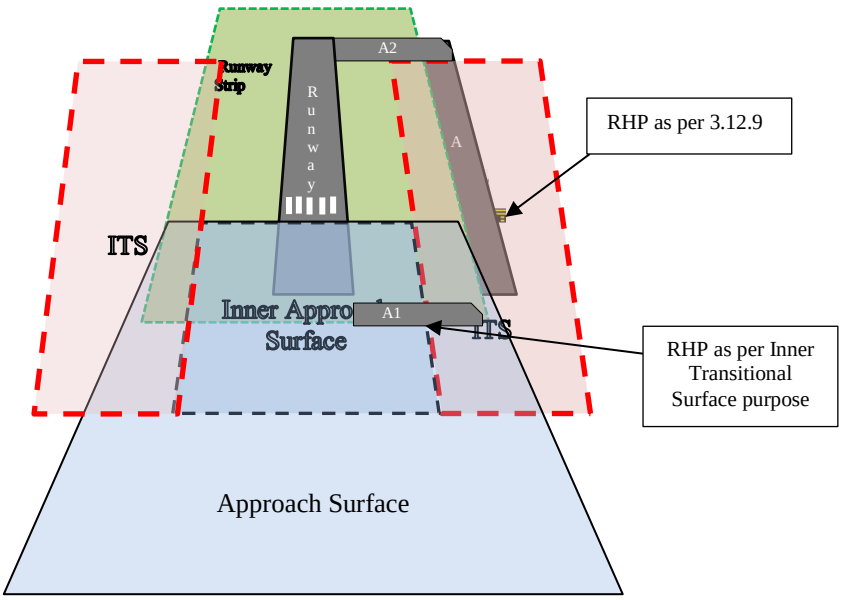

Figure 1 - Runway Holding Position on Taxiway with Displaced Threshold

2.39 The AOP/SG/2 meeting reviewed the case study presented and analysis conducted by India and deliberated a need for the further study and encouraged that the paper to be submitted to the relevant group of Aerodrome Design and Operation Panel (ADOP).

Provision of Safety Line at Associated Taxiways (WP/16)

2.40 India presented a concept to adopt safety indication marking to demarcate wingtip clearance at Runway Entry Taxiway adjoining with parallel taxiways.

2.41 The AOP/SG/2 meeting noted that Annex 14 Volume I Table 3.1 stipulates distance between Taxiway Center line and Runway Centre line for various configuration of runways. The meeting also noted that the aircraft holding at runway holding position (RHP) on taxiway connected with parallel taxiway, waiting for entry to runway as shown in Figure 2, in few situations left sufficient clearance for another aircraft taxing on parallel taxiway to cross behind the parked aircraft. However, there was no wingtip clearance indication to pilot of taxing aircraft to assess the clearance distance.

Figure 2 – Aircraft taxiing on parallel taxiway behind aircraft holding on runway holding position

2.42 The guidance to maintain a safe distance between aircraft holding on runway holding position and aircraft taxiing on parallel taxiway is provided in Paragraph 1.2.19 of Doc 9157 Part 2 - Taxiways, Aprons and Holding Bays. As per this guidance, the distance between runway centerline and centerline of the parallel taxiway often requires greater distance than distances provided in Table 3.1 of Annex 14 Volume I.

2.43 The AOP/SG/2 meeting noted the issue and solution proposed, and expressed that more deliberations required for developing an appropriate solution.

Runway End Safety Areas (WP/17)

2.44 IFALPA presented pilots' perspective on Runway End Safety Areas (RESA) and highlighted how an optimized runway environment could improve accident and incident survivability.

2.45 The data collected by IFALPA from past incidents and accidents had shown that, in the majority of cases, an aircraft overrunning a runway and leaving the paved surface at a speed of up to 70 knots would come to a halt within 300 metres of the runway end. Therefore, the installation of RESA that meets above dimensions had significantly mitigated the risk of injury or death to passengers, crew and rescue teams. IFALPA recognized that at some aerodromes it may be impossible for an adequate (full length) RESA to be installed due to surrounding terrain and topography. In such instance, IFALPA advocated the installation of an arresting system, such as an Engineered Material Arresting System (EMAS).

2.46 The AOP/SG/2 meeting noted that IFALPA emphasized the importance to make a flight crew aware of EMAS existence at a runway end making it effective through marking and depiction on appropriate aeronautical chart, as well as in their departure or arrival briefings, which would constitute a means of safe practice in the event of a runway excursion.

Proposal of Criteria on Declared Distance for Aircraft Intersection Departure Procedure (WP/18)

2.47 The paper presented by the Republic of Korea highlighted a need of a standard method/procedure for calculation of Take-Off Run Available (TORA) Distance for intersection departures, as international airports adopt the intersection departure as a standard operating procedure to reduce aircraft's ground taxing time. The meeting was provided with the procedures used by Australia, Canada, Netherlands and Philippines for determination of TORA for intersection departures. The meeting noted that Doc 9157 Aerodrome Design Manual, Part 1 - Runways (Paragraph 3.4 refers) that contains the method for calculation of declared distances did not contain any specification for the calculation of TORA for intersection departures.

2.48 The AOP/SG/2 meeting reviewed the issue highlighted in the working paper on intersection departure procedures declared distance and appreciated. The AOP/SG noted the issue and considered a need of systematic work in this regard.

Proposal of Vehicle Signal System in the Hot Spot of Airport (WP/19)

2.49 The Republic of Korea (ROK) presented a proposed method to guarantee the safety of aircraft on ground movement and the punctuality of aircraft operations through the installation of automatic vehicle signal system interfaced with airport surface detection radar and A-SMGCS (advanced-surface movement guidance and control system).

2.50 The meeting noted that the Incheon Airport had developed the vehicle signal system installed on service roads crossing taxiways as illustrated in Figure 3, automatically controlled using airport surface detection radar and advances surface movement guidance and control system (A-SMGCS). The system enhanced aircraft safety regarding the intersection between taxiways and service roads to assist in the prevention of collisions between aircraft and vehicles/objects, and aircraft taxiing on-time performances as well.

Figure 3: Vehicle signal system at Incheon Airport

2.51 The AOP/SG/2 meeting reviewed and noted the proposal of ROK to consider installing vehicle signal system on the service roads crossing taxiway to prevent aircraft accident or incident and encouraged ROK to conduct a further study working together with other Member States and International Organization with the objective to achieve more benefits from the installation of the system at international airports.

Wildlife Strike Hazard Reduction (IP/05)

2.52 IATA presented pilots' perspective on wildlife hazard reduction, including pilots' responsibility, what information they need and how they could contribute towards a successful wildlife management strategy. The meeting noted the need to work together among the pilots or the airlines, regulators, wildlife managers, air traffic controllers, corporate operators, manufactures, biologists, those involved in airside operations or the aerodrome itself to find the right balance for aviation safety, land use and wildlife rights.

2.53 While the Doc 9137, *Airport Service Manual Part 3 – Wildlife Control and Reduction* contents guidance on bird/wildlife strike hazard management and wildlife strike reporting procedures, the meeting noted a need to develop a standardised process to define a reporting of wildlife strike by aircraft operator.

Experience Sharing of Middle Runway Non-Stop Flight Construction at Beijing Capital International Airport (BCIA) (IP/06)

2.54 China shared the experiences in the maintenance of the middle runway (36R/18L) at Beijing Capital International Airport (BCIA) taking into consideration of the runway non-stop flight construction. The meeting took a note that the middle runway maintenance's experience proved that the operational area intrusion prevention, management and control and operation capacity were the key to the runway non-stop flight construction-management content.

EMAS Implementation in China (IP/07)

2.55 China presented CAAC's certification process of EMAS and the EMAS implementation in China to increase the airport's safety level by reducing the severe consequence of overrunning. Lanzu-1 EMAS was the only EMAS that obtained the approval from CAAC, and installed in several domestic airports in China. The meeting was also informed that in order to enhance airport safety margins, CAAC was planning to progressively install EMAS in the airports where the overrunning consequence maybe catastrophic.

Plan and Construction of Beijing New Airport (IP/08)

2.56 China presented the plan and design of Beijing new airport with 6 runways. The New Airport would put into operation in 2019 and operate independently from Beijing Capital International Airport, which would expect to handle more than 100 million passengers annually for long-term goal. The meeting noted that it was one of the largest ongoing airport construction projects.

Large Airport Airfield Plan and Design (IP/09)

2.57 China provided updates on large airport projects currently under construction or planning in China and shared the relevant experience gained including the problems and challenges encountered during planning and design of large airports.

Training Experience for the Employees of Civil Aviation Airports in China (IP/10)

2.58 China provided updates on three training categories of civil aviation airport employees in China, namely airport inspector training, airport manager training, airport professional technical personnel training. CAAC had undertaken trainings to Asia, Africa, ASEAN, Latin America, and countries along the Belt and Road in recent years. Through these training, the laws and regulations of ICAO and CAAC have been propagating; the advanced management ideas, techniques and methods of CAAC have been disseminating, and the professional quality of the employees at the airport have been enhancing, the operation safety and efficiency of the airport have been improving.

Activities toward Runway Surface Condition Assessment (IP/11)

2.59 Japan presented the activities conducted and planned in Japan to meet the ICAO standard on *Global Reporting Format (GRF)* for runway surface condition adopted by ICAO and scheduled for applicability on 5 November 2020.

IATA A-CDM Brochure (IP/12)

2.60 IATA presented a brochure developed by the IATA Airlines A-CDM Coordination Group (AACG). The brochure contained recommendations on implementation of A-CDM to encourage harmonization of processes, stakeholder consultation and collaborative implementation. IATA had presented the brochure to the ICAO APAC ATFMSG/8 and planned to present it to the ATMSG/6 and A-CDM/TF/3.

Challenges in Design, Construction and Operations of Airports for STOL Aircraft Operations in Nepal Complying with ICAO Standards (IP/13)

2.61 Nepal presented an overview of the various technical difficulties faced by Civil Aviation Authority of Nepal in the course of design, construction and operation of airports in hilly and remote regions of Nepal. This paper also described the challenges in complying with ICAO standards while designing and operations of airports in such difficult topography of Nepal for STOL aircraft operations.

Tribhuvan International Airport (TIA) Master Plan, 2016 (IP/14)

2.62 Nepal provided a synopsis of the Ultimate Master Plan developed for TIA by the Civil Aviation Authority of Nepal and its phase wise future development. The Master Plan mainly focused on airside and landside infrastructure development to address the air traffic growth, capacity constraints and current airside safety issues.

Amended Annex 15 and New PANS-AIM (IP/17)

2.63 ICAO provided update on Amendment 40 to Annex 15, adopted by the Council of ICAO and applicable from 08 November 2018, and the new *Procedures for Air Navigation Services – Aeronautical Information Management* (PANS-AIM) which was expected to be approved in the near future with the same applicability date. These two publications were complemented by guidance material provided in ICAO Doc 8126 – AIS Manual, which was also subject to amendment and expected to be aligned with the applicability of the Annex and PANS.

2.64 The amended Annex and new PANS would result in the consolidation and clarification of information forming SARPS in the Annex, while information on procedures would migrate to, or be developed specifically for, the PANS, much in the same way that PANS-Aerodromes provided procedures for application by States to allow them to meet the SARPS in Annex 14.

2.65 A key inclusion in the new PANS-AIM was its *Appendix 1 – Aeronautical Data Catalogue*, which would be considered the point of reference for all provisions related to aeronautical data origination and publication, and would provide a common language for all participants in the aeronautical data chain. The Catalogue included data specifications for a range of aerodromes-related aeronautical information.

2.66 The Data Catalogue would be available through the ICAO Secure Portal in MS Excel format to permit ease of use by data originators and the AIS, and to facilitate standardization. It was strongly recommended that the aerodromes community became familiar with the new PANS-AIM and the Data Catalogue, as the procedures and the data definition would form the foundation of formal agreements between aerodrome authorities and the AIS for the publication of aerodrome information in State AIPs.

2018 – 2019 ICAO USOAP CMA Activity Plan (IP/18)

2.67 ICAO provided update on USOAP CMA activities for 2018 and 2019 which was published in ICAO EB 2018/30 dated 15 June 2018. Any changes to the USOAP CMA activities published in the EB would be communicated to the National Continuous Monitoring Coordinator (NCMC).

FAA Assistance to Airports in the Micronesia Region (IP/19)

2.68 USA presented an overview of Federal Aviation Administration (FAA) assistance to airports in the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau. This included assistance to improve aerodrome certification, inspection and surveillance programs and FAA Airport Improvement Program (AIP) grant funding.

Ground Service Equipment Pooling Scheme (IP/20)

2.69 Hong Kong China provided update on the initiative taken by Hong Kong China to implement a Ground Service Equipment Pooling Scheme in the Hong Kong International Airport in three phases starting the first phase on 6 July 2018. The full implementation of the Scheme was targeted in 2024 upon commencement of the third runway system. Under the Scheme, critical GSE, namely conveyor belt loaders, lower deck loaders and passenger steps would be stationed on each parking stand for ramp handling operators' ("RHOs") rental use for aircraft turnaround handling.

2.70 Expected benefits from the scheme implementation would be improvements in efficiency by having guaranteed GSE availability to reduce unnecessary aircraft ground delays, as well as a reduction in apron road traffic due to fewer slow-moving GSE traveling. Air quality improvement, as 95% of the GSE under the Scheme would be electric-powered with zero emission and adoption of new technology in GSE with safety enhancement features.

Works to effect 3-runway system at Singapore Changi Airport (Presentation)

2.71 Singapore provided update on the works to effect a 3-runway system at Singapore Changi Airport. The meeting noted that the third runway (02R/20L) at Singapore Changi Airport would be operated as a civil-military co-use runway. New end-around taxiways were also planned at both ends of the middle runway to facilitate aircraft ground movements. The paper also highlighted the challenges of the project and the various measures that were in place to enhance site safety during the course of the works.

ACI APEX in Safety (WP/20)

2.72 ACI presented the ACI Airport Excellence (APEX) in Safety Program describing its history, program contents, benefits to airports, costs and recent updates. The programme improves airports level of safety and compliance following ICAO Standards and Recommended Practices and adoption of ACI's best practices.

2.73 The meeting noted the following benefits from APEX safety review:

a) Enhancement of safety levels towards regulatory standards, best operational practices and identification of training needs;

b) Self-evaluation of safety performance;

c) Accessibility to a network of experts to mitigate any safety gaps in accordance with operating environment;

d) Receiving of a comprehensive gap analysis on safety operational management levels;

e) Development of staff; and

f) Setting the path to seek or maintain aerodrome certification.

2.74 The meeting also noted that APANPIRG/25 held in September 2014 concluded that States should support the APEX in Safety program (Conclusion APANPIRG 25/9) and RASG-APAC/4 arrived at a similar conclusion in November 2014 (RASG-APAC Decision 4/13). As of April 2018, this program had benefited more than 85 airports worldwide, 16 of them located in Asia-Pacific States, i.e. China, India, Indonesia and Myanmar.

2.75 Recognizing the benefits of ACI's APEX in Safety program, the meeting encouraged airport operators to approach ACI for assistance through the APEX in Safety Program.

Status of Air Navigation Deficiencies in AOP Field (WP/05)

2.76 The AOP/SG/2 meeting reviewed the list of Air Navigation Deficiencies noted by APANPIRG/28 in the AOP field. Cambodia, India, Maldives, Sri Lanka and Thailand provided updates on the status of their Deficiencies. The AOP/SG/2 meeting urged concerned States to provide the necessary resources for the elimination of deficiencies.

2.77 The meeting also urged States to update the status of AOP Air Navigation Deficiencies prior to the APANPIRG/29 Meeting and adopted the following Conclusion.

<table>
<tr><td colspan="3">Conclusion AOP/SG/2-3: Update of AOP Air Navigation Deficiencies</td></tr>
<tr><td colspan="2">What: That, the list of Air Navigation Deficiencies reported and identified in AOP Field be updated as detailed in Appendix D to the Report.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To report to APANPIRG/29 updates on AOP Air Navigation Deficiencies.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 29-Jun-18</td><td colspan="2">Status: Adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>

2.78 **Appendix D** has been updated incorporating recent updates received from Fiji and Myanmar on their status of AOP Air Navigation Deficiencies.

IFALPA Annex 29 Deficiencies (IP/15)

2.79 IFALPA presented the deficiency sheets for the Asia and Pacific Regions, reviewed and updated by the IFALPA Annual Conference in Luxembourg in March 2018. IFALPA developed the document for the reporting of deficiencies in airspace and aerodromes. The Regional Meeting and Annual Conference had reviewed deficiencies reported and updated during the year.

APANPIRG AOP Sub Group Task List (WP/21)

2.80 The AOP/SG/2 meeting reviewed and further updated the AOP/SG task list.

2.81 Recognizing the needs to address the challenges faced in the AOP field and to achieve specific deliverables of AOP/SG through the systematic works of the Working Groups and Task Force, the AOP/SG/2 reviewed the TORs developed for the establishment of Asia/Pacific Wildlife Hazard Management Working Group (WHM WG), Asia/Pacific Aerodrome Assistance Working Group (AP-AA WG) and Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF) and adopted following Decisions:

Decision AOP/SG/2-4: Asia/Pacific Wildlife Hazard Management Working Group (AP-WHM WG)	
What: That, the Asia/Pacific Wildlife Hazard Management Working Group (AP-WHM WG) be established in accordance with the TOR appended at **Appendix F** to the Report.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: To assist States to establish a National Wildlife Strike Hazard Management Committee and a National Wildlife strike hazard reduction programme.	Follow-up: ☐ Required from States
When: 29 June 2018	Status: Adopted by Subgroup
Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:	

Decision AOP/SG/2-5: Asia/Pacific Aerodrome Assistance Working Group (AP-AA WG)	
What: That, the Asia/Pacific Aerodrome Assistance Working Group (AP-AA WG) be established in accordance with the TOR appended at **Appendix G** to the Report.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: To support certification of all aerodromes used for international operations by 2020, in order to address identified AOP deficiencies, and assist States with low AGA EI in USOAP CMA activities.	Follow-up: ☐ Required from States

When:	29 June 2018	Status:	Adopted by Subgroup
Who:	☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:		

Decision AOP/SG/2-6: Asia/Pacific Aerodrome Design and Operations Task Force (AP -ADO/TF)			
What: That, the Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF) be established in accordance with the TOR appended at **Appendix H** to the Report.		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why: To achieve some specific deliverables of AOP/SG through the systematic works of the Task Force.		Follow-up: ☐Required from States	
When:	29 June 2018	Status:	Adopted by Subgroup
Who:	☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:		

2.82 The meeting urged States/Administrations to nominate experts/advisors for the WHM WG, AP - AA WG and AP - ADO/TF.

Airports Climate Change Adaptation (WP/22)

2.83 ACI presented its initiatives to urge airports to take action on adaptation to climate change.

2.84 The meeting noted that the ICAO Council tasked its advisory body on all matters pertaining to international aviation environmental protection, i.e., the Committee on Aviation Environmental Protection (CAEP), to intensify its activities on the topic of climate adaptation, beyond the collection of scientific information. This resulted in an update of the Airport Planning Manual, Part 2 (ICAO Doc 9184), due to be published by ICAO in August 2018, including a new Chapter 9 on climate adaptation. The CAEP/10 meeting in 2016 resolved to develop and submit for approval by the CAEP/11 meeting (February 2019) a Climate Adaptation Synthesis which highlighted that the identification of the potential impacts of climate change on airports operations and related infrastructure requires close cooperation with relevant meteorological offices and the ability to model changes in climate over time.

2.85 ACI highlighted a number of potential effects of climate change, including increased frequency or severity of storms, that have potential impacts to airport operations and planning which would require a risk assessment including a comprehensive list of risks, threats and vulnerabilities to all aspects of the airport business and operation.

2.86 The meeting noted that ACI had completed a briefing note on climate change adaptation for their members and a Policy Paper on climate resilience and adaptation. The Policy Paper was presented at the 56th ACI World Governing Board meeting to raise awareness of member airports on the need to proactively assess the vulnerability and risk to climate change impact and to take necessary measures to prevent negative climate change impact.

2.87 Recognizing the importance of climate change adaptation by airport operators, the meeting endorsed the Draft Conclusion for consideration by the APANPIRG/29 meeting.

<table>
<tr><td colspan="3">Draft Conclusion AOP/SG/2-7: Airports Climate Change Adaptation Measures</td></tr>
<tr><td colspan="2">What: That Asia/Pacific States urge airport operators to identify the potential impacts of climate change on airports operations and related infrastructure and consider appropriate adaptation measures to address the potential climate change impacts.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☒ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: Enhance levels of aerodrome resilience to climate change impact</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 5-Sep-18</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:</td></tr>
</table>

Date and Venue of Next Meeting (WP/23)

2.88 The meeting reviewed the draft agenda and agreed on the following Provisional Agenda for the Third Meeting of AOP/SG:

DRAFT PROVISIONAL AGENDA

Agenda Item 1: Adoption of Provisional Agenda

Agenda Item 2: Review Outcome of Relevant Meetings

Agenda Item 3: Regional Reporting

- Asia Pacific ANP
- Asia Pacific Seamless ATM Plan

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

- Regulation of Aerodromes
- Aerodrome Planning & Design
- Management, Operations and Maintenance of Aerodromes
- Airport Collaborative Decision Making (A-CDM)
- Trainings

Agenda Item 5: AOP Air Navigation Service Deficiencies

Agenda Item 6: Update of the AOP/SG Task List

Agenda Item 7: Airport Environmental Initiatives

Agenda Item 8: Any other business

Agenda Item 9: Date and Venue for Next Meeting

2.89 The next meeting of AOP/SG will be held in last week of June 2019 in Bangkok, Thailand for 3 days.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) note the information provided in this paper;

b) discuss:

(i) **Draft Conclusion AOP/SG/2-1**: Asia Pacific Regional Guidance on Requirements for the Design and Operations of Water Aerodromes for Seaplane Operations (2.16);

(ii) **Draft Conclusion AOP/SG/2-7**: Airports Climate Change Adaptation Measures (2.87);

c) note conclusions and decisions adopted by AOP/SG/2:

(i) **Decision AOP/SG/2-2:** Amendment to TOR of the Small Working Group to Develop Guidance on Aerodrome Operations Personnel Competency (AOPC SWG);

(ii) **Conclusion AOP/SG/2-3:** Update of AOP Air Navigation Deficiencies;

(iii) **Decision AOP/SG/2-4:** Asia/Pacific Wildlife Hazard Management Working Group (AP-WHM WG);

(iv) **Decision AOP/SG/2-5:** Asia/Pacific Aerodrome Assistance Working Group (AP-AA WG);

(v) **Decision AOP/SG/2-6:** Asia/Pacific Aerodrome Design and Operations Task Force (AP -ADO/TF).

d) urge concerned States to take necessary measures, including the allocation of adequate resources in order that States can achieve ***2020 target*** of ***Beijing Declaration*** commitment to complete the certification process of the uncertified international aerodromes;

e) urge States, who have not fully met the requirements for certification of international aerodromes, to develop action plan and submit it to the APAC Office;

f) urge States, who have not published yet the status of certified aerodromes in their national AIP to publish such information;

g) urge concerned States to provide information related to international aerodromes to update *Table AOP I -1: International Aerodromes required in the Asia/Pacific Regions* and *Table AOP II – 1: Requirements and Capacity Assessment in International Aerodromes in the Asia and Pacific Regions* of Asia Pacific Air Navigation Plans Volume I and Volume II;

h) urge States having AGA experts to volunteer their services to the ICAO APAC CAT initiative, and States with low USOAP EI in AGA to request ICAO for the APAC CAT and IPAV assistance;

i) urge International Organization(s) to collaborate with ICAO in capacity building programmes in AGA;

j) encourage airport operators to approach ACI for assistance through the ACI APEX in Safety Program;

k) agree to the updated AOP Air Navigation Deficiency List (2.78); and

l) Discuss any other relevant matters as appropriate.

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INTERNATIONAL CIVIL AVIATION ORGANIZATION

ASIA PACIFIC REGIONAL GUIDANCE ON REQUIREMENTS FOR THE DESIGN AND OPERATIONS OF WATER AERODROMES FOR SEAPLANE OPERATIONS

This Guidance Material is approved by the meeting and published by ICAO Asia and Pacific Office, Bangkok

RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENTS			
No.	Date applicable	Date entered	Entered by

CORRIGENDA			
No.	Date of issue	Date entered	Entered by

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Asia Pacific Regional Guidance on Requirements for the Design and Operations of Water Aerodromes for Seaplane Operations

INTRODUCTION

ICAO Annex 14 does not differentiate between land and water as a surface from which aircraft can operate; and Annex14 defines that an aerodrome can be an area of land or water.

Operations of aeroplanes on water differ significantly from those conducted on land, and the criteria used for certification of land aerodromes may not be appropriate for certification of water aerodromes. However, one fundamental certification criterion that requires the aerodrome certificate holder to establish and maintain an appropriate Safety Management System (SMS) remains the same for both land and water aerodromes.

The specifications outlined in this document focus on those facilities, services and equipment where water aerodromes differ from land aerodromes in terms of their design and operations.

PART I GENERAL

Note. – This guidance material outlines the minimum specifications for the physical characteristics, obstacle limitation surfaces (OLS), visual aids, services and operating procedures to be provided at water aerodrome for seaplanes operating maximum mass of 5700Kg and below.

1.1 Definitions

Aerodrome – A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and movement of aircraft.

Aeroplane – A power-driven heavier than air aircraft deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

Fixed platform – A platform extending from the shore, on water and supported by pillars to hold it in position, intended to align alongside seaplanes for the purposes of embarkation and disembarkation of passengers, loading and unloading of cargo, or refueling or parking of seaplanes.

Floating platform – A platform placed on open water authorized for the purpose of embarkation and disembarkation of passengers, loading and unloading of cargo by seaplane.

Gangway – A movable walkway where people board and disembark such as platforms, and piers.

Low water level – The average low level during that month of the year when levels are lowest or, in the case of tidal waters, the average level of low water springs or lower low waters, depending on the type of tide.

Mooring – A fixed permanent installation on the water surface used to secure seaplanes. The seaplane may be moored to a floating buoy, a pier, platforms, etc.

Mooring buoy – A buoy connected by chain or cable to a permanent unmovable anchor sunk deeply into the bottom of a body of water.

Protected area – An area which is protected from large waves. The structure providing protection can be natural or constructed.

Seaplane – An aeroplane on floats (amphibious or non-amphibious) or a flying boat (water-only or amphibious).

Taxi channel – A defined path on a water aerodrome, intended for the use of taxing seaplanes.

Turning basin – A water area used for the water taxi maneuvering of seaplanes along shoreline facilities and at the ends of a narrow water runway.

Waterways – A river, canal or other waterbody serving as a route or way of travel or transport.

Water aerodrome – A defined area, primarily on water, intended to be used either wholly or in part for the arrival, departure and movement of seaplanes, and any building and equipment on ground or water.

Water aerodrome movement area – The part of an aerodrome to be used for take-off, landing and taxiing of seaplanes, consisting of the maneuvering area and platforms.

Water aerodrome operator – Any organization/ or person in charge of a water aerodrome including employee, agent or other authorized representative.

Water current – is rate of flow of the water.

Water runway (channel) – A defined rectangular area on a water aerodrome, intended for the landing and take-off of seaplane along its length.

1.2 Certification of water aerodromes

1.2.1 States should certify water aerodromes open to public use in accordance with these specifications as well as other relevant ICAO specifications through an appropriate regulatory framework.

1.2.2 The regulatory framework shall include the establishment of criteria and procedures for the certification of water aerodromes.

Note 1.— Guidance on a regulatory framework which is given in the Manual on Certification of Aerodromes (Doc 9774) may be used as far as appropriate for the certification of water aerodromes.

Note 2.— The Sample APAC Regulations for Water Aerodromes, First Edition 2015 provides general guidance to the State Administration for establishing national regulations for water aerodromes.

1.2.3 As part of the certification process, States shall ensure that a water aerodrome manual which will include all pertinent information on the water aerodrome site, facilities, services, equipment, operating procedures, organization and management including a safety management system, is submitted by the applicant for approval/acceptance prior to granting the aerodrome certificate.

Note 1.— The intent of a safety management system is to have in place an organized and orderly approach in the management of aerodrome safety by the aerodrome operator. Annex 19 — Safety Management contains the safety management provisions applicable to certified aerodromes. Guidance on a harmonized safety management system is given in the Safety Management Manual (SMM) (Doc 9859) and in the Manual on Certification of Aerodromes (Doc 9774). Procedures on the management of change, conduct of safety assessment, reporting and analyses of safety occurrences at aerodromes and continuous monitoring to enforce compliance with applicable specifications so that identified risks are mitigated can be found in the PANS-Aerodromes (Doc 9981).

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PART II WATER AERODROME DATA

*Note.— This Part contains specifications for the provision of data relating to the water aerodrome that is to be determined and recorded in the **Water Aerodrome Operations Manual (WAOM)**. This Part is also used to define the characteristics of water aerodrome that are to be made available through the aeronautical information publications and/or disseminated through an aeronautical information service.*

2.1 Water aerodrome data quality requirements

2.1.1 Except as specified, the determination and reporting of water aerodrome-related aeronautical data shall be in accordance with the accuracy requirements set forth below taking into account the established quality system procedures:

a) The water aerodrome elevation shall be measured to the accuracy and rounded up to the next higher of one half metre or foot;

b) Linear dimensions shall be measured to the nearest one-half metre;

c) Aeronautical geographical co-ordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 reference datum;

d) True bearings shall be measured to the nearest degree;

e) Water depths shall be measured and rounded down to the nearest one tenth of metre; and

f) Tides shall be measured with respect to lowest tides recorded for the location.

2.2 Geographic data

Geometric centre

2.2.1 The geometric centre of a water aerodrome shall be determined and given to the nearest $1/10^{th}$ second.

Water aerodrome elevation

2.2.2 Average highest elevation of the water runway shall be measured with reference to mean sea level.

Water aerodrome magnetic variation

2.2.3 The magnetic variation for the water aerodrome geometric centre shall be determined and given to the nearest degree from magnetic north.

Navigation aids

2.2.4 Where navigation aids are installed for use at water aerodromes, the following information shall be determined and given:

(a) the bearing, geographic co-ordinates of the antenna or radiating centre to the nearest $1/10^{th}$ second**;** and

(b) the elevation of the antenna or radiating centre.

2.3 Water aerodrome dimensions and related information

2.3.1 The following data shall be measured or described and given for each facility provided on a water aerodrome:

a) water runway(s):

(i) true bearing;

(ii) length;

(iii) width;

(iv) depth of water; and

(v) water current.

b) turning basins:

(i) location;

(ii) dimension; and

(iii) depth of water.

c) taxi channel:

(i) width; and

(ii) depth of water.

d) shore facility:

(i) type; and

(ii) depth at shore.

e) significant obstacles on and in the vicinity of the water aerodrome:

(i) location;

(ii) top elevation to the nearest (next higher) foot; and

(iii) type.

f) marking

(i) water runways;

(ii) taxi channels; and

(iii) hazardous areas.

2.4 Provision of operational information

Movement area and related facilities

2.4.1 Information on the condition of the movement area and the operational status of related facilities shall be given to the appropriate aeronautical information service;

a) Information of operational significance shall be given to the appropriate air traffic services units; and

b) The information shall be kept up to date.

2.4.2 The condition of the movement area and the operational status of related facilities shall be monitored and reports of operational significance or affecting seaplane performance shall be given to the appropriate air traffic services units in respect of:

a) damage to shore facility;

b) floating debris in the movement area;

c) temporary hazards to include log booms, surface vessels or any other surface or below surface hazard;

d) abnormally high/low water depth;

e) water currents;

f) tidal areas, depth of water at high and low tides or seasonal changes; and

g) any other information that may have safety impact on operations.

2.4.3 Information on water runway(s) shall consist of:

a) the tidal range;

b) the times of high and low tide; and

c) the approximate speed and direction of the water current.

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PART III PHYSICAL CHARACTERISTICS

3.1 Water runway

Number and orientation of water runways

3.1.1 The number of water runways at a water aerodrome and their orientation should be such that, for a large percentage of time as practicable but for not less than 95 percent there is at least one water runway for which the surface wind velocity component at right angles to its longitudinal axis will not preclude the landing or taking off of seaplane that the water aerodrome is intended to serve.

Length of water runways

3.1.2 The length of the water runway to be provided should be adequate to meet the operational requirements of the critical seaplane for which the runway is intended and should be not less than the longest length determined by applying the corrections for local conditions to the operations and performance characteristics of the relevant seaplanes.

Width of water runways

3.1.3 The width of the water runway should be not less than 60 m wherever practicable.

Water Depth

3.1.4 The depth of the water measured at low water level in the water runway should not be less than 1.8 m (6 ft.) or less than 0.3 m below the hull or floats when the seaplane is stationary and loaded to maximum takeoff weight.

Water runway strip

3.1.5 A protective buffer should extend on each side from the edge of the water runway to a distance of not less than 30 m (100 ft.) and on each end of the water runway to a distance of 60 m wherever practicable.

3.2 Turning basins

3.2.1 Turning basins should be provided at the end of the water runway, whenever necessary.

3.2.2 When turning basins are provided it shall have:

(a) A diameter measured at low water level of not less than twice the specified minimum width of the corresponding water runway;

(b) The depth of turning basins measured at low water level should be at least that of the corresponding water runway; and

(c) A horizontal obstruction clearance between the edge of the turning basin and the nearest obstacle of no less than 15 m (50 ft.).

3.3 Taxi channels

3.3.1 Taxi channels should be provided to permit the safe and expeditious handling of aerodrome traffic. Where provided, the taxi channels shall have a width of not less than 45 m (150 ft.), wherever practicable

3.3.2 Wingtip to wingtip clearance for passing seaplanes (dual directional taxi channels) should be not less than 15 m (50 ft.).

3.3.3 The depth of the water measured at low water level in the taxi channel should not be less than 1.8 m (6 ft.) or less than 0.3 m below the hull or floats when the seaplane is stationary and loaded to maximum take-off weight.

3.4 Mooring areas

3.4.1 Mooring areas should be provided, whenever necessary, for the mooring of seaplane and to permit the embarkation and disembarkation of passengers, loading and unloading of cargo and mail without interfering with the aerodrome traffic.

3.4.2 When mooring areas are provided:

(a) The size of the mooring areas should be adequate to permit expeditious handling of the peak hour traffic.

(b) The depth of water at the mooring area measured at low water level should be at least that of the corresponding taxi channel.

(c) The mooring area shall be designed in such a manner as to provide a minimum clearance of 15 m (50 ft.) between any part of the seaplane and any object it could come into contact with depending on water level.

3.5 Shore facilities

3.5.1 A platform (fixed or floating), ramp or beach should be provided to permit the embarking and disembarking of passengers and crew, loading and unloading of cargo and refueling.

3.5.2 Where a platform is provided it shall:

a) be in a condition that permits constant use without causing injury to persons or damage to aircraft;

b) be attached or anchored in a manner that prevents it from shifting position or becoming detached;

c) have access from the shore that provides for the safe movement of crew and passengers; and

d) have at least two bull rails or provision for appropriate number of tie-down cleats at each seaplane parking position to secure the seaplane.

3.5.3 When a seaplane is normally secured in a position where any seaplane component overhangs the platform and constitutes a hazard to the movement of crew and passengers, the hazard shall be clearly indicated by means of:

a) cones; and/ or

b) hashed red and white markings; and

c) in a manner easily identifiable to crew and passengers.

3.5.4 Where a ramp or beach is provided it shall be:

a) built 1.5 times the width of floats or landing gear of the largest seaplane intended to use the facility;

b) located in such a manner as to provide a minimum clearance of 1.8 m (6 ft.) between a seaplane wing and any object it could come into contact with; and

c) constructed with a slope not steeper than 8:1.

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PART IV OBSTACLE RESTRICTION AND REMOVAL

Note.— This Part establishes a series of Obstacle Limitation Surfaces (OLS) that define the limits to which objects may project into the airspace in order to minimize the dangers presented by obstacles, either during take-off or approach of seaplanes at water aerodromes.

4.1 Obstacle limitation surfaces

4.1.1 The following OLS shall be established for non-instrument water aerodromes as shown in Figure 1 provided in Appendix 1:

a) a take-off climb/approach surface;

b) a transitional surface; and

c) an inner horizontal surface.

Take-off climb /approach Surface

4.1.2 *Description* – The take-off climb/approach surface shall be either straight or curved and established at the end/beginning of the water runway strip.

4.1.3 *Characteristics* – The limit of the take-off climb /approach surface shall be:

a) The width of the inner edge shall not be less than that of the associated water runway strip

b) The inner edge shall start at 60 m from threshold of water runway;

c) The elevation of the inner edge shall be the elevation of the water aerodrome;

d) The length of the take-off climb /approach surface shall not be less than 2500 m (8200 ft.) from the inner edge;

e) The slope of the take-off climb/approach surface shall be a minimum of 4 % (1:25);

f) The centre line of the take-off climb/approach surface shall define the approach path and be:

(i) a straight line; or

(ii) an arc of constant radius; or

(iii) a combination of a straight line and an arc of constant radius.

Straight-in take-off climb/Approach Surface

4.1.4 Where the slope is designed for a straight-in approach the divergence of the take-off climb/approach surface shall be set at 10% starting from the inner edge.

Curved take-off climb/approach Surfaces

4.1.5 Where established, a curved take-off climb/approach surface shall not contain more than one curved portion.

4.1.6 A curved portion of a take-off climb/approach surface shall not allow a change of direction greater than 90 degrees.

4.1.7 Where a curved portion of take-off climb/approach surface is provided:

a) the straight portion originating at the inner edge shall not be less than 1300 m (4265 ft.); and

b) the radius of arc defining the centre line of the take-off climb/approach surface shall not in any portion of the take-off climb/approach surface be less than 736 m (2415 ft.) in accordance with **Figure 2** given in **Appendix 1**.

4.1.8 A take-off climb/approach surface incorporating a curved portion shall be established only where guidance, such as, geographical points or other visual references are available.

Note.— A curved approach is normally established at a non-instrument water runway where it is necessary to avoid obstacles, terrain, noise sensitive areas, or to utilise the airspace above public lands (e.g. freeways, rivers, golf courses).

Table 1 - Dimensions and slopes of obstacle limitation surfaces - water aerodromes

Approach type – Non-instrument	
Take-off climb/approach surface	
Width of inner edge	Width of water runway strip - (120 m minimum)
Location of inner edge	60 m from the threshold
Divergence take-off climb/approach surface	10 %
Length (minimum)	2500 m
Slope of take-off climb/approach surface (maximum)	4% (1:25)
Transitional Surface:	
Slope (maximum)	Vertical to 15 m then 1:5 (20 %)
Inner Horizontal Surface:	
Height	45 m
Radius	2,500 m

4.2 Displaced threshold

4.2.1 Where the integrity of the approach surface cannot be maintained due to fixed or mobile obstacles, a landing threshold shall be displaced from the normal threshold.

4.2.2 This displacement shall be established so that the new approach surface, starting at the displacement, will clear all obstacles.

4.2.3 Where a threshold has been displaced, the inner edge of approach surface shall be located at 60 m from the point of displacement.

4.3 Objects and obstacles

4.3.1 No fixed object shall be permitted on a water runway or on a water runway strip.

4.3.2 Fixed objects or structures that are located within the water aerodrome boundary shall not penetrate OLS unless:

a) those structures are for air navigation purposes; or

b) are essential to the safety of aircraft operation;

c) are marked, in accordance with ICAO Annex 14, Volume I; and

d) are frangible.

4.3.3 A mobile object shall not penetrate take-off climb/approach surfaces, unless procedures are in place to ensure the object is removed during approach and departure operations.

4.4 Other objects

4.4.1 Where an aeronautical study (safety risk assessment) indicates that an object is hazardous to seaplane located on the movement area or in the air in the immediate vicinity of the water aerodrome, it shall be:

a) removed; or

b) marked; and/or

c) lighted in accordance with ICAO Annex 14, Volume I.

4.4.2 The water aerodrome operator shall conduct a safety risk assessment to establish the required clearances to be used above waterways, lagoons, or harbor.

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PART V VISUAL AIDS FOR NAVIGATION

5.1 Wind direction indicator

5.1.1 Unless the direction of the wind can be obtained by radio, at least one wind direction indicator should be installed.

5.1.2 Where a wind direction indicator is installed it shall be:

a) of an international orange, orange and white or red and white colour; and

b) in the form of a truncated cone.

5.1.3 The wind direction indicator should be:

a) visible at a height of 300 m (1000 ft.) above the water runway; and

b) visible from any portion of the manoeuvring area.

5.2 Markings

5.2.1 Dock identification marking

Characteristics

5.2.1.1 Dock identification markings shall consist of:

a) a triangle;

b) painted bull rails as specified in 5.2.1.3.

5.2.1.2 Both markings shall be affixed to the upper surface of the dock so as to be visible from 300 m (1000 ft.) above the water runway.

Bull rails

5.2.1.3 Where bull rails are installed they shall be painted in alternated bands of international orange and white stripes.

Gangways

5.2.1.4 Gangways shall be painted red or signage provided indicating seaplane access only.

5.2.2 Marker buoys

Characteristics

5.2.2.1 Marker buoys shall be visible to aircraft:

a) manoeuvring on the surface of water; and

b) 300 m (1000 ft.) above the water runway.

Water runway markers

5.2.2.2 Except as specified in 6.2.2.3 at water aerodromes where there is no conflict with marine traffic or marine regulations:

a) Both ends of the take-off and landing area shall be marked with floating markers.

b) The markers shall be visible from a distance greater than 2 nautical miles.

c) Each marker shall be:

- of international orange in color; or
- alternating international orange and white.

5.2.2.3 Where it is impracticable to mark the water runway as specified in 5.2.2.2:

(a) guidance such as geographical points and/or other visual references shall be provided to designate the take-off and landing area; and

(b) these visual references shall be identified and published.

Displaced threshold markers

5.2.2.4 Where a threshold is displaced permanently or temporarily:

a) the threshold displacement shall be marked with floating markers;

b) the markers shall be visible from a distance of at least 2 nautical miles; and

c) each marker shall be international orange or the markers shall be alternating international orange and white.

Hazardous areas markers

5.2.2.5 Where shoals or other hazards could endanger a seaplane, marker buoys shall be installed to clearly indicate the hazardous area.

5.2.2.6 Marker buoys for delineating hazardous area shall be distinctly marked from water runway markers in colour and shapes.

5.3 Signs

Prohibition signs

5.3.1 A sign shall be provided and displayed on the dock restricting the dock to seaplane operations only.

5.3.2 A sign shall be displayed on the dock restricting passengers from the docking area until all seaplanes and propellers have come to a complete stop.

5.4 Strobe Lights

5.4.1 Strobe lights should be installed to delineate water aerodrome facilities wherever necessary. Where installed, the strobe lights shall be:

a) white, quick flashing; and

b) located in an area that is easily and constantly seen by both marine and air traffic.

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PART VI VISUAL AIDS FOR DENOTING OBSTACLES

6.1 Objects to be marked and/or lighted

Fixed objects

6.1.1 Objects that are conspicuous by their shape, size or colour need not be marked.

6.1.2 Except as covered under the Marine Act, objects shall be marked in accordance with 6.2.

6.2 Marking of objects

General

6.2.1 Except as specified in 6.1.1 all fixed objects shall be marked in a conspicuous colour.

6.2.2 Where it is not possible to colour the objects, markers or flags shall be displayed on or above the objects.

Use of colours

6.2.3 The colour and form of marking displayed on objects shall be in accordance with *Annex 14, Volume I- Aerodrome Design and Operations*.

Use of markers

6.2.4 Markers displayed on or adjacent to objects shall be:

a) located in conspicuous positions so as to retain the general definition of the object; and

b) recognizable in clear weather from a distance of:

- 1000 m for an object to be viewed from the air; and
- 300 m for an object to be viewed from the ground in all directions in which a seaplane is likely to approach the object.

6.2.5 The shape of the markers shall be:

a) distinctive to the extent necessary to ensure that they are not mistaken for markers employed to convey other information; and

b) such that the hazard presented by the object they mark is not increased.

6.2.6 The colour selected shall contrast with the background against which it will be seen.

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PART VII WILDLIFE STRIKE HAZARD REDUCTION

Note.— The presence of wildlife (birds) on and in the water aerodrome vicinity poses a serious threat to seaplane operational safety.

7.1 The wildlife strike hazard on or in the vicinity of water aerodrome shall be assessed through an ongoing evaluation of the wildlife hazard by competent personnel.

7.2 Action shall be taken to decrease the risk to seaplane operations by adopting measures to minimize the likelihood of collisions between wildlife and seaplane.

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PART VIII LIGHTING OF MOVEMENT AREA

8.1 Water aerodrome identification and maneuvering area lighting should be provided for reduced visibility conditions wherever necessary.

8.2 A lighted water aerodrome can be identified by a beacon alternating white and yellow flashes at the rate of 12 to 30 flashes per minute.

8.3 In water traffic congested areas, a radio activated strobe beacon may be used to alert mariners and other airman that a seaplane will be arriving or departing within a short time.

8.4 Floodlights or spotlights should be installed on the shore to illuminate aprons, floats, ramps, and piers wherever necessary. Care must be taken in locating and aiming floodlights to preclude affecting the vision of pilot's landing or taking off or creating distracting reflections.

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PART IX RESCUE AND FIRE FIGHTING

Level of protection to be provided

9.1 At water aerodromes the rescue and fire-fighting vessel(s) shall be provided appropriate to the level of protection required.

9.2 The rescue vessel(s) provided shall be appropriate for the environment involved and they shall be capable or shall carry equipment capable of accommodating twice the maximum number of passengers carried by the largest type of seaplane serving the water aerodrome.

9.3 The level of protection provided at a water aerodrome for rescue and fire-fighting shall be appropriate to the water aerodrome using principles in paragraphs 9.2.4 and 9.2.5 of ICAO Annex 14 Volume I.

9.4 Types of extinguishing agents and the amount of water for foam production and complimentary agents shall be provided on the rescue and fire-fighting vessel(s) in accordance with the aerodrome category for rescue and fire-fighting determined under Table 9-1 and Table 9-2 of ICAO Annex 14 Volume I.

9.5 The equipment and information sufficient to navigate to and from the incident site, communicate with survivors and rescue personnel, effect entry and fire-fighting and provide medical assistance shall be provided in rescue and fire-fighting vessels.

9.6 A communication system shall be provided linking the water aerodrome fire station, control tower (if available), fire and rescue vessel(s), fire and rescue vehicles and any other fire station (if available) in the vicinity.

9.7 An alerting system for rescue and fire-fighting personnel, capable of being operated by that station, shall be provided at a fire station, any other fire station in the vicinity and the aerodrome control tower.

Response time

9.8 For water aerodromes the operational objective of the RFFS shall be to achieve a response time not exceeding three (03) minutes to any point of each operational water runway, in optimum visibility and surface conditions.

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PART X WATER AERODROME EMERGENCY PLANNING

10.1 The operator of water aerodrome shall prepare and submit an Aerodrome Emergency Plan (AEP) for the particular water aerodrome for approval/acceptance by the regulatory authority.

10.2 The objectives of emergency planning outlined in Chapter 9 of ICAO Annex 14, Volume I applies equally to water aerodromes.

10.3 The emergency plan shall consider the particular hazards associated with seaplane operations, including:

a) passenger evacuation into a further life-threatening environment, e.g. deep water;

b) the onset of hypothermia, and its associated effects, during and following prolonged immersion in cold water; and

c) the immediate toxicity and respiratory effects on survivors in the water following the ingestion of floating fuel and oils and their associated vapours, and fire suppressant foams, powders and gases.

10.4 The AEP shall contain provisions for:

a) water rescue;

b) fire response; and

c) recovery of disabled aircraft from the movement area.

10.5 The AEP shall contain procedures for periodic testing of the adequacy of the plan and for reviewing the results in order to improve its effectiveness.

10.6 The AEP shall be tested in accordance with the Annex 14, Volume I requirements.

Note.— Additional guidance on seaplane accidents in the water is outlined in Appendix 6 to the ICAO Airport Services Manual (Doc 9137) Part 7.

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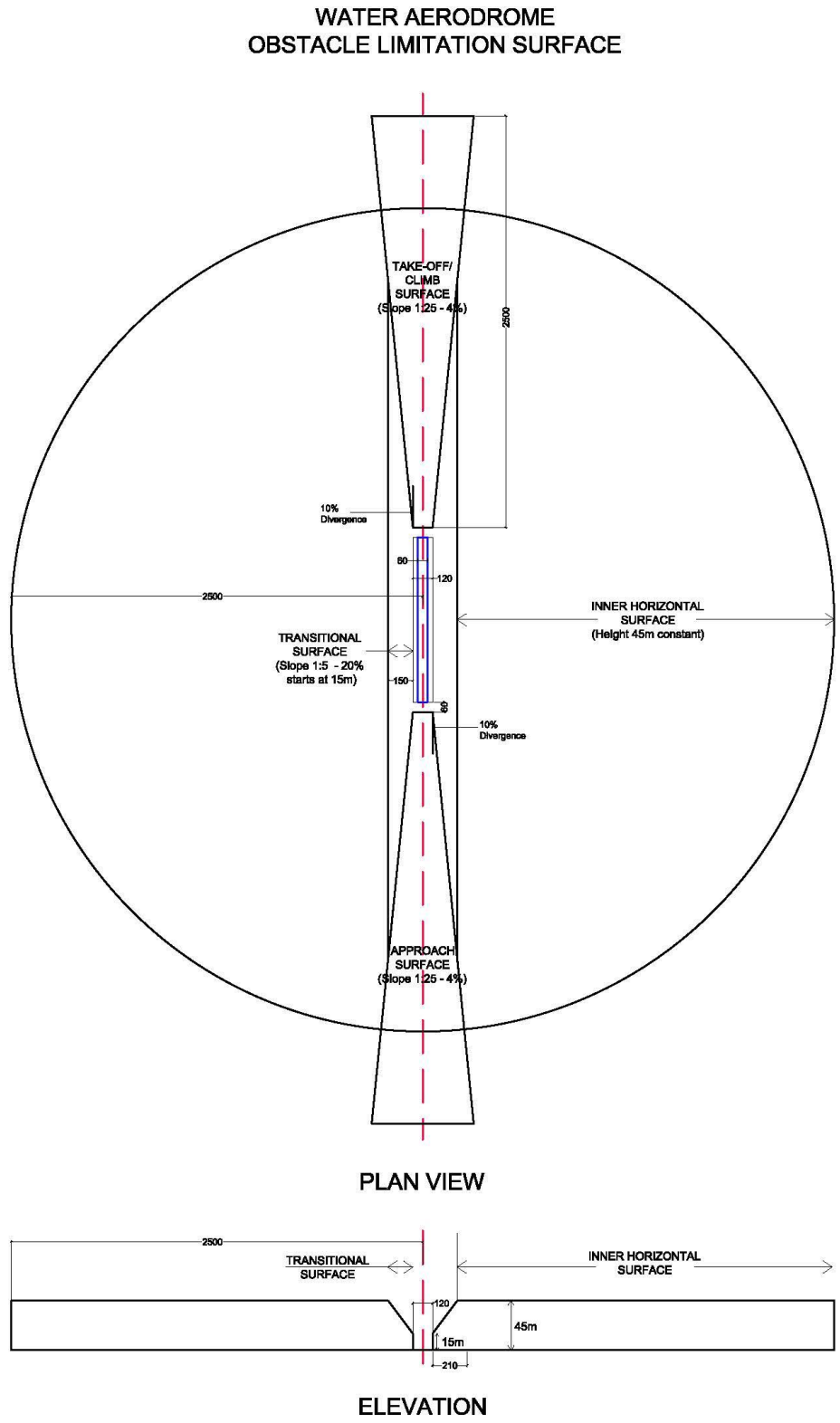
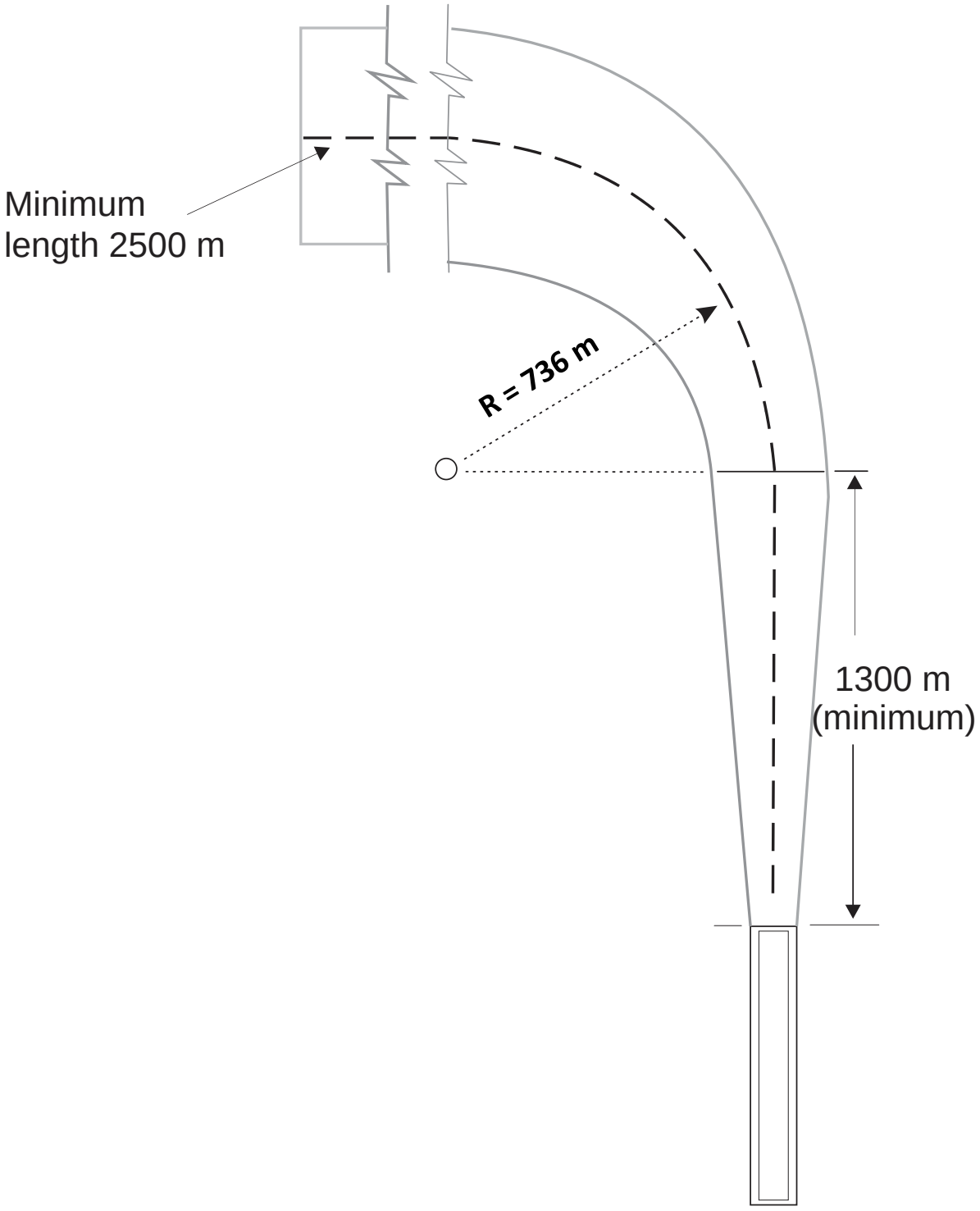
<u>APPENDIX 1</u> — Figure 1 – Obstacle Limitation Surface



APPENDIX 1 — Figure 2 – Curved Take-Off Climb/Approach Surface



APPENDIX 2 — REFERENCES

REFERENCES

1) Annex 14 — Aerodromes, Volume I — Aerodrome Design and Operations

2) Air Safety Support International, Overseas Territories Aviation Requirements, Part 139 – Certification of Aerodromes, Subpart F – Water aerodromes

3) FAA Advisory Circular, AC No. 150/5395-1B – Seaplane Bases

4) Supplementary Information Relating to the Report on Requirements for a Safety Case pertaining to Air and Water Operations in Victoria Harbour, QualaTech Aero Consulting Ltd., 20 September 2010.

—END—

PROPOSED AMENDMENT
TO
TERMS OF REFERENCE (TOR) OF THE SMALL WORKING GROUP TO DEVELOP GUIDANCE ON AERODROME OPERATIONS PERSONNEL COMPETENCY

Deliverable(s)

a) Draft Guidance Manual for Aerodrome Operations Personnel Competency.

Scope of work

The following are the broad principles describing the scope of work:

a) Study/review the best practices available in the APAC Region and other Regions related to aerodrome Operations Personnel competency requirements;

b) develop description of the functions and competency requirements of the various key aerodrome operations personnel, including responsibilities;

c) formulate aerodrome operations personnel competency assessment areas, and training curriculum; and

d) be consistent with ICAO Annex 1, Doc 9774 and other requirements where applicable.

Composition

The Small Working Group would be composed of experts nominated by China, Macao China, Japan, Maldives, Malaysia, Singapore and ACI. Other APAC States and industry partners with/without experience in airport operational personnel competency requirements may also volunteer to join the Working Group. Additional membership could be invited from other regions if required.

Conduct of the work and schedule

The Working Group would complete its work ~~in two years' time frame~~ by 30 September 2019. The work would be carried out by means of electronic correspondence as far as practicable. Minimum amount of face to face meetings would be planned.

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Updated on 30 August 2018

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
Annex 14, Volume I	**Nepal** **Kathmandu International Airport**	**Runway/ taxiways**	**ICAO Mission of February 2008**	Provision of RESA in accordance with section 3.5 of ICAO Annex 14, Volume I.	RESA will be provided	Tribhuvan International airport/ CAAN	Estimated Implementation Date (Start of work): 06/08/2017 dated of completion 31/01/2019	U
				Insufficient runway strip, refer recommendations given in section 3.4 of Annex 14, Volume I.	Provide runway strip as per ICAO recommendations		Master Plan Review of TIA is in process from Intl. Consulting firm.	A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
	Maldives							
Annex 14, Volume I	**~~Male International Airport~~ Velana International Airport**	**Runway/ Taxiways**	**AGA Mission Report April 2008**	Insufficient runway strip.	Runway strip available	Maldives Airports Company Pvt. Ltd	~~Runway strip of 150m for both sides is available~~ ~~Apron is still within the runway strip.~~ ~~New master plan work is in progress, new runway construction on-going, estimated date of completion: December 2018.~~ ~~Exemption granted by the State to Aerodrome Operator till December 2018.~~ ~~Runway strip of 150m for both sides is available~~ Apron is still within the runway strip. New master plan work is in progress, new runway construction on-going, estimated date of completion: December 2018. Exemption granted by the State to Aerodrome Operator till December 2018.	U

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
				Provision of RESA in accordance with section 3.5 of ICAO Annex 14, Volume I.	RESA will be provided	Maldives Airports Company Pvt. Ltd	~~RESA available for RWY36 end- 240m~~ ~~RESA available for RWY18 end- 55m~~ ~~These figures have been published in the AIP~~ ~~Exemption granted by the State to Aerodrome Operator till December 2018.~~ RESA available for RWY36 end- 240m RESA available for RWY18 end- 90m Revision to declared distances have been published in the AIP Supplement 02/18 date of issue: 15 March 2018. Exemption granted by the State to Aerodrome Operator till December 2018. [CLOSED]	~~U~~

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
Annex 14 Volume I	**India** **Chennai International Airport**	**Runway**	**AGA mission January 2009**	RESA not provided in accordance with Para 3.5 of Annex 14, Volume I requirements;	RESA will be provided	AAI	~~December 2012~~ ~~RESA provided, however desired strength is yet to be provided.~~ RESA provided. [CLOSED]	~~U~~
				Runway strip is insufficient-300m strip width is not available for the full length of runway 07/25 in accordance with 3.4.3 of Annex 14, Volume I.	300m strip width for full length of runway 07/25 will be made available.	AAI	~~December 2013~~ ~~Action initiated~~ Work in progress. October 2019. Presently distance between RWY 25 Centerline to TWY 'A' is 123m and to provide RWY Strip of 150m, TWY 'B' will be straightened from intersection TWY 'C'.	A
Annex 14, Volume I	**Mumbai International Airport**	**Runway**	**AGA mission January 2009**	RESA not provided for R/W 09 and R/W 14 in accordance with Para 3.5 of ICAO Annex 14, Volume I;	RESA will be provided	MIAL	~~R/w 09 RESA provided~~ ~~R/w 14 June 2013~~ RESA provided. [CLOSED]	~~U~~

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
				Runway strip is insufficient-300m strip width is not available for the full length of runway 09/27 in accordance with 3.4.3 of Annex 14, Volume I	300m strip width for full length of runway 09/27 will be made available	MIAL	~~R/w 09/27- August 2013~~ ~~R/w 14/32- June 2013~~ 31 Dec 2020. Due to presence of slum in beginning of RWY 09/27 south – RWY strip 300m not available. Due to presence of slum of either side at beginning of RWY 14/32 – RWY strip 300m not available.	A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
Annex 14 Volume I	**Cambodia** **Siem Reap International Airport**	**Runway**	**AGA mission of March 2009**	RESA not provided as per Para 3.5 of Annex 14, Volume I. ;	RESA will be provided		~~RESA provided. RESA improvement plan under consideration to satisfy Para's 3.587 to 3.5.10 of Annex 14.~~ RESA provided at both ends of the Runway (runway 05/23) Dimension 90 m x 140 m [CLOSED]	~~U~~

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
Annex 14 Volume I	**Bangladesh** **Hazrat Shahjalal International Airport, Dhaka**	**Runway/ Taxiway**	**ICAO mission April 2009**	Runway strip width insufficient(300m strip not available for the full length of runway);	runway strip in accordance with Annex 14, volume I will be provided	CAABD	Runway strip width 300m available for the full length of runway (mitigation measures for storm water drain on the western side strip under process. No obstructions on graded area)	A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
Annex 14, Volume I	**Thailand** **Phuket International Airport**	**Runway**	**AGA mission of July 2009**	RESA to satisfy Section 3.5 of Annex 14, Volume I requirements;	RESA will be provided		~~Risk assessment study in process~~ ~~[DCA letter dated 9 April 2014)~~ The Runway End Safety Area will be provided at Phuket International Airport to satisfy Section 3.5 of Annex 14, Volume I requirements. The contractor procurement is in progress. The construction is expected to be completed in 2020.	U
				Runway strip width insufficient (300m runway strip for precision approach runways in accordance with Para 3.4.5 of Annex 14, Volume I;	300m runway strip width for full length of runway will be made available		~~Risk assessment study in process~~ ~~[DCA letter dated 9 April 2014)~~ Phuket International Airport has corrected the Air Navigation Deficiencies in AOP field by completing the risk assessment study regarding the runway strips deficiency, and DCA has already approved the risk assessment study since December 2014.	A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
Annex 14 Volume I	**Myanmar** **Yangon International Airport**	**Runway/ Taxiway**	**ICAO mission April 2010**	Runway shoulder higher than adjacent strip	Flush strip with adjacent runway shoulder	Department of Civil Aviation	~~October 2011~~ 30 Nov 2018 (Risk Assessment conducted by the operator on 21 May 2018)	A
				Provision of enhanced taxiway centre line marking in accordance with standard in Para 5.2.8.11 of Annex 14, Volume I.	enhanced taxiway markings will be provided		~~DCA SMGCS. The system will start in 2012has planned to implement~~ 20 November 2018	A
				Provision of RESA in accordance with Section 3.5 of Annex 14, Volume I requirements;	RESA will be provided		~~March 2011~~ 30 Dec. 2018 Risk Assessment conducted by the operator on 10 Aug 2018.)	A
				Provisions of shoulders for taxiways	taxiway shoulders will be provided		~~Beginning of 2012~~ 30 Nov. 2018	B
				Provision of road holding position signs at entrances to active runways	road holding position signs will be provided		~~October 2011~~ 30 Dec. 2018	A
		Bird Hazard		Establishment of a national bird committee in accordance with APANPIRG Conclusion 18/1.	Establish National Bird Committee		~~DCA will establish National Bird committee.~~ 31 March 2019 (Guideline for Wildlife Control is being developed and will be	B

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
							published on 30 Sep 2018)	
Annex 14, Volume I	**Mandalay Airport**	**Runway/ Taxiway**	**April 2010**	Provision of RESA in accordance with Section 3.5 of Annex 14, Volume I requirements;	RESA will be provided	Department of Civil Aviation	~~Oct 2011~~ 31 Dec 2019 (Risk Assessment is being conducted by the operator)	A
				~~Provision of enhanced taxiway centre line marking in accordance with standard in Para 5.2.8.11 of Annex 14, Volume I.~~	~~enhanced taxiway markings will be provided~~		~~DCA is reviewing the requirement for taxiway enhanced centerline marking~~ Completed on 13 April 2018 CLOSED	A
				~~Provision of road holding position signs at entrances to active runways.~~	~~road holding position signs will be provided.~~		~~Oct 2011~~ Completed on 7 Aug 2018	A
Annex 14 Vol. I Amendment 6 ***§ 10.1*** ***§ 10.2***				~~A maintenance programme should be established to maintain facilities in a condition which does not impair safety of air navigation.~~	~~DCA establishes and implements producers to aerodrome operators meet national requirements for maintenance programme.~~		~~End of 2011~~ A maintenance programme for Electrical & Visual Aids completed on 01 Dec 2016 and for Pavement on 01-Jan2017. CLOSED	A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
	Fiji Islands							
Annex 14 Volume I	**Nadi International Airport**	**Runway/ Taxiway**	**ICAO mission June 2010**	Provision of RESA in accordance with Section 3.5 of Annex 14, Volume I requirements;	RESA will be provided		ACTION TAKEN (PARTIALLY COMPLETED):- RESA provided for the runway ends:- RWY 09 – 90mx90m (compliant) RWY 20 - 90mx90m (compliant) RWY 02 – 30m x 90m (limited due to the Localizer aerial) RWY 27 – nil (limited due to sea located at the end of the strip area) Information published in the State AIP ~~For the non-compliant RWY 02 and RWY 27, a Safety Case is being developed by the Aerodrome Operator requesting issuance of an Exemption until RESA is able to be provided.~~ ~~**Target date 4th Quarter 2025**~~ For the non-compliant RWY 02 and RWY 27, a safety case has been presented by the Aerodrome Operator for issue of an Exemption until RESA is able to be provided in 2020. **Target date - 2020**	A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
				~~Establishment of a national bird committee in accordance with APANPIRG Conclusion 18/1.~~	~~Established National Bird Committee~~		~~ACTION TAKEN (PARTIALLY COMPLETED): Wildlife Committees (membership includes Aerodrome Operators, CAA, Airline representatives and other industry stakeholders) have been established for each the two International Airports and meet on a monthly basis.~~ ~~A National Wildlife Committee which will bring together both committees will be established before the end of 2017.~~ **~~Target date 4th Quarter 2017~~** **Wildlife Committees established for both international airports.** **Membership includes aerodrome operators, CAA Fiji, airline representatives and other industry stakeholders** [CLOSED]	~~B~~

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
Annex 14 Volume I	**Nausori International Airport**	**Runway/ Taxiway**	**June 2010**	Provision of RESA in accordance with Section 3.5 of Annex 14, Volume I requirements.	RESA will be provided		ACTION TAKEN (PARTIALLY COMPLETED): RESA provided for runway ends:- RWY 10 – 30mx30m (limited due to airport boundary) RWY 28 - nil (limited due to public road) Information published in the State AIP ~~A Safety Case is being developed by the Aerodrome Operator requesting issuance of an Exemption until RESA is able to be provided. Land has been acquired and work is due to commence 4th quarter 2017.~~ ~~**Target date 4th Quarter 2018**~~ **A safety case has been presented by the Aerodrome Operator for issue of an Exemption until RESA is able to be provided in 2020.** **Target date - 2020**	A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
	Sri Lanka							
Annex 14 Volume I	**Bandaranaike International Airport**	**Runway/ Taxiway**	**ICAO mission April 2010**	Provision of 300m strip width for the full length of precision approach CAT I runway in accordance with the standard 3.4.3, Annex 14, Volume I; remove obstacles from runway strip; flush the strip with the adjacent runway shoulder	runway strip in accordance with Annex 14, volume I will be provided, obstacles from strip will be removed and and flush strip with adjacent runway shoulder	CAASL	~~Safety study for the deficiency will be completed and submitted by August 2017.~~ AASL has informed that the Runway Safety Team – BIA will carry out the safety study and submit the report by June 2018 Preliminary Report of the Safety Study of AASL was reviewed in April 2018	A
				Provision of runway hold position lights in accordance with Para 5.3.19 of ICAO Annex 14, Volume I	runway hold position lights will be provided		~~The stop bars will be provided in association with SMGCS at all A,B,C,D & E TWYs. The location will be 120m from RWY centre line for TWY A & E whereas 90m for TWY B,C & D. The target date of operation is JULY 2017.~~ Runway Holding Position Stop Bar Lights have been installed with effect from 31/07/2017 and after the provision of training to ATCOs the operations of these lights have been commissioned with the issuance of the applicable SOP dated 02nd April 2018. [CLOSED]	~~A~~

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
				Establishment of a national bird committee in accordance with APANPIRG Conclusion 18/1.	National Bird Committee will be established		~~TOR for National Bird committee is being drafted. The committee will be convened by August 2017.~~ 1st Draft of TOR of National Bird Control Committee of Sri Lanka has been compiled and ready for ratification.	A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
	Viet Nam							
Annex 14 Volume I	**Noi Bai International Airport, Hanoi**	**Bird Hazard**	**ICAO mission March 2010**	Wildlife strike report submission to ICAO for inclusion in IBIS.	Submission of wildlife strike reports to ICAO for inclusion in IBIS.		Quarter I, 2018 Airport Corporation of Viet Nam (ACV) annually reports to CAAV about wildlife strike, bird information as well as measures to control incidents from birds according to Regulation 399/CHK issued by CAAV about safety report. CAAV is developing data base and is preparing report submission to ICAO for inclusion in IBIS.	B
Annex 14, Volume I	**Tan Son Nhat International Airport, Ho Chi Minh City**	**Runway/ Taxiway**	**March 2010**	Provision of RESA in accordance with Section 3.5 of Annex 14, Volume I requirements;	Provide RESA		December 2018 At present, Tan Son Nhat Intl airport is re-designed for upgrading the runways and setting up the RESA.	A

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Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
				Wildlife strike report submission to ICAO for inclusion in IBIS.	Submission of wildlife strike reports to ICAO for inclusion in IBIS.		Quarter I, 2018 Airport Corporation of Viet Nam (ACV) annually reports to CAAV about wildlife strike, bird information as well as measures to control incidents from birds according to Regulation 399/CHK issued by CAAV about safety report. CAAV is developing data base and is preparing report submission to ICAO for inclusion in IBIS.	B

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
	Brunei Darussalam							
Annex 14 Volume I	**Brunei International Airport**	**Runway**	ICAO Mission of April 2011	vegetation along pavement edges and strip higher than the adjacent runway pavement; uneven earth mounds on strip				A
				faded centre line and other markings;				A
		Taxiway		non provision of enhanced taxiway centre line marking in accordance with Para 5.2.8 of Annex 14, Volume I				A
				Objects on taxiway strips; vegetation on pavement joints and maintenance of joints				A
		Apron		non provision of ICAO compliant signage in accordance with section 5.4 Annex 14, Volume I				A
		Rescue and Fire Fighting (RFF):		non provision of direct access for the rescue and fire fighting vehicles from the fire station into the runway;				A
				non provision of road holding position sign at all road entrances to a runway; and				A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
		Wildlife Hazards:		Establishing a national bird control committee in accordance with APANPIRG Conclusion 18/1;				B

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
Annex 14 Volume I	**Lao PDR** **Wattay International Airport**	**Runway**	**ICAO Mission of March 2011**	Non provision of RESA in accordance with section 3.5 of Annex 14, Volume I rubber deposits and faded centre line markings.				U A
		Taxiway		Provision of runway hold position lights in accordance with Para 5.3.19 of ICAO Annex 14, Volume I Provision of enhanced taxiway centre line marking in accordance with Para 5.2.8 of Annex 14, Volume I				A
		Rescue and Fire Fighting (RFF):		Provision of road holding position sign at all road entrances to a runway;				A
		Wildlife Hazards:		Establishing a national bird control committee in accordance with APANPIRG conclusion 18/1.				B

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
	Luang Prabang International Airport	**Runway**		Provision of enhanced taxiway centre line marking in accordance with standard in Para 5.2.8.11 of Annex 14, Volume I				A
		Taxiway		Provision of runway hold position lights in accordance with Para 5.3.19 of ICAO Annex 14, Volume I on new taxiways	.			A
		Rescue and Fire Fighting (RFF)		Provision of road holding position sign at all road entrances to a runway				A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
Annex 14 Volume I	**Mongolia** **Ulaan Baatar International Airport**	**Runway**	**ICAO Mission of July 2011**	rubber deposits and faded centre line and other faded markings;				A
		Taxiway		Resealing cracks on pavement surface with sealants to prevent ingress of water and broken edges which could cause FOD issues.				A
				Provision of enhanced taxiway centre line marking in accordance with Para 5.2.8 of Annex 14, Volume I.				A
				faded taxiway markings				A
				Maintenance of pavement cracks				A
				provision of runway hold position lights in accordance with Para 5.3.19 of ICAO Annex 14, Volume I .				A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
				provision of taxiway hold position signs on all hangar taxiways at entrances to the active taxiways/runway.				A
		Apron		sealing the cracks on the apron surface				A
		Airfield signage		Provision of ICAO compliant signage in accordance with section 5.4 Annex 14, Volume I and to cut the vegetation in front of the signs.				A
		Wildlife Hazards		establishing a national bird control committee in accordance with APANPIRG conclusion 18/1; collect wildlife reports and forward to ICAO for inclusion in the ICAO IBIS;				B B

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
Annex 14 Volume I	**Tonga** **Fua'amotu International Airport**	**Runway Strip**	**ICAO Mission of Sept. 2015**	Insufficient Runway Strip				A
Annex 14 Volume I	**Solomon Islands** **Honiara International Airport/Henderson Field**	**Runway Strip**	**ICAO Mission of Oct. 2015**	Insufficient Runway Strip				A
		RESA		RESA at both ends of runway not provided				U
		Aerodrome Pavements		Lack of maintenance of aerodrome pavements in accordance with Annex 14, 10.2				U
Annex 14 Volume I	**Samoa** **Faleolo International Airport**	**Runway Strip**	**ICAO Mission of Oct. 2015**	Insufficient Runway Strip				A

AIR NAVIGATION DEFICIENCIES IN AOP FIELD IN THE ASIA/PACIFIC REGION

Identification		Deficiencies			Corrective Action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Target date of completion**	**Priority for action****
		Aerodrome Pavements		Lack of maintenance of aerodrome pavements in accordance with Annex 14, 10.2				U

* Priority for action to remedy the shortcoming is based on the following safety assessments:

"U" priority = Urgent requirements having a direct impact on safety and requiring immediate corrective actions. Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

"A" priority = Top priority requirements necessary for air navigation safety. Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

"B" priority = Intermediate requirements necessary for air navigation regularity and efficiency. Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

Appendix F

Wildlife Hazard Management Working Group (WHM SWG)

TERMS OF REFERENCE

Objective:

To assist States to establish a National Wildlife Strike Hazard Management Committee and a National Wildlife strike hazard reduction programme.

Scope of works:

To meet the above objectives the Working Group shall carry out the following tasks:

1) Develop a model TOR for National Wildlife Strike Control Committee;
2) Monitor the establishment of a Wildlife Strike Control Committee by the States.
3) Assist in conducting workshop/seminar on Global and Regional Guidance on WHM;
4) Develop Asia Pacific Regional Guidance on implementation of wildlife strike hazard reduction programme;
5) Share the best practices on the measures adopted by member States/Administrations to prevent wildlife strike hazards at or in the vicinity of aerodromes;
6) Develop a performance measurement metrics to evaluate the effectiveness of the implementation of a wildlife strike hazard reduction programme by the aerodrome operator; and
7) Be consistent with ICAO Annex 14, Volume I – Aerodrome Design and Operations, Doc 9137 Airport Services Manual, Part 3 – Wildlife Control and Reduction, and other requirements where applicable.

Composition:

The Working Group would be composed of subject matter experts nominated by APAC States / Administrations and International Organization satisfying the criteria:

(1) Minimum 3 years of work experience in CAA Aerodrome Regulatory Department or in International Organizations or Aerodrome Operations at international airports in wildlife hazard management field;
(2) Familiar with Annex 14 and related guidance materials; and
(3) The nominated expert will continue to be a member for a minimum of three consecutive years.

States in other ICAO regions and industry partners with experience in wildlife hazard management may also be invited to participate in the Working Group.

Conduct of the work and timeframe:

As far as practicable, the work would be carried out through electronic correspondences and web-conferences. Minimum face-to-face meetings would be planned.

Time frame:

The Working Group would complete its work by September 2021.

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Appendix G

Asia/Pacific Aerodrome Assistance Working Group (AP-AA WG)

TERMS OF REFERENCE

Objective:

The main objective of the establishment of AP-AA WG is to realize the commitment of the "Beijing Declaration" - to certify all aerodromes used for international operations by 2020, fulfil the objectives of the AOP/SG to address identified AOP deficiencies listed in APANPIRG database for their resolution and to improve the AGA EI resulting from USOAP CMA activities.

Scope of works:

To meet the above objective the AP-AA WG shall carry out the following tasks:

(1) Conduct a survey on States with low AGA EI and/or air navigation deficiencies to establish the requirements for assistance;

(2) Review the air navigation deficiencies in the field of AOP (as listed in the APANPIRG air navigation deficiencies database) and assist the concerned State(s) to develop corrective action plans;

(3) Assist States with low AGA EI to establish an aerodrome certification process including developing specific operating regulations, training programme and training plan, guidance material for all technical areas, aerodrome inspector handbook with checklists, procedures for accepting non compliances, and surveillance programme; and

(4) Assist in conducting seminars/workshops/trainings for the aerodrome regulatory and aerodrome operator staff in APAC region; provide experts to deliver presentations at the seminars/workshops in aerodrome certification, implementation of SMS and other technical areas such as aerodrome emergency planning, runway safety, etc.

Composition: The AP-AA WG would be composed of subject matter experts nominated by APAC States/Administrations and International Organizations, familiar with Annex 14 and its guidance materials and in particular on aerodrome certification procedures and ICAO USOAP CMA.

Working Methods: As far as practicable, the work should be carried out through electronic correspondences and web-conferences. Minimum face-to-face meetings would be planned. The AP-AA WG may be assembled on need basis to assist States. Onsite assistance may be provided to States, if required, on cost-recovery basis. The ICAO APAC Office would do necessary coordination.

Time frame: The AP-AA WG would be established initially for three years (until 30 September 2021).

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Appendix H

Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF)

TERMS OF REFERENCE

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 ATM 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;
- measurement and reporting of the 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, Seamless ATM 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. 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 be three years (until September 2021).