



ICAO

Thirty First Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/31)

Video Teleconference - Bangkok, Thailand, 14 to 16 December 2020

Schedule: 10:00 – 13:15 Bangkok Time [UTC+7hrs]

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

3.1: AOP

REPORT ON THE FOURTH MEETING OF AOP SUB GROUP

(Presented by Chairperson of AOP/SG)

SUMMARY

This paper presents the outcomes of the Fourth Meeting of the APANPIRG Aerodrome Operations and Planning Sub Group (AOP/SG/4, Video Teleconference, 10 – 13 November 2020) for review by APANPIRG/31.

Strategic Objectives:

- A: **Safety** – Enhance global civil aviation safety*
- B: **Air Navigation Capacity and Efficiency** — Increase the capacity and improve the efficiency of the global aviation system*
- E: **Environmental Protection** — minimize the adverse environment effects of civil aviation activities.*

Action by the Meeting is in paragraph 3.

1. INTRODUCTION

1.1 The Fourth Meeting of the APANPIRG Aerodrome Operations and Planning Sub Group (AOP/SG/4) was held from 10 to 13 November 2020 as a video teleconference.

1.2 The meeting was attended by 123 participants from 20 States, 1 Special Administration Region of China and 6 International Organizations.

1.3 A total of 25 Working Papers, 15 Information Papers and 1 Presentation covering 9 Agenda Items were considered by AOP/SG/4.

1.4 Based on the outcomes of discussions on various Agenda Items, the meeting adopted 4 Conclusions and 3 Decisions that were of a purely technical or operational nature. In addition, AOP/SG/4 formulated 7 Draft Conclusions and 1 Draft Decision for consideration by APANPIRG/31.

1.5 The full report of AOP/SG/4 is available at the following URL:
<https://www.icao.int/APAC/Meetings/Pages/2020-AOP-SG4.aspx>

1.6 Appendices used in this Working Paper carry the same Appendix numbers as those in the Report of AOP/SG/4 for easy reference.

2. DISCUSSION

2.1 **Attachment A** to this Paper provides a Summary Report of AOP/SG/4 for review by APANPIRG/31. Some important discussions of AOP/SG/4 are summarized in the ensuing paragraphs.

Asia/Pacific Air Navigation Plans (WP/05)

2.2 Recognizing that many aerodromes used for international operations or aerodromes under construction or planned for international operations in Asia/Pacific Region were not included in APAC ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1, and considering that information included in Tables AOP I-1 and Table AOP II-1 were accurate and current for regional planning of the other air navigation services, AOP/SG/4 recalled the following Conclusion adopted in AOP/SG/3 (Bangkok, Thailand, 24-26 June 2019):

Conclusion AOP/SG/3-1: Proposal for Amendment of Asia/Pacific ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1

That,

Many aerodromes used for international operations or aerodromes under construction or planned for international operations in Asia/Pacific Region were not included in APAC ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1. It is also important that information included in Tables AOP I-1 and Table AOP II-1 are accurate and current for regional planning of the other air navigation services.

States are urged to:

- a) review the aerodromes listed in **APAC ANP Volume I, Table AOP I-1**;
- b) review the **ANP Volume II, Table AOP II-1** for the list of facilities and services to be provided by the State concerned at each aerodrome that is listed in **Table AOP I-1**;
- c) initiate and send to ICAO APAC Office proposals for amendment of **APAC ANP Volume I, Table AOP I-1** and **ANP Volume II, Table AOP II-1** in accordance with the template provided in **Appendix A** to the AOP/SG/3 Report, if their international aerodromes are not listed in **Table AOP I-1** or require any amendments to update the information provided in **Tables AOP I-1 and AOP II-1**.

2.3 AOP/SG/4 also noted that, subsequent to AOP/SG/3, the ICAO APAC Office had processed proposals for amendments of APAC ANP Volumes I and II from Bangladesh, Indonesia, Lao PDR, Malaysia, Maldives, Myanmar, Nepal, Philippines, Thailand, Timor-Leste and Viet Nam. The total aerodromes listed in APAC ANP Volume I as of October 2020 were 239.

2.4 AOP/SG/4 urged States to take note of **Conclusion AOP/SG/3-1**, and initiate and send proposals for amendment of APAC ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1, as necessary.

Report on the Fifth Meeting of the Asia Pacific Airport Collaborative Decision Making Task Force (APA-CDM/TF/5) (WP/07)

APA-CDM/TF Terms of Reference and Deliverables (WP/08)

2.5 AOP/SG/4 noted that the APA-CDM/TF/5 Meeting reviewed the APA-CDM/TF Terms of Reference (ToR), which was amended by APANPIRG/30 (Bangkok, Thailand, 4 to 6

November 2019) through **Decision APANPIRG/30/3**, subsequent to an amendment proposal formulated by APA-CDM/TF/4 (Bangkok, Thailand, 22 to 26 April 2019) and endorsed by AOP/SG/3 (Bangkok, Thailand, 24 to 26 June 2019) to align the ToR with the APAC Seamless ANS Plan Version 3.0, 2019 approved by APANPIRG/30 and agreed the following Draft Decision. AOP/SG/4 endorsed the Draft Decision for the consideration of APANPIRG/31.

Draft Decision AOP/SG/4-1 (APA-CDM/TF/5–1): Proposal for Amendment of APA-CDM/TF TOR			
What: That, the Terms of Reference (TOR) of Asia/Pacific Airport Collaborative Decision Making Task Force (APA-CDM/TF) be amended as in Appendix A to the Report of AOP/SG/4.		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why: To align the TOR with the APAC Seamless ANS Plan Version 3.0.		Follow-up:	☐ Required from States
When: 16-Dec-20		Status:	Draft to be adopted by PIRG
Who: ☒ Sub groups ☐ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:			

Report of the Fourth Meeting of the Aerodrome Operational Personnel Competency Small Working Group (AOPC/SWG/4) (WP/08)

2.6 The AOPC/SWG/4 Meeting (Yangon, Myanmar, 10 – 14 February 2020) reviewed the latest draft Asia/Pacific Regional Guidance on Aerodrome Operations Personnel Competency Requirement Framework presented at the Meeting. Consolidating the AOPC Matrices developed under WP/02, the AOPC/SWG/4 Meeting updated the Draft Asia/Pacific Regional Guidance on AOPC Requirement Framework.

2.7 With the finalized draft, the AOPC/SWG/4 Meeting formulated and AOP/SG/4 adopted the following Conclusion.

Conclusion AOP/SG/4-2 (AOPC SWG/4–1): Asia/Pacific Regional Guidance on Aerodrome Operations Personnel Competency Requirement Framework			
What: That, the Asia/Pacific Regional Guidance on Aerodrome Operations Personnel Competency Requirement Framework provided in Appendix B to the AOP/SG/4 Report be adopted and published on the ICAO APAC website.		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why: To provide regional guidance on aerodrome operations personnel competency requirement framework.		Follow-up:	☐ Required from States
When: 13 Nov 2020		Status:	Adopted by Subgroup
Who: ☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:			

2.8 With the progress made during the AOPC/SWG/4 Meeting, it was determined that all tasks assigned to AOPC/SWG had been completed. AOP/SG/4 adopted the following Decision formulated by AOPC/SWG/4:

Decision AOP/SG/4-3 (AOPC SWG/4-2): Dissolution of Aerodrome Operations Personnel Competency Small Working Group			
What:	That, the Aerodrome Operations Personnel Competency Small Working Group (AOPC/SWG), having completed all tasks as per its TOR, be dissolved.	Expected impact:	☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why:	All tasks as per TOR completed	Follow-up:	☐ Required from States
When:	13 Nov 2020	Status:	Adopted by Subgroup
Who:	☒ Sub groups ☐ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:		

Report on the Second Meeting of the Asia/Pacific Wildlife Hazard Management Working Group (AP-WHM WG/2) (WP/09)

Submission of Wildlife Strike Reports to ICAO (AP/WHM/WG/2-WP/02)

2.9 In order to better facilitate occurrence reporting and data analysis, as announced in ICAO EB 2017/25, ICAO had replaced the old IBIS computer application with a new reporting system based on the European Co-ordination Centre for Accident and Incident Reporting Systems (ECCAIRS) platform. A User Manual and Software Installation Manual of ECCAIRS is available at <http://www.icao.int/ibis> for States interested in the platform.

2.10 States were requested to submit the wildlife strike reports either through ECCAIRS.e5f files, or through an ECCAIRS Excel-based form that could be downloaded at <http://www.icao.int/ibis>. The files should be sent to the following email addresses:

wildlife@icao.int, icaohq@icao.int, aoi@icao.int, and iaa@icao.int

2.11 The Chairperson of AP-WHM/WG highlighted the importance for States to submit wildlife strike reports in one of the specified formats, so as to facilitate the data processing and analysis by ICAO HQ. To further enhance wildlife strike reporting by States, AOP/SG/4 endorsed the following Draft Conclusion formulated by AP-WHM/WG/2 for adoption by APANPIRG/31:

Draft Conclusion AOP/SG/4-4 (AP-WHM WG/2-1): Submission of Wildlife Strike Reports			
What:	That, States are requested to submit wildlife strike reports to ICAO in the format of either ECCAIRS.e5f files or the standard ICAO ECCAIRS Excel-based form available at http://www.icao.int/ibis .	Expected impact:	☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why:	To facilitate wildlife strike occurrence reporting and data analysis	Follow-up:	☒ Required from States

When:	16-Dec-20	Status:	Draft to be adopted by PIRG
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other: Nil		

Challenges in Wildlife Hazard Management for Aerodrome Operators in Asia-Pacific (AP/WHM/WG/2-WP/03)

2.12 Presented by ACI, WP/03 delivered the major challenges in wildlife hazard management that aerodrome operators in Asia-Pacific are facing and suggested a way forward to continue to meet these challenges.

2.13 The challenges covered in the WP included the lack of wildlife hazard management plan, the lack of resources and training and the lack of a positive safety culture and communication. Way forward suggested in the WP included the continuation of joint ICAO/ACI seminars and symposiums, continuation of promotion of a positive safety culture, promotion of online training and continuation of cooperation in APEX in Safety.

2.14 The AP-WHM/WG/2 Meeting noted that there were a number of wildlife hazard management courses available but some aerodromes still faced the problem of staff competency in their wildlife hazard management unit. It was agreed that the issue could be caused by insufficient awareness among aerodrome senior management, thus resulting in the lack of resources in the area.

2.15 With reference to AP-WHM/WG/2 WP/03 and the discussion by the Meeting, AOP/SG/4 endorsed the following Draft Conclusions formulated by AP-WHM/WG/2 for adoption by APANPIRG/31:

Draft Conclusion AOP/SG/4-5 (AP-WHM WG/2-2): Wildlife Hazard Management Training			
What:	That, States recognise the prioritised need for competent and trained personnel in aerodrome wildlife hazard management at regulatory and aerodrome operation levels.	Expected impact:	☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why:	To reduce the risk associated to wildlife activities by the provision of competent wildlife hazard management personnel at aerodromes.	Follow-up:	☒ Required from States
When:	16-Dec-20	Status:	Draft to be adopted by PIRG
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other: Nil		

Draft Conclusion AOP/SG/4-6 (AP-WHM WG/2-3): Promotion of a Positive Safety Culture			
What:	That, - States are encouraged to promote a positive safety culture in wildlife hazard management at regulatory and aerodrome operation levels; and - Reporting culture be considered in implementing aerodrome wildlife hazard management programmes.	Expected impact:	☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical

Why:	To enhance reporting on wildlife	Follow-up:	☒ Required from States
When:	16-Dec-20	Status:	Draft to be adopted by PIRG
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other: Nil		

Report of the First Joint Meeting of the Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF/1) and Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG/1) and the Second Meeting of Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG/2) (WP/10)

AP-AA/WG/2

Generic Documents for Aerodrome Certification

2.16 AOP/SG/4 noted that AP-AA/WG/2 developed a generic aerodrome certification procedure manual, a draft generic aerodrome inspector handbook, generic procedures for accepting non-compliance and a draft generic aerodrome manual. The AP-AA/WG/2 Meeting agreed that it would be beneficial to publish the generic documents, either finalized or in a draft state, on the ICAO APAC Office website for reference or advance information by APAC States which have been working on the certification of aerodromes for international operations. Efforts would be endeavoured to finalize the generic documents at the earliest opportunity. AOP/SG/4 adopted the following Decision formulated by AP-AA/WG/2:

Decision AOP/SG/4-7 (AP-AA/WG/2-1): Generic Documents related to Aerodrome Certification			
What:	That,	Expected impact:	
a)	the generic documents in Appendix C (Generic Aerodrome Certification Procedure) and Appendix E (Generic Procedures for Accepting Non-Compliances in Aerodromes) to the AOP/SG/4 Report be made available on the ICAO APAC Office Website for the reference by States in the APAC Region; and	☐ Political / Global	
b)	the draft generic documents in Appendix D (Draft Generic Aerodrome Inspector Handbook) and Appendix F (Draft Generic Aerodrome Manual) to AOP/SG/4 Report be made available on the ICAO APAC Office Website for the advance information by States in the APAC Regions.	☐ Inter-regional	
		☐ Economic	
		☐ Environmental	
		☒ Ops/Technical	
Why:	To provide guidance to States which have yet to complete the aerodrome certification process.	Follow-up:	☐ Required from States
When:	13-Nov-20	Status:	Adopted by Subgroup
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:		

Survey Questionnaire for APAC States with Low AGA EI (AP-AA/WG/2 WP/08)

2.17 Presented by India, WP/08 introduced a survey questionnaire for States in APAC Region with low AGA EI score (i.e. below 61%) and/or air navigation deficiencies and to establish the requirements for assistance in enhancing the EI scores of these States.

2.18 The AP-AA/WG/2 Meeting noted that the revised safety target set in the ICAO Global Aviation Safety Plan 2020-2022 stated that all States should improve their score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system to reach at least 75% by 2022.

2.19 In view of the above, the target audience of this survey questionnaire would be amended to include APAC States which (1) have not completed the certification of aerodromes used for international operations, (2) have AGA EI below 75%, and/or (3) are identified with AOP air navigation deficiencies, through the proposed amendment to the Terms of Reference of AP-AA/WG, as detailed in paragraph 5.

2.20 Noting that the AP-AA/WG/2 Meeting amended the survey questionnaire, AOP/SG/4 adopted the following Conclusion formulated by AP-AA/WG/2:

Conclusion AOP/SG/4-8 (AP-AA/WG/2-2): Survey Questionnaire for Aerodrome Assistance in APAC States			
What:	That, the survey questionnaire in Appendix G to AOP/SG/4 Report be circulated to States to identify the need of aerodrome assistance among States in the APAC Regions.	Expected impact:	☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why:	To identify the need of aerodrome assistance among States in the APAC Regions	Follow-up:	☒ Required from States
When:	13-Nov-20	Status:	Adopted by Subgroup
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☒ Other: AP-AA/WG		

Amendment of Terms of Reference of AP-AA/WG

2.21 AOP/SG/4 noted that the Terms of Reference (TOR) of AP-AA/WG was reviewed during the AP-AA/WG/2 Meeting.

2.22 The safety target set in the ICAO Global Aviation Safety Plan 2020-2022 stated that all States should improve their score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system to reach at least 75% by 2022.

2.23 It was also recommended that, besides the ICAO APAC Office, COSCAPs could also support the implementation of the AP-AA/WG tasks.

2.24 In view of the above, AOP/SG/4 adopted the following Decision drafted by AP-AA/WG/2:

Decision AOP/SG/4-9 (AP-AA/WG/2–3): Proposal for Amendment to TOR of Asia/Pacific Aerodrome Assistance Working Group			
What:		That, the AP-AA/WG/2 Meeting agreed to propose an amendment to the TOR of AP-AA/WG as placed in Appendix H to AOP/SG/4 Report.	
		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why:		To align the TOR with the GASP 2020-2022 target on USOAP EI	
		Follow-up: ☐ Required from States	
When:		13-Nov-20	
		Status: Adopted by Subgroup	
Who:		☒ Sub groups ☐ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☒ Other: AP-AA/WG	

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

Certification of Aerodromes

2.25 AOP/SG/4 noted that there were **239** international aerodromes listed in Asia/Pacific Region ANP Volume I as of October 2020. However, the number of international aerodromes used for international operations in Asia/Pacific Region has increased and reached to approximately **342** based on information gathered from Doc 7910 (Location Indicator), States' Aeronautical Information Publications (AIPs), CAA / Airport Websites, flight tracking data and ICAO Missions.

2.26 AOP/SG/4 reviewed the list of aerodromes used for international operations in APAC region that have yet to be certified, which was prepared based on information collected from APAC States through survey questionnaire, ICAO/COSCAPs missions including ICAO USOAP audit and ICAO, and flight tracking data, and placed in **Appendix I** to the AOP/SG/4 Report.

2.27 AOP/SG/4 noted that approximately 42 aerodromes (i.e. 12 %) out of 342 aerodromes used for international operations in Asia and Pacific Regions were yet to be certified.

Note:- On 26 November 2020, Bangladesh confirmed in writing that Sylhet Airport / VGSY had been certified. This brought down the number from 42 to 41.

2.28 The status of certified aerodromes in different Sub Regions of Asia/Pacific Region is illustrated in the Table 1 below:

Aerodromes	North Asia (5 States & 2 SARs)	South East Asia (11 States)	South Asia (8 States)	Pacific (15 States & 8 OTs)
Total Number of Int'l Aerodromes	134	98	52	58

Aerodromes	North Asia (5 States & 2 SARs)	South East Asia (11 States)	South Asia (8 States)	Pacific (15 States & 8 OTs)
Number of Certified Int'l Aerodromes	127	81	42 43	50
Number of Int'l Aerodromes yet to be certified	7	17	10 9	8
States with Int'l Aerodromes yet to be certified (number and percentage of aerodromes yet to be certified)	1) China (3, 3%) 2) Japan (4, 12%)	1) Brunei Darussalam (1, 100%), 2) Lao PDR (4, 100%) 3) Malaysia (2, 11%) 4) Philippines (3, 33%) 5) Thailand (5, 45%), 6) Timor-Leste (2, 100%)	1) Afghanistan (4, 100%) ~~2) Bangladesh (1, 33%)~~ 3) India (5, 19%)	1) Kiribati (2, 100%) 2) Micronesia (Federal States of) (4, 100%), 3) Nauru (1, 100%), 4) Tuvalu (1, 100%)

Table 1 - Status of certified aerodromes used for international operations in
Sub Regions of Asia/Pacific Region

2.29 AOP/SG/4 also noted that some States had certified their aerodromes without full compliance with ICAO requirements on aerodrome certification process and recommended to recertify their aerodromes in full compliance with those ICAO requirements.

2.30 AOP/SG/4 noted that the 2020 target for the commitment related to aerodrome certification made in *Beijing Declaration* was determined by the *Asia Pacific Ministerial Conference on Civil Aviation* (Beijing, China, 31 January to 1 February 2018). Therefore, ICAO APAC Office would not be in a position to alter this target.

Status of Certification of Aerodromes in AIP

2.31 AOP/SG/4 further noted a number of States / Administrations that have yet to publish the status of certification of aerodromes in AIP AD 1.5. A summary is available in Table 2 below:

States	North Asia (5 States & 2 SARs)	South East Asia (11 States)	South Asia (8 States)	Pacific (15 States & 8 OTs)
No aerodromes listed in AD 1.5/ AD 1.5 missing in AIP	--	1) Brunei Darussalam 2) Lao PDR 3) Philippines 4) Timor Leste	1) Afghanistan	1) American Samoa (US) 2) Cook Is. 3) Guam (US) 4) Kiribati 5) Nauru 6) Niue (NZ) 7) N. Mariana Is. (US) 8) Samoa 9) Tonga 10) Tuvalu 11) Vanuatu
Some but not all aerodromes listed in AD 1.5	1) China 2) Japan	1) Malaysia ~~2) Thailand~~ 3) Viet Nam	1) India 2) Pakistan	--
Status listed but not under AD 1.5	--	--	--	1) Fiji 2) New Zealand
AIP cannot be located	--	--	--	1) Marshall Is. 2) Micronesia (Federated States of) 3) Palau 4) Solomon Is.
Total	2 States	7 ~~6~~ States	3 States	17 States / OTs

Table 2 – Status of AIP AD 1.5 in Sub Regions of Asia/Pacific Region

Note: On 7 December 2020, Thailand submitted evidence showing that its AIP AD 1.5 would contain all aerodromes used for international operations with effect from 31 December 2020.

2.32 AOP/SG/4 urged States and their aerodrome operators that have yet to certify aerodromes used for international operations to take an effective action on the 55th DGCA Action Item 55/42. In addition, AOP/SG/4 urged States to provide periodic updates on the progress of the certification of aerodromes and AIP AD 1.5 to the ICAO APAC Office.

Enhanced Global Reporting Format for Assessing and Reporting Runway Surface Conditions (GRF), Runway Safety Team (RST) and Runway Safety Go-Team (RSGT) (WP/14)

GRF

2.33 AOP/SG/4 noted that the SARPs and PANS related to GRF was originally set to become applicable on 5 November 2020. However, to alleviate the burden on Member States during, and in the aftermath of, the COVID-19 pandemic, as promulgated in State Letter Ref. AN 10/1.1,

AN 11/1.3.33, AN 11/6.3.32, AN 3/5.13, AN 4/1.2.29, AN 2/2.7, AN 13/2.1, AN 4/27 and AN 2/33-20/73 dated 30 July 2020, the Council, at the eighth meeting of its 220th Session held on 19 June 2020, adopted amendments on the postponement of the applicability date, from 5 November 2020 to 4 November 2021, for provisions related to GRF. The concerned Annexes and Procedures for Air Navigation Services (PANS) were:

- a) Annex 3 – *Meteorological Service for International Air Navigation*;
- b) Annex 6 – *Operation of Aircraft*, Part I – *International Commercial Air Transport – Aeroplanes* and Part II – *International General Aviation – Aeroplanes*;
- c) Annex 8 – *Airworthiness of Aircraft*;
- d) Annex 14 – *Aerodromes*, Volume I – *Aerodrome Design and Operations*;
- e) Annex 15 – *Aeronautical Information Services*;
- f) *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444);
- g) *Procedures for Air Navigation Services – Aerodromes* (PANS-Aerodromes, Doc 9881); and
- h) *Procedures for Air Navigation Services – Aeronautical Information Management* (PANS-AIM, Doc 10066).

GRF Implementation Action Plan Template

2.34 In order to assist States in tracking the implementation progress of GRF-related provisions, based on a template developed by COSCAP-SEA earlier, AOP/SG/4 noted that ICAO APAC Office prepared a GRF Implementation Action Plan Template. The template is available in **Appendix L to AOP/SG/4 Report**.

2.35 The template identified 15 action items and a number of action parties to facilitate States in their preparation for GRF implementation. Target dates for each action items have also been set, which States may take reference when determining their own implementation dates.

2.36 To maximize the benefits brought by the template, AOP/SG/4 endorsed the following Draft Conclusion for consideration by APANPIRG/31:

Draft Conclusion AOP/SG/4–10: GRF Implementation Action Plan Template			
What: That, a) The GRF Implementation Action Plan Template contained in Appendix L to AOP/SG/4 Report be uploaded to ICAO APAC Website for reference by States / Administrations; and b) States / Administrations are requested to make reference to the GRF Implementation Action Plan Template and submit their own action plans to ICAO APAC Office by 28 February 2021 .		Expected impact: ☐ Political / Global ☐ Inter-regional ☒ Economic ☐ Environmental ☒ Ops/Technical	
Why: To assist States in the implementation of GRF-related SARPs and PANS.		Follow-up:	☒ Required from States
When: 16-Dec-20		Status:	Draft to be adopted by PIRG
Who: ☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:			

RST

2.37 AOP/SG/4 noted that an aerodrome operator shall establish a Runway Safety Team (RST) comprised of relevant organizations operating or providing services on the aerodrome. The terms of reference and composition of the RST should be established and included in the aerodrome manual. Activities to be included in the terms of reference as well as the proposed composition of an RST were included in the Appendix to the Chapter 8 of Part II of PANS-Aerodromes (Doc 9981).

2.38 AOP/SG/4 also noted that ICAO has been maintaining a RST Survey to keep track of the establishment of RSTs at aerodromes used for international operations. The survey results and questionnaire were available at the following URL:

<https://www.icao.int/safety/RunwaySafety/Pages/Runway%20Safety%20Team%20Register.aspx>

2.39 Considering the importance of RST, AOP/SG/4 endorsed the following Draft Conclusion for consideration by APANPIRG/31:

Draft Conclusion AOP/SG/4–11: Runway Safety Team			
What: That, States/Administrations to urge operators of aerodromes used for international operations to:		Expected impact:	
a) establish runway safety teams (RSTs) in accordance with PANS-Aerodromes (Doc 9981) and ICAO RST Handbook; and		☐ Political / Global	
b) participate in the ICAO RST Survey to register their RSTs.		☐ Inter-regional	
		☒ Economic	
		☐ Environmental	
		☒ Ops/Technical	
Why:	To promote and keep track of the establishment of RSTs among aerodromes used for international operations to enhance runway safety.	Follow-up:	☒ Required from States
When:	16-Dec-20	Status:	Draft to be adopted by PIRG
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:		

Regional Guidance on Aeronautical Information Publication – AD 1.5 Status of Certification of Aerodromes (WP/15)

2.40 AOP/SG/4 recalled **Conclusion APANPIRG/30/4** which, inter alia, urged States that have not published the status of certification of aerodromes in State's AIP to publish the status as soon as possible in accordance with Annex 14 Vol I (para. 2.13.1), PANS-Aerodromes (para. 2.3.7) and Appendix 2 to PANS-AIM (Doc 10066); and agreed that if any States fails to publish the status of certification of aerodromes in State's AIP by December 2019 will be subject to being included on the APANPIRG AOP Air Navigation Deficiency list against ICAO Annex 14 para. 2.13.1 a), PANS-Aerodromes, para. 2.3.7 and Appendix 2 to PANS-AIM.

2.41 Since the adoption of the **Conclusion APANPIRG/30/4**, ICAO APAC Office received queries from a number of States requesting for clarification on the content to be published in AIP AD 1.5. As a result, a regional guidance on AIP AD 1.5 had been drafted to supplement the aforementioned ICAO provisions and provide detailed guidance to States / Administrations.

2.42 AOP/SG/4 noted that paragraph 3.4 of the draft regional guidance would only be incorporated after APANPIRG's adoption of **Draft Conclusion AOP/SG/4-14: Alternative Safety Oversight Framework for Military Aerodromes undertaking Limited Civil International Operations** (see discussion under WP/25 of AOP/SG/4) and ICAO HQ follow-up actions on the issue.

2.43 AOP/SG/4 adopted the following Conclusion:

Conclusion AOP/SG/4-12: Regional Guidance on Aeronautical Information Publication – AD 1.5 Status of Certification of Aerodromes			
What: That, the <i>Regional Guidance on Aeronautical Information Publication – AD 1.5 Status of Certification of Aerodromes</i> provided in Appendix M to AOP/SG/4 Report be adopted and published on the ICAO APAC website.		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why: AIP AD 1.5.	To provide regional guidance on	Follow-up:	☒ Required from States
When:	16-Dec-20	Status:	Adopted by Subgroup
Who: ☒ Sub groups ☒ APAC States ☒ CAO APAC RO ☐ CAO HQ ☐ Other:			

Alphanumeric Call Sign Initiative (WP/21)

2.44 AOP/SG/4 noted that the root cause for a significant number of airspace incidents, including Large Height Deviations (LHDs) and runway conflicts had been identified for many decades as radiotelephony call sign confusion, when a pilot incorrectly responds to an Air Traffic Control (ATC) instruction to another aircraft, or in some cases, when an air traffic controller provided an incorrect instruction to an aircraft with a similar call sign to that intended.

2.45 With the support of IATA, the Asia Pacific Alphanumeric Call Sign project had been agreed at ATM/SG/4 and endorsed at APANPIRG/27 through the following Conclusion:

Conclusion APANPIRG/27-15: Use of Alphanumeric Call Signs for Scheduled Airline Operations

That, ICAO conducts a Survey of Asia Pacific States to ascertain the status of capability to accept / process alphanumeric ATC call-signs for scheduled airline operations.

2.46 With regard to ATC 'loop error' LHD events, Japan had provided a detailed analysis to the Twenty-Fifth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/25, video teleconference, 27-30 October 2020) meeting regarding of these incidents were due to similar call signs.

2.47 In response to a query from ICAO, IATA clarified that its successful similar call sign initiative that had been implemented in the Middle East (MID) Region had not been able to progress in the Asia/Pacific (APAC) Region. AOP/SG/4 noted that one of the reasons for this had been the reluctance of aerodrome operators to implement change until an automated tool was available to accommodate alphanumeric call signs.

2.48 Noting the grave safety risks from such occurrences, AOP/SG/4 reviewed and endorsed the following Draft Conclusion formulated by RASMAG/25. ACI expressed its willingness to assist with the trial of alphanumeric call signs. The Draft Conclusion would then be reviewed by ATM/SG/8.

Draft Conclusion RASMAG/25-3: Alphanumeric Call Sign Initiative			
What: Noting: 1) the extreme safety risks associated with pilot-ATC miscommunication and the number of Category D (ATC Loop Error) Large Height Deviations (LHDs); 2) APANPIRG Conclusion 27/15. ATMSG Conclusions 5-5 and 5-6 regarding the Asia Pacific Alpha Numeric Call-Sign (ANCS) call sign project; and 3) alphanumeric call signs were a well-established call sign confusion mitigation, that: leading Air Navigation Service Providers (ANSPs) and aerodrome operators, in coordination with CANSO and ACI, were urged to consider a trial to identify and overcome any barriers for the implementation of alphanumeric call signs, with a view to developing a project for the Asia/Pacific (APAC) Region.		Expected impact: ☒ Political / Global ☐ Inter-regional ☒ Economic ☐ Environmental ☒ Ops/Technical	
Why: The Asia Pacific ANCS call-sign project had not been universally supported by aerodrome operators and ANSPs thus far.		Follow-up: ☐ Required from States	
When: 30-Oct-20		Status: Draft to be adopted by Subgroup	
Who: ☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other: RASG			

Runway with Holding Bays or Multiple Entrance Taxiways (WP/24)

2.49 Presented by China, this paper brought up two issues: (a) a figure in ICAO Aerodrome Design Manual, Part 2 did not tally with Annex 14, Volume I SARPs and the actual aircraft operation; and (b) the possibility of aircraft ground collision when a runway was equipped with holding bay or multiple entrance taxiways and when an aircraft was passing behind another aircraft holding short of runway.

2.50 India expressed that, in addition to the consideration raised in WP/24, jet blast effect should also be taken into account especially for scenarios where small aircraft were involved.

2.51 To further address the matters, AOP/SG/4 endorsed the following Draft Conclusion for the adoption of APANPIRG/31:

Draft Conclusion AOP/SG/4-13: Holding Bays and Multiple Entrance Taxiways		
What: That, the ICAO HQ be invited to consider to: a) Review Figure 2-2 of ICAO Aerodrome Design Manual (Doc 9157), Part 2 <i>Taxiways, Aprons and Holding Bays</i> to tally with SARPs of runway-holding position marking and actual aircraft operations; and b) Review the current SARPs in Annex 14, <i>Aerodromes – Volume I, Aerodrome Design and Operations</i> to cater for the design of multiple entrance taxiways.		Expected impact: ☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical

Why: To tally a figure in ICAO guidance material with the applicable SARPs and to enhance aircraft safety	Follow-up: ☐ Required from States
When: 16-Dec-20	Status: Draft to be adopted by PIRG
Who: ☒ Sub groups ☒ APAC States ☒ CAO APAC RO ☒ ICAO HQ ☐ Other:	

Alternative Safety Oversight Framework for Military Aerodromes Undertaking Limited Civil International Operations (WP/25)

2.52 In APAC Region, there were a number of military aerodromes designated as alternates for international flights or receiving international flights on a limited scale and / or ad hoc basis. Presented by Australia, this paper proposed a way forward for the safety oversight of those military aerodromes in Australia undertaking the aforementioned operations.

2.53 Instead of going through an aerodrome certification exercise, it was proposed Australian Civil Aviation Safety Authority (CASA) and the Defence Aviation Safety Authority (DASA) agree on an appropriate written framework to ensure there is effective safety oversight of those military aerodromes undertaking limited civil international operations. This was to be commensurate with the current and future expected level of international civil operations at said aerodromes.

2.54 Military aerodromes undertaking limited civil international operations would include those (1) designated as alternates for international flights; and (2) used for international operations on a limited scale and on an ad hoc basis. “Limited scale” would refer to a tiny and insignificant amount of flights when compared to the overall traffic volume of that State, the military aerodrome and a civil aerodrome used for international operations in that State. “Ad hoc” would refer to that the international flights are sporadic and irregular in nature.

2.55 The aerodromes in question would be required to comply with the ICAO SARPs, procedures, and other relevant guidance material as much as practicable. In addition, aerodrome users would be informed of this alternate safety framework at AIP AD 1.5.

2.56 AOP/SG/4 considered that the proposed alternative safety oversight framework for military aerodromes undertaking limited civil international operations in Australia might be a practical solution for other States, where the certification of such aerodromes by civil aviation authorities might prove difficult and, considering the limited presence of civil international flights, an alternative safety oversight framework could be adopted. As such, AOP/SG/4 endorsed the following Draft Conclusion for adoption by APANPIRG/31:

Draft Conclusion AOP/SG/4–14: Alternative Safety Oversight Framework for Military Aerodromes undertaking Limited Civil International Operations	
What: That, recognizing: (1) certain military aerodromes in States are undertaking limited civil international operations; (2) certification of such aerodromes by civil aviation authorities may prove difficult; and (3) an alternative safety oversight framework may be appropriate in consideration of the low level of civil international operations at such aerodromes; ICAO HQ is invited to consider establishing an alternative safety oversight framework in lieu of certification for such military aerodromes.	Expected impact: ☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical

Why: To provide an alternative safety oversight framework for military aerodromes undertaking limited civil international operations.	Follow-up: ☐ Required from States
When: 16-Dec-20	Status: Draft to be adopted by PIRG
Who: ☒ Sub groups ☒ APAC States ☒ CAO APAC RO ☒ ICAO HQ ☐ Other:	

Status of Air Navigation Deficiencies in AOP Field (WP/16)

2.57 AOP/SG/4 reviewed the list of Air Navigation Deficiencies noted by APANPIRG/30 in the AOP field. Brunei Darussalam, India, Mongolia, Myanmar, Nepal, Thailand and Viet Nam provided updates on the status of their Deficiencies.

2.58 In connection with **Conclusion APANPIRG/30/4: Certification of aerodromes used for international operations in Asia Pacific States**, the States / Administrations / aerodromes identified in **Appendix I** would be included in the APANPIRG AOP Deficiency List after review and endorsement by APANPIRG/31, with effect from 1 January 2021.

2.59 AOP/SG/4 received the following verbal updates from States:

States	Updates
Australia	AIP Australia had incorporated AD 1.5 since 5 November 2020, pointing readers to <i>En Route Supplement Australia</i> (ERSA) for the status of certification of aerodromes.
India	There had been difficulties in certifying military / joint-use aerodromes. India was looking forward to guidance from ICAO on the matter. (See Draft Conclusion AOP/SG/4-14 for details.)
Japan	On the military / joint-use aerodromes, Japan had been facing difficulties similar to India, and would like to have further guidance from ICAO.
Lao PDR	Updates would be provided to ICAO APAC Office after the meeting.
Nepal	Nepal reported the progress of the corrective action plans stated in the Air Navigation Deficiency List.
United States	The AIP issue for the US Territories would be examined by FAA.

2.60 The Secretariat reminded States / Administrations to provide written correspondences to ICAO APAC Office once updates became available. The updates would be incorporated to the Air Navigation Deficiency List to be presented to APANPIRG/31 if provided on time.

2.61 Australia provided written evidence to the Secretariat during the course of AOP/SG/4. The evidence was considered adequate and the proposed Air Navigation Deficiency entry under Australia was removed.

[Post-meeting notes 1: Philippines provided written evidence subsequent to AOP/SG/4 that Manila/RPLL had been certified. The evidence was considered adequate. As such, Manila/RPLL had been removed from the list of Deficiencies.]

[Post-meeting notes 2: Subsequent to AOP/SG/4, Bangladesh confirmed in writing that Sylhet Airport / VGSY had been certified. Therefore, VGSY was removed from the list of Deficiencies.]

2.62 The updated list of Deficiencies was placed in **Appendix N to AOP/SG/4 Report**.

2.63 AOP/SG/4 noted the note provided under Conclusion APANPIRG/29/27 and reproduced below:

Note: In case States provide satisfactory evidence to the APAC Office for the resolution of the deficiencies, the APAC Office in consultation with the Chair of respective Sub Group and subsequent approval from Chairman of APANPIRG may take action to remove the deficiency from APANPIRG open deficiency list.

2.64 Based on the previous communications with and participation in AOP/SG meetings from States / Administrations, ICAO APAC Office prepared a list of AOP Focal Points in **Appendix O to AOP/SG/4 Report**. The list would allow effective and efficient communications between States / Administrations and ICAO APAC Office on AOP matters, including but not limited to the resolution of Air Navigation Deficiencies in the AOP field.

2.65 AOP/SG/4 adopted the following Conclusion:

Conclusion AOP/SG/4–15: AOP Focal Points			
What: That, States / Administrations be urged to review and update contact details of AOP Focal Points, as contained in Appendix O to AOP/SG/4 Report , for the coordination of actions to resolve the APANPIRG Air Navigation Deficiencies in the AOP Field and for other AOP matters.		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why: To streamline the communications between States / Administrations and ICAO APAC Office on AOP matters		Follow-up:	☒ Required from States
When:	13-Nov-20	Status:	Adopted by Subgroup
Who:		☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:	

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

- a) discuss the Draft Conclusions and Draft Decision formulated by AOP/SG/4:
 - (i) **Draft Decision AOP/SG/4-1 (APA-CDM/TF/5-1):** Proposal for Amendment of APA-CDM/TF TOR;
 - (ii) **Draft Conclusion AOP/SG/4-4 (AP-WHM WG/2-1):** Submission of Wildlife Strike Reports;
 - (iii) **Draft Conclusion AOP/SG/4-5 (AP-WHM WG/2-2):** Wildlife Hazard Management Training;
 - (iv) **Draft Conclusion AOP/SG/4-6 (AP-WHM WG/2-3):** Promotion of a Positive Safety Culture;
 - (v) **Draft Conclusion AOP/SG/4-10:** GRF Implementation Action Plan Template;

- (vi) **Draft Conclusion AOP/SG/4-11:** Runway Safety Team;
 - (vii) **Draft Conclusion AOP/SG/4-13:** Holding Bays and Multiple Entrance Taxiways; and
 - (viii) **Draft Conclusion AOP/SG/4-14:** Alternative Safety Oversight Framework for Military Aerodromes undertaking Limited Civil International Operations;
- b) note the Conclusions and Decisions adopted by AOP/SG/4:
- (i) **Conclusion AOP/SG/4-2 (AOPC SWG/4-1):** Asia/Pacific Regional Guidance on Aerodrome Operations Personnel Competency Requirement Framework;
 - (ii) **Decision AOP/SG/4-3 (AOPC SWG/4-2):** Dissolution of Aerodrome Operations Personnel Competency Small Working Group;
 - (iii) **Decision AOP/SG/4-7 (AP-AA/WG/2-1):** Generic Documents related to Aerodrome Certification;
 - (iv) **Conclusion AOP/SG/4-8 (AP-AA/WG/2-2):** Survey Questionnaire for Aerodrome Assistance in APAC States;
 - (v) **Decision AOP/SG/4-9 (AP-AA/WG/2-3):** Proposal for Amendment to TOR of Asia/Pacific Aerodrome Assistance Working Group;
 - (vi) **Conclusion AOP/SG/4-12:** Regional Guidance on Aeronautical Information Publication – AD 1.5 Status of Certification of Aerodromes; and
 - (vii) **Conclusion AOP/SG/4-15:** AOP Focal Points;
- c) 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;
- d) note that AOP/SG/4 endorsed **Draft Conclusion RASMAG/25-3:** Alphanumeric Call Sign Initiative; and
- e) discuss any other relevant matters as appropriate.
- — — — —

Attachment A to APANPIRG/31 WP/09**Summary Report of the Fourth Meeting of the APANPIRG
Aerodrome Operations and Planning Sub Group (AOP/SG/4)***Video Teleconference, 10 – 13 November 2020***1. Introduction**

1.1. The Fourth Meeting of the Aerodrome Operations and Planning Sub Group (AOP/SG/4) was held as a video teleconference from 10 to 13 November 2020.

1.2. The Meeting was attended by 123 participants from 20 Member States, 1 Special Administration Region and 6 International Organizations.

1.3. There were 25 Working Papers, 15 Information Papers and 1 Presentation considered by the Meeting.

Agenda Item 1: Adoption of Provisional Agenda

1.4. All 9 agenda items were adopted by the Meeting without amendment.

2. Agenda Item 2: Review Outcome of Relevant Meetings**Action Items of 56th Conference of Directors General of Civil Aviation Asia and Pacific Regions (WP/02)**

2.1 AOP/SG/4 reviewed all Actions Items of the 56th Conference of Directors General of Civil Aviation Asia and Pacific Regions (DGCA/56, 19 to 23 August 2019, Kathmandu, Nepal), including Action Item 56/5 and 56/24 related to AOP/SG, which are reproduced below:

Discussion Paper No.	Action Item	Agenda Item 9a – Beijing Declaration Commitments
DP/1a/9 DP/12a/2	Action Item 56/5	The Conference urged States/Administrations to: a) accelerate progress under the Beijing Declaration, provide customized assistance to the Pacific Island States, and work with ICAO on its technical assistance programme and capacity building activities for the region; ... [other sub-items omitted]
DP/6/3	Action Item 56/24	The Conference encouraged States/Administrations to: a) ensure an airport master plan is developed for each airport, and reviewed periodically with participation from stakeholders in line with various guidance issued by ICAO from time to time; b) recognize the need to address the infrastructure capacity constraint issue urgently through operational efficiencies and new infrastructure when required; c) if privatization is pursued, consider the balanced concessions framework proposed by IATA and follow the guidance issued by ICAO in this regard; and d) collaborate with airlines and key stakeholders.

2.2 The Meeting urged States CAAs and aerodrome operators to take necessary actions in accordance with 56th DGCA Conference Action Item 56/5 a) and 56/24 a) and b).

Relevant Outcomes of APANPIRG/30 and APAC Action Plan (WP/03)

2.3 AOP/SG/4 reviewed and noted the follow up actions taken by ICAO APAC Office on the Decisions/Conclusions adopted by the Thirtieth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/29, Bangkok, Thailand, 4 to 6 November 2019) related to AOP/SG.

Actions on AOP/SG/3 Conclusions and Decisions (WP/04)

2.4 AOP/SG/4 reviewed and noted the follow up actions taken by ICAO APAC Office on the Decisions/Conclusions adopted by the AOP/SG/3 Meeting (Bangkok, Thailand, 24 – 26 June 2019).

3. Agenda Item 3: Regional Reporting

Asia/Pacific Air Navigation Plans (WP/05)

3.1 AOP/SG/4 noted the structure of the Asia/Pacific Air Navigation Plans and procedures for their amendments. There were three Volumes of Asia/Pacific ANP.

3.2 ANP Volume I contained stable plan elements, the amendment of which necessitates approval by the Council. ANP Volume II contained dynamic plan elements, the amendment of which does not require approval by the Council. Approval of ANP Volume II was under the responsibility of the relevant PIRG.

3.3 ANP Volume III contained dynamic/flexible plan elements providing implementation planning guidance for air navigation systems and their modernization taking into consideration emerging programmes, such as, the ICAO Aviation System Block Upgrades (ASBUs) and associated technology roadmaps described in the *Global Air Navigation Plan* (GANP) (Doc 9750). The amendment of Volume III would not require approval by the Council.

APAC ANP Volume I, Part II – Aerodromes/Aerodrome Operations (AOP)

3.4 This part of the APAC ANP constituted the agreed regional requirements considered to be the minimum necessary for effective planning and implementation of Aerodromes Operations (AOP) facilities and services in the Asia and Pacific Regions and complements the provisions of ICAO SARPs and PANS related to AOP. It contained stable plan elements related to the assignment of responsibilities to States for the provision of aerodrome facilities and services within the Region(s) in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300) and mandatory requirements related to the AOP facilities and services to be implemented by States in accordance with regional air navigation agreements.

3.5 The list of regular and alternate aerodromes (including their designations) required in the Region(s) to serve international civil aviation operations (international scheduled air transport, non-scheduled air transport and general aviation operations) was given in Table AOP I-1 of ANP Volume I. Each Contracting State should ensure the provision of aerodrome facilities and services at the international aerodromes under its jurisdiction.

APAC ANP Volume II, Part II – Aerodromes/Aerodrome Operations (AOP)

3.6 This part of the APAC ANP, Volume II, complemented the provisions in ICAO SARPs and PANS related to Aerodrome Design and Operations (AOP). It contained dynamic plan elements related to the assignment of responsibilities to States for the provision of AOP facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to AOP facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicated a commitment on the part of the State(s) concerned to implement the requirement(s) specified.

3.7 Table AOP II-1 of ANP Volume II contained the list of facilities and services to be provided by the State concerned at each aerodrome that is listed in Table AOP I-1 in Volume I. Table AOP II-1 showed the operational requirements at each aerodrome to be considered in planning the facilities and services for safe and efficient aircraft operations.

Amendment of ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1

3.8 AOP/SG/4 noted that there were 239 international aerodromes listed in Asia/Pacific Region ANP Volume I. However, the number of international aerodromes used for international operations in Asia/Pacific Region had increased and reached to approximately 342 based on information gather from Doc 7910 (Location Indicator), States Aeronautical Information Publication (AIP), CAA Websites and ICAO Missions.

3.9 Recognizing that many aerodromes used for international operations or aerodromes under construction or planned for international operations in Asia/Pacific Region were not included in APAC ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1, and considering that information included in Tables AOP I-1 and Table AOP II-1 were accurate and current for regional planning of the other air navigation services, AOP/SG/4 recalled the following Conclusion adopted in AOP/SG/3 (Bangkok, Thailand, 24-26 June 2019):

Conclusion AOP/SG/3–1: Proposal for Amendment of Asia/Pacific ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1

That,

Many aerodromes used for international operations or aerodromes under construction or planned for international operations in Asia/Pacific Region were not included in APAC ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1. It is also important that information included in Tables AOP I-1 and Table AOP II-1 are accurate and current for regional planning of the other air navigation services.

States are urged to:

- a) review the aerodromes listed in **APAC ANP Volume I, Table AOP I-1**;
- b) review the **ANP Volume II, Table AOP II-1** for the list of facilities and services to be provided by the State concerned at each aerodrome that is listed in **Table AOP I-1**;
- c) initiate and send to ICAO APAC Office proposals for amendment of **APAC ANP Volume I, Table AOP I-1** and **ANP Volume II, Table AOP II-1** in accordance with the template provided in **Appendix A** to the AOP/SG/3 Report, if their international aerodromes are not listed in **Table AOP I-1** or require any amendments to update the information provided in **Tables AOP I-1 and AOP II-1**.

3.10 AOP/SG/4 also noted that, subsequent to AOP/SG/3, the ICAO APAC Office had processed proposals for amendments of APAC ANP Volumes I and II from Bangladesh, Indonesia, Lao PDR, Malaysia, Maldives, Myanmar, Nepal, Philippines, Thailand, Timor-Leste and Viet Nam. The total aerodromes listed in APAC ANP Volume I as of October 2020 were 239.

3.11 AOP/SG/4 urged States to take note of **Conclusion AOP/SG/3-1**, and initiate and send proposals for amendment of APAC ANP Volume I, Table AOP I-1 and ANP Volume II, Table AOP II-1, as necessary

APAC ANS Plan Update (WP/06)

3.12 The meeting noted that the Asia/Pacific Region's primary means of planning to support the ICAO Doc 9750 Global Air Navigation Plan (GANP) was the Asia/Pacific Seamless ANS Plan, which required the involvement and active participation of States and all stakeholders. At present, the Asia/Pacific Seamless ANS Plan had several important subsidiary plans, and it was expected that AOP-related subsidiary plans would need to be developed as well.

3.13 A total of 28 States/Administrations, i.e. 63.6% 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, only six States had submitted at least four reports from 2014 to 2018 (note: 'regular reporting' is measured over the past three years).

3.14 As 2019 had been a review year for the Asia/Pacific Seamless ATM Plan, the meeting noted that the Plan was renamed to be the Asia/Pacific Seamless ANS Plan and the need to develop a National Air National Plan (NANP). A template for the development of a NANP can be accessed from the ICAO website at

<https://www.icao.int/APAC/Documents/edocs/National%20Air%20Navigation%20Template%20V6.0.docx>

3.15 In general, the ten priority regional targets planned for Phase I (November 2015 - November 2019) Phase 1 was far from being implemented, even three years after the initial target date. In particular Air Traffic Flow Management/Collaborative Decision-Making (ATFM/CDM) was recognized as having only a 'partial or slow' implementation. States had been urged by APANPIRG/27 to give higher priority both at CAA and Air Navigation Service Provider (ANSP) levels, and to mobilize human and financial resources to complete the implementation of Phase 1 objectives.

3.16 The ten priorities had been updated by APANPIRG/30 to 16 priorities. However, the Seamless reporting portal had not been able to be updated thus far to match the 6th Edition of GANP and Version 3.0 of the Asia/Pacific Seamless ANS Plan, meaning that data was now unfortunately out-of-date.

3.17 Ultimately, the *Asia/Pacific Seamless ANS Plan* was expected to be incorporated into Volume III of the Regional Air Navigation Plan (RANP), to become fully web-based.

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

Report on the Fifth Meeting of the Asia Pacific Airport Collaborative Decision Making Task Force (APA-CDM/TF/5) (WP/07)

4.1 AOP/SG/4 reviewed the Report of the Fifth Meetings of the Asia Pacific Airport Collaborative Decision Making Task Force (APA-CDM/TF/5) held as a video teleconference on 15 - 17 June 2020.

Air Traffic Flow Management Steering Group Outcomes (WP/03)

4.2 The APA-CDM/TF/5 Meeting was informed of outcomes from the 10th Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/10, Video Teleconference, 4 to 8 May 2020).

4.3 The Meeting noted that the ATFM/SG/10 had been informed of matters relevant to APA-CDM/TF including the APAC Flight Information Exchange Model (FIXM) 4.1 Extension (**Conclusion APANPIRG/30/12**) and AFTN/AMHS-Based Interface Control Document (Conclusion CNS SG/23/1), both of which were available on the ICAO APAC Regional Office eDocuments web-page (<https://www.icao.int/APAC/Pages/eDocs.aspx>) for use by Asia/Pacific Administrations in implementing cross-border ATFM communications. **Table 1** summarized the data attributes currently included in the FIXM extension.

Estimated	Calculated	Target	Actual
		Target Off Blocks Time (TOBT)	Actual Off Blocks Time (AOBT)
		Target Start Approval Time (TSAT)	
	Calculated Take-Off Time (CTOT)	Target Take-Off Time (TTOT)	
Estimated Time Over (ETO)	Calculated Time Over (CTO)		Actual Time Over (ATO)
Estimated Landing Time (ELDT)	Calculated Landing Time (CLDT)		
Other			
Trajectory		Aircraft Track	
• ETO • CTO • ATO • Flight level or Altitude • Waypoint		• Ground speed • Bearing • Flight level or Altitude • Position (Designator or Latitude/Longitude or Relative Point) • Time over position	

Table 1: APAC FIXM 4.1 Extension data attributes

4.4 The APA-CDM/TF/5 Meeting was informed that any proposal to include additional attributes in the FIXM Extension must be supported by a suitable operational scenario proposed formally through ATFM/SG and/or APA-CDM/TF. It was noted that a number of attributes relevant to A-CDM process, such as Actual Landing Time (ALDT) and Actual Take-off Time (ATOT), had already been included in FIXM 4.1 Core.

4.5 Regarding the CTOT compliance windows, it was clarified that multiple compliance windows did not apply at an individual airport. Only one CTOT compliance window should be established for all flights at an airport, taking into account factors which warranted deviation from the regionally agreed -5 to +10 minutes window, and as agreed by relevant stakeholders.

Report on ICAO APAC A-CDM Survey (WP/09)

4.6 AOP/SG/4 Meeting noted that the Report of the ICAO APA-CDM Survey had been reviewed by the APA-CDM/TF/5 Meeting.

4.7 AOP/SG/4 meeting also noted that, as per paragraph 7.3 of APAC Seamless ANS Plan Version 3.0, all international aerodromes should operate an A-CDM system for Airport CDM Information Sharing (ACIS) integrated with the ATM network function consistence with ASBU Elements ACDM-B0/1 & B0/2.

4.8 The Secretariat recapitulated *the Asia Pacific Airport Collaborative Decision Making (A-CDM) Implementation Plan*, which served as the regional guidance on the harmonisation of A-CDM systems in APAC region and adopted a milestone approach. The Plan could be downloaded from ICAO APAC Office website. AOP/SG/4 also noted that the extension of APA-CDM/TF for 2 years until APANIRG/32, as determined through **Decision APANPIRG/30/3**, would allow the Task Force to work on fostering the interoperability of A-CDM with ATFM and other relevant systems.

APA-CDM/TF Terms of Reference and Deliverables (WP/08)

4.9 AOP/SG/4 noted that the APA-CDM/TF/5 Meeting reviewed the APA-CDM/TF Terms of Reference (ToR), which was amended by APANPIRG/30 (Bangkok, Thailand, 4 to 6 November 2019) through **Decision APANPIRG/30/3**, subsequent to an amendment proposal formulated by APA-CDM/TF/4 (Bangkok, Thailand, 22 to 26 April 2019) and endorsed by AOP/SG/3 (Bangkok, Thailand, 24 to 26 June 2019) to align the ToR with the APAC Seamless ANS Plan Version 3.0, 2019 approved by APANPIRG/30 and agreed the following Draft Decision. AOP/SG/4 endorsed the Draft Decision for the consideration of APANPIRG/31.

Draft Decision AOP/SG/4-1 (APA-CDM/TF/5–1): Proposal for Amendment of APA-CDM/TF TOR			
What:		That, the Terms of Reference (TOR) of Asia/Pacific Airport Collaborative Decision Making Task Force (APA-CDM/TF) be amended as in Appendix A to the Report of AOP/SG/4.	
		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why:		To align the TOR with the APAC Seamless ANS Plan Version 3.0.	
		Follow-up: ☐ Required from States	
When:		16-Dec-20	
		Status: Draft to be adopted by PIRG	
Who:		☒ Sub groups ☐ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:	

Report of the Fourth Meeting of the Aerodrome Operational Personnel Competency Small Working Group (AOPC/SWG/4) (WP/08)

4.10 The Group Leader of the Aerodrome Operational Personnel Competency Small Working Group (AOPC/SWG) presented the Report of the Fourth Meeting of the Aerodrome Operations Personnel Competency Small Working Group (AOPC/SWG/4) held in Yangon, Myanmar from 10 to 14 February 2020.

4.11 The AOPC/SWG/4 Meeting reviewed the latest draft Asia/Pacific Regional Guidance on Aerodrome Operations Personnel Competency Requirement Framework presented at the Meeting.

4.12 Consolidating the AOPC Matrices developed under WP/02, the AOPC/SWG/4 Meeting updated the Draft Asia/Pacific Regional Guidance on AOPC Requirement Framework.

4.13 Regarding the enhanced global reporting format for assessing and reporting runway surface conditions (GRF), the Group Leader advised AOP/SG/4 that relevant competence requirements had been incorporated into the Draft Guidance. In this connection, ACI also shared its new GRF course which would be available in 2021.

4.14 Singapore noted that the word “shall” was seen in the Draft Regional Guidance, and enquired if that signified the relevant parts would become standards or requirements. After clarifications from the Group Leader and the Secretariat, AOP/SG/4 noted that this document would remain as regional guidance, and States / Administrations would determine the best way to adopt the guidance.

4.15 With the finalized draft, the AOPC/SWG/4 Meeting formulated and AOP/SG/4 adopted the following Conclusion.

Conclusion AOP/SG/4-2 (AOPC SWG/4-1): Asia/Pacific Regional Guidance on Aerodrome Operations Personnel Competency Requirement Framework		
What:	That, the Asia/Pacific Regional Guidance on Aerodrome Operations Personnel Competency Requirement Framework provided in Appendix B to the AOP/SG/4 Report be adopted and published on the ICAO APAC website.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why:	To provide regional guidance on aerodrome operations personnel competency requirement framework.	Follow-up: ☐ Required from States
When:	13 Nov 2020	Status: Adopted by Subgroup
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:	

4.16 With the progress made during the AOPC/SWG/4 Meeting, it was determined that all tasks assigned to AOPC/SWG had been completed. AOP/SG/4 adopted the following Decision formulated by AOPC/SWG/4:

Decision AOP/SG/4-3 (AOPC SWG/4-2): Dissolution of Aerodrome Operations Personnel Competency Small Working Group		
What:	That, the Aerodrome Operations Personnel Competency Small Working Group (AOPC/SWG), having completed all tasks as per its TOR, be dissolved.	Expected impact: ☐ Political / Global

		☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: completed	All tasks as per TOR	Follow-up: ☐ Required from States
When:	13 Nov 2020	Status: Adopted by Subgroup
Who: ☒ Sub groups ☐ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:		

4.17 The Chair congratulated the group leader and members of AOPC/SWG for their meritorious work in developing a regional guidance on aerodrome operations personnel competency requirement framework.

Report on the Second Meeting of the Asia/Pacific Wildlife Hazard Management Working Group (AP-WHM WG/2) (WP/09)

4.18 The Chairperson of the Asia/Pacific Wildlife Hazard Management Working Group (AP-WHM/WG) presented the Report of the Second Meeting of the Asia/Pacific Wildlife Hazard Management Working Group (AP-WHM WG/2), which was held as a video teleconference from 27 to 29 May 2020.

Submission of Wildlife Strike Reports to ICAO (AP/WHM/WG/2-WP/02)

4.19 AOP/SG/4 noted that the AP-WHM/WG/2 Meeting was presented with the new submission formats for wildlife strike reports to ICAO.

4.20 In order to better facilitate occurrence reporting and data analysis, as announced in ICAO EB 2017/25, ICAO had replaced the old IBIS computer application with a new reporting system based on the European Co-ordination Centre for Accident and Incident Reporting Systems (ECCAIRS) platform. A User Manual and Software Installation Manual of ECCAIRS is available at <http://www.icao.int/ibis> for States interested in the platform.

4.21 States were requested to submit the wildlife strike reports either through ECCAIRS.e5f files, or through an ECCAIRS Excel-based form that could be downloaded at <http://www.icao.int/ibis>. The files should be sent to the following email addresses:

wildlife@icao.int, icaohq@icao.int, aoi@icao.int, and iaa@icao.int

4.22 The Chairperson of AP-WHM/WG highlighted the importance for States to submit wildlife strike reports in one of the specified formats, so as to facilitate the data processing and analysis by ICAO HQ. To further enhance wildlife strike reporting by States, AOP/SG/4 endorsed the following Draft Conclusion formulated by AP-WHM/WG/2 for adoption by APANPIRG/31:

Draft Conclusion AOP/SG/4-4 (AP-WHM WG/2-1): Submission of Wildlife Strike Reports			
What:	That, States are requested to submit wildlife strike reports to ICAO in the format of either ECCAIRS.e5f files or the standard ICAO ECCAIRS Excel-based form available at http://www.icao.int/ibis .	Expected impact: ☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why:	To facilitate wildlife strike occurrence reporting and data analysis	Follow-up:	☒ Required from States
When:	16-Dec-20	Status:	Draft to be adopted by PIRG
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other: Nil		

Challenges in Wildlife Hazard Management for Aerodrome Operators in Asia-Pacific (AP/WHM/WG/2-WP/03)

4.23 Presented by ACI, WP/03 delivered the major challenges in wildlife hazard management that aerodrome operators in Asia-Pacific are facing and suggests a way forward to continue to meet these challenges.

4.24 The challenges covered in the WP included the lack of wildlife hazard management plan, the lack of resources and training and the lack of a positive safety culture and communication. Way forward suggested in the WP included the continuation of joint ICAO/ACI seminars and symposiums, continuation of promotion of a positive safety culture, promotion of online training and continuation of cooperation in APEX in Safety.

4.25 The AP-WHM/WG/2 Meeting noted that there were a number of wildlife hazard management courses available but some aerodromes still faced the problem of staff competency in their wildlife hazard management unit. It was agreed that the issue could be caused by insufficient awareness among aerodrome senior management, thus resulting in the lack of resources in the area.

4.26 With reference to AP-WHM/WG/2 WP/03 and the discussion by the Meeting, AOP/SG/4 endorsed the following Draft Conclusions formulated by AP-WHM/WG/2 for adoption by APANPIRG/31:

Draft Conclusion AOP/SG/4-5 (AP-WHM WG/2-2): Wildlife Hazard Management Training			
What:	That, States recognise the prioritised need for competent and trained personnel in aerodrome wildlife hazard management at regulatory and aerodrome operation levels.	Expected impact: ☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why:	To reduce the risk associated to wildlife activities by the provision of competent wildlife hazard management personnel at aerodromes.	Follow-up:	☒ Required from States
When:	16-Dec-20	Status:	Draft to be adopted by PIRG
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other: Nil		

Draft Conclusion AOP/SG/4-6 (AP-WHM WG/2-3): Promotion of a Positive Safety Culture			
What:	That, - States are encouraged to promote a positive safety culture in wildlife hazard management at regulatory and aerodrome operation levels; and - Reporting culture be considered in implementing aerodrome wildlife hazard management programmes.	Expected impact: ☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why:	To enhance reporting on wildlife	Follow-up:	☒ Required from States
When:	16-Dec-20	Status:	Draft to be adopted by PIRG
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other: Nil		

Wildlife Hazard Management Survey Questionnaire (AP/WHM/WG/2-WP/11)

4.27 Subsequent to the First Meeting of ICAO Asia/Pacific Wildlife Hazard Management Working Group (AP-WHM/WG/1), a questionnaire was forwarded to the States and Administrations in the region to assess the status of the wildlife management measures being adopted by the respective States. Responses were received from the following 10 States / Administrations: Bangladesh, Brunei Darussalam, Cambodia, Hong Kong China, India, Indonesia, Pakistan, Philippines, Singapore and Thailand. Their responses were tabulated and analyzed.

4.28 In response to AP-WHM WG Task 1/5, this paper highlights the analysis and recommendations to the Working Group for further discussion and evolution of the processes. In the meantime, the full responses and analysis of the survey questionnaire were contained in the Attachments to AP-WHM WG/2 WP/11.

4.29 The objective of the survey questionnaire was to analyse States' challenges in wildlife hazard management and to formulate prioritised actions to provide assistance to the States as required. Noting that only a few States responded to the survey and some sub-regions were poorly or not represented, COSCAP-SEA recommended that the survey be re-issued to States in the APAC region that have not responded earlier. The AP-WHM WG/2 Meeting agreed to the recommendation and new tasks were included in the AP-WHM WG Task List.

Evaluation of Airport Wildlife Hazard Management Programme (AP/WHM/WG/2-WP/06)

4.30 Delivered by India and World Birdstrike Association, WP/06 presented the process for evaluation of established wildlife hazard management programme (WHMP) at airport to provide safety assurance that the programme is fully effective and correctly implemented. The paper was prepared in response to AP-WHM/WG Task 1/13, i.e. "Develop performance measurement indicators/metrics to evaluate the effectiveness of the implementation of Airport Wildlife Hazard Management Programme".

4.31 The paper was attached with a number of examples of safety performance indicators and targets related to airport WHMP, which may be useful for aerodrome operators in the evaluation.

4.32 India supplemented that a combination of various dispersal methods is needed for effectiveness. USA expressed that the environment faced by wildlife hazard management personnel would be dynamic and ever-changing. USA suggested a 3-tier evaluation for completeness, which include airport's self-evaluation of WHMP, regulator's review of the airport WHMP, as well as regulator's review of WHMP-related regulations.

4.33 The AP-WHM/WG/2 Meeting agreed that the performance measurement metrics would be reviewed by States involved in the relevant task prior to being finalized.

Guidance on Wildlife Hazard Management Programme in Fiji (AP/WHM/WG/2-WP/07)

4.34 Delivered by Fiji, WP/07 presented the Guidance Material implemented by Fiji to assist aerodrome operators to comply with the ICAO Annex 14, Volume I requirements on the development, implementation and demonstration of an effective bird/wildlife strike and wildlife control programme at airports. The paper was prepared in response to AP-WHM WG Task 1/9.

4.35 The analysis of wildlife data in respect of wildlife strikes as well as the observations and monitoring of wildlife activities could reveal trends that would assist airport authorities in identifying areas of concern which should be addressed through a well-managed wildlife control programme.

4.36 This paper also invites the AP-WHM/WG/2 Meeting to consider the development of a Regional Guidance document on Airport Wildlife Hazard Management Programmes (WHMP) with reference to the best practices from Fiji and other States in the APAC Region.

4.37 Australia suggested and the AP-WHM/WG/2 Meeting agreed that the future Regional Guidance on WHMP should be so organized to link to the SMS components.

Past and Upcoming WHM Events

4.38 Upon enquiry from India regarding possible online WHM knowledge sharing, the Chairperson of AP-WHM/WG advised AOP/SG/4 that there would be an online conference organised by the World Birdstrike Association on 13 – 14 January 2021. The Secretariat supplemented that there was a WHM webinar co-organised by ICAO and Australian Aviation Wildlife Hazard Group on 23 September 2020, and a second webinar was being planned for the second quarter of 2021.

Report of the First Joint Meeting of the Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF/1) and Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG/1) and the Second Meeting of Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG/2) (WP/10)

4.39 The Chairperson of the Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG) presented the Report of the First Joint Meeting of the Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF/1) and Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG/1) and the Second Meeting of Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG/2). The Joint Meeting was held in Bangkok, Thailand from 25 to 27 September 2019, whereas AP-AA/WG/2 was held in Bangkok, Thailand from 27 to 30 January 2020.

Joint Meeting of AP-ADO/TF/1 and AP-AA/WG/1

Need of Guidance Materials for Design, Construction and Safe Operations of Altiports (Joint Meeting WP/09)

4.40 Presented by Nepal, WP/09 introduced the importance of air transportation in topographically constrained States like Nepal where the most of the interior are not easily accessible by surface transport, as well as the challenges faced during the construction and operation of altiports and other small aerodromes.

4.41 With the operations of small aircraft becoming a safety focus, WP/09 recommended Guidance Materials be developed for the planning, design and construction of altiports and other small aerodromes facing challenges similar to altiports, as well as the safe operations of small aircraft using these aerodromes.

Development of Separate Requirements for Certification of Aerodromes in Challenged Landscape (Joint Meeting WP/10)

4.42 Presented by India, WP/10 introduced challenges faced by many countries in Asia Pacific Region where their airports are situated in mountainous terrain, islands or were built before the certification became obligatory. These airports did not meet ICAO Annex 14 requirements completely and pose certification challenges to the country concerned. There would be a need to develop separate requirements for such aerodromes.

4.43 The following difficulties were presented: runway orientation, provision of runway strip, slope of runway and runway strip, runway end safety area, taxiway and apron, aerodrome obstacles, visual aids and rescue and fire fighting services.

4.44 Subsequent to WP/09 and WP/10, Dr. Somchanok, the Chairperson of AP-ADO/TF, commented that there might be a need for separate guidance materials for aerodromes in challenging environment (e.g. altiport, aerodromes in difficult and limited environment, etc.) as the presence of these aerodromes were essential to the local communities but it might be infeasible to fully comply with the existing SARPs and guidance materials on aerodromes. Dr. Somchanok invited States to discuss in details.

4.45 AOP/SG/4 noted that the Joint Meeting had agreed that a regional guidance for altiports and other similar aerodromes would be required. India agreed to lead the drafting of the regional guidance, whereas Nepal, Thailand and United States agreed to assist in the drafting. This task had been included in the AP-ADO/TF task list.

Implementation of Requirements for Certification of Aerodromes in the Asia/Pacific Region (WP/05)

4.46 AOP/SG/4 noted that the Joint Meeting reviewed the status of aerodrome certification in APAC region and received the following updates:

States	Updates
India	The number of civil/military co-used aerodromes for international operations was 4 instead of 5. Certification would complete in December 2020.
Lao PDR	Certification of Vientiane Wattay International Airport (VLVT) was in progress.
Nepal	The name of Kathmandu International Airport (VNKT) would be amended.
Thailand	Khon Kaen (VTUK), Phitsanulok (VTPP) and Ubon Ratchathani (VTUU) would be removed from the list as there would not be any international operations. The remaining aerodromes would be certified by 2020.

4.47 The Secretariat reminded the States to formally write to the APAC Regional Office and/or submit a proposal for amendment to APAC ANP, as appropriate, to initiate the changes.

4.48 Mr. Srivastava, the Chairperson of AP-AA/WG, urged States to expedite the aerodrome certification process so as to meet the *Beijing Declaration* commitment regarding aerodrome certification by 2020. States were encouraged to seek assistance from ICAO (including APAC Regional Office, COSCAPs, TCB and GAT) for the implementation of aerodrome certification plan of the States including training and technical assistance in aerodrome certification.

AP-AA/WG/2

Generic Documents for Aerodrome Certification

4.49 AOP/SG/4 noted that AP-AA/WG/2 developed a generic aerodrome certification procedure manual, a draft generic aerodrome inspector handbook, generic procedures for accepting non-compliance and a draft generic aerodrome manual.

4.50 The AP-AA/WG/2 Meeting agreed that it would be beneficial to publish the generic documents, either finalized or in a draft state, on the ICAO APAC Office website for reference or advance information by APAC States which have been working on the certification of aerodromes for international operations. Efforts would be endeavoured to finalize the generic documents at the earliest opportunity. AOP/SG/4 adopted the following Decision formulated by AP-AA/WG/2:

Decision AOP/SG/4-7 (AP-AA/WG/2-1): Generic Documents related to Aerodrome Certification			
What:	That,		Expected impact:
a)	the generic documents in Appendix C (Generic Aerodrome Certification Procedure) and Appendix E (Generic Procedures for Accepting Non-Compliances in Aerodromes) to the AOP/SG/4 Report be made available on the ICAO APAC Office Website for the reference by States in the APAC Regions; and		☐ Political / Global
b)	the draft generic documents in Appendix D (Draft Generic Aerodrome Inspector Handbook) and Appendix F (Draft Generic Aerodrome Manual) to AOP/SG/4 Report be made available on the ICAO APAC Office Website for the advance information by States in the APAC Regions.		☐ Inter-regional
			☐ Economic
			☐ Environmental
			☒ Ops/Technical
Why:	To provide guidance to States which have yet to complete the aerodrome certification process.	Follow-up:	☐ Required from States
When:	13-Nov-20	Status:	Adopted by Subgroup
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:		

Survey Questionnaire for APAC States with Low AGA EI (AP-AA/WG/2 WP/08)

4.51 Presented by India, WP/08 introduced a survey questionnaire for States in APAC Region with low AGA EI score (i.e. below 61%) and/or air navigation deficiencies and to establish the requirements for assistance in enhancing the EI scores of these States.

4.52 The AP-AA/WG/2 Meeting noted that the revised safety target set in the ICAO Global Aviation Safety Plan 2020-2022 stated that all States should improve their score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system to reach at least 75% by 2022.

4.53 In view of the above, the target audience of this survey questionnaire would be amended to include APAC States which (1) have not completed the certification of aerodromes used for international operations, (2) have AGA EI below 75%, and/or (3) are identified with AOP air navigation deficiencies, through the proposed amendment to the Terms of Reference of AP-AA/WG, as detailed in paragraph 5.

4.54 Noting that the AP-AA/WG/2 Meeting amended the survey questionnaire AOP/SG/4 adopted the following Conclusion formulated by AP-AA/WG/2:

Conclusion AOP/SG/4-8 (AP-AA/WG/2–2): Survey Questionnaire for Aerodrome Assistance in APAC States			
What: That, the survey questionnaire in Appendix G to AOP/SG/4 Report be circulated to States to identify the need of aerodrome assistance among States in the APAC Regions.		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why: To identify the need of aerodrome assistance among States in the APAC Regions		Follow-up:	☒ Required from States
When: 13-Nov-20		Status:	Adopted by Subgroup
Who: ☒ Sub groups ☒ APAC States ☒ ICAO APAC RO		☐ ICAO HQ ☒ Other: AP-AA/WG	

Amendment of Terms of Reference of AP-AA/WG

4.55 AOP/SG/4 noted that the Terms of Reference (TOR) of AP-AA/WG was reviewed during the AP-AA/WG/2 Meeting.

4.56 The safety target set in the ICAO Global Aviation Safety Plan 2020-2022 stated that all States should improve their score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system to reach at least 75% by 2022.

4.57 It was also recommended that, besides the ICAO APAC Office, COSCAPs could also support the implementation of the AP-AA/WG tasks.

4.58 In view of the above, AOP/SG/4 adopted the following Decision drafted by AP-AA/WG/2:

Decision AOP/SG/4-9 (AP-AA/WG/2–3): Proposal for Amendment to TOR of Asia/Pacific Aerodrome Assistance Working Group	
What: That, the AP-AA/WG/2 Meeting agreed to propose an amendment to the TOR of AP-AA/WG as placed in Appendix H to AOP/SG/4 Report .	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical

Why: To align the TOR with the GASP 2020-2022 target on USOAP EI	Follow-up: ☐ Required from States
When: 13-Nov-20	Status: Adopted by Subgroup
Who: ☒ Sub groups ☐ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☒ Other: AP-AA/WG	

4.59 The Chairperson of AOP/SG expressed her appreciation for the good work performed by AP-ADO/TF and AP-AA/WG.

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

Certification of Aerodromes

4.60 AOP/SG/4 noted that there were **239** international aerodromes listed in Asia/Pacific Region ANP Volume I as of October 2020. However, the number of international aerodromes used for international operations in Asia/Pacific Region has increased and reached to approximately **342** based on information gathered from Doc 7910 (Location Indicator), States' Aeronautical Information Publications (AIPs), CAA / Airport Websites, flight tracking data and ICAO Missions.

4.61 AOP/SG/4 reviewed the list of aerodromes used for international operations in APAC region that have yet to be certified, which was prepared based on information collected from APAC States through survey questionnaire, ICAO/COSCAPs missions including ICAO USOAP audit and ICVM, and flight tracking data, and placed in **Appendix I** to the AOP/SG/4 Report.

4.62 AOP/SG/4 noted that approximately **42** aerodromes (i.e. 12 %) out of **342** aerodromes used for international operations in Asia and Pacific Regions were yet to be certified.

Note:- On 26 November 2020, Bangladesh confirmed in writing that Sylhet Airport / VGSY had been certified.

4.63 The status of certified aerodromes in different Sub Regions of Asia/Pacific Region is illustrated in the Table 1 below:

Aerodromes	North Asia (5 States & 2 SARs)	South East Asia (11 States)	South Asia (8 States)	Pacific (15 States & 8 OTs)
Total Number of Int'l Aerodromes	134	98	52	58
Number of Certified Int'l Aerodromes	127	81	42 43	50

Aerodromes	North Asia (5 States & 2 SARs)	South East Asia (11 States)	South Asia (8 States)	Pacific (15 States & 8 OTs)
Number of Int'l Aerodromes <u>yet</u> to be certified	7	17	10 ⁹	8
States with Int'l Aerodromes <u>yet</u> to be certified (number and percentage of aerodromes <u>yet</u> to be certified)	1) China (3, 3%) 2) Japan (4, 12%)	1) Brunei Darussalam (1, 100%), 2) Lao PDR (4, 100%) 3) Malaysia (2, 11%) 4) Philippines (3, 33%) 5) Thailand (5, 45%), 6) Timor-Leste (2, 100%)	1) Afghanistan (4, 100%) ~~2) Bangladesh (1, 33%)~~ 3) India (5, 19%)	1) Kiribati (2, 100%) 2) Micronesia (Federal States of) (4, 100%), 3) Nauru (1, 100%), 4) Tuvalu (1, 100%)

Table 1 - Status of certified aerodromes used for international operations in Sub Regions of Asia/Pacific Region

4.64 AOP/SG/4 also noted that some States had certified their aerodromes without full compliance with ICAO requirements on aerodrome certification process and recommended to recertify their aerodromes in full compliance with those ICAO requirements.

4.65 AOP/SG/4 noted that the 2020 target for the commitment related to aerodrome certification made in *Beijing Declaration* was determined by the *Asia Pacific Ministerial Conference on Civil Aviation* (Beijing, China, 31 January to 1 February 2018). Therefore, ICAO APAC Office would not be in a position to alter this target.

Status of Certification of Aerodromes in AIP

4.66 AOP/SG/4 further noted a number of States / Administrations that have yet to publish the status of certification of aerodromes in AIP AD 1.5. A summary is available in Table 2 below:

States	North Asia (5 States & 2 SARs)	South East Asia (11 States)	South Asia (8 States)	Pacific (15 States & 8 OTs)
No aerodromes listed in AD 1.5/ AD 1.5 missing in AIP	--	1) Brunei Darussalam 2) Lao PDR 3) Philippines 4) Timor Leste	1) Afghanistan	1) American Samoa (US) 2) Cook Is. 3) Guam (US) 4) Kiribati 5) Nauru 6) Niue (NZ) 7) N. Mariana Is. (US) 8) Samoa 9) Tonga 10) Tuvalu 11) Vanuatu
Some but not all aerodromes listed in AD 1.5	1) China 2) Japan	1) Malaysia 2) Thailand 3) Viet Nam	1) India 2) Pakistan	--
Status listed but not under AD 1.5	--	--	--	1) Fiji 2) New Zealand
AIP cannot be located	--	--	--	1) Marshall Is. 2) Micronesia (Federated States of) 3) Palau 4) Solomon Is.
Total	2 States	7 States	3 States	17 States / OTs

Table 2 – Status of AIP AD 1.5 in Sub Regions of Asia/Pacific Region

4.67 AOP/SG/4 urged States and their aerodrome operators that have yet to certify aerodromes used for international operations to take an effective action on the 55th DGCA Action Item 55/42. In addition, AOP/SG/4 urged States to provide periodic updates on the progress of the certification of aerodromes and AIP AD 1.5 to the ICAO APAC Office.

4.68 Australia informed the AOP/SG/4 that AIP Australia had incorporated AD 1.5 since 5 November 2020, pointing readers to *En Route Supplement Australia* (ERSA) for the status of certification of aerodromes. The evidence provided by Australia to the Secretariat during the course of AOP/SG/4 was considered adequate in order to delist Australia from the Table 2 above.

ICAO Universal Safety Oversight Audit Programme (USOAP) and AGA Findings (WP/12)

4.69 AOP/SG/4 noted ICAO USOAP CMA activities conducted in APAC States in 2019 and until October 2020. The Meeting also noted the USOAP CMA activities planned for 2021.

4.70 AOP/SG/4 also noted 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 **61.41%** compared to the global average of **61.59%** as at 21 October 2020.

4.71 The Table 3 below illustrated the APAC Average AGA EI scores in all 8 Critical Elements derived from iSTARS 2.0 SPACE (using PQ Tester) for 2017 – 2010:

Table 3: APAC Average AGA EI scores in all 8 Critical Elements

	APAC average EI in AGA (in %)	Critical Elements (CE)							
		CE-1	CE-2	CE-3	CE-4	CE-5	CE-6	CE-7	CE-8
Oct. 2020	61.41 <i>[Global Average 62.65]</i>	75.00	68.64	64.44	42.73	58.61	63.26	58.11	38.42
June 2019	60.52 <i>[Global Average 61.59]</i>	75.68	66.80	62.13	42.30	58.14	63.87	58.87	39.77
June 2018	57.87 <i>[Global Average 59.5%]</i>	68.57	65.78	55.71	38.18	49.60	60.45	53.01	51.13
May 2017	56.29 <i>[Global Average 57.99]</i>	68.57	63.3	53.65	33.17	51.9	59.78	55.2	39.44

4.72 AOP/SG/4 urged APAC States to:

- a) arrange necessary resources to recruit, train and retain qualified and experienced technical staff to effectively perform safety oversight of aerodromes;
- b) complete/continuously update the compliance checklist/EFOD and SAAQ;
- c) submit/update the Corrective Action Plans (CAPs) on the On-line Framework (OLF), informing the ICAO Regional Office when complete and ready for review; and
- d) implement the CAPs and complete the self-assessment of the PQs on the OLF, including uploading the evidence documents, to report the progress on the OLF, informing the ICAO Regional Office when complete and ready for validation.

ICAO Initiatives to Assist States in AGA Area (WP/13)

4.73 AOP/SG/4 noted that ICAO had taken various activities in AGA area in Asia Pacific States under No Country Left Behind initiative.

4.74 The AGA technical assistance missions conducted to APAC States from 2016 to 2020 under ICAO APAC Combined Action Team (CAT), COSCAPs, ICAO Programme for Aviation Volunteers (IPAV) and International Financial Facility for Aviation Safety (IFFAS) initiatives are provided in **Appendix J** to the AOP/SG/4 Report.

4.75 AOP/SG/4 noted an ACI-ICAO aerodrome certification seminar and an ACI-ICAO aerodrome certification compliance and audit course held in 2017 and 2018 respectively for Pacific Island States under the ACI Developing Nations Airport Assistance Programme (ACI-DNA). In addition, financed by ICAO Voluntary Funds SAFE contributed by the United States, it was noted that Aerodrome Assistance Go-Team Missions had been planned for Brunei Darussalam, Lao PDR and Timor-Leste in 2021.

4.76 AOP/SG/4 also noted that ICAO/COSCAPs had organized various training courses, workshops, seminars and webinars together with ICAO partners, and the details were provided in **Appendix K** to this Report.

4.77 The Meeting further noted that as a result of continuous efforts in improving USOAP CMA EI by the 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 61.41% as of October 2020 compare to 60.52% as of June 2019. Furthermore, the following improvements in EI have been noted pre and post ICVM/Audit of the audited States, as shown in Table 4:

Table 4: USOAP CMA EI in AGA before and after ICVM

S. No		EI as of March 2016	EI as of 2018 [Post ICVM/ Audit]	EI as of 2019 [Post ICVM/ Audit]	EI as of 2020 [Post ICVM/ Audit/]
1	Bangladesh	54.68	65.44 [ICVM]	-	-
2	Indonesia	44.90	72.73 [ICVM]	-	-
3	Papua New Guinea	61.59	68.15 [ICVM]	-	-
4	Philippines	38.13	48.89 [ICVM]	-	-
5	Cambodia	39.04	59.03 [Audit]	-	-
6	Thailand	32.69	-	53.74 [ICVM]	-
7	Fiji	47.79	-	78.03 [ICVM]	-
8	Tonga	19.08	-	32.82 [ICVM]	-
9	Afghanistan	NA	-	NA [Desktop Audit]	-
10	Myanmar	56.64	-	-	61.48 [IVA]

4.78 United States commented that the increased usage of online training and seminars, providing focused assistance, could be beneficial for States to enhance their AGA safety oversight,

which would eventually be reflected in USOAP CMA EI in AGA area. The Chairperson commented that it would be ideal to have further collaborations between States and ICAO APAC Office to provide more technical assistance.

4.79 Noting initiatives taken by ICAO in assisting Asia Pacific States to overcome USOAP findings in AGA and to improve USOAP CMA EI, the meeting urged:

- a) States AGA experts who have completed Computer Based Training on USOAP CMA to volunteer their services to the ICAO APAC CAT initiatives;
- b) International Organization(s) to collaborate with ICAO in capacity building programmes; and
- c) States with low USOAP EI in AGA to request ICAO for the APAC CAT and IPAV assistance.

Enhanced Global Reporting Format for Assessing and Reporting Runway Surface Conditions (GRF), Runway Safety Team (RST) and Runway Safety Go-Team (RSGT) (WP/14)

GRF

4.80 AOP/SG/4 noted that the SARPs and PANS related to GRF was originally set to become applicable on 5 November 2020. However, to alleviate the burden on Member States during, and in the aftermath of, the COVID-19 pandemic, as promulgated in State Letter Ref. AN 10/1.1, AN 11/1.3.33, AN 11/6.3.32, AN 3/5.13, AN 4/1.2.29, AN 2/2.7, AN 13/2.1, AN 4/27 and AN 2/33-20/73 dated 30 July 2020, the Council, at the eighth meeting of its 220th Session held on 19 June 2020, adopted amendments on the postponement of the applicability date, from 5 November 2020 to 4 November 2021, for provisions related to GRF. The concerned Annexes and Procedures for Air Navigation Services (PANS) were:

- a) *Annex 3 – Meteorological Service for International Air Navigation;*
- b) *Annex 6 – Operation of Aircraft, Part I – International Commercial Air Transport – Aeroplanes and Part II – International General Aviation – Aeroplanes;*
- c) *Annex 8 – Airworthiness of Aircraft;*
- d) *Annex 14 – Aerodromes, Volume I – Aerodrome Design and Operations;*
- e) *Annex 15 – Aeronautical Information Services;*
- f) *Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM, Doc 4444);*
- g) *Procedures for Air Navigation Services – Aerodromes (PANS-Aerodromes, Doc 9881); and*
- h) *Procedures for Air Navigation Services – Aeronautical Information Management (PANS-AIM, Doc 10066).*

GRF Implementation Action Plan Template

4.81 In order to assist States in tracking the implementation progress of GRF-related provisions, based on a template developed by COSCAP-SEA earlier, AOP/SG/4 noted that ICAO APAC Office prepared a GRF Implementation Action Plan Template. The template is available in **Appendix L to AOP/SG/4 Report**.

4.82 The template identified 15 action items and a number of action parties to facilitate States in their preparation for GRF implementation. Target dates for each action items have also been set, which States may take reference when determining their own implementation dates.

4.83 To maximize the benefits brought by the template, AOP/SG/4 endorsed the following Draft Conclusion for consideration by APANPIRG/31:

Draft Conclusion AOP/SG/4–10: GRF Implementation Action Plan Template			
What: That, a) The GRF Implementation Action Plan Template contained in Appendix L to AOP/SG/4 Report be uploaded to ICAO APAC Website for reference by States / Administrations; and b) States / Administrations are requested to make reference to the GRF Implementation Action Plan Template and submit their own action plans to ICAO APAC Office by 28 February 2021 .		Expected impact: ☐ Political / Global ☐ Inter-regional ☒ Economic ☐ Environmental ☒ Ops/Technical	
Why:	To assist States in the implementation of GRF-related SARPs and PANS.	Follow-up:	☒ Required from States
When:	16-Dec-20	Status:	Draft to be adopted by PIRG
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:		

RST

4.84 AOP/SG/4 noted that an aerodrome operator shall establish a Runway Safety Team (RST) comprised of relevant organizations operating or providing services on the aerodrome. The terms of reference and composition of the RST should be established and included in the aerodrome manual. Activities to be included in the terms of reference as well as the proposed composition of an RST were included in the Appendix to the Chapter 8 of Part II of PANS-Aerodromes (Doc 9981).

4.85 As indicated in the GRF Implementation Action Plan Template (**Appendix L to AOP/SG/4 Report**), RST had been a major player in the implementation of GRF, providing feedback to the CAA in such matters as development of national procedures and guidance material, provision of on-the-job training, arrangement of trials prior to implementation, as well as the implementation plan. As such, the establishment and effective running of RSTs would be crucial for States to fine-tune and carry out their GRF implementation action plan.

4.86 During COVID-19 pandemic, aerodromes faced substantially different operational environment due to the sharp drop in the amount of air traffic movement. Runway safety might be impacted by a different operational environment, e.g. aircraft parked on runways and taxiways, increased wildlife presence, increase in towing activities associated with parked aircraft, and reduced headcount of operational personnel. AOP/SG/4 noted that an active and effective RST would be able to perform hazard identifications and safety risk assessments, so that runway safety risks might be mitigated in a timely manner.

4.87 AOP/SG/4 also noted that ICAO has been maintaining a RST Survey to keep track of the establishment of RSTs at aerodromes used for international operations. The survey results and questionnaire were available at the following URL:

<https://www.icao.int/safety/RunwaySafety/Pages/Runway%20Safety%20Team%20Register.aspx>

4.88 Considering the importance of RST, AOP/SG/4 endorsed the following Draft Conclusion for consideration by APANPIRG/31:

Draft Conclusion AOP/SG/4–11: Runway Safety Team			
What: That, States/Administrations to urge operators of aerodromes used for international operations to:		Expected impact:	
a) establish runway safety teams (RSTs) in accordance with PANS-Aerodromes (Doc 9981) and ICAO RST Handbook; and		☐ Political / Global	
b) participate in the ICAO RST Survey to register their RSTs.		☐ Inter-regional	
		☒ Economic	
		☐ Environmental	
		☒ Ops/Technical	
Why:	To promote and keep track of the establishment of RSTs among aerodromes used for international operations to enhance runway safety.	Follow-up:	☒ Required from States
When:	16-Dec-20	Status:	Draft to be adopted by PIRG
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:		

RSGT

4.89 AOP/SG/4 noted that ICAO Runway Safety Go-Team (RSGT) assists States in developing a national runway safety programme. It also assists airports in establishing / improving the effectiveness of runway safety teams, as well as provides on-site technical assistance to all runway safety stakeholders. RSGT had been a voluntary multi-disciplinary assistance visit to an airport performed by an ad-hoc group of experts from ICAO and RSP partner organisations; it was not an ICAO audit, validation, inspection nor certification.

4.90 AOP/SG/4 noted that COSCAP-SEA arranged the first two RSGT missions in the APAC Region in March 2020 – to Manila, Philippines and Makassar, Indonesia. Recommendations were provided to the States and airports for enhancing runway safety. The two missions utilized the funding available under COSCAP-SEA and was therefore available free-of-charge to the two States.

4.91 With the upcoming applicability of GRF-related SARPs and PANS, the scope of RSGT might be extended to assist States and airports in the implementation of GRF. In such cases, the duration of RSGT on-site activities might be slightly extended to incorporate additional activities.

4.92 AOP/SG/4 urged States in need of assistance in the area of runway safety and GRF to request for RSGT Assistance Missions through ICAO APAC Office and/or its corresponding COSCAP.

Regional Guidance on Aeronautical Information Publication – AD 1.5 Status of Certification of Aerodromes (WP/15)

4.93 AOP/SG/4 recalled **Conclusion APANPIRG/30/4** which, inter alia, urged States that have not published the status of certification of aerodromes in State's AIP to publish the status as soon as possible in accordance with Annex 14 Vol I (para. 2.13.1), PANS-Aerodromes (para. 2.3.7) and Appendix 2 to PANS-AIM (Doc 10066); and agreed that if any States fails to publish the status of certification of aerodromes in State's AIP by December 2019 will be subject to being included on the APANPIRG AOP Air Navigation Deficiency list against ICAO Annex 14 para. 2.13.1 a), PANS-Aerodromes, para. 2.3.7 and Appendix 2 to PANS-AIM.

4.94 Since the adoption of the **Conclusion APANPIRG/30/4**, ICAO APAC Office received queries from a number of States requesting for clarification on the content to be published in AIP AD 1.5. As a result, a regional guidance on AIP AD 1.5 had been drafted to supplement the aforementioned ICAO provisions and provide detailed guidance to States / Administrations.

4.95 AOP/SG/4 noted that paragraph 3.4 of the draft regional guidance would only be incorporated after APANPIRG's adoption of **Draft Conclusion AOP/SG/4-14: Alternative Safety Oversight Framework for Military Aerodromes undertaking Limited Civil International Operations** (see discussion under WP/25) and ICAO HQ follow-up actions on the issue.

4.96 AOP/SG/4 adopted the following Conclusion:

Conclusion AOP/SG/4-12: Regional Guidance on Aeronautical Information Publication – AD 1.5 Status of Certification of Aerodromes		
What: That, the <i>Regional Guidance on Aeronautical Information Publication – AD 1.5 Status of Certification of Aerodromes</i> provided in Appendix M to AOP/SG/4 Report be adopted and published on the ICAO APAC website.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	Why: To provide regional guidance on AIP AD 1.5.
When: 16-Dec-20		Follow-up: ☒ Required from States
Status: Adopted by Subgroup		Who: ☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:

Challenges Arising from COVID-19 in Aerodrome Operations (WP/19)

4.97 AOP/SG/4 noted ACI's paper on the challenges in aerodrome operations caused by the COVID 19 pandemic, how aerodrome operators had been coping with them, and seeks comments and guidance from AOP/SG with a view to improving resilience of the industry in the face of similar public health crises in the future.

4.98 AOP/SG/4 noted with interest ACI's advisory bulletin on the issues arising from parking of idle aircraft, guidelines on the recovery and restart of airport operations, and guidelines on establishing procedures to ensure preparedness for handling public health emergencies.

COVID-19 Challenges: Contingency Parking Arrangement & Typhoon Measures (WP/20)

4.99 Presented by Hong Kong, China, WP/20 presented the challenges brought by COVID-19 to Hong Kong International Airport due to a surge in demand for parking space in response to reduction in air transport services. This paper also shared the contingency measures in dealing with the passage of typhoon with a view to ensuring aircraft and airfield safety.

4.100 Upon enquiry, Hong Kong, China expressed that fuel ballasting had long been one of the methods to minimise the chance of inadvertent aircraft movement amid tropical cyclone. The ballasting would need to observe the limitation set by aircraft manufacturer so that the aircraft weight and balance would remain safe.

4.101 The Secretariat informed AOP/SG/4 that the ICAO Facilitation Panel had established a Task Force to discuss public health issues in aviation. Annex 9 and relevant guidance materials would be analysed and enhanced with the lesson learnt from COVID-19.

Alphanumeric Call Sign Initiative (WP/21)

4.102 AOP/SG/4 noted that the root cause for a significant number of airspace incidents, including Large Height Deviations (LHDs) and runway conflicts had been identified for many decades as radiotelephony call sign confusion, when a pilot incorrectly responds to an Air Traffic Control (ATC) instruction to another aircraft, or in some cases, when an air traffic controller provided an incorrect instruction to an aircraft with a similar call sign to that intended.

4.103 With the support of IATA, the Asia Pacific Alphanumeric Call Sign project had been agreed at ATMSG/4 and endorsed at APANPIRG/27 through the following Conclusion:

Conclusion APANPIRG/27-15: Use of Alphanumeric Call Signs for Scheduled Airline Operations

That, ICAO conducts a Survey of Asia Pacific States to ascertain the status of capability to accept / process alphanumeric ATC call-signs for scheduled airline operations.

4.104 With regard to ATC 'loop error' LHD events, Japan had provided a detailed analysis to the Twenty-Fifth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/25, video teleconference, 27-30 October 2020) meeting regarding of these incidents were due to similar call signs.

4.105 In response to a query from ICAO, IATA clarified that its successful similar call sign initiative that had been implemented in the Middle East (MID) Region had not been able to progress in the Asia/Pacific (APAC) Region. AOP/SG/4 noted that one of the reasons for this had been the reluctance of aerodrome operators to implement change until an automated tool was available to accommodate alphanumeric call signs.

4.106 Noting the grave safety risks from such occurrences, AOP/SG/4 reviewed and endorsed the following Draft Conclusion formulated by RASMAG/25. ACI expressed its willingness to assist with the trial of alphanumeric call signs. The Draft Conclusion would then be reviewed by ATM/SG/8.

Draft Conclusion RASMAG/25-3: Alphanumeric Call Sign Initiative		
What:	Noting:	Expected impact:
1) the extreme safety risks associated with pilot-ATC miscommunication and the number of Category D (ATC Loop Error) Large Height Deviations (LHDs); 2) APANPIRG Conclusion 27/15. ATMSG Conclusions 5-5 and 5-6 regarding the Asia Pacific Alpha Numeric Call-Sign (ANCS) call sign project; and 3) alphanumeric call signs were a well-established call sign confusion mitigation, that:		☒ Political / Global ☐ Inter-regional ☒ Economic ☐ Environmental ☒ Ops/Technical

leading Air Navigation Service Providers (ANSPs) and aerodrome operators, in coordination with CANSO and ACI, were urged to consider a trial to identify and overcome any barriers for the implementation of alphanumeric call signs, with a view to developing a project for the Asia/Pacific (APAC) Region.	
Why: The Asia Pacific ANCS call-sign project had not been universally supported by aerodrome operators and ANSPs thus far.	Follow-up: ☐ Required from States
When: 30-Oct-20	Status: Adopted by Subgroup
Who: ☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other: RASG	

4.107 AOP/SG/4 also noted that, for aerodrome operators, from the MID Region's experience, the suggested course of action would be to target the interface point at which the airport systems ingest the flight information. At this interface a process would be required that translates an alphanumeric call sign into commercial flight numbers. The interface process could be an information technology 'translator application' or simply a person with a spreadsheet manually translating (most commonly at seasonal schedule submission). Once translated, all airport downstream systems would only deal with the commercial flight number. Hence no further adaptation would be required.

New Technologies at Hong Kong International Airport (WP/22)

4.108 In view of the coronavirus disease (COVID-19) outbreak in 2020, this paper introduced various innovative technologies adopted by the Hong Kong International Airport in protecting airport users from COVID-19 infection. On the other hand, as the airport was taking forward the Three-Runway System project, new technology was also being developed jointly by Hong Kong Civil Aviation Department and Airport Authority Hong Kong in further enhancing the airport operational safety and efficiency.

4.109 The new technologies covered in this paper included disinfection channel, intelligent sterilization robots, antimicrobial coating, and digital apron and tower management systems.

Rapid Exit Taxiway Design (WP/23)

4.110 Presented by China, this paper examined a design issue with the rapid exit taxiway (RET) as specified in Annex 14, Volume I.

4.111 While it was a common design to provide turning curves to both directions at the junction with parallel taxiways, the current aerodrome design for Code 4E operations as specified in Annex 14, Volume I, including the minimum distance between runway and taxiway centre lines (172.5 m), the preferred intersection angle of RET (30 degrees), and the radius of turn-off curve from runway to RET (550 m), would result in an insufficient RET straight portion, which was specified in ICAO Aerodrome Design Manual (Doc 9157), Part 2.

4.112 In order to cope with the situation, China adopted a smaller intersection angle of RET at 25 degrees. China recommended States (a) to adopt an angle smaller than 30 degrees as the intersection angle of RET for Code 4E operations, and (b) to use simulation software, consult with pilots and draw experience from actual operations to determine the RET design.

4.113 Upon enquiries, China shared with AOP/SG/4 that the 25-degree intersection angle might require review as different aerodromes might have different situations, and that aerodrome operators would need to perform simulations during planning stage.

4.114 AOP/SG/4 noted that while there was no plan to review ICAO *Aerodrome Design Manual* (Doc 9157) at this stage and States were expected to select RET designs in compliance with ICAO SARPs, the matter would be raised in the upcoming Aerodrome Design Working Group (ADWG) meeting scheduled for 16-18 November 2020 for review.

Runway with Holding Bays or Multiple Entrance Taxiways (WP/24)

4.115 Presented by China, this paper brought up two issues: (a) a figure in ICAO Aerodrome Design Manual, Part 2 did not tally with Annex 14, Volume I SARPs and the actual aircraft operation; and (b) the possibility of aircraft ground collision when a runway was equipped with holding bay or multiple entrance taxiways and when an aircraft was passing behind another aircraft holding short of runway.

4.116 India expressed that, in addition to the consideration raised in WP/24, jet blast effect should also be taken into account especially for scenarios where small aircraft were involved.

4.117 To further address the matters, AOP/SG/4 endorsed the following Draft Conclusion for the adoption of APANPIRG/31:

Draft Conclusion AOP/SG/4-13: Holding Bays and Multiple Entrance Taxiways		
What:	That, the ICAO HQ be invited to consider to:	Expected impact:
	a) Review Figure 2-2 of ICAO Aerodrome Design Manual (Doc 9157), Part 2 <i>Taxiways, Aprons and Holding Bays</i> to tally with SARPs of runway-holding position marking and actual aircraft operations; and b) Review the current SARPs in Annex 14, <i>Aerodromes – Volume I, Aerodrome Design and Operations</i> to cater for the design of multiple entrance taxiways.	☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why:	To tally a figure in ICAO guidance material with the applicable SARPs and to enhance aircraft safety	Follow-up: ☐ Required from States
When:	16-Dec-20	Status: Draft to be adopted by PIRG
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☒ ICAO HQ ☐ Other:	

4.118 Similar to the RET design issue, AOP/SG/4 noted that the matters would be reviewed during the upcoming ADWG meeting.

Alternative Safety Oversight Framework for Military Aerodromes Undertaking Limited Civil International Operations (WP/25)

4.119 In APAC Region, there were a number of military aerodromes designated as alternates for international flights or receiving international flights on a limited scale and / or ad hoc basis. Presented by Australia, this paper proposed a way forward for the safety oversight of those military aerodromes in Australia undertaking the aforementioned operations.

4.120 Instead of going through an aerodrome certification exercise, it was proposed Australian Civil Aviation Safety Authority (CASA) and the Defence Aviation Safety Authority (DASA) agree on an appropriate written framework to ensure there is effective safety oversight of those military aerodromes undertaking limited civil international operations. This was to be commensurate with the current and future expected level of international civil operations at said aerodromes.

4.121 Military aerodromes undertaking limited civil international operations would include those (1) designated as alternates for international flights; and (2) used for international operations on a limited scale and on an ad hoc basis. “Limited scale” would refer to a tiny and insignificant amount of flights when compared to the overall traffic volume of that State, the military aerodrome and a civil aerodrome used for international operations in that State. “Ad hoc” would refer to that the international flights are sporadic and irregular in nature.

4.122 The aerodromes in question would be required to comply with the ICAO SARPs, procedures, and other relevant guidance material as much as practicable. In addition, aerodrome users would be informed of this alternate safety framework at AIP AD 1.5.

4.123 AOP/SG/4 considered that the proposed alternative safety oversight framework for military aerodromes undertaking limited civil international operations in Australia might be a practical solution for other States, where the certification of such aerodromes by civil aviation authorities might prove difficult and, considering the limited presence of civil international flights, an alternative safety oversight framework could be adopted. As such, AOP/SG/4 endorsed the following Draft Conclusion for adoption by APANPIRG/31:

Draft Conclusion AOP/SG/4-14: Alternative Safety Oversight Framework for Military Aerodromes undertaking Limited Civil International Operations		
What: That, recognizing: (1) certain military aerodromes in States are undertaking limited civil international operations; (2) certification of such aerodromes by civil aviation authorities may prove difficult; and (3) an alternative safety oversight framework may be appropriate in consideration of the low level of civil international operations at such aerodromes; ICAO HQ is invited to consider establishing an alternative safety oversight framework in lieu of certification for such military aerodromes.		Expected impact: ☒ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: To provide an alternative safety oversight framework for military aerodromes undertaking limited civil international operations.	Follow-up: ☐ Required from States	
When: 16-Dec-20	Status: Draft to be adopted by PIRG	
Who: ☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☒ ICAO HQ ☐ Other:		

4.124 The Secretariat explained to AOP/SG/4 that this Draft Conclusion would first be considered for adoption in APANPIRG/31 (virtual meeting, scheduled for 14 – 16 December 2020). Then, the APANPIRG/31 Report containing the Conclusion, if adopted, would be reviewed by ICAO Air Navigation Commission (ANC). A Working Group under ANC would review the PIRG reports and determined the way forward. In parallel, the Secretariat had also communicated with the Aerodromes Operations and Infrastructure (AOI) Section of ICAO HQ, and understood that the matter could be considered together with the ongoing review of ICAO *Manual on Certification of Aerodromes* (Doc 9774).

5. Agenda Item 5: AOP Air Navigation Service Deficiencies

Status of Air Navigation Deficiencies in AOP Field (WP/16)

5.1 AOP/SG/4 reviewed the list of Air Navigation Deficiencies noted by APANPIRG/30 in the AOP field. Brunei Darussalam, India, Mongolia, Myanmar, Nepal, Thailand and Viet Nam provided updates on the status of their Deficiencies.

5.2 AOP/SG/4 recalled that APANPIRG/30 (4 to 6 November 2019, Bangkok, Thailand) adopted the following Conclusion formulated by AOP/SG/3:

Conclusion APANPIRG/30/4: Certification of aerodromes used for international operations in Asia Pacific States

That, the Ministers of Asia and Pacific States committed to certify all aerodromes used for international operations by 2020 through the Beijing Declaration. The AOP/SG monitors the aerodrome certification implementation commitment of the Beijing Declaration and reports progress to the annual APAC DGCA Conference through the APANPIRG. States and Aerodrome Operators should take effective actions on Action Item 55/42 agreed at the 55th Conference of the APAC DGCA.

In view of above, the Meeting:

- a) Urged States and their Aerodrome Operators that have yet to certify aerodromes used for international operations to take an effective action on the 55th DGCA Action Item 55/42;
- b) Urged States to provide periodic updates on the progress of the certification of aerodromes to the ICAO APAC Office;
- c) Urged States that have not published the status of certification of aerodromes in State's AIP to publish the status as soon as possible in accordance with Annex 14 Volume I (para. 2.13.1), PANS-Aerodromes (para. 2.3.7) and Appendix 2 to PANS-AIM (Doc 10066);
- d) Agreed that, if any aerodrome used for international operations fails to obtain an aerodrome certificate from the Regulatory Authority by fulfilling ICAO Annex 14 requirements under the aerodrome certification process by 2020, or fails to maintain the aerodrome certificate already obtained, will be subject to being included on the APANPIRG AOP Air Navigation Deficiency list against para. 1.4 (certification of aerodromes) of the Annex 14, Volume I;
- e) Agreed that, if any States fail to achieve the target of the Beijing Declaration on certification of aerodromes by 2020 will be subject to being included on the APANPIRG AOP Air Navigation Deficiency list against para. 1.4 of the Annex 14, Volume I;

- f) Agreed that, if any States fails to publish the status of certification of aerodromes in State's AIP by December 2019 will be subject to being included on the APANPIRG AOP Air Navigation Deficiency list against ICAO Annex 14 para. 2.13.1 a), PANS-Aerodromes, para. 2.3.7 and Appendix 2 to PANS-AIM.

5.3 In connection with **Conclusion APANPIRG/30/4**, the States / Administrations / aerodromes identified in **Appendix I** would be included in the APANPIRG AOP Deficiency List after review and endorsement by APANPIRG/31, with effect from 1 January 2021.

5.4 AOP/SG/4 received the following verbal updates from States:

States	Updates
Australia	AIP Australia had incorporated AD 1.5 since 5 November 2020, pointing readers to <i>En Route Supplement Australia</i> (ERSA) for the status of certification of aerodromes.
India	There had been difficulties in certifying military / joint-use aerodromes. India was looking forward to guidance from ICAO on the matter. (See Draft Conclusion AOP/SG/4-14 for details.)
Japan	On the military / joint-use aerodromes, Japan had been facing difficulties similar to India, and would like to have further guidance from ICAO.
Lao PDR	Updates would be provided to ICAO APAC Office after the meeting.
Nepal	Nepal reported the progress of the corrective action plans stated in the Air Navigation Deficiency List.
United States	The AIP issue for the US Territories would be examined by FAA.

5.5 The Secretariat reminded States / Administrations to provide written correspondences to ICAO APAC Office once updates became available. The updates would be incorporated to the Air Navigation Deficiency List to be presented to APANPIRG/31 (virtual meeting, scheduled for 14 – 16 December 2020) if provided on time.

5.6 Australia provided written evidence to the Secretariat during the course of AOP/SG/4. The evidence was considered adequate and the proposed Air Navigation Deficiency entry under Australia was removed.

[Post-meeting notes 1: Philippines provided written evidence subsequent to AOP/SG/4 that Manila/RPLL had been certified. The evidence was considered adequate. As such, Manila/RPLL had been removed from the list of Deficiencies.]

[Post-meeting notes 2: Subsequent to AOP/SG/4, Bangladesh confirmed in writing that Sylhet Airport / VGSY had been certified. Therefore, VGSY was removed from the list of Deficiencies.]

5.7 The updated list of Deficiencies was placed in **Appendix N to AOP/SG/4 Report**.

5.8 AOP/SG/4 noted the note provided under Conclusion APANPIRG/29/27 and reproduced below:

Note: In case States provide satisfactory evidence to the APAC Office for the resolution of the deficiencies, the APAC Office in consultation with the Chair of respective Sub Group and subsequent approval from Chairman of APANPIRG may take action to remove the deficiency from APANPIRG open deficiency list.

5.9 Based on the previous communications with and participation in AOP/SG meetings from States / Administrations, ICAO APAC Office prepared a list of AOP Focal Points in **Appendix O to AOP/SG/4 Report**. The list would allow effective and efficient communications between States / Administrations and ICAO APAC Office on AOP matters, including but not limited to the resolution of Air Navigation Deficiencies in the AOP field.

5.10 During the course of AOP/SG/4, Hong Kong China, Japan, Lao PDR and United States provided updates to the AOP Focal Points to the Secretariat. Their inputs had been incorporated in **Appendix O to AOP/SG/4 Report**.

[Post-meeting notes: Australia, Brunei Darussalam, India, Macao China and Nepal provided updates to the AOP Focal Points subsequent to AOP/SG/4 and their inputs had also been incorporated in the same Appendix.]

5.11 AOP/SG/4 adopted the following Conclusion:

Conclusion AOP/SG/4-15: AOP Focal Points			
What: That, States / Administrations be urged to review and update contact details of AOP Focal Points, as contained in Appendix O to AOP/SG/4 Report , for the coordination of actions to resolve the APANPIRG Air Navigation Deficiencies in the AOP Field and for other AOP matters.		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why:	To streamline the communications between States / Administrations and ICAO APAC Office on AOP matters	Follow-up:	☒ Required from States
When:	13-Nov-20	Status:	Adopted by Subgroup
Who:	☒ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:		

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

APANPIRG AOP Sub Group Task List (WP/17)

6.1 The meeting reviewed the updated AOP/SG task list presented by the Secretariat and further updated by the meeting, and placed in **Appendix P**.

6.2 On Task AOP/SG/1/2 (renumbered) amended from “implementation of A-CDM at high density aerodromes” to “implementation of A-CDM at aerodromes used for international operations”, AOP/SG/4 noted that the scale of A-CDM system should be commensurate with the aerodrome operations. In smaller aerodromes, a simple A-CDM tool might be sufficient for the timely and efficient exchange of information among airport stakeholders.

7. Agenda Item 7: Airport Environmental Issues

Water Management at Airports (IP/14)

7.1 This paper presented the global water stress issues and what ACI had been doing to promote best practices in water management through policy, airports recognition and publication.

7.2 AOP/SG/4 noted the ACI Policy Handbook, which provided directions on how airports should protect scarce water resources by minimizing usage and reducing the negative impacts from wastewater, as well as the ACI Asia-Pacific Green Airports Recognition 2020 with water management as the theme.

8. Agenda Item 8: Any Other Business

ICAO Initiatives for Aerodromes Restart (IP/15)

8.1 This paper presented the ICAO initiatives to facilitate States to cope with the various challenges of restarting aerodrome operations after a partial or full closure of aerodromes, due to the COVID-19 pandemic.

8.2 ICAO had been providing support to Member States to cope with the challenges caused by the COVID-19 pandemic, through Implementation Packages (iPack). An iPack is a bundle of standardized guidance material, training, tools and expert support, which aim to facilitate and guide the implementation of ICAO provisions for State entities, aviation service providers, supply chain stakeholders and their personnel.

8.3 An iPack on Aerodromes Restart had been developed to facilitate and guide Civil Aviation Authorities and/or aerodrome operators in applying Annex 14, Volume I and other relevant ICAO provisions, to ensure safety, regularity and efficiency of aerodrome operations after a partial or full aerodrome closure due to the COVID-19 pandemic.

8.4 To further support States in their restart activities, an *Aerodrome Restart* online course has been developed, through ICAO's Global Aviation Training Section. This course, of a 5-hour duration, aims to provide Civil Aviation Authorities and aerodrome operators with the knowledge and skills required in applying Annex 14, Volume I and other relevant ICAO provisions, to ensure safety, regularity and efficiency during gradual resumption of aerodrome operations after a full or partial aerodrome closure due to the COVID-19 pandemic.

9. Agenda Item 9: Date and Venue of Next Meeting

Provisional Agenda, Date and Venue of Next Meeting (WP/18)

9.1 AOP/SG/4 reviewed the draft agenda proposed by the Secretariat and agreed on the following Provisional Agenda for AOP/SG/5:

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 Air Navigation Plan
	– Asia Pacific Seamless ANS Plan
Agenda Item 4:	Provision of AOP in the Asia/Pacific Region
	– Reports of Working Group/Task Force Meetings
	– Planning & Design of Aerodromes
	– Certification and Operations of Aerodromes
	– Capacity Development and Trainings
Agenda Item 5:	Air Navigation Deficiencies in AOP
Agenda Item 6:	Airport Environmental Initiatives
Agenda Item 7:	AOP/SG Task List
Agenda Item 8:	Any other business
Agenda Item 9:	Date and Venue for the Next Meeting

9.2 The next AOP/SG Meeting will be held in last week of June 2021 for 4 days. States/Administrations interested to host the Fifth Meeting of the AOP/SG were requested to contact the Secretariat. The venue of AOP/SG/5 will be communicated to States/Administrations through ICAO APAC Invitation Letter for AOP/SG/5.

9.3 Ms. Lyu Qing, Chairperson of AOP/SG, thanked the members for their contribution and cooperation to AOP/SG/4. She also expressed her appreciation to the Chairpersons of APA-CDM/TF, AP-ADO/TF, AP-AA/WG and AP-WHM/WG, as well as the Group Leader of AOPC/SWG, for their excellent work delivered to AOP/SG/4.

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Asia/Pacific Airport Collaborative Decision-Making Task Force (APA-CDM/TF)

TERMS OF REFERENCE

(As amended by ~~Decision APANPIRG/30/3~~)
(Proposed Amendment by APA-CDM/TF/5)

The scope and objective of the APA-CDM/TF is to assist States in implementation of A-CDM at ~~high density~~ international aerodromes ~~(100,000 scheduled movements per annum or more as per Asia/Pacific Seamless ATM Plan)~~ by fostering harmonized A-CDM implementations and promoting best practices to achieve performance expectations as per Asia/Pacific A-CDM Implementation Plan.

To achieve the above objective, the Task Force shall:

- 1) Monitor and assist States in implementation of A-CDM at ~~high density~~ international aerodromes to foster harmonized implementations as per Asia/Pacific A-CDM Implementation Plan;
- 2) Encourage States to share their experiences and best practices in implementing A-CDM through Workshop /Seminar;
- 3) Monitor the progress of achieving the performance expectations as per Asia/Pacific A-CDM Implementation Plan and review them as needed;
- 4) Foster the interoperability of A-CDM with ATFM and Aircraft Operator systems; and
- 5) Establish and continue close working arrangements with other relevant ICAO Regional groups such as the Air Traffic Flow Management Steering Group (ATFM/SG), System-Wide Information Management Task Force (SWIM/TF) and other groups working on related issues.

Composition: The APA-CDM Task Force will be a multidisciplinary group composed of subject matter experts in aircraft operations, air traffic management, aerodrome operations and systems engineering, supplemented with other members as and when required.

Working Methods: The Task Force will hold at least one three-day face-to-face meeting each year.

Time Lines: Deliverables addressing the objective of the Task Force are required to be developed and delivered to APANPIRG/32.

INTERNATIONAL CIVIL AVIATION ORGANIZATION

DRAFT



**ASIA/PACIFIC REGIONAL GUIDANCE ON AERODROME OPERATIONS
PERSONNEL COMPETENCY REQUIREMENT FRAMEWORK**

DRAFT Version 1.1, March 2020

This guidance material was developed by the Asia/Pacific Aerodrome Operations Personnel Competency Small Working Group (AOPC SWG)

Approved by APANPIRG AOP/SG and published by the
ICAO Asia and Pacific Office, Bangkok

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FOREWORD

1. Introduction

1.1 APANPIRG/27 recognised the importance of the aerodrome operations personnel competency requirement for certification of aerodromes, roles and responsibilities of aerodrome operations personnel in terms of safety, efficiency and facilitation for flights, passengers, cargo, and all set of activities required to maintain a valid aerodrome certificate. APANPIRG/27 endorsed the AOP/WG/4 decision to form a Small Working Group comprised of China, Macao China, Japan, Malaysia, Maldives, Singapore and ACI to develop *Guidance on Aerodrome Operations Personnel Competency Requirement Framework* for use as a reference document in Asia Pacific Region.

1.2 The Asia/Pacific Regional Guidance on Aerodrome Operations Personnel Competency Requirement Framework was developed by the AOPC SWG using information derived from Annex 14 Volume I – Aerodrome Design and Operations, Procedures for Air Navigation Services (PANS) — Aerodromes (Doc 9981), Manual on Certification of Aerodromes (Doc 9774), Airport Services Manual (Doc 9137) and Airport Council International’s (ACI) Handbooks.

2. Scope and purpose of the document

Scope of the document

2.1 This document provides guidance for the competency and assessment of the aerodrome operations and technical personnel in the following areas and corresponding curriculum of the trainings required for those personnel:

- a) Runway surface conditions assessment and reporting;
- b) Aerodrome movement area maintenance;
- c) Inspection of the movement area;
- d) Works in progress on the airside;
- e) Foreign object debris (FOD);
- f) Wildlife hazard management;
- g) Apron safety;
- h) Runway Safety; and
- i) Aerodrome driver permit scheme and vehicle/equipment safety requirement

2.2 Guidance on competency and training of aerodrome rescue and firefighting personnel is available in Airport Services Manual (Doc 9137) Part 1 – Rescue and Firefighting (Chapter 14 – Training) and Part 8 – Airport Operations Services (Chapter 17, 17.6 – Training). Therefore, this manual excludes the rescue and fire-fighting services from the scope.

2.3 Guidance on foreign object debris (FOD) training, wildlife hazard management training and framework for an airside vehicle driver training programme is available in PANS-Aerodrome (Doc 9981).

Purpose of the document

2.4 The purpose of this document is to provide guidance to:

- a) aerodrome operators in establishing minimum competency requirements for personnel involved in aerodrome operations; and
- b) regulators for assessment of minimum qualification of the aerodrome operations personnel during initial certification and continuous surveillance of aerodrome operators.

2.5 Guidelines provided in this document are in consistency with the requirements of ICAO Annexes 14 and 19, PANS-Aerodromes (Doc 9981), Safety Management Manual (Doc 9859), Manual on Certification of Aerodromes (Doc 9774), Airport Services Manual (Doc 9137) and relevant ACI Handbooks.

ACRONYMS AND ABBREVIATIONS

ADP	Airside driver permit
AIA	Accident investigation authority
AIP	Aeronautical information publication
AIS	Aeronautical information service
ANSP	Air navigation services provider
ATS	Air traffic service
AVP	Airside vehicle permit
CAA	Civil aviation authority
FOD	Foreign object debris/damage
GSE	Ground support equipment
IAA	Indian Aviation Academy
IAAA	Incheon Airport Aviation Academy
LVP	Low visibility procedures
NAVAID	Navigation aid
OLS	Obstacle limitation surfaces
PAPI	Precision approach path indicator
RFF	Rescue and fire fighting
RST	Runway safety team
RTF	Radiotelephone
SAA	Singapore Aviation Academy
SARPs	Standards and Recommended Practices
SMS	Safety management system
WGS-84	World Geodetic System — 1984
WHMP	Wildlife hazard management programme
WIP	Works in progress

PART I AERODROME OPERATIONAL MANAGEMENT

Chapter 1 DEFINITIONS

1.1 Definitions can be found in following documents:

- a) Annex 14, Volume I – Aerodrome Design and Operations;
- b) Annex 19, Safety Management
- c) Procedures for Air Navigation Services (PANS) — Aerodromes (Doc 9981); and
- d) Safety Management Manual (Doc 9859).

Chapter 2 FUNCTIONS AND RESPONSIBILITIES OF THE AERODROME MANAGEMENT, OPERATIONS AND TECHNICAL PERSONNEL

2.1 Functions and responsibilities of the aerodrome management, operations and technical personnel can be found in following documents:

- a) PANS-Aerodromes (Doc 9981), Part II – Aerodrome Operational Management;
- b) Manual on Certification of Aerodromes (Doc 9774), Chapter 3, Section D – Obligation of the Aerodrome Operator;
- c) Airport Services Manual (Doc 9137), Part 8 – Airport Operational Services, Chapter 2 – The Functional Responsibilities of the Airport Technical Departments; and
- d) Aerodrome Manual of the respective aerodrome.

Chapter 3 AERODROME OPERATIONS PERSONNEL

3.1 In this document, aerodrome operations personnel are categorised into four levels of seniority in the organizational hierarchy. However, it depends on size and complexity of operations at a particular aerodrome. At smaller aerodromes, there may be only one or two categories/hierarchy of aerodrome personnel.

- a) Accountable Executive;
- b) Head of Aerodrome Operation/Maintenance (Technical Services);
Note – This refers to the senior managerial personnel overseeing the aerodrome operation / maintenance (technical services) matters that may have a different title.
- c) Managers/Supervisors; and
- d) Officers/Technicians.

PART II TRAINING AND COMPETENCY OF AERODROME OPERATIONS PERSONNEL

Chapter 1 TRAINING

GENERAL

1.1. The activities conducted by an aerodrome operator require the appropriate competencies and training of personnel, in order to carry out their assigned tasks.

1.2. Trainings are generally conducted by the individual's employer according to national employment regulations, but may also be conducted by the aerodrome operator or other third parties.

1.3. This chapter provides the general obligations related to training programmes and competency checks for all personnel carrying out the procedures detailed in aerodrome manual.

Note.— Training for other activities, not contained in this document, may be carried out depending on the needs identified by the aerodrome operator.

1.4. Additional material related to training procedures, including more detailed programmes or requirements, can be found in other document related to activity-specific training.

Note.— General principles and procedures on training can be found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part I.

OBJECTIVES

1.5. Aerodrome operators shall ensure that training programmes are developed and implemented for personnel involved in aerodrome operations.

1.6. The training programmes shall include procedures for the verification of personnel knowledge and for the practical application thereof, at adequate intervals.

OPERATIONAL PRACTICES

1.7. Aerodrome operators shall be responsible for ensuring their staff are adequately trained for each task they are required to carry out. The details of the training will vary depending on the person's experience and background and the complexity of the required task.

1.8. Training objectives should be identified. Based on these objectives, the training programme should include content and frequency for each technical subject, as well as a method to track the progress of the required training and the maintenance of training records.

1.9. A training programme should include:

- a) theoretical training;
- b) practical or on-the-job training;
- c) testing of understanding; and
- d) demonstrating competence or recurrent theoretical and/or practical training.

Note 1.— Provisions on demonstrating competence are in Chapter 2.

Note 2.— Demonstration of continued competence is an alternative to recurrent training.

Note 3.— Chapter 3 provides guidance on the structure of a training programme.

1.10. Refresher training, including theoretical and practical aspects, may be provided after a long term absence to ensure that such personnel is kept abreast of the most recent material, developments and practices.

Chapter 2 DEMONSTRATING COMPETENCE

2.1 In order to demonstrate competence in a specific task, personnel shall demonstrate that the theory, practical training and local knowledge can be applied together in a satisfactory way, usually by successfully completing a competency check.

2.2 Competency checks may be used as an alternative to recurrent training whereby the employer can ensure its personnel demonstrate continued competence in a task and therefore do not require recurrent training.

2.3 Competency checks can be completed during day-to-day activities by having a competent individual accompany and assess the staff member on a task they are required to complete.

2.4 Records of all the steps taken to achieve the task shall be made and an evaluation shall be completed.

2.5 For a team or section to be recognized as competent, periodical audits or checks should be carried out and recorded. All shortfalls should be addressed by reviewing and updating the training material, refresher training or the frequency of refresher training. Similarly, after any accident, incident or serious occurrence, it may be prudent to review training to ensure it remains appropriate.

*Note 1:— **Appendix A** provides a sample of Competency Matrices related to nine aerodrome operational functional areas. Competency requirements of the Safety Manager's functions can be found in Chapter 9 of Safety Management Manual (Doc 9859) [refer to 9.3.6 Appointment of key safety personnel].*

Note 2:- Following definitions may be used to determine the level of competency of the aerodrome operations personnel in the matrices provided in **Appendix A**:

- a) Basic - Possess basic fundamental knowledge and general awareness of the subject to comprehend the works and processes involved. Generally, applicable to management levels that oversee the operations.

Basic level of competency maybe achieved attending a relevant course.

- b) Intermediate - Possess technical skills and practical working knowledge of the subject that are required to execute the works competently under supervision. Generally, applicable to operational personnel or project officers who are responsible to perform the duties and are involved in planning/implementation of the system.

Intermediate level of competency maybe achieved attending a relevant course and after having certain periods of practical experiences, as determined by the appropriate authority, on the relevant field or on-the-job trainings.

- c) Advanced - Possess advanced and in-depth knowledge to be able to provide training and expert opinion/advice on the subject. Generally, applicable to specialist who is well versed with the subject with hands-on experiences and specialised trainings.

Advanced level of competency maybe achieved attending a specialized course and after having certain periods of practical experiences, as determined by the appropriate authority, on the relevant field.

Chapter 3 STRUCTURE OF A TRAINING PROGRAMME

INITIAL TRAINING

3.1 Initial training should be composed of theoretical and practical training modules. Personnel should be assessed and demonstrate their capability to safely accomplish the required tasks upon completion of the initial training and prior to starting on-the-job training.

RECURRENT TRAINING

3.2 The aerodrome operator should ensure that personnel complete recurrent training at suitable intervals after the completion of their initial training programme. Continuous competency checking may be used as an alternative to recurrent training.

REFRESHER TRAINING

3.3 When a person has not performed any of their assigned tasks for a significant period of time, or has been involved in an accident, incident or serious occurrence, in which training-related issues have been identified as a contributing factor, that person should complete relevant refresher training prior to:

- a) performing assigned tasks; or
- b) being allowed unescorted access on the movement area and other operational areas of the aerodrome, as appropriate.

Note 1:- PANS-Aerodromes (Doc 9981) provides following training curricula/syllabi:

- a) FOD training (refer to Appendix 1 to Chapter 5 of Part II);
- b) Wildlife control training (refer to Appendix 1 to Chapter 6 of Part II);
- c) Framework for an airside vehicle driver training programme (refer to Appendix 1 to Chapter 9 of Part II);

Note 2:- Training syllabus for aerodrome rescue and firefighting personnel is available in Airport Services Manual (Doc 9137) Part 1 – Rescue and Firefighting (Chapter 14 – Training) and Part 8 – Airport Operations Services (Chapter 17, 17.6 – Training).

*Note 3:- Examples of the training syllabi that are required for Runway Surface Conditions Assessment and Reporting, Aerodrome Movement Area Maintenance, Inspection of Movement Area, Work in progress on the airside, Apron Safety and Runway Safety are provided in **Appendix B**. Depending on the needs of aerodrome, Civil Aviation Authority or aerodrome operator, as appropriate, may assess and determine whether the training syllabi in **Appendix B** qualify as basic, intermediate or advanced courses.*

Note 4:- ICAO and industry recognized training courses for aerodrome operations personnel can be found in following websites:

- a) ICAO Global Aviation Training
<https://www.icao.int/training/Pages/Training-Catalogue.aspx?subjectid=1>
- b) Airports Council International
<https://aci.aero/global-training/programmes/>
- c) International Air Transport Association
<https://www.iata.org/en/training/courses/>
- d) ICAO TRAINAIR Plus Regional Training Centres of Excellence in APAC Regions:
 - 1. Capital Airports Management Academy, China <http://www.cah.com.cn/>
 - 2. GMR Aviation Academy, India <http://www.gmraviationacademy.org/>
 - 3. Incheon Airport Aviation Academy (IAAA), Republic of Korea
<https://academy.airport.kr:844/academy/index.jsp>
 - 4. Civil Aviation Training Center, Republic of Korea
<https://www.airport.co.kr/kcaaeng/main.do>

5. *Singapore Aviation Academy (SAA), Singapore* <https://saa.caas.gov.sg/>

APPENDIX A - AERODROME OPERATIONS PERSONNEL COMPETENCY REQUIREMENTS

Table A1-0: AOPC Matrix - Accountable Executive

Note: By fulfilling the requirements in table A1-0, the accountable executive may be considered to have fulfilled the competency requirements for all nine aerodrome operational functional areas.

Aerodrome Operations Personnel	Competency areas (knowledge, skills and attitudes)	Required Competency Level (Basic/ Intermediate/ Advanced)	Training Areas	Required Type of Training (Initial, OJT, Refresher, Recurrent, Specialised)	Requirement of Competency Test
Accountable Executive	National Legislation and regulations/ requirements, including the need for aerodrome certification References: ▪ ICAO Annexes 14 and 19 ▪ PANS Aerodromes (Doc 9981)	Basic	a) National aerodrome regulations; b) ICAO Annex 14 requirements on aerodrome certification and Annex 19 requirements on SMS	Initial training Recurrent training (when significant amendment/ changes applied)	No
	Aerodrome operations and safety management system	Basic	Aerodrome/SMS manuals	Initial training	No

Table A1-1: AOPC Matrix - Runway Surface Conditions Assessment and Reporting

Aerodrome Operations Personnel	Competency areas (knowledge, skills and attitudes)	Required Competency Level (Basic/ Intermediate/ Advanced)	Training Areas	Required Type of Training (Initial, OJT, Refresher, Recurrent, Specialised)	Requirement of Competency Test
Head of Aerodrome Operation	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training (when significant amendment/ changes applied)	No
	Aerodrome operations and safety management system	Basic	a) Relevant parts of aerodrome/SMS manuals b) Airside Safety and Operations	Initial training Recurrent training	No
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	No
	<u>Job related requirements:</u> <u>National and international requirements and best practices on:</u> a) Runway pavement characteristics with different types of distress on runway pavement b) Runway friction evaluation and assessment c) Runway surface conditions assessment <u>References:</u> ▪ ICAO Annexes 14 and 19 ▪ PANS Aerodromes (Doc 9981) ▪ Airport Services Manual (Doc 9137), Part 2 - Pavement Surface condition.	Basic	Runway Condition Reporting	Initial training Recurrent training Refresher training as required	No

Appendix A

	▪ Aerodrome Design Manual (Doc 9157), Part 3 – Pavements ▪ Safety Management Manual (Doc 9859) ▪ ACI Runway Safety Handbook ▪ ACI Apron Safety Handbook				
Managers/ Supervisors	a) National Legislation and regulations / requirements, including aerodrome certification process b) NOTAM/SNOWTAM and AIP	Basic	a) National aerodrome regulations; b) NOTAM/SNOWTAM and AIP	Initial training Recurrent training Refresher training as required Specialized training	Yes
	<u>Aerodrome operations and Safety management system, covering:</u> a) Identification of safety Hazards b) Risk assessment and Mitigation c) Accident/Incident Investigation d) Safety/Audits Inspections	Intermediate	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	Yes
	<u>Job related requirements:</u> a) Pavement characteristics b) Evaluation of pavements and identification of types of distress c) Correct use of equipment as required for friction testing and other assessments d) Friction assessment, evaluation and reporting methodology e) Procedures for reporting runway surface conditions f) Radiotelephone g) Runway incursion h) FOD management	Advanced	a) Aerodrome Pavement Maintenance b) Friction measurement training provided by friction testing equipment manufacturer c) Runway Condition Reporting d) Airside Safety and Operations e) Runway Incursion Awareness and Prevention	Initial training Recurrent training Refresher training if required Specialized training as required	Yes

Appendix A

	References: ▪ ICAO Annexes 14 and 19 ▪ PANS Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ Airport Services Manual (Doc 9137), Part 2 - Pavement Surface condition. ▪ Aerodrome Design Manual (Doc 9157), Part 3 – Pavements (relevant Chapters only) ▪ ACI Runway Safety Handbook ▪ ACI Apron Safety Handbook		f) Radiotelephone phraseology		
Officers/ Technicians	a) National Legislation and regulations / requirements including aerodrome compliance to regulations (applicable parts/chapters only) b) NOTAM/SNOWTAM and AIP	Basic	a) National aerodrome regulations b) NOTAM/SNOWTAM and AIP	Initial training Recurrent training Refresher training if required	Yes
	<u>Aerodrome operations (applicable parts/chapters) and safety management system, covering:</u> a) Identification of safety Hazards b) Safety reporting – mandatory, voluntary and confidential reports on hazard and risk management	Intermediate	Relevant parts of aerodrome/SMS manuals	Initial training + OJT Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training + OJT Recurrent training Refresher training as required	Yes

Appendix A

	<u>Job related requirements:</u> a) Pavement characteristics b) Evaluation of pavements and identification of types of distress c) Correct use of equipment as required for friction testing d) Friction assessment, evaluation and reporting methodology e) Procedures for reporting runway surface conditions f) Radiotelephone g) Runway incursion h) FOD management References: ▪ Annex 14 (applicable chapters only) ▪ PANS-Aerodromes (Doc 9981) (applicable parts/chapters only) ▪ Airport Services Manual (Doc 9137), Part 2 - Pavement Surface condition	Intermediate	a) Aerodrome Pavement Maintenance b) Friction measurement training provided by friction testing equipment manufacturer c) Runway Condition Reporting d) Airside Safety and Operations e) Runway Incursion Awareness and Prevention f) Radiotelephone phraseology	Initial training + OJT Recurrent training Refresher training as required	Yes

Table A1-2: AOPC Matrix - Aerodrome Movement Area Maintenance

Aerodrome Operations Personnel	Competency areas (knowledge, skills and attitudes)	Required Competency Level (Basic/ Intermediate/ Advanced)	Training Areas	Required Type of Training (Initial, OJT, Refresher, Recurrent, Specialised)	Requirement of Competency Check
Head of Aerodrome Maintenance (Technical Services)	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training (when significant amendment/changes applied)	No
	Aerodrome operations and safety management system	Basic	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training	No
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	No
	<u>Job related requirements:</u> <u>National and International requirements and best practices on:</u> - Aerodrome pavement management system - Runway surface conditions assessment - Obstacle limitation Surfaces - Maintenance Management - Aerodrome visual aids <u>References:</u> - ICAO Annexes 14 and 19 - PANS Aerodromes (Doc 9981) - ACI Aerodrome maintenance - Airport Services Manual (Doc 9137), Part 2 – Pavements	Basic	Understanding Annex 14 and PANS- Aerodromes	Initial training Recurrent training Refresher training as required	No

Appendix A

	▪ Safety Management Manual (Doc 9859) ▪ ACI Runway Safety Handbook ▪ ACI Apron Safety Handbook				
Managers/ Supervisors	a) National Legislation and regulations / requirements, including aerodrome certification process b) NOTAM and AIP	Basic	a) National aerodrome regulations; b) NOTAM and AIP	Initial training Recurrent training Refresher training as required Specialized training	Yes
	<u>Aerodrome operations and Safety management system covering:</u> a) Identification of safety Hazards b) Risk assessment and Mitigation c) Accident/incident investigation d) Safety/Audits Inspections e) Occupational health and safety	Intermediate	Relevant parts of Aerodrome/SMS manuals	Initial training Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	Yes
	<u>Job related requirements:</u> a) Developing SOP b) Preventive maintenance of visual aids and paved and non-paved movement areas c) Runway Incursion d) Radiotelephone e) Maintenance Management f) Removal of runway contaminants (e.g. snow, slush, ice, rubber, fuel etc.) g) Providing maintenance Trainings h) FOD management References:	Advanced	a) Understanding Annex 14 and PANS-Aerodromes b) Aerodrome Pavement Maintenance c) Airfield Lighting including PAPI/VASIS Maintenance d) Maintenance of Markings, Signs and markers	Initial training Recurrent training Refresher training as required Specialized training as required	Yes

Appendix A

	▪ ICAO Annexes 14 and 19 ▪ PANS Aerodromes (Doc 9981) ▪ Airport Services Manual (Doc 9137), Part 2 - Pavement Surface condition. ▪ Airport Services Manual (Doc 9137), Part 6 - Control of Obstacles ▪ Airport Services Manual (Doc 9137), Part 8 - Airport Operational Services ▪ Airport Services Manual (Doc 9137), Part 9 - Maintenance practices ▪ Airport Services Manual (Doc 9137), Part 5 - Electrical Systems ▪ Safety Management Manual (Doc 9859) ▪ ACI Runway Safety Handbook ▪ ACI Apron Safety Handbook		e) Removal of Contaminants from Aerodrome Pavements f) Runway Incursion Awareness and Prevention g) Radiotelephone phraseology h) Maintenance of Unpaved Surfaces		
Officers / Technicians (Carrying out day-to day Aerodrome Movement Area Maintenance)	a) National Legislation and regulations / requirements, including aerodrome compliance to regulations (applicable parts only) b) NOTAM and AIP	Basic	a) National aerodrome regulations; b) NOTAM and AIP	Initial training Recurrent training Refresher training as required	Yes
	<u>Aerodrome operations and safety management system, covering:</u> a) Identification of safety Hazards b) Safety reporting – mandatory, voluntary & confidential	Intermediate	Relevant parts of aerodrome and SMS manuals	Initial training + OJT	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training + OJT Recurrent training Refresher training as required	Yes
	<u>Job related requirements:</u> a) Pavement characteristics	Intermediate	a) Understanding Annex 14 and PANS-Aerodromes	Initial training + OJT Recurrent training Refresher training as required	Yes

b) Method and technology for pavements maintenance c) Maintenance of the paved and unpaved areas including storm-water drainage systems d) Maintenance of aerodrome visual aids e) Foreign Object debris (FOD) management f) Protection of navigational aids References: ▪ Relevant parts of Annex 14 ▪ PANS-Aerodromes (Doc 9981) (applicable parts/chapters only) ▪ Airport Services Manual (Doc 9137), Part 2 - Pavement Surface condition. ▪ Airport Services Manual (Doc 9137), Part 6 - Control of Obstacles ▪ Airport Services Manual (Doc 9137), Part 8 - Airport Operational Services ▪ Airport Services Manual (Doc 9137), Part 9 - Maintenance practices ▪ Airport Services Manual (Doc 9137), Part 2 - Pavements ▪ Airport Services Manual (Doc 9137), Part 5 - Electrical Systems ▪ Safety Management Manual (Doc 9859) ▪ ACI Runway Safety Handbook ▪ ACI Apron Safety Handbook		b) Airside Safety and Operations c) Aerodrome Pavement Maintenance d) Airfield Lighting Maintenance e) Maintenance of Markings, Signs and markers f) Removal of Contaminants from Aerodrome Pavements g) Runway Incursion Awareness and Prevention h) FOD Training i) Maintenance of Unpaved Surfaces j) Radiotelephone phraseology		

Note:- Managers/supervisors and Officers / Technicians carrying out day-to day aerodrome movement area maintenance may be from Civil Engineering or Electrical Engineering background depending on the field of the maintenance..

Table A1-3: AOPC Matrix - Inspection of Movement Area

Aerodrome Operations Personnel	Competency areas (knowledge, skills and attitudes)	Required Competency Level (Basic/ Intermediate/ Advanced)	Training Areas	Required Type of Training (Initial, OJT, Refresher, Recurrent, Specialised)	Requirement of Competency Check
Head of Aerodrome Operation	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training (when significant amendment/changes applied)	No
	Aerodrome operations and safety management system	Basic	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training	No
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	No
	<u>Job related requirements:</u> National and international requirements and best practices on: a) Wildlife Hazard Management b) Obstacle limitation Surfaces c) Movement area Inspection d) Visual aids e) Low visibility operations, if applicable f) Adverse weather operations g) FOD management References: ▪ ICAO Annexes 14 and 19 ▪ PANS Aerodromes (Doc 9981)	Basic	a) Aerodrome safeguarding b) Aerodrome Inspection c) Airside safety and operations (which includes Wildlife Hazard Management, Adverse Weather, Low Visibility Operations)	Initial training Recurrent training Refresher training as required	No

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	▪ Airport Services Manual (Doc 9137), Part 2 - Pavement Surface condition. ▪ Airport Services Manual (Doc 9137), Part 6 - Control of Obstacles ▪ Airport Services Manual (Doc 9137), Part 8 - Airport Operational Services ▪ Airport Services Manual (Doc 9137), Part 3 - Wildlife Control and Reduction ▪ Aerodrome Design Manual (Doc 9157), Part 4 – Visual Aids ▪ Manual of all Weather Operations (Doc 9365) ▪ Safety Management Manual (Doc 9859) ▪ ACI Runway Safety Handbook ▪ ACI Apron Safety Handbook				
Managers/ Supervisors	<u>National and international requirements:</u> a) National Legislation and regulations / requirements, including aerodrome certification process b) NOTAM and AIP	Basic	a) National aerodrome regulations; b) NOTAM and AIP	Initial training Recurrent training Refresher training as required	Yes
	<u>Aerodrome operations and Safety management system, covering:</u> a) Identification of safety Hazards b) Risk assessment and Mitigation c) Accident/Incident Investigation d) Safety/Audits Inspections	Intermediate	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	Yes

	<u>Job related requirements:</u> a) Developing SOP related to inspection of movement area b) Radiotelephone c) Runway incursion d) Knowledge on Wildlife Hazard Management e) Obstacle limitation Surfaces f) Movement area Inspection g) Visual aids h) Low visibility operations, if applicable i) Adverse weather operations j) Providing Inspection Trainings k) FOD management References: ▪ ICAO Annexes 14 and 19 ▪ PANS Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ Aerodrome Design Manual (Doc 9157), Part 4 – Visual Aids ▪ Airport Services Manual (Doc 9137), Part 2 -Pavement Surface Condition. ▪ Airport Services Manual (Doc 9137), Part 6 - Control of Obstacles ▪ Airport Services Manual (Doc 9137), Part 8 - Airport Operational Services ▪ Airport Services Manual (Doc 9137), Part 3 - Wildlife Control and Reduction ▪ Manual of all Weather Operations (Doc 9365) ▪ ACI Runway Safety Handbook ▪ ACI Apron Safety Handbook ▪ ACI Wildlife Hazard Management Handbook	Advanced	a) Understanding Annex 14 and PANS-Aerodrome b) Aerodrome Inspection c) Aerodrome safeguarding d) Airside safety and operations (which includes Wildlife Hazard Management, Adverse Weather, Low Visibility Operations) e) Radio telephony phraseology f) Runway incursion awareness and prevention	Initial training Recurrent training Refresher training as required Specialized training as required	Yes

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Officers/ Technicians (Carrying out day-to day inspection of the movement area)	a) National Legislation and regulations / requirements including aerodrome compliance to regulations (applicable parts/chapters only) b) NOTAM and AIP	Basic	a) National aerodrome regulations; b) NOTAM and AIP	Initial training Recurrent training Refresher training as required	Yes
	<u>Aerodrome operations and safety management system, covering:</u> a) Identification of safety hazards b) Safety reporting – mandatory, voluntary & confidential	Intermediate	Relevant parts of aerodrome/SMS manuals	Initial training + OJT Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training + OJT Recurrent training Refresher training as required	Yes
	<u>Job related requirements:</u> a) Radiotelephone b) Runway incursion c) Wildlife Hazard Management d) Obstacle Control e) Visual aids f) Low visibility operations, if applicable g) Adverse weather operations h) FOD management <u>References:</u> ▪ Annex 14 (applicable parts only) ▪ PANS-Aerodromes (Doc 9981) (applicable parts/chapters only) ▪ Aerodrome Design Manual (Doc 9157), Part 4 – Visual Aids ▪ Airport Services Manual (Doc 9137), Part 6 - Control of Obstacles ▪ Airport Services Manual (Doc 9137), Part 8 - Airport Operational Services	Intermediate	a) Understanding Annex 14 including PANS Aerodrome b) Aerodrome Inspection c) Aerodrome safeguarding d) Airside safety and operations (which includes Wildlife Hazard Management, Adverse Weather, Low Visibility Operations) e) Radio telephony phraseology f) Runway incursion awareness and prevention	Initial training + OJT Recurrent training Refresher training as required	Yes

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	▪ Airport Services Manual (Doc 9137), Part 3 - Wildlife Control and Reduction ▪ Manual of all Weather Operations (Doc 9365) ▪ Safety Management Manual (Doc 9859) ▪ ACI Runway Safety Handbook ▪ ACI Apron Safety Handbook		g) Adverse weather and low visibility operations (if applicable)		

Table A1-4: AOPC Matrix - Works in progress on the airside

Aerodrome Operations Personnel	Competency areas (knowledge, skills and attitudes)	Required Competency Level (Basic/ Intermediate/ Advanced)	Training Areas	Required Type of Training (Initial, OJT, Refresher, Recurrent, Specialised)	Requirement of Competency Check
Head of Aerodrome Maintenance (Technical Services)	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training (when significant amendment/changes applied)	No
	Aerodrome operations and safety management system	Basic	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training	No
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	No
	<u>Job related requirements:</u> National and International requirements and best practices on: a) Compliance with aerodrome works safety plan and procedures including OLS b) Aerodrome emergency plan c) Development of training program to mitigate potential safety hazards caused by works in progress d) Works authorization procedure e) Promoting safety awareness f) Accidents and incidents Investigation g) Hazards Identification and Risk management h) Conduct of internal safety audit	Basic	a) Understanding Annex 14 and PANS-Aerodromes b) Aerodrome Safety Management System c) Accident/incident investigation d) Runway incursion Awareness and Prevention e) Aerodrome Inspection f) Managing Works in Progress	Initial training Recurrent training Refresher training as required	No

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	Implementation of the proposed mitigations; i) Coordination with ATS and other stakeholders/agencies, as required References: ▪ ICAO Annexes 14 and 19 ▪ PANS-Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ ACI Managing Operations During Construction Handbook ▪ CAA Advisory Circular (Guidance materials)				
Managers/ Supervisors	a) National Legislation and regulations / requirements, including aerodrome certification process b) NOTAM and AIP	Basic	a) National aerodrome regulations; b) NOTAM and AIP	Initial training Recurrent training Refresher training as required	Yes
	<u>Aerodrome operations and safety management system, covering:</u> a) Identification of safety Hazards b) Risk assessment and Mitigation c) Accident/incident investigation d) Safety/Audits Inspections	Intermediate	Relevant parts of aerodrome and SMS manuals	Initial training Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	Yes

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	<u>Job related requirements:</u> a) Develop work safety plan and work control procedures b) Aerodrome emergency plan c) Provide work safety training d) Promote work safety awareness e) Evaluate and control of contractor f) Prepare inspection checklist g) Perform safety inspection h) Reduced runway length operations i) FOD management <u>References:</u> ▪ ICAO Annexes 14 and 19 ▪ PANS-Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ ACI Managing Operations During Construction Handbook ▪ CAA Advisory Circular (relevant parts only)	Advanced	a) Understanding Annex 14 and PANS-Aerodromes b) Managing Operations during construction c) Runway incursion Awareness and Prevention which includes FOD control d) Emergency Planning and Response e) Airside operation and safety f) Aerodrome Safety Management System	Initial training Recurrent training Refresher training as required Specialized training as required	Yes
Officers/ Technicians	a) National Legislation and regulations / requirements including aerodrome compliance to regulations (applicable parts/chapters only) b) NOTAM and AIP	Basic	a) National aerodrome regulations; b) NOTAM and AIP	Initial training Recurrent Refresher training as required	Yes
	<u>Aerodrome operations and safety management system, covering:</u> a) Identification of safety Hazards b) Safety reporting – mandatory, voluntary and confidential	Intermediate	Relevant parts of aerodrome and SMS manuals	Initial training + OJT Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training + OJT Recurrent training Refresher training as required	Yes

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	<u>Job related requirements:</u> a) Execute work safety plan and procedures and monitor the height of installations/equipment b) Role in aerodrome emergency plan c) Ensure works in progress in accordance with work plan d) Ensure working area are marked and lit in accordance with work plan e) Ensure access routes in accordance with work plan f) Ensure safety measures implemented in accordance with work plan g) Identify and report hazards h) Perform safety inspection i) FOD management References: j) Annexes 14 & 19 (relevant Chapters) k) PANS-Aerodromes (Doc 9981) l) Safety Management Manual (Doc 9859) m) ACI Managing Operations During Construction Handbook n) CAA Advisory Circular (relevant parts only)	Intermediate	a) Understanding Annex 14 and PANS-Aerodromes b) Managing Operations during construction c) Runway incursion Awareness and Prevention which includes FOD control d) Emergency Planning and Response e) Airside operation and safety f) Aerodrome Safety Management System	Initial training + OJT Recurrent training Refresher training as required	Yes

Table A1-5: AOPC Matrix – FOD Management

Aerodrome Operations Personnel	Competency areas (knowledge, skills and attitudes)	Required Competency Level (Basic/ Intermediate/ Advanced)	Training Areas	Required Type of Training (Initial, OJT, Refresher, Recurrent, Specialised)	Requirement of Competency Check
Head of Aerodrome Operation	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training (when significant amendment/changes applied)	No
	Aerodrome operations and safety management system	Basic	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training	No
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	No
	<u>Job related requirements:</u> a) Documentation and Reporting b) Analysis and Evaluation c) FOD Mitigation <u>References:</u> ▪ ICAO Annexes 14 and 19 ▪ PANS-Aerodromes (Doc 9981) ▪ Relevant parts of Doc 9137 ▪ CAA Advisory Circular (Guidance materials)	Basic	FOD Management (Refer to PANS-Aerodrome)	Initial training Recurrent training Refresher training as required	No

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Managers/ Supervisors	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training Refresher training as required	Yes
	<u>Aerodrome operations and safety management system covering:</u> a) Identification of safety Hazards b) Risk assessment and Mitigation c) Accident/incident investigation d) Safety/Audits Inspections	Intermediate	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	Yes
	<u>Job related requirements:</u> a) FOD management b) FOD occurrence analysis and evaluation c) Airside Driving d) Specific equipment operation e) Radiotelephone f) Aerodrome markings, signs and lights g) Familiar with actions for emergency cases References: ▪ ICAO Annexes 14 and 19 ▪ PANS-Aerodromes (Doc 9981) ▪ Relevant parts of Doc 9137 ▪ CAA Advisory Circular (Guidance materials)	Advanced	a) FOD Management (Refer to PANS-Aerodrome) b) Airside driving (Refer to PANS-Aerodromes) c) Radiotelephone phraseology d) Aerodrome markings, signs and lights e) FOD detection equipment (if applicable, provided by manufacturer)	Initial training Recurrent training Refresher training as required Specialized training as required	Yes

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Officers/ technicians	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training Refresher training as required	Yes
	<u>Aerodrome operations and safety management system covering:</u> a) Identification of safety Hazards b) Safety reporting – mandatory, voluntary and confidential c) FOD inspection and reporting	Intermediate	Relevant parts of aerodrome/SMS manuals	Initial training + OJT Recurrent training	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training + OJT Recurrent training Refresher training as required	Yes
	<u>Job Related Requirements</u> a) FOD inspection and reporting b) Airside Driving c) Specific equipment operation d) Radiotelephone e) Aerodrome markings, signs and lights f) Familiar with actions for emergency cases References: ▪ ICAO Annexes 14 and 19 ▪ PANS-Aerodromes (Doc 9981) ▪ Relevant parts of Doc 9137 ▪ CAA Advisory Circular (Guidance materials)	Intermediate	a) FOD Management (Refer to PANS-Aerodrome) b) Airside driving (Refer to PANS-Aerodromes) c) Radiotelephone phraseology d) Aerodrome markings, signs and lights e) FOD detection equipment (if applicable, provided by manufacturer)	Initial training + OJT Recurrent training Refresher training as required	Yes

Table A1-6: AOPC Matrix – Wildlife Hazard Management

Aerodrome Operations Personnel	Competency areas (knowledge, skills and attitudes)	Required Competency Level (Basic/ Intermediate/ Advanced)	Training Areas	Required Type of Training (Initial, OJT, Refresher, Recurrent, Specialised)	Requirement of Competency Check
Head of Aerodrome Operation	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training (when significant amendment/changes applied)	No
	Aerodrome operations and safety management system	Basic	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training	No
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	Yes
	<u>Job related requirements:</u> Airport wildlife hazard management programme, focusing: ▪ Role and responsibility of aerodrome wildlife committee; ▪ Operational practices to control wildlife hazard; ▪ Staff training requirements. <u>References:</u> ▪ Annexes 14 and 19 ▪ PANS Aerodromes (Doc 9981) ▪ Airport Services Manual (Doc 9137), Part 3 - Wildlife Hazard Management;	Basic	Wildlife Hazard Management (Refer to PANS-Aerodrome)	Initial training Recurrent training	No

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	▪ ACI Wildlife Hazard Management Handbook; ▪ CAA Advisory Circular (if available)				
Managers/ Supervisors (In charge of wildlife hazard management of the airport)	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training Refresher training as required	Yes
	<u>Aerodrome operations and safety management system, covering:</u> a) Accident and incident investigation management b) Hazard and risk management including wildlife strike risk assessment and mitigation	Basic	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	Yes
	<u>Job related requirements:</u> a) Wildlife survey b) Understanding of habitat management - how wildlife is attracted to the environment c) Understanding of wildlife ecology - how wildlife could respond to different control methods d) Documentation and strike reporting e) Use of dispersal equipment and other methodology f) Review/evaluation of the effectiveness of the airport wildlife hazard management programme g) Radiotelephone h) Airside driving References: ▪ Annexes 14 and 19	Advanced	a) Wildlife Hazard Management (Refer to PANS-Aerodrome) b) Dispersal equipment (provided by manufacturer) c) Radiotelephone phraseology d) Airside driving (Refer to PANS-Aerodromes)	Initial training Recurrent training Refresher training as required Specialized training as required	Yes

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	▪ PANS Aerodromes (Doc 9981) ▪ Airport Services Manual (Doc 9137), Part 3 - Wildlife Hazard Management; ▪ ACI Wildlife Hazard Management Handbook; ▪ CAA Advisory Circular (if available)				
Officers/ Technicians (Doing day-to day wildlife surveys, patrols, dispersal)	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training Refresher training as required	Yes
	<u>Aerodrome operations and safety management system, covering:</u> a) Hazard and risk management b) Safety reporting – mandatory, voluntary and confidential reports	Intermediate	Relevant parts of aerodrome/SMS manuals	Initial training + OJT	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training + OJT Recurrent training Refresher training as required	Yes
	<u>Job related requirements:</u> a) Wildlife identification and management b) Biology and behavior of wildlife c) Documentation and strike reporting d) Use of dispersal equipment and other methodology e) Analysis and evaluation f) Wildlife habitat management g) Migration of bird h) Airside driving i) Radiotelephone References: ▪ Annexes 14 and 19 ▪ PANS Aerodromes (Doc 9981)	Intermediate	a) Wildlife Hazard Management (Refer to PANS- Aerodrome) b) Dispersal equipment (provided by manufacturer) c) Radiotelephone phraseology d) Airside driving (Refer to PANS- Aerodromes)	Initial training + OJT Recurrent training Refresher training as required	Yes

	▪ Airport Services Manual (Doc 9137), Part 3 - Wildlife Hazard Management; ▪ ACI Wildlife Hazard Management Handbook; ▪ CAA Advisory Circular (if available)				

Table A1-7: AOPC Matrix - Apron Safety

Aerodrome Operations Personnel	Competency areas (knowledge, skills and attitudes)	Required Competency Level (Basic/ Intermediate/ Advanced)	Training Areas	Required Type of Training (Initial, OJT, Refresher, Recurrent, Specialised)	Requirement of Competency Check
Head of Aerodrome Operation	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training (when significant amendment/changes applied)	No
	Aerodrome operations and safety management system	Basic	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training	No
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	No

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	<u>Job related requirements:</u> <u>National and international requirements and best practices on:</u> a) Aircraft turnaround procedures b) Role in Aerodrome Emergency Plan <u>References:</u> ▪ Annexes 14 and 19 (relevant parts) ▪ PANS Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ ACI Apron Safety Handbook	Basic	a) Understanding Annex 14 and PANS-Aerodromes b) Aerodrome Safety Management System (SMS) c) Airside Safety and Operations d) Emergency Planning and Response	Initial training Recurrent training Refresher training as required	No
Managers/ Supervisors	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training Refresher training as required	Yes
	<u>Aerodrome operations, including:</u> a) FOD management b) Safety management during construction and maintenance works c) Understanding of aerodrome emergency procedures d) Follow-me procedures <u>Safety management systems</u>	Intermediate	Relevant parts of aerodrome and SMS manuals	Initial training Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	Yes

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	<u>Job related requirements:</u> a) Airside driving regulations b) Aircraft turnaround procedures (e.g. Passenger loading bridge operations, Passenger safety on apron, Aircraft fueling safety, flight catering safety etc.) c) Jet blast hazards d) Marshalling e) Apron signs and marking f) Operations under adverse weather g) Handling of fuel and oil spills h) Apron inspection and cleaning (FOD, pavement, markings, signs, ensuring GSE in place etc.) i) Use of personal protective equipment (earplugs, high-visibility vest etc.) j) Role in Aerodrome Emergency Plan k) Radiotelephone terminology l) Compliance with safety rules during construction and maintenance works References: ▪ Annexes 14 and 19 (relevant parts) ▪ PANS Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ ACI Apron Safety Handbook	Advanced	a) Understanding Annex 14 and PANS-Aerodromes b) Managing Works in Progress c) Emergency Planning and Response d) Airside Safety and Operations e) Aerodrome Safety Management System f) FOD Training	Initial training Recurrent training Refresher training as required Specialized training as required	Yes
Officers/ Technicians	a) National Legislation and regulations / requirements b) NOTAM and AIP	Basic	a) National aerodrome regulations; b) NOTAM and AIP	Initial training Recurrent training Refresher training as required	Yes

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	<u>Aerodrome operations, including:</u> a) Apron management b) Apron safety management c) Follow-me procedures <u>Safety management system, covering:</u> a) Identification of safety Hazards b) Safety reporting – mandatory, voluntary and confidential	Intermediate	Relevant parts of aerodrome and SMS manuals	Initial training + OJT Recurrent training Refresher training as required	Yes
	Aerodrome layout including apron layouts and stand configurations	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training + OJT Recurrent training Refresher training as required	Yes

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	<u>Job related requirements:</u> a) Airside driving regulations and safety hazards b) Aircraft turnaround procedures (e.g. Passenger loading bridge operations, Passenger safety on apron, Aircraft fueling safety, flight-catering safety etc.) c) Jet blast hazards d) Marshalling e) Apron signs and marking f) Operations under adverse weather g) Handling of fuel and oil spills h) Apron inspection and cleaning (FOD, pavement, markings, signs, ensuring GSE in place etc.) i) Use of personal protective equipment (earplugs, high-visibility vest etc.) j) Role in Aerodrome Emergency Plan k) Radiotelephone terminology l) Compliance with safety rules during construction and maintenance works References: ▪ Annexes 14 and 19 (relevant parts) ▪ PANS Aerodromes (Doc 9981) ▪ ACI Apron Safety Handbook	Intermediate	a) Understanding Annex 14 and PANS-Aerodromes b) Airside Safety and Operations c) Aerodrome Safety Management System	Initial training + OJT Recurrent training Refresher training as required	Yes.

Table A1-8: AOPC Matrix - Runway Safety

Aerodrome Operations Personnel	Competency areas (Knowledge, skills and attitudes)	Required Competency Level (Basic / Intermediate / Advanced)	Training Areas	Required Type of Training (Initial, OJT, Refresher, Recurrent, Specialized)	Requirement of Competency Check
Head of Aerodrome Operation	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training (when significant amendment/changes applied)	No
	Aerodrome operations and safety management systems	Basic	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training	No
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	No

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	<u>Job related requirements:</u> <u>National and international requirements and best practices on:</u> a) Emergency planning and response b) Aerodrome operations and maintenance in general c) Accident and incident investigation d) Runway Safety Programme and runway safety team <u>References:</u> ▪ Annexes 14 and 19 (relevant parts) ▪ PANS Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ ACI Runway Safety Handbook ▪ Manual on Prevention of Runway Incursion (Doc 9870) ▪ Runway Safety Team Handbook ▪ Runway Safety Programme – Global Runway Safety Action Plan First Edition, November 2017 ▪ CAA Advisory Circulars (Relevant Parts)	Basic	a) Emergency Planning and Response b) Airside Safety and Operations c) Aerodrome accident and incident investigation d) National and Airport runway safety programmes	Initial training Recurrent training Refresher training as required	No
Managers/ Supervisors	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training Refresher training as required	Yes

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	<u>Aerodrome operations including:</u> a) FOD management b) Safety management during construction and maintenance works c) Understanding of aerodrome emergency procedures d) Follow-me procedures <u>Safety management systems</u>	Intermediate	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	Yes

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	<u>Job related requirements:</u> All of the competency requirements for frontline officers, but at advanced level, plus: a) Understanding of disabled aircraft removal plan. b) Re-declaration of runway distances c) SMS principles including safety risk management. d) Preliminary investigations of accidents and incidents e) Safety during construction and maintenance works f) Runway Safety Programme and runway safety team References: ▪ Annexes 14 and 19 (relevant parts) ▪ PANS Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ Manual on Prevention of Runway Incursion (Doc 9870) ▪ Runway Safety Team Handbook ▪ Runway Safety Programme – Global Runway Safety Action Plan First Edition, November 2017 ▪ ACI Runway Safety Handbook ▪ CAA Advisory Circulars (Relevant Parts)	Advanced	a) Emergency Planning and Response b) Understanding Annex 14 and PANS-Aerodrome c) Aerodrome SMS d) Aerodrome Incident/Accident Investigation e) Managing Works in Progress f) Airside Safety and Operations g) Runway incursion awareness and prevention h) Runway safety management i) Wildlife hazard management (Refer to PANS-Aerodromes) j) National and Airport runway safety programmes	Initial training Recurrent training Refresher training as required Specialized training as required	Yes.
Officers / Technicians	a) National Legislation and regulations / requirements b) NOTAM and AIP	Basic	a) National aerodrome regulations b) NOTAM and AIP	Initial training Recurrent training Refresher training as required	Yes

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	<u>Aerodrome operations</u> a) Understanding of the aerodrome manual of the airport concerned b) Follow-me procedures <u>Safety management system, covering:</u> a) Identification of safety Hazards b) Safety reporting – mandatory, voluntary and confidential	Intermediate	Relevant parts of aerodrome and SMS manuals	Initial training + OJT Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training + OJT Recurrent training Refresher training as required	Yes

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	<u>Job related requirements:</u> a) Runway inspection including FOD, pavement conditions, drainage, markings and signs, in-pavement lights, obstacles, etc. b) Runway surface condition reporting c) Airside driving including airfield signs and markings d) Radiotelephone e) Adverse weather operations and low visibility procedures f) Removal of runway contaminants, e.g. rubber, ice, snow g) Vegetation control h) Wildlife hazard management i) Follow-me procedures j) Prevention of runway incursion k) Compliance with safety rules during construction and maintenance works l) Emergency response procedures m) Role in Runway Safety Team References: ▪ Annexes 14 and 19 (relevant parts) ▪ PANS Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ Runway Safety Team Handbook ▪ ACI Runway Safety Handbook	Intermediate	a) Understanding Annex 14 and PANS Aerodromes b) Aerodrome Inspection c) Runway Condition Reporting d) Airside Driving (Refer to PANS-Aerodrome) e) Adverse weather and low Visibility Operations f) Removal of Contaminants from Aerodrome Pavements g) Escort and Follow-Me Operations h) Runway Safety Management i) Runway incursion awareness and prevention j) Airside Safety and Operations k) Managing Works in Progress l) Wildlife hazard management m) Emergency Planning and Response n) National and Airport runway safety programmes	Initial training + OJT Recurrent training Refresher training as required	Yes.

Table A1-9: AOPC Matrix - Aerodrome Driver Permit Scheme and Vehicle/Equipment Safety Requirement

Aerodrome Operations Personnel	Competency/knowledge areas	Required Competency Level (Basic/ Intermediate / Advanced)	Training Areas	Required Type of Training (Initial, OJT, Refresher, Recurrent, Specialized)	Requirement of Competency Check
Head of Aerodrome Operation	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training (when significant amendment/changes applied)	No
	Aerodrome operations and safety management system	Basic	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training	No
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	No
	<u>Job related requirements:</u> (a) Emergency procedures for aerodrome driving (b) Vehicle/equipment safety requirements (c) Aerodrome driver training program (d) Aerodrome driver permit record system and vehicle/equipment permit record system <u>References:</u> ▪ ICAO Annexes 14 and 19 ▪ PANS-Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ Airport Services Manual (Doc 9137), Part 9 – Airport Maintenance Practices (Relevant Chapters)	Basic	Airside driving (Refer to PANS-Aerodromes)	Initial training Recurrent training Refresher training as required	No

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	- Manual on prevention of runway incursion (Doc 9870) - ACI Apron Safety Handbook - CAA Advisory Circular (Guidance materials)				
Managers/ Supervisors	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Recurrent training Refresher training as required	Yes
	<u>Aerodrome operations and safety management system, covering:</u> - Identification of safety Hazards - Risk assessment and Mitigation - Accident/incident investigation - Safety/Audits Inspections	Intermediate	Relevant parts of aerodrome/SMS manuals	Initial training Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training Recurrent training Refresher training as required	Yes

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	<u>Job Related Requirements:</u> (a) Develop airside traffic rules and procedures (b) Provide airside safety training to drivers (c) Promote airside safety awareness to drivers (d) Provide Radiotelephone training (e) Familiarization with vehicle/equipment safety requirements (f) Conduct inspection for vehicle/equipment (g) Keep data and records of aerodrome driver permit and vehicle/equipment permit References: ▪ ICAO Annexes 14 and 19 ▪ PANS-Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ Airport Services Manual (Doc 9137), Part 9 – Airport Maintenance Practices (Relevant Chapters) ▪ Manual on prevention of runway incursion (Doc 9870) ▪ ACI Apron Safety Handbook ▪ CAA Advisory Circular (Guidance materials)	Advanced	Airside driving (Refer to PANS-Aerodromes)	Initial training Recurrent training Refresher training as required Specialized training as required	Yes
Officers/ technicians (working on maneuvering area)	National Legislation and regulations / requirements, including aerodrome certification process	Basic	National aerodrome regulations	Initial training Initial training Recurrent training Refresher training as required	Yes

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	<u>Aerodrome operations and safety management system, covering:</u> a) Identification of safety Hazards b) Safety reporting – mandatory, voluntary and confidential	Intermediate	Relevant parts of aerodrome/SMS manuals	Initial training + OJT Recurrent training Refresher training as required	Yes
	Aerodrome layout	Intermediate	Aerodrome layout (Based on aerodrome layout drawing and onsite orientation)	Initial training + OJT Recurrent training Refresher training as required	Yes
	<u>Job Related Requirements:</u> (a) Holder of a valid official driver license of the same class of vehicle recognized/issued by the local government (b) Medical fitness certificate (c) Driving skill (d) Specific equipment operation (e) Radiotelephone (f) Airside operations safety rules (g) Airside driving rules (h) Adverse weather conditions procedures (i) Aerodrome signage, markings and lightings (j) Roles in aerodrome emergency plan References: ▪ ICAO Annexes 14 and 19 ▪ PANS-Aerodromes (Doc 9981) ▪ Safety Management Manual (Doc 9859) ▪ Airport Services Manual (Doc 9137), Part 9 – Airport Maintenance Practices (Relevant Chapters)	Intermediate	a) Airside driving (Refer to PANS-Aerodromes) b) Specific equipment operation (if applicable, provided by manufacturer)	Initial training + OJT Recurrent training Refresher training as required	Yes

	▪ Manual on prevention of runway incursion (Doc 9870) ▪ ACI Apron Safety Handbook ▪ CAA Advisory Circular (Guidance materials)				

APPENDIX B – TRAINING SYLLABI

Title of Training Course	Understanding Annex 14 and PANS-Aerodrome	Course Reference No.: 01	Version: 1/2020
	Reference to AOPC Matrix Table: A1-2, A1-3, A1-4, A1-7, A1-8		
Course Goal (Purpose of the course)	The ICAO Annex 14 sets out the fundamental Standards and Recommended Practices (SARPs) for airport design and operations, which States undertake to apply through national legislation. This course provides an introduction to the content and structure of Annex 14. This course also covers the implementation of the PANS-Aerodrome in the context of an aerodrome Safety Management System.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Describe the SARPs contained in Annex 14 ▪ Implementation of SARPs. ▪ Discuss best practices to meet the requirements of Annex 14. ▪ Share experience with experts on the different options to implement and further improve best practices. ▪ Conduct Aerodrome operational safety assessments, as per PANS-Aerodromes, for safety risk management, aeronautical and compatibility studies		
Prerequisites for taking this course	Title of Training Course (if applicable): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s): 1) Understanding Annex 14 (ACI); or https://aci.aero/global-training/training-information/course-categories/safety/understanding-icao-annex-14/ 2) Working with Annex 14 (ACI) https://aci.aero/global-training/training-information/course-categories/safety/gsn-4-working-with-annex-14/ In addition to the above, for PANS-Aerodromes, refer to “Aerodrome Safety Management incorporating PANS-Aerodromes” (IAAA) https://academy.airport.kr:844/academy/pagework_02102.html		
Training method/activities	☐ CBT/Online ☒ Class room ☐ Practical/Simulator ☐ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Runway Condition Reporting (ICAO-ACI GRF Online Training)	Course Reference No.: 02	Version: 1/2020
	Reference to AOPC Matrix Table: A1-1, A1-8		
Course Goal (Purpose of the course)	The ICAO Global Reporting Format (GRF) is a globally-harmonized methodology for runway surface condition assessment and reporting that it is intended to be the only such reporting format for international aviation, with the objective of reducing runway excursions, thus improving the safety of airport operations. The aim of the course is to assist airport personnel to implement the new Runway Condition reporting requirements as outlined in ICAO Circular 355 (Assessment, Measurement and Reporting of Runway Surface Conditions).		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Describe the background for Runway Condition Assessment and Reporting as it relates to the ICAO Global Reporting Format (GRF) ▪ Explain the major elements of the Runway Condition Assessment Matrix (RCAM) ▪ Describe when a Runway Condition Assessment should be conducted ▪ Describe the steps required to conduct a Runway Condition Assessment ▪ Explain under what circumstances Runway Condition Codes can be adjusted ▪ Determine the Runway Condition Codes to be used as per the GRF ▪ Explain the formatting and use of the SNOWTAM and other means of promulgation ▪ Complete a Runway Condition Report (RCR) using the ACI Runway Condition Worksheet ▪ Through multiple case scenarios, apply the steps required to generate an RCR and NOTAM		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): ACI/ICAO Global Reporting Format (GRF) online training course (Desirable) https://www.olc.aero/product/icao-global-reporting-format/ ☐ None ☒ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s): ACI-ICAO Global Reporting Format (GRF) for Runway Surface Condition Assessment and Reporting. https://aci.aero/global-training/training-information/course-categories/safety/grf-for-runway-surface-condition-assessment-and-reporting/		
Training method/activities	☐ CBT/Online ☒ Class room ☐ Practical/Simulator ☐ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Notes:-

- (1) Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.*
- (2) The pre-requisite listed is a desirable online course and therefore not compulsory.*

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Title of Training Course	Airside Safety and Operations	Course Reference No.: 03	Version: 1/2020
	Reference to AOPC Matrix Table: A1-1, A1-2, A1-3, A1-7, A1-8		
Course Goal (Purpose of the course)	The Airside Operations course provides participants with a broad understanding of airside operations at an airport. Participants will investigate the various components of airside operations and how they interact together to form an operational system.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Describe the safety operations at airports. ▪ Describe the factors that affect safety at airports. ▪ Explain how to control and maintain safety at airports. ▪ Apply practical and up-to-date tools for managing safety on the airport. ▪ Implement safety standards in airport operations..		
Prerequisites for taking this course	Title of Training Course (if applicable): Airside Operations - online training (ACI) https://aci.aero/global-training/programmes/airport-operations-diploma/airside-operations/ ☐ None ☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s): Airside Safety and Operations (ACI) https://aci.aero/global-training/training-information/course-categories/safety/gsn-2-airside-safety-operations/		
Training method/activities	☐ CBT/Online ☒ Class room ☐ Practical/Simulator ☐ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Runway Incursion Awareness and Prevention	Course Reference No.: 04	Version: 1/2020
	Reference to AOPC Matrix Table: A1-1, A1-2, A1-3, A1-4, A1-8		
Course Goal (Purpose of the course)	To raise awareness of the danger of runway incursions by sharing information of incidents (through case studies and facilitated discussion) and offering advice to operational personnel about how airport operators, airlines and air traffic service providers can prevent runway incursions. To raise awareness of this key topic and give participants practical ideas which they can implement at their own aerodrome to enhance safety.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ select terms and definitions associated with runway safety; ▪ risks to runway safety and factors that contribute to the rise in runway incursions; ▪ purpose and scope of ICAO Manual for Prevention of Runway Incursions (Doc 9870); ▪ purpose of runway incursion prevention programs and runway safety teams; ▪ common runway incursion scenarios; ▪ common factors that could contribute to a runway incursion; ▪ purpose and benefits of a standardized approach to runway incursion incident reporting and data collection; ▪ communication procedures to prevent runway incursions; ▪ procedures for runway safety teams; ▪ problems that contribute to the breakdown of communication; ▪ visual aids to help maintain situational awareness; ▪ best practices for taxi operations; and ▪ usefulness of Standard Operating Procedures (SOP).		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): Runway incursion awareness and prevention (ACI) https://aci.aero/Global-Training/Training-Information/Course-Categories/Safety/Runway-Incursion-Awareness-and-Prevention/		
Training method/activities	☐ CBT/Online ☒ Classroom ☐ Practical/Simulator ☐ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Aerodrome Inspection	Course Reference No.: 05	Version: 1/2020
	Reference to AOPC Matrix Table: A1-3, A1-4, A1-8		
Course Goal (Purpose of the course)	This course provides a competency-based training on aerodrome safety inspection for aviation authorities and airport operators. Trainees will learn how to carry out aerodrome inspection in accordance with ICAO SARPs (Standards and Recommended Practices) and relevant national standards through classroom interaction training, field practices and exercises at airside areas.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Employ standard communication phraseology required for safely conducting aerodrome inspection ▪ Conduct an Aerodrome Surface Inspection ▪ Conduct an inspection of Visual aids and navigational aids (NAVAIDs) ▪ Verify airside access and movement in airside areas ▪ Conduct an inspection for the application of safety measures in airside operations ▪ Verify the application of Notice to Airmen (NOTAMs) ▪ Inspect the presence of wildlife ▪ Conduct an inspection of Aerodrome Rescue and Fire Fighting Services (ARFFS) ▪ Conduct an inspection of a Safety Management System (SMS)		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): 1) Aerodrome Inspection (IAAA); or https://academy.airport.kr:844/academy/pagework_02104.html 2) GSN 6: Aerodrome Auditing and Compliance (ACI) https://aci.aero/global-training/training-information/course-categories/safety/gsn-6-aerodrome-auditing-and-compliance/		
Training method/activities	☐ CBT/Online ☒ Classroom ☐ Practical/Simulator ☒ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

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Title of Training Course	Aerodrome Safeguarding	Course Reference No.: 06	Version: 1/2020
	Reference to AOPC Matrix Table: A1-3		
Course Goal (Purpose of the course)	All aerodromes have to ensure that the environment both on and off the airport are maintained in a safe condition for aircraft operations. The aerodrome safeguarding course is designed to introduce participants to the different forms that safeguarding takes and how to develop procedures in order to implement effective controls.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Explain the importance of safeguarding in today's aviation environment ▪ Understand the elements of aerodrome safeguarding ▪ Explain how aerodrome safeguarding procedures may be developed ▪ Describe the legal aspects of the safeguarding process ▪ Apply the knowledge on aerodrome safeguarding at their own		
Prerequisites for taking this course	Title of Training Course (if applicable): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (if available): Aerodrome Safeguarding and OLS (ACI) https://aci.aero/global-training/training-information/course-categories/safety/aerodrome-safeguarding/		
Training method/activities	☐ CBT/Online ☒ Classroom ☐ Practical/Simulator ☐ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

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Title of Training Course	Adverse Weather and Low Visibility Operations	Course Reference No.: 07	Version: 1/2020
	Reference to AOPC Matrix Table: A1-3, A1-8		
Course Goal (Purpose of the course)	Through practical planning exercises and real-life examples, this one-of-a-kind course reviews operational obstacles due to weather and the solutions to address them. Explore planning tools and procedures that will help your airport respond to rare disturbances. Learn how to prepare your resources, equipment and staff to establish a proactive culture across your operations and organization.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Understand how adverse weather conditions produce complications ▪ Build response and action plans that address the risks your airport faces ▪ Minimize the impact of disruption and quickly return to normal operations ▪ Strengthen cooperation between departments and operations to become more efficient in planning and response ▪ Improve the allocation of resources, equipment and staff		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): Airport Extreme Weather Operations and Planning (IATA) https://www.iata.org/en/training/courses/airport-operations-weather/262/en/		
Training method/activities	☐ CBT/Online ☒ Classroom ☐ Practical/Simulator ☐ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Emergency Planning and Response	Course Reference No.: 08	Version: 1/2020
	Reference to AOPC Matrix Table: A1-4, A1-7, A1-8		
Course Goal (Purpose of the course)	This course investigates the importance of planning for emergency situations and of properly managing activities in crisis situations. It introduces the international requirements of an Emergency Plan, discusses how to manage the press and media in crucial situations, as well as focusing on business continuity and the return to normal operations after a crisis. The support provided to victims and the need to rebuild confidence after an incident are also discussed. Current topics on aviation terrorism are included. Case studies provide key insights into the current world climate.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Explain the key role of emergency planning. ▪ Describe best practices in crisis management. ▪ Apply relevant tools and advice to implement emergency plans and procedures.		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): GSN 3: Emergency Planning and Crisis Management (ACI) https://aci.aero/global-training/training-information/course-categories/safety/gsn-3-emergency-planning-crisis-management/		
Training method/activities	☐ CBT/Online ☒ Classroom ☐ Practical/Simulator ☐ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Aerodrome Accident and Incident Investigation	Course Reference No.: 09	Version: 1/2020
	Reference to AOPC Matrix Table: A1-8		
Course Goal (Purpose of the course)	This course will introduce industry best practices for Accident and Incident Investigation at airports. Key concepts and issues such as the impact of human factors on increasing incidents and accidents in aviation. Through this course, participants will become able to establish mitigation measures at their own airports to reduce incidents and accidents.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Describe the type of incidents and accidents that can happen at airports. ▪ Conduct formal investigations to reduce and prevent accidents at their airport. ▪ Apply personal experience to further determine how best to prevent accidents and incidents at their airport.		
Prerequisites for taking this course	Title of Training Course (if applicable): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (if available): 1) Accident and Incident Investigation (ACI); or https://aci.aero/global-training/training-information/course-categories/safety/accident-and-incident-investigation/ 2) Aircraft Accident Investigation Techniques (SAA); or https://saa.caas.gov.sg/course-details?courseTitle=aircraft-accident-investigation-techniques&courseId=1000467 3) Aircraft Accident Investigation Management (SAA); or https://saa.caas.gov.sg/course-details?courseTitle=aircraft-accident-investigation-management&courseId=1000468 4) Incident Investigation: Effective Safety Risk Management (SAA) https://saa.caas.gov.sg/course-details?courseTitle=incident-investigation:-effective-safety-risk-management&courseId=1000665		
Training method/activities	☐ CBT/Online ☒ Class room ☐ Practical/Simulator ☐ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Runway Safety Management	Course Reference No.: 10	Version: 1/2020
	Reference to AOPC Matrix Table: A1-8		
Course Goal (Purpose of the course)	Runway Safety is a significant challenge and top priority for airport operations. This training program deals with Runway Safety Management designed for airport operators. The content of this course is distilled from a wide range of guidance material from Civil Aviation Authorities, operational safety procedures from airports, guidance from ICAO and best practices from other international aviation organizations dealing with runway safety.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: • Understand the importance of runway safety at an aerodrome • Describe the key steps required to establish a runway safety team • Explain major industry best practices with regards to runway Planning and Design from a safety perspective • Describe the major requirements of runway inspections and reporting • Explain key Low Visibility Procedures required to ensure the safe operation of aircraft during low visibility conditions including the protection of Navigational Aids (NAVAIDs) • Understand the key elements of airside operations and how they impact on runway safety • Describe the key elements of runway maintenance • Explain how to manage temporary restrictions and how to disseminate this information to stakeholders • Describe the major safety measures with regards to construction associated with the operational areas of the aerodrome		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): Runway Safety Management (ACI) https://www.olc.aero/product/runway-safety-management/		
Training method/activities	☒ CBT/Online ☐ Classroom ☐ Practical/Simulator ☐ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Aerodrome Pavement Maintenance	Course Reference No.: 11	Version: 1/2020
	Reference to AOPC Matrix Table: A1-1, A1-2		
Course Goal (Purpose of the course)	This course will provide information needed to establish an effective aerodrome pavement management and maintenance program. This course will help trainees to understand the performance of pavements, how to evaluate them, the characteristics of a good pavement management and maintenance program, and current repair techniques used in the industry. This course will help airport officers make informed decisions about the maintenance of aerodrome pavements and address special considerations such as minimizing impacts on users, maximizing airport safety, and adapting to their local operating environments.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Evaluation of pavements and identification of types of distress ▪ Techniques for repairing Hot-Mix Asphalt and Portland Cement Concrete pavements ▪ Pavement management and maintenance programs ▪ Aerodrome pavement maintenance - case studies ▪ Conduct an Aerodrome Surface Inspection		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): UC Berkeley, ITS-SAA Airport Maintenance (SAA) https://saa.caas.gov.sg/		
Training method/activities	☐ CBT/Online ☒ Class room ☐ Practical/Simulator ☒ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Radiotelephone Phraseology	Course Reference No.: 12	Version: 1/2020
	Reference to AOPC Matrix Table: A1-1, A1-2, A1-5, A1-6		
Course Goal (Purpose of the course)	Radiotelephone training. ICAO standard phraseologies are developed to provide efficient, clear, concise, and unambiguous communications. Constant attention should be given to the correct use of ICAO phraseologies in all instances in which they are applicable.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Employ standard phraseology; ▪ Understand the need to use clear, concise communications;		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): <i>Note: The following training courses include Radiotelephone Phraseology</i> 1) Refer to PANS-Aerodromes – Framework for an Airside Vehicle Driver Training Programme 2) Aerodrome Inspection Course (Course reference no.: 05)		
Training method/activities	☐ CBT/Online ☒ Class room ☐ Practical/Simulator ☐ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Removal of Contaminants from Aerodrome Pavements	Course Reference No.: 13	Version: 1/2020
	Reference to AOPC Matrix Table: A1-2 and A1-8		
Course Goal (Purpose of the course)	To provide participants with Knowledge, Skills and Attitudes to enable them effectively and efficiently monitor and remove contaminants (e.g. rubber deposits, ice, snow, etc. as per local climate conditions) on aerodrome pavements and apply appropriate removal methodology to obtain the required friction level.		
Course Objective (Learning objectives)	Upon successful completion of the course, the participants will be able to: ▪ Identify causes of reduction in friction value of runway surface and its effect on aircraft movement on active runway ▪ Appreciate importance of maintaining requisite friction value on runways ▪ Measure runway friction value ▪ Identify the low-friction areas ▪ Apply appropriate contaminant removal methods considering the pavements surface material and extent of deposits		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☒ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): 1) Airport Runway Snow Removing Operations Management (Capital Airport Management Academy, China); or https://www.icao.int/training/Pages/training-catalogue-details.aspx?catid=446&language=0&region=&ITP=0 2) Runway Rubber Removal (IAA) https://www.icao.int/training/Pages/training-catalogue-details.aspx?catid=383&language=0&region=&ITP=0		
Training method/activities	☐ CBT/Online ☒ Class room ☐ Practical/Simulator ☒ Practical (On-site) ☒ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Maintenance of Markings, Signs and Markers	Course Reference No.: 14	Version: 1/2020
	Reference to AOPC Matrix Table: A1-2		
Course Goal (Purpose of the course)	The course enables the participants to interpret and implement the certification specifications related to Runways, Taxiways, Aprons and adjacent areas markings and signs, e.g. for planning purposes and future maintenance. Based on best practices, the participants will become knowledgeable about the configuration, dimensioning and design of these infrastructural elements and will learn how to fulfill relevant requirements.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to verify and maintain: ▪ Markings ▪ Signs ▪ Markers		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☒ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): 1) Airfield Pavement Markings (IAA); and (https://www.icao.int/training/Pages/training-catalogue-details.aspx?catid=382&language=0&region=&ITP=0) 2) Airfield Signs (IAA) (https://www.icao.int/training/Pages/training-catalogue-details.aspx?catid=2426&language=0&region=&ITP=0)		
Training method/activities	☐ CBT/Online ☒ Class room ☐ Practical/Simulator ☒ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Managing Works in Progress	Course Reference No.: 15	Version: 1/2020
	Reference to AOPC Matrix Table: A1-4, A1-7, A1-8		
Course Goal (Purpose of the course)	All aerodromes have to manage works in progress at some point, whether as a result of new developments or maintenance. It is therefore vital that staffs involved are able to manage the construction in a safe manner, enabling aircraft operation to continue, whilst at the same time allowing the works to carry on. This course provides detailed information on how to plan aerodrome works, ensuring the necessary documentation is produced in accordance with the Airport's Safety Management System, how the works are controlled on a day to day basis and how to bring new developments into operational status.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Effectively manage works, Risk Assessments and Compliance Statements, ensuring compliance with National and International Standards ▪ Explain how to effectively manage contractors to ensure safe operations ▪ Offer examples for managing works in the form of Case Studies as part of the learning experience ▪ Explain the need for effective and safe "Management of Change" in the Aerodrome works process		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): Managing Operations During Construction online course (ACI) https://www.olc.aero/product/managing-operations-during-construction/ ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☐ Initial ☒ On-Job-Training ☐ Recurrent ☐ Refresher ☒ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): Airport Safety Course - Managing Aerodrome Works (ACI) https://aci.aero/global-training/training-information/course-categories/safety/managing-aerodrome-works/		
Training method/activities	☐ CBT/Online ☒ Class room ☐ Practical/Simulator ☒ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☒ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Title of Training Course	Escort and Follow-me Operations	Course Reference No.: 16	Version: 1/2020
	Reference to AOPC Matrix Table: A1-8		
Course Goal (Purpose of the course)	This course explains why Escort and Follow-Me Operations are required on a daily basis at airports and provides the theoretical knowledge required to undertake them.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: ▪ Understand how Escort & Follow-Me operations help to facilitate secure, safe and efficient airside operations. ▪ Recognize the similarities and differences that exist between Escort and Follow-Me operations. ▪ Explain the role and responsibilities of the driver in performing Escort and Follow-Me operations. ▪ Describe the key steps involved in conducting successful escort and follow-me operations. ▪ Understanding the procedures that must be followed when conducting Escort and Follow-Me operations. ▪ Understand the training that should be undertaken to ensure driver competence to conduct Escort and Follow-Me operations.		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): Escort and follow-me online course (ACI) https://www.olc.aero/product/escort-and-follow-me-operations/		
Training method/activities	☒ CBT/Online ☐ Class room ☐ Practical/Simulator ☐ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☐ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Appendix B

Title of Training Course	Airfield Lighting including PAPI/VASIS Maintenance	Course Reference No.: 17	Version: 1/2020
	Reference to AOPC Matrix Table: A1-2		
Course Goal (Purpose of the course)	This course provides trainees an overview of Airport Electrical & Mechanical Installations and their maintenance		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: • Provide participants knowledge skill & attitude (KSAs) about Aeronautical Grounds Aids, Serviceability and Maintenance Standards at their airports and to maintain the desired serviceability levels during day-to-day operation and during changes in infrastructures and procedures. • Maintain the Airfield Lighting Systems as per ICAO Standards.		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☐ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): 1) Aeronautical Ground Aids, Serviceability standards and maintenance (IAA); or https://www.aai.aero/sites/default/files/CALENDAR%20%20ENGLISH.pdf 2) Maintenance of Airfield Lighting System (GMR Aviation Academy, India) https://gmractionacademy.org/maintainance-of-airfield-lighting-system.aspx		
Training method/activities	☐ CBT/Online ☒ Class room ☐ Practical/Simulator ☒ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☒ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

Appendix B

Title of Training Course	Maintenance of Unpaved Surfaces	Course Reference No.: 18	Version: 1/2020
	Reference to AOPC Matrix Table: A1-2		
Course Goal (Purpose of the course)	This course provides trainees the knowledge in maintenance of aerodrome unpaved surfaces.		
Course Objective (Learning objectives)	Upon successful completion of this course, participants will be able to: Gain a comprehensive knowledge in aerodrome unpaved surfaces including drainage in compliance with ICAO Annex 14.		
Prerequisites for taking this course	Title of Training Course (<i>if applicable</i>): N/A ☐ None ☒ Indoctrination/Familiarization ☐ Initial ☐ On-Job-Training		
Training Type	☐ Indoctrination/Familiarization ☒ Initial ☒ On-Job-Training ☐ Recurrent ☐ Refresher ☐ Specialized		
Course Content	Reference to the ICAO/Industry recognized training course(s) (<i>if available</i>): Landscaping (GMR Aviation Academy, India) https://gmractionacademy.org/landscaping.aspx		
Training method/activities	☐ CBT/Online ☒ Class room ☐ Practical/Simulator ☒ Practical (On-site) ☐ Factory/Manufacturer		
Assessment	☐ Attendance only (If competency test / assessment is not required) ☒ Minimum passing score: 80% (If competency test is required) ☒ Satisfactory result in on-site assessment (If assessment is required)		

Note:- Aerodrome operators and training organizations approved by State's CAA can develop and deliver a training course based on above course content.

APPENDIX C - REFERENCES

ICAO PUBLICATIONS

Convention on International Civil Aviation (Doc 7300)

Annex 14 — Aerodromes Volume I — Aerodrome Design and Operations

Annex 15 — Aeronautical Information Services

Annex 19 — Safety Management System

PANS-Aerodromes (Doc 9981)

PANS-TRG, (Doc 9868), Part I

Manual on Certification of Aerodromes (Doc. 9774)

Safety Management Manual (Doc 9859)

Airport Services Manual (Doc 9137)

Part 1.— Rescue and Fire Fighting

Part 2.— Pavement Surface Conditions

Part 3.— Wildlife Hazard Management

Part 5.— Removal of Disabled Aircraft

Part 6.— Control of Obstacles

Part 7.— Airport Emergency Planning

Part 8.— Airport Operational Services

Part 9.— Airport Maintenance Practices

Aerodrome Design Manual (Doc 9157)

Part 1.— Runways

Part 2.— Taxiways, Aprons and Holding Bays

Part 3.— Pavements

Part 4.— Visual Aids

Airport Planning Manual (Doc 9184)

Part 1.— Master Planning

Part 2.— Land Use and Environmental Control

Manual of Surface Movement Guidance and Control Systems (SMGCS) (Doc 9476)

World Geodetic System — 1984 (WGS-84) Manual (Doc 9674)

Runway Safety Team Handbook

Runway Safety Programme – Global Runway Safety Action Plan First Edition, November 2017

OTHER PUBLICATIONS

ACI Apron Safety Handbook

ACI Runway Safety Handbook

ACI Wildlife Hazard Management Handbook
ACI Managing Operations During Construction Handbook

Generic Aerodrome Certification Procedure

Version 1.0, November 2020

[DASS]-[DASS]-GMAC

Issue: [XX]

Revision: [XX]

Date: [XX XXX XXXX]

Introductory Notes

This generic document was developed by the ICAO Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG) for reference by States in the APAC Regions. When referring to this generic document, States are expected to customize the content in accordance to the States' legislations, regulations and situations.

ICAO Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services and Guidance Materials shall take prevalence in the event of any conflict between the aforementioned provisions and this generic document.

Enquiries and feedbacks regarding this generic document can be made to ICAO APAC Office at apac@icao.int.

Approved By

[Name of Director General]

Director General

[DASS]

FOREWORD

Under [CA Act/CAR-Aerodromes], an aerodrome may provide services to the public only when an aerodrome certificate has been granted by the [DG] of [DASS].

The [DG] is responsible for the aerodrome certification process and for promulgating appropriate and clear Aerodrome Standards and Regulations to be complied with by aerodrome operators. These Aerodrome Standards and Regulations are based on the Standards and Recommended Practices stipulated in Volume I and Volume II of Annex 14 (entitled “Aerodromes – Aerodrome Design and Operations” and “Heliports”) to the Convention on International Civil Aviation.

This Procedure spells out the aerodrome certification process that aerodrome operators in [State] are required to follow to ensure [international/public] aerodromes meet the relevant requirements stipulated under [CA Act/CAR-Aerodromes].

Aerodrome operators or applicants for an aerodrome certificate should refer to the applicable sections of [CA Act/CAR-Aerodromes], together with this manual, to ascertain the requirements of, and the obligations imposed by or under [State] civil aviation legislation.

[Name of Director General]

Director General

[DASS]

[XX XXX XXXX]

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Record of Revision

[illegible]

List of Effective Pages

[illegible]

1. Administration and Control of Procedure

1.1 General

1.1.1 The original issue of the Aerodrome Certification Procedure (ACP) was dated **XX XXX XXXX**.

1.1.2 The valid pages of ACP are listed in the List of Effective Pages (LOEP) distributed with every revision.

1.1.3 Whenever there is a significant change of responsibility, guidelines, policy or procedures, a new manual issuance is required. Minor amendments (if any) shall be issued in the form of a revision with effective pages being reviewed not later than the effective date.

1.1.4 Actual changes to the text will be in “*red italics*” and such changes will also be identified by a vertical line that appears in the outer margin of the page affected.

1.1.5 *Minor Changes*

- A. Few chapters are affected requiring revision change.
- B. The changes are made and communicated by way of revising the manual to a higher revision number.

1.1.6 *Major Changes*

- A. Extensive revisions necessitating a complete re-issuance when involving significant changes in responsibility, guidelines, policy or procedures including substantial format change.
- B. The next higher issue number will be allocated while the revision number will be reset to zero.

Issue Number	Revision Number	Effective Date	Revised By
XX	XX	XX XXX XXXX	[DASS]

1.2 Filing Instructions

1.2.1 Consult the LOEP.

1.2.2 When updating hard copies and inserting changes, users should exercise caution not to throw away pages from the ACP that have not been replaced. Using the LOEP can help determine the correct content of the ACP.

1.3 Generation of Amendments

1.3.1 The power to issue and amend this guidance material rests with the [DG], delegated to the [DASS].

1.3.2 Requests for any change in contents of this guidance material may be directed to [DASS].

1.3.3 The need to amend this ACP may be generated by a number of causes, including but not be limited to the following:

- A. promotion of safety;
- B. promotion of operational process;
- C. response to amendments to [DASS] or legislative requirements;
- D. response to ICAO Standards, Recommended Practices, Procedures and/or Guidance Materials; or
- E. accommodation of new initiatives or technologies; or
- F. [lists of any other reasons]

1.4 Gender Reference

For the sake of clarity and editorial efficiency, the male gender is used throughout this guidance material to apply (as applicable) to both male and female employees. No discrimination is intended or implied.

.....

2. Introduction

2.1 Purpose

2.1.1 This Aerodrome Certification Procedure (ACP), issued by the [DG], sets out the procedures for an applicant/aerodrome operator to obtain or retain an Aerodrome Certificate, in compliance with the [CA Act/CAR-Aerodromes] concerning aerodromes. These regulations are based on the Standards and Recommended Practices (SARPs) stipulated in Volume I and Volume II of Annex 14 (entitled “Aerodromes – Aerodrome Design and Operations” and “Heliports”, respectively) to the Convention on International Civil Aviation.

2.1.2 In this regard, the ACP provides the relevant information on aerodrome certification as follows:

- A. [DASS] Responsibilities
- B. Regulations on aerodrome certification;
- C. Processes and requirements of aerodrome certification;
- D. Aerodrome Manual; and
- E. Aerodrome audit and inspection.

2.2 [DASS] Responsibilities

2.2.1 In respect of Aerodrome Certification, the [DASS] is a department within [CAA] responsible for:

- A. establishing and enforcing Regulations and mandatory Standards in respect of the safety of aerodromes;
- B. certifying that aerodromes subject to the regulations will achieve an acceptable level of safety when operated and maintained in accordance with an approved Aerodrome Manual;
- C. assuring the continued safety of operations at certified aerodromes through guidance, audit and inspection; and
- D. [lists of any other responsibilities]

2.2.2 The [DASS] organizational structure is shown in Figure [XXX].

[insert organizational structure]

2.2.3 Notwithstanding the above responsibilities of [DASS], the responsibility for the safety of aerodrome operations rests with the certified aerodrome. A certified aerodrome with a Safety Management System (SMS) in place is required to maintain its own safety audit and inspection program. [DASS] will audit that program as it deems appropriate.

2.3 Regulations on Aerodrome Certification

All relevant aspects of aerodrome certification are based on the following regulations of [CA Act/CAR-Aerodromes]:

2.3.1 Requirements to hold an Aerodrome Certificates

The requirement for the operator of an aerodrome open to [international/public] use to hold an Aerodrome Certificate is stipulated in [CA Act/CAR-Aerodromes].

2.3.2 Issuance of Aerodrome Certificate

The Aerodrome Certificate shall be in compliance with the following:

- [list the relevant Articles/Sections of CA Act/CAR-Aerodromes]

2.3.3 Amendment of Aerodrome Certificate

Amending an aerodrome certificate shall be in compliance with the following:

- [list the relevant Articles/Sections of CA Act/CAR-Aerodromes]

2.3.4 Renewal of Aerodrome Certificate

Renewal of an aerodrome certificate shall be in compliance with the following:

- [list the relevant Articles/Sections of CA Act/CAR-Aerodromes]

2.3.5 Transfer of Aerodrome Certificate

In the event of a change of an Aerodrome Operator, the transfer of an Aerodrome Certificate shall be in compliance with the following:

- [list the relevant Articles/Sections of CA Act/CAR-Aerodromes]

2.3.6 Compliance and Enforcement

2.3.6.1 [DASS] shall enforce the Aerodrome's compliance to the National Aerodrome laws and regulations, which may result in the suspension of operations, in whole or in part, or revocation of aerodrome [certificate], by the power vested in the [DG] by the following [CA Act/CAR-Aerodromes]:

- [list the relevant Articles/Sections of CA Act/CAR-Aerodromes]

2.3.7 Other related regulations

List of all related Acts and Regulations are provided in [Appendix X].

2.3.8 Changes to Regulations and their Effects on Existing Aerodromes

2.3.8.1 Regulations are subject to changes from time to time. In general, certified aerodrome shall endeavour to comply with new standards and/or recommended practices by the applicable date. In case a certified aerodrome has difficulty in compliance with the new standards and/or recommended practices, upon application from aerodrome, [DASS] will assess the case and determine whether a time-limited exemption / exception may be granted, depending on the critical nature of the requirement and other aerodrome operational considerations, and subsequent to a safety risk assessment acceptable to [DASS].

2.3.8.2 In the event of a change in the Aerodrome Regulations, in the interim, and unless otherwise directed by [DASS], aerodrome's existing facility that does not meet the new requirements specified in the Regulations must continue to comply with the standards that were applicable to it under the conditions of the issuance of its Aerodrome Certificate. In this case, a gap analysis and timescales for compliance or an aeronautical study / safety risk assessment must be submitted to [DASS].

2.3.9 Conflict with Other Regulations, Standards and Recommended Practices

2.3.9.1 Compliance with the requirements specified in the regulations and guidance materials relevant to aerodromes does not absolve an aerodrome operator from obligations in respect of requirements prescribed by other government or statutory authorities. Where another statutory requirement conflicts with the provisions of such regulations, the matter must be referred to [DASS] for resolution.

.....

3. Processes and Requirements of Aerodrome Certification

3.1 Scope of Aerodrome Certification

3.1.1 The scope of aerodrome certification covers all relevant specifications established through the regulatory framework applicable to the aerodrome, which includes at least the following subjects:

- A. compliance of the aerodrome infrastructure with the applicable regulations for the operations the aerodrome is intended to serve;
- B. the operational procedures and their day-to-day operations, when applicable, concerning:
 - 1) aerodrome data and reporting;
 - 2) access to the movement area;
 - 3) aerodrome emergency plan;
 - 4) rescue and fire fighting;
 - 5) inspection of the movement area;
 - 6) maintenance of the movement area;
 - 7) snow and ice control, and other hazardous meteorological conditions;
 - 8) visual aids and aerodrome electrical systems;
 - 9) safety during aerodrome works;
 - 10) apron management;
 - 11) apron safety;
 - 12) vehicles on the movement area;
 - 13) wildlife hazard management;
 - 14) obstacles;
 - 15) removal of a disabled aeroplane;
 - 16) low visibility operations;
 - 17) handling of dangerous goods; and
 - 18) protection of sites for radar and navigational aids;
 - 19) compliance of the Safety Management System with applicable regulations;
- C. the aerodrome manual as detailed in the [Articles/Sections of CA Act/CAR-Aerodromes].

3.2 Introduction

3.2.1 This chapter describes the processes and requirements for the certification of an aerodrome, wishing to provide services of [international/public civil aviation].

3.2.2 The certification process is designed to ensure that an applicant/aerodrome operator understands the requirements and is capable of meeting them. When satisfactorily completed, the certification process would ensure that the applicant/aerodrome operator is able to comply with the applicable requirements of [CAA]'s Aerodrome Regulations.

3.2.3 Under no circumstances will an aerodrome be certificated until [CAA] is assured that the applicant/aerodrome operator is capable of fulfilling responsibilities and complying with [CAA] regulations in an appropriate and continuing manner. The aerodrome certification process only addresses the aviation safety aspect of the aerodrome. It is the responsibility of the applicant/aerodrome operator to ensure that the use of the site as an aerodrome is in compliance with other State and local statutory requirements such as land-use or environment regulations. The Aerodrome Certificate does not absolve the applicant/aerodrome operator from observing such requirements.

3.2.4 In addition, the processes and requirements for amendment, renewal, transfer, suspension and revocation of the Aerodrome Certificate are also provided.

3.3 Aerodrome Certification Process

3.3.1 General

3.3.1.1 The aerodrome certification process provides for interaction between the applicant/aerodrome operator and [DASS], from initial inquiry to final approval or denial. This certification process consists of:

- A. Pre-application Phase;
- B. Formal Application Phase;
- C. Document Evaluation Phase;
- D. Demonstration Audit and Inspection Phase; and
- E. Certification Phase.

3.3.1.2 The aerodrome certification process must be used with good judgement. Some phases may be combined depending on the size and complexity of the aerodrome operation.

3.3.2 Phase One – Pre-application

3.3.2.1 This Pre-application phase commences when an applicant/aerodrome operator makes initial inquiries to apply for an Aerodrome Certificate. During this stage, the first meeting between the applicant/aerodrome operator and [DASS] takes place, creating the first information exchange on service and guidance regarding the regulations, procedures, responsibilities, aerodrome operations that the applicant/aerodrome operator intends to provide and documentation/data to be submitted.

3.3.2.2 The pre-application phase may not be omitted, but it may be shortened if the applicant/aerodrome operator is familiar with the requirements of the Aerodrome Regulations.

3.3.2.3 In case of an already functioning aerodrome that needs to be certificated, the applicant/aerodrome operator would still need to contact [DASS] with his intention to commence the process, identifying the level of operation of the aerodrome and brief [DASS] on his capabilities and intentions.

3.3.2.4 Initial Inquiry - An initial request for information regarding certification could be verbally coordinated in the first instance, but must be followed up in writing, and provided to [DASS] at the time the applicant/aerodrome operator starts its planning and preparation.

3.3.2.5 [DASS] will send a letter to acknowledge the receipt of the initial inquiry, together with a point of contact information and pre-application meeting details (e.g. meeting date, time, venue, agenda) to the applicant/aerodrome operator within [XX] days after receiving the inquiry letter.

3.3.2.6 Pre-application Meeting - The applicant/aerodrome operator should advise the key management personnel to attend the pre-application meeting, and should prepare to discuss specific aspects of the applicant/aerodrome operator's proposed operation in general terms.

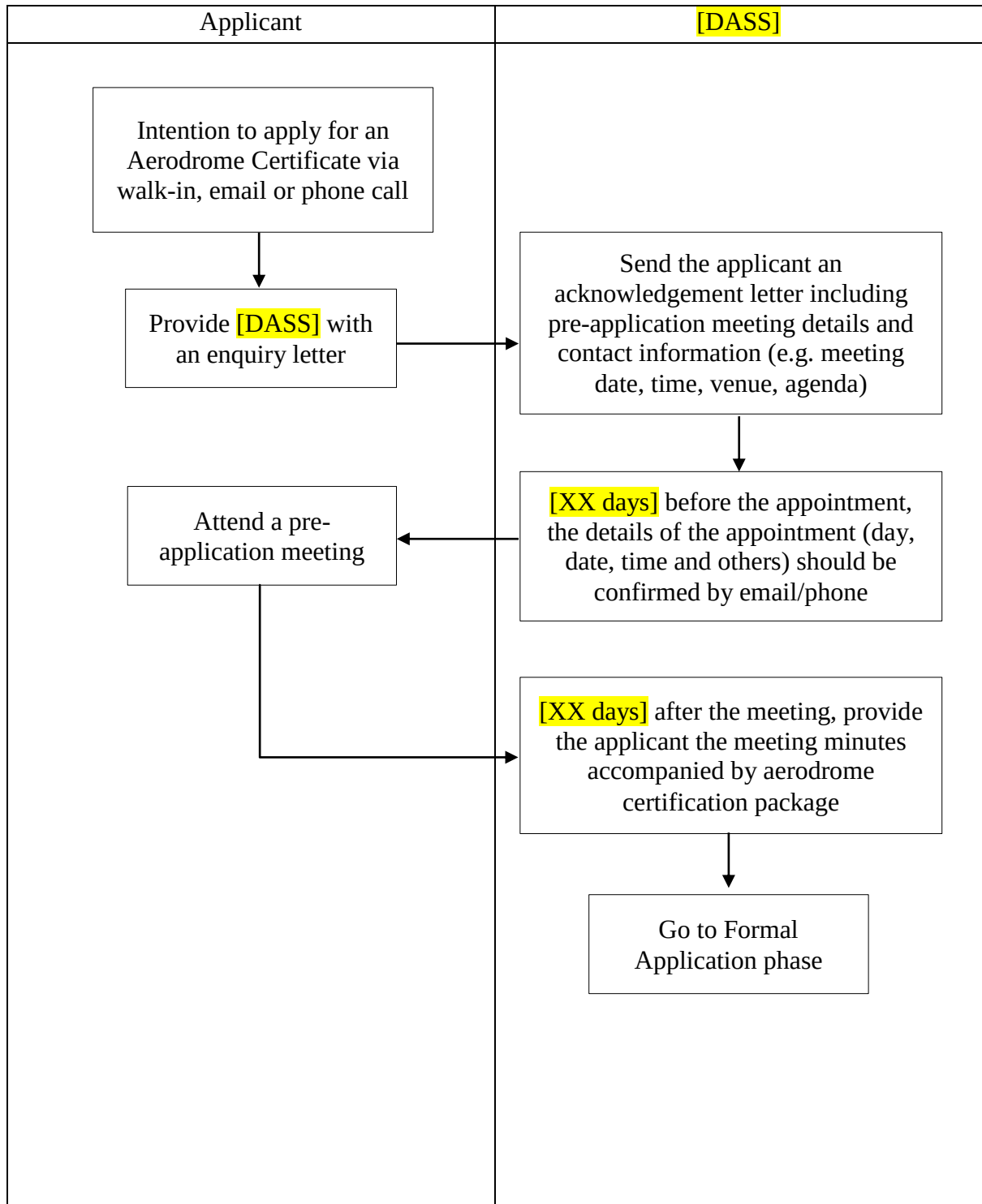
3.3.2.7 At the pre-application meeting, the applicant/aerodrome operator and any of his key personnel attending the meeting should be briefed in as much detail as necessary to ensure that they understand the applicable aerodrome regulations, certification requirements and certification process.

3.3.2.8 The applicant/aerodrome operator should receive the pre-application meeting minutes accompanied by aerodrome certification package within [XX] days after the meeting.

3.3.2.9 The applicant/aerodrome operator shall complete the aerodrome certification package and submit the package to [DASS] within [XX] days upon receipt of the package.

3.3.2.10 The applicant/aerodrome operator and his personnel must be made aware of their responsibilities during the certification process. It is to their benefits to submit required items as soon as they become available and to notify [DASS] immediately of any problems or changes in the proposed operation.

3.3.2.11 The process of Pre-application phase is illustrated in Figure [XXX].



3.3.3 Phase Two – Formal Application

3.3.3.1 For the Formal Application phase, the applicant/aerodrome operator shall submit the completed certification package, which includes an application for Aerodrome Certificate and the following documents as a minimum:

- [list the required documents to be submitted for aerodrome certificate application]

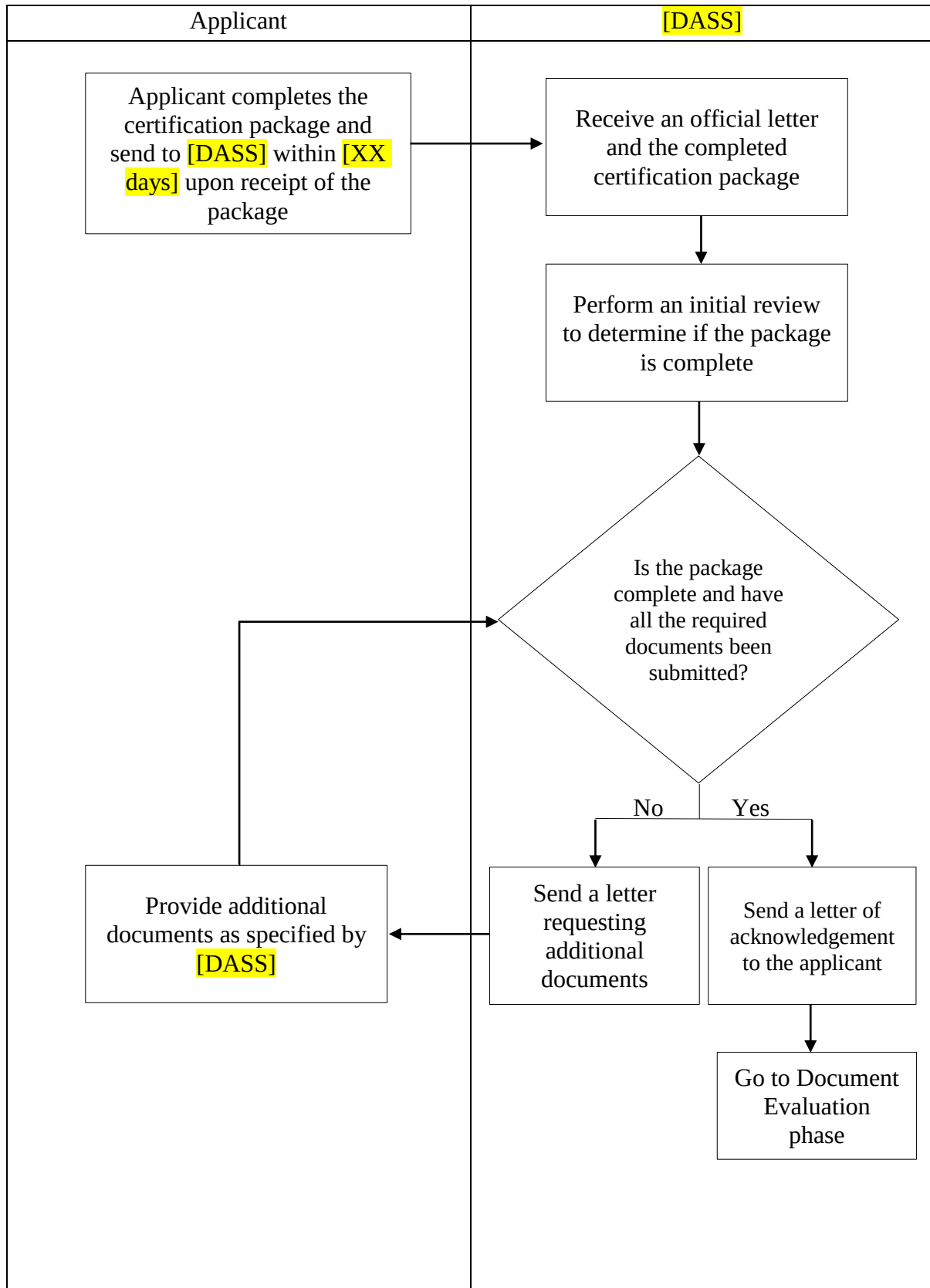
3.3.3.2 Approvals from other State authorities as required by other local statutory requirements shall be obtained by the applicant/aerodrome operator and submitted together with the application.

3.3.3.3 The application shall be submitted in sufficient time to allow for detailed consideration and inspection of the aerodrome before the intended or desired date of grant of the Aerodrome Certificate. For a new application for a certificate, this should normally be submitted [XX] months in advance of the planned start of operations.

3.3.3.4 Upon receipt of the completed application package, the initial review will be conducted to verify that at least those items required for formal application have been submitted. The initial review also permits a determination of whether the submitted material represents a feasible proposal and is of sufficient quality to proceed with the certification process.

3.3.3.5 The applicant/aerodrome operator will receive a letter informing the outcome of the initial review within [XX] days.

The process of Formal Application phase is illustrated in Figure [XXX].



3.3.4 Phase Three – Document Evaluation

3.3.4.1 The purpose of the Document Evaluation Phase is to assess all required documents to ensure full compliance with the Aerodrome Regulations applicable to the scale of the proposed aerodrome operations.

3.3.4.2 On receipt of the completed certification package, [DASS] will carry out a detailed examination of the Aerodrome Manual and other documents submitted to ensure the completeness of coverage and compliance with the relevant regulations, including the data and information to be published by the Aeronautical Information Services (AIS).

3.3.4.3 The submitted documents by the applicant/aerodrome operator will be retained by [DASS] during the currency of the Aerodrome Certificate.

3.3.4.4 The assessment of the Aerodrome Manual and survey report will be conducted for assessing:

- A. the completeness and compliance of its contents, including procedures, description of infrastructure, staffing, equipment, etc. with the regulations; and
- B. the quality, accuracy, and completeness of the aerodrome and obstacle survey.

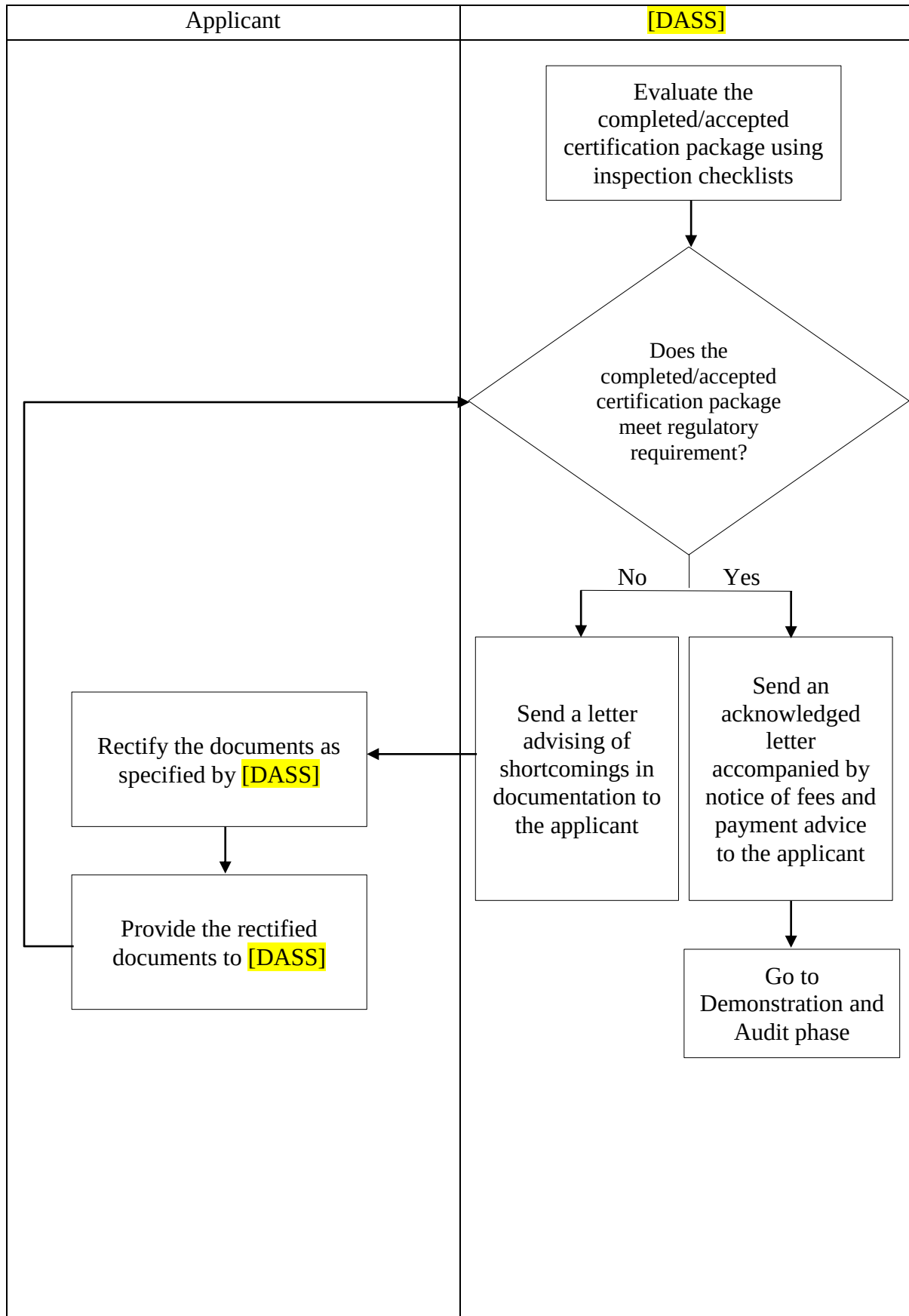
3.3.4.5 The applicant/aerodrome operator will be informed when the Aerodrome Manual and/or associated manuals (i.e. the SMS Manual and AEP) is approved. In case of the manual(s) is not approved, the areas that need amendment to comply with the Aerodrome Regulations and the rectification period will be advised. If the applicant cannot rectify the deviations/deficiencies within the period of time specified by [DASS], the [DASS] may reject the application.

3.3.4.6 Once the Aerodrome Manual and/or associated manuals is approved by [CAA], the applicant/aerodrome operator shall make copies of the manual and distribute them to its stakeholders and other relevant parties in such a manner that all aerodrome operating staff have access to all parts of the manual relevant to each staff member's duties.

3.3.4.7 The applicant/aerodrome operator shall inform [DASS] of any changes to the approved Aerodrome Manual and/or associated manuals between the time of application for a certificate and the end of the on-site verification.

3.3.4.8 Upon satisfactory completion of the Document Evaluation Phase, [DASS] will coordinate the progression to the Demonstration, Audit and Inspection Phase.

The process of Document Evaluation phase is illustrated in Figure [XXX].



3.3.5 Phase Four – Demonstration and Audit

3.3.5.1 In this Demonstration and Audit phase, the emphasis is on compliance with regulations and safe operating practices. [DASS] will ensure that the aerodrome facilities, operational procedures, Safety Management System (SMS), Aerodrome Emergency Plan (AEP), and programs for training and directing personnel in the performance of their duties are effective.

3.3.5.2 Prior to commencing the audit and inspection, it is important that the Aerodrome manual and associated manual(s) must be approved, any additional material requested by [DASS] must be provided, and the applicable fee must be paid.

Note: Fees are payable by an applicant for an aerodrome certificate or the holder of an aerodrome certificate for the following services:

- A. Assessment of an application for an aerodrome certificate and subsequent grant of the certificate if the application is successful;
- B. Application for renewal of an aerodrome certificate and subsequent renewal of the certificate if the application is successful; and
- C. [Other services as specified by the CAA]

3.3.5.3 The scope of audit and inspection covers the subjects included in the manual(s) in order to confirm that the aerodrome operations are carried out effectively in accordance with the applicable regulation and procedures described in the manual(s).

3.3.5.4 Due to the wide scope of the certification, the aerodrome inspectors may use the sampling method for verifying particular subjects and select items for more detailed inspection and verification. The areas of technical inspection may include physical characteristics, visual aids, rescue and fire fighting, operations and SMS.

3.3.5.5 The audit and inspection of the SMS is normally included at this stage of the initial certification. Depending on the implementation status of the SMS at the aerodrome, a specific verification of the SMS can be conducted separately because the aerodrome operator's SMS may not yet be fully operational. Its effectiveness will be assessed during continued oversight and will constitute an important factor in deciding the continued oversight activities that will be carried out.

3.3.5.6 Similarly, the verification of the AEP may be either staged through modules to a full emergency exercise.

3.3.5.7 The audit and inspection of the SMS focuses explicitly on the components required for granting the certificate and, when applicable, covers all other requirements for the SMS. SMS requirements also apply to the aerodrome operator's subcontractors in the domains within the scope of certification.

3.3.5.8 If the aerodrome operator is not directly responsible for some of the activities within the scope of certification, the on-site verification ensures that there is appropriate coordination between the aerodrome operator and the other stakeholders.

3.3.5.9 Audit and inspection protocols - [DASS] will coordinate with the applicant/aerodrome operator to agree with a program for the on-site demonstration, audit and verification activities, including, but not limited to:

- A. venue, time and attendance of an opening meeting;
- B. allocation of aerodrome inspectors to the audit and verification tasks to a planned timetable;
- C. facilitation of transport, accommodation and subsistence requirements, as applicable;
- D. execution of the on-site audit;
- E. closing meeting; and
- F. compilation of the draft report.

3.3.5.10 The applicant/aerodrome operator shall ensure that access is granted to [CAA inspectors] for the purpose of ensuring safety at an aerodrome, to:

- A. inspect and carry out tests on the aerodrome facilities, equipment or services;
- B. inspect the aerodrome operator's documents and records; or
- C. verify the aerodrome's safety management system.

The aerodrome operator shall also co-operate in facilitating the above activities.

3.3.5.11 The applicant/aerodrome operator should note that the failure to provide evidence is considered a non-compliance and may result in a finding.

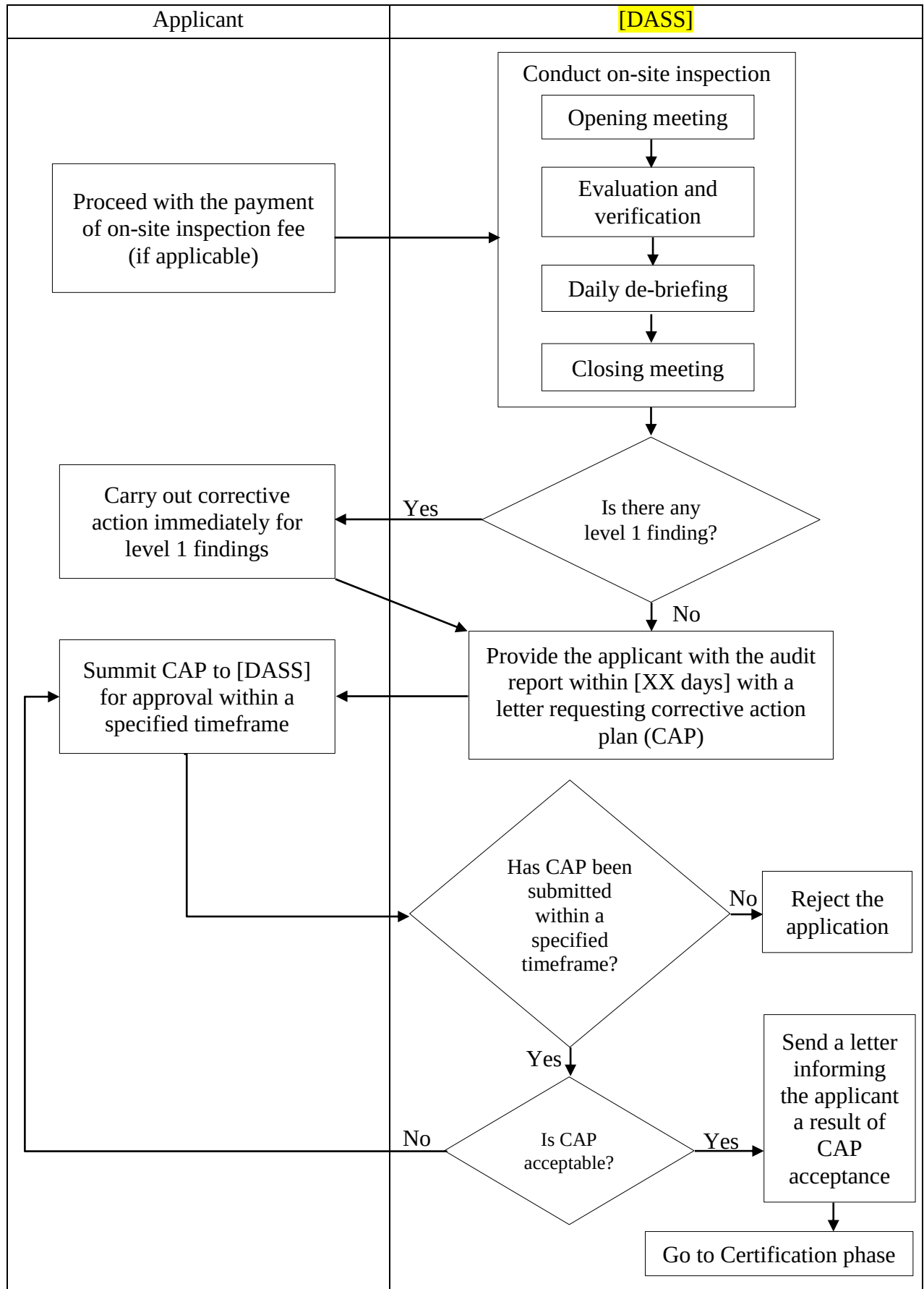
3.3.5.12 During the audit/inspection closing meeting, a preliminary list of findings (if any) is given to the applicant/aerodrome operator.

3.3.5.13 An audit report is also sent to the applicant/aerodrome operator within [XX] days after the closing meeting.

3.3.5.14 In case of finding(s), the applicant/aerodrome operator is required to develop a Corrective Action Plan (CAP) proposing ways to eliminate or mitigate the findings, with deadlines for each subsequent action.

3.3.5.15 [DASS] may impose immediate appropriate measures on the applicant/aerodrome operator, if necessary, until actions have been taken to remove or mitigate the findings, including aeronautical study (if applicable), in order to ensure an acceptable level of safety.

3.3.5.16 The process of Demonstration and Audit phase is illustrated in Figure [XXX].



3.3.6 Phase Five – Certification

3.3.6.1 The Certification Phase covers the final assessment of the previous phases, resulting in the issuance of a certificate and promulgation of the data, information and certification status of the aerodrome.

3.3.6.2 When there is no finding or once the corrective action plans are accepted and mitigation measures are agreed upon, the [CAA] will grant the aerodrome certificate to the applicant/aerodrome operator.

3.3.6.3 [DASS] will notify the applicant/aerodrome operator in writing of the granting of the Aerodrome Certificate while advising the applicant to pay the certification fee.

3.3.6.4 If the [CAA] refuses to grant an aerodrome certificate to the applicant, [DASS] will, within [XX] days of the refusal, give the applicant a written notice of the refusal, stating the reasons for the refusal.

3.3.6.5 [CAA] will state the granting condition(s)/limitation(s) (if any) and the validity duration of the certificate.

3.3.6.6 An appendix may be attached to the certificate describing the essential conditions prevailing at the aerodrome, which may include:

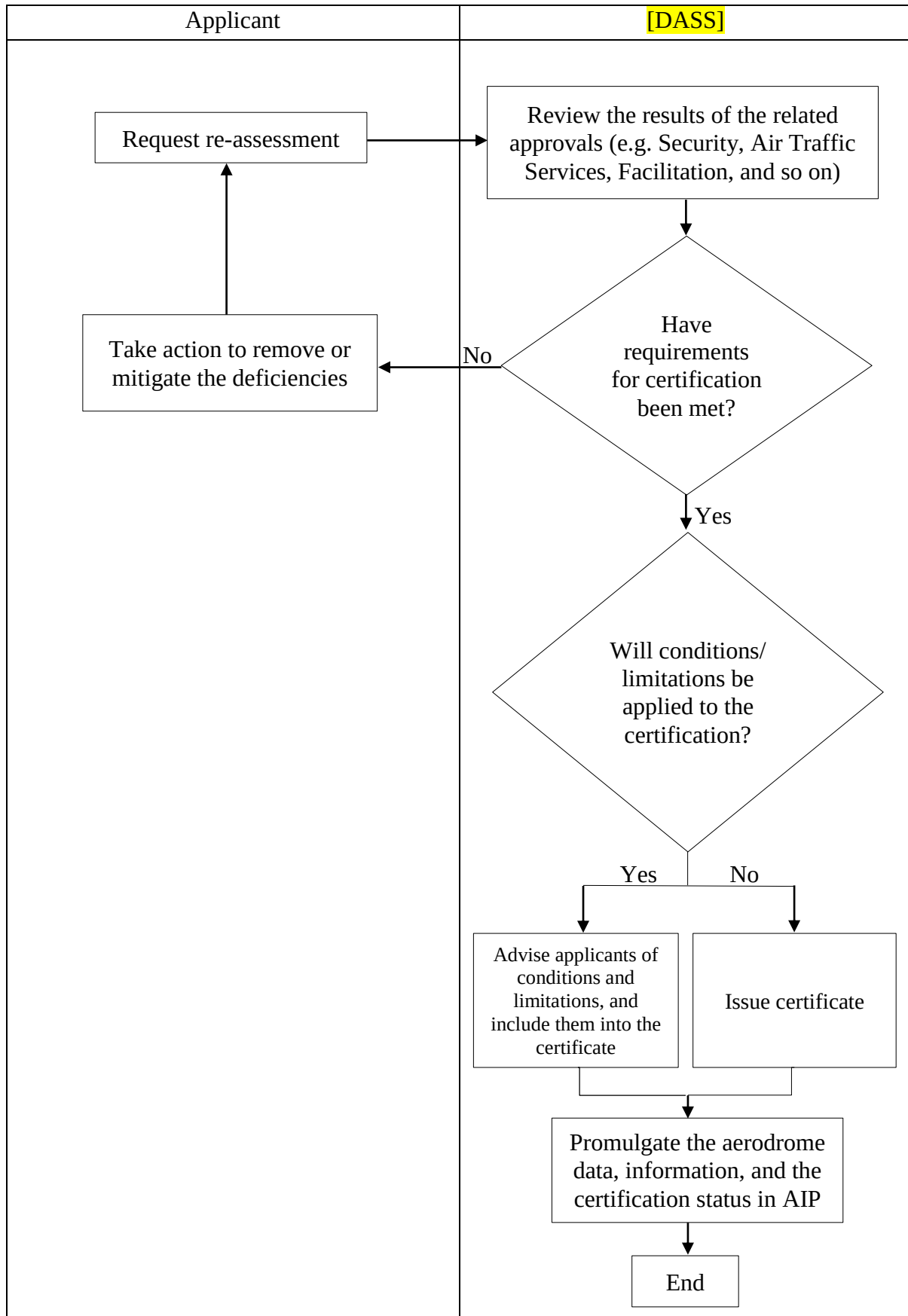
- A. type of use;
- B. aerodrome reference code elements – element one (aeroplane reference field length) and element two (wing span);
- C. critical aeroplane type(s);
- D. operational conditions for the accommodation of critical aeroplanes for which the facility is provided;
- E. Rescue and Fire Fighting (RFF) category;
- F. operational restrictions at the aerodrome; and
- G. [list of any other conditions attached to the certificate]

3.3.6.7 Aerodrome operators shall ensure that the Conditions and Limitations, if any, are brought to the attention of their managerial and operating staff, and strictly complied with. A copy of the Aerodrome Certificate, Conditions and Limitations, if any, shall be included in the aerodrome operator's Aerodrome Manual that is distributed to its stakeholders and other relevant parties.

3.3.6.8 An aerodrome certificate is granted on the condition that the aerodrome operator will, at all times, be in compliance with the applicable regulations and mandatory requirements.

3.3.6.9 [DASS] will coordinate with the AIS provider to promulgate the aerodrome data and information, and the certification status of the aerodrome in the Aeronautical Information Publications (AIP).

3.3.6.10 The process of Certification phase is illustrated in Figure [XXX].



3.3.7 Promulgation of a Certified Aerodrome in the AIP and NOTAM

3.3.7.1 Upon granting of an Aerodrome Certificate, aerodrome operator shall ensure that all the aerodrome data is permanently included in the AIP, including the effective dates for which the aerodrome is certified and for which it will commence operations.

3.3.7.2 Where safety concerns are observed on the aerodrome, special conditions or operational restrictions may be attached to the certificate and published in the AIP or by NOTAM until the planned corrective action(s) is completed. In this case, validity of certificate could be shortened, taking the content and duration of the corrective action plan into account.

3.3.8 Validity of an Aerodrome Certificate

3.3.8.1 The validity of the certificate is limited in time and not exceeding [XX] years.

3.3.8.2 An aerodrome certificate shall remain in force for a period as stated in the certificate, unless it is earlier suspended, revoked or cancelled.

3.3.8.3 During the period of validity of the certificate, [DASS] monitors the timely implementation of the corrective action plans within the continued oversight plan.

3.3.8.4 The validity is published for each aerodrome in the [AD1] section of the AIP.

3.4 Continued Oversight

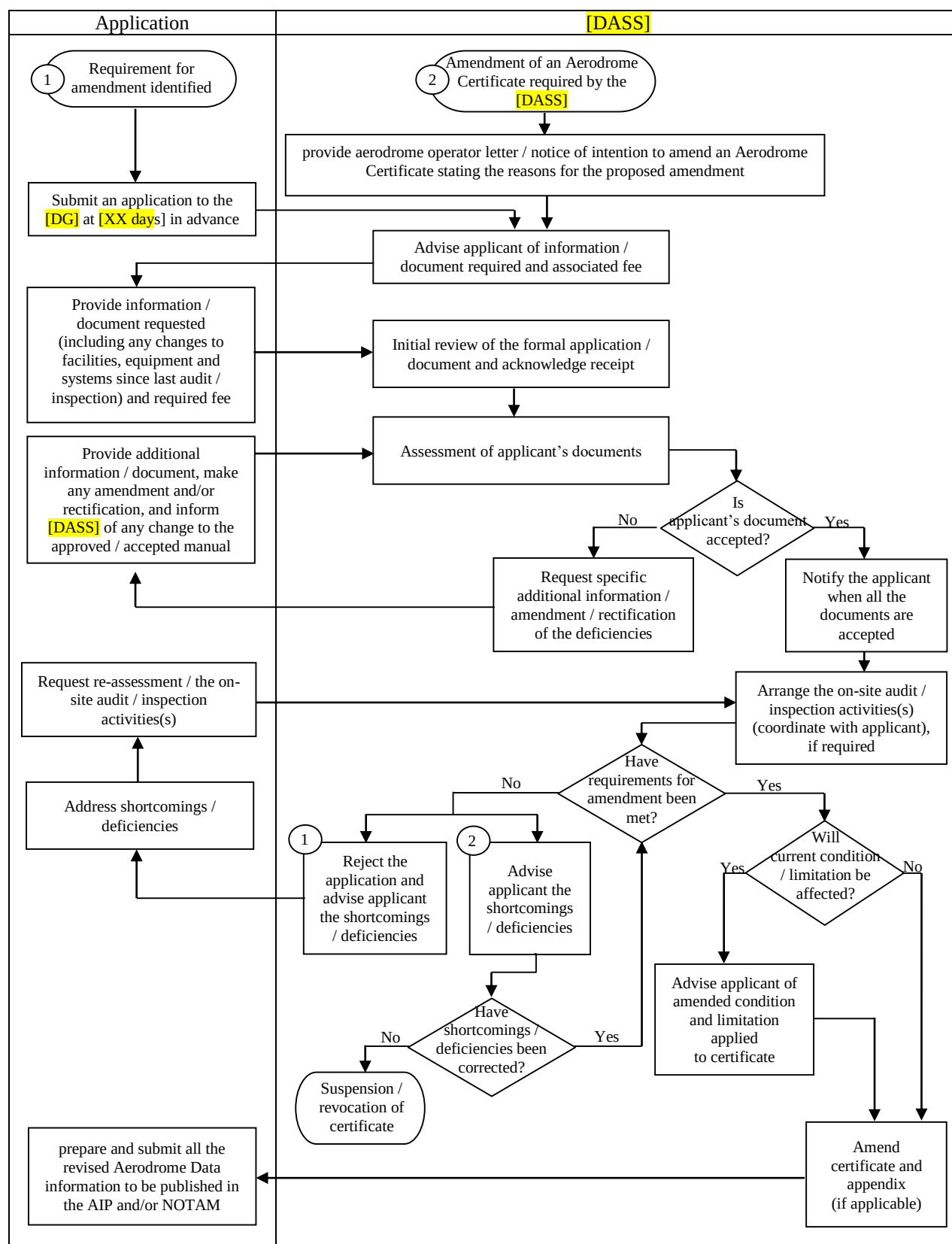
Upon granting the certificate to the aerodrome operator, [DASS] will continue its safety oversight in order to ensure that the compliance to the given conditions and requirements is maintained.

3.5 Amendment of an Aerodrome Certificate

An aerodrome certificate may be amended in response to a request by an aerodrome operator or as a consequence of enforcement action by [CAA] for a number of reasons:

- A. a change of aerodrome name;
- B. a change of aerodrome reference code;
- C. a change of aerodrome boundaries;
- D. a change of type of runway or pavement strength of runway;
- E. a change of aerodrome operations;
- F. to add, remove or amend a deviation;
- G. to add, remove or amend a condition, limitation or special procedure; and
- H. [list of any other reasons]

3.5.1.2 The process for the amendment of an aerodrome certificate is illustrated in Figure [XXX].



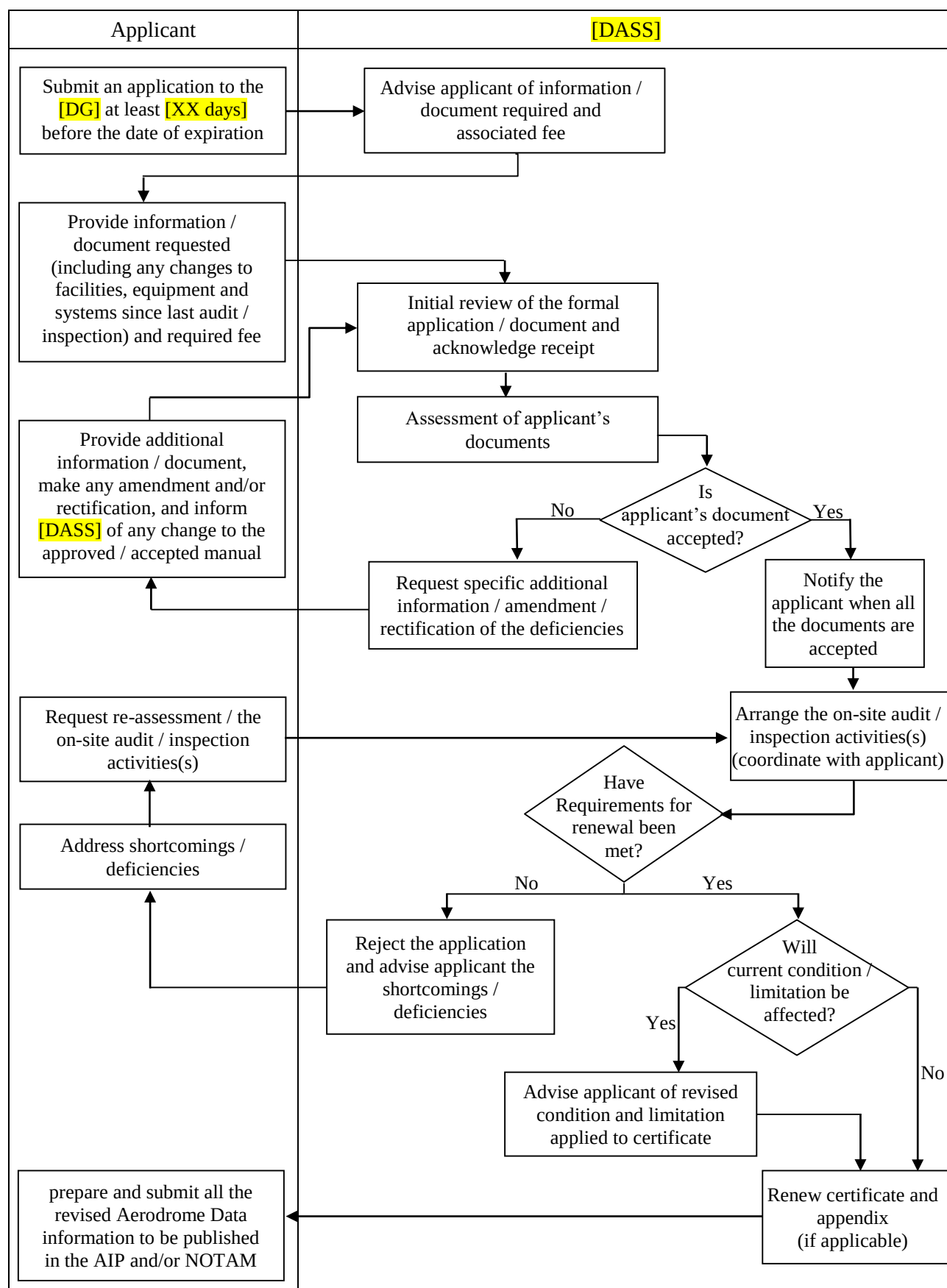
3.6 Renewal of an Aerodrome Certificate

3.6.1 The applicant/aerodrome operator shall request renewal of the aerodrome certificate at least [XX] days before it is due to expire.

3.6.2 If the aerodrome has not been audited or inspected within [XX] months of an application for renewal being raised, [DASS] will arrange for an audit to be undertaken as part of the renewal process.

3.6.3 Prior to renewal [DASS] will review outstanding audit/inspection result, corrective actions and, where applicable, conditions and limitations. If it appears that the applicant/aerodrome operator maintains the qualifications and capability to operate the aerodrome, which is open to [international/public] use, the [CAA] will extend a period of validity of the certificate.

3.6.4 The process for the renewal of an aerodrome certificate is illustrated in Figure [XXX].



3.7 Transfer of an Aerodrome Certificate

3.7.1 The holder of an aerodrome certificate shall not transfer the rights under the certificate to another person unless written permission has been obtained from the [CAA].

3.7.2 The submission of the application for transferring the rights shall be made, in accordance with the [CA Act/CAR-Aerodromes], to [CAA] at least [XX] days before the intended effective date.

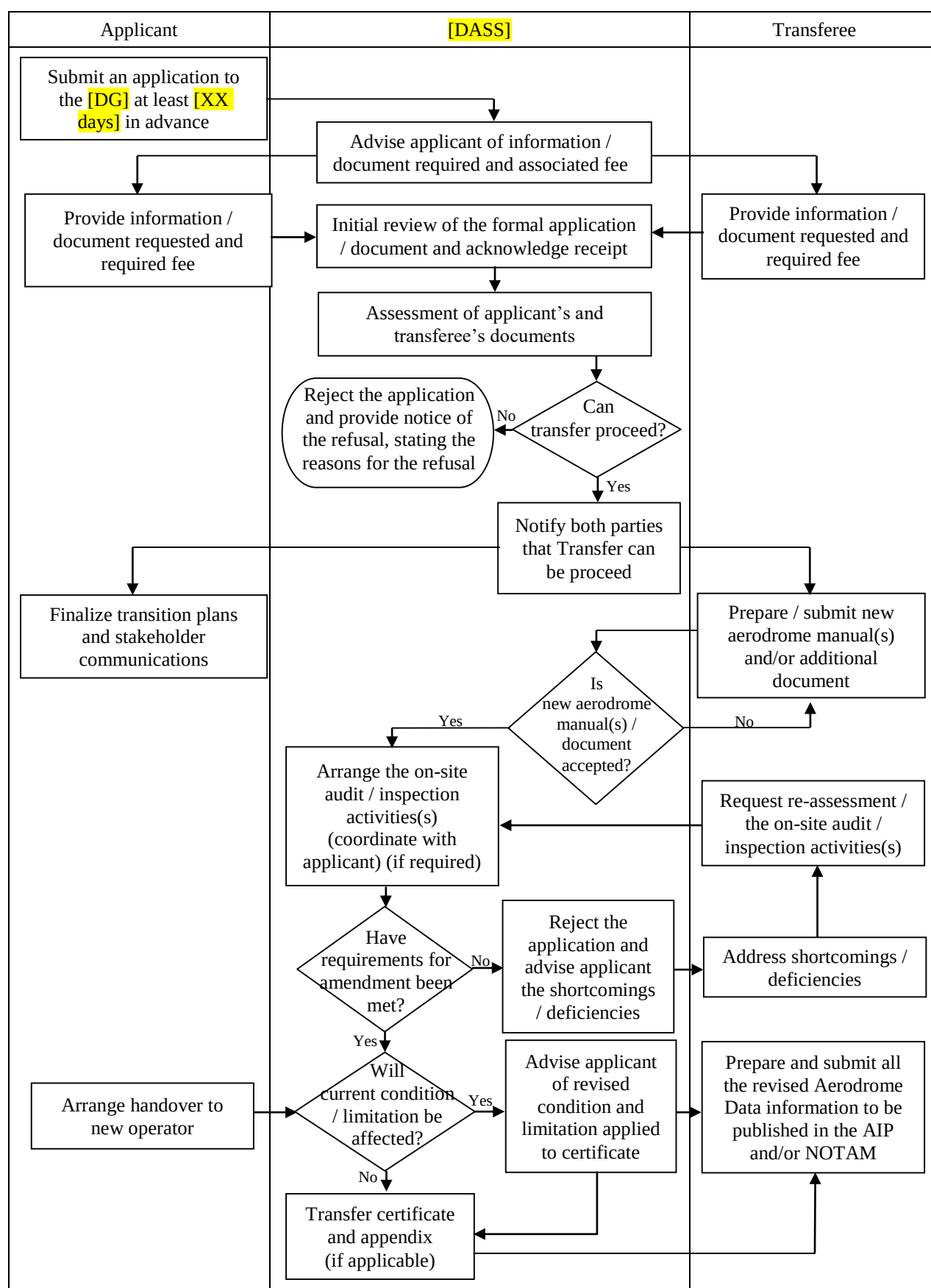
3.7.3 If the [CAA] grants a permission to transfer the right under an Aerodrome Certificate to an applicant/aerodrome operator, the [CAA] will, within [XX] days of granting the permission, give the applicant/aerodrome operator a written permission and issue a new certificate. The applicant/aerodrome operator shall return the certificate to the [CAA] within [XX] days from the effective date of the new certificate.

3.7.4 It is important to note that an application for transferring may be refused on the following conditions:

- A. Transferee is not considered a suitable body with the required resources and competence to be able to fulfil the duties of and aerodrome operator;
- B. Transition plan is deemed inadequate to effectively manage safety during the transfer of responsibility;
- C. Documentation, including the proposed Aerodrome Manual, do not meet regulatory requirements;
- D. Other reason, deemed by [CAA] to be evidence of the potential inability of the transferee to operate a safe aerodrome;
- E. [list of any other conditions]

In this case, the [DASS] will inform the applicant/aerodrome operator and the transferee, in writing, of its reason no later than [XX] days before the proposed transfer.

3.7.5 The process for the transfer of an aerodrome certificate is illustrated in Figure [XXX]



3.8 Suspension/Revocation of Aerodrome Certificate

3.8.1 A suspension or revocation of an aerodrome certificate shall take effect from the date specified in the notice of suspension or revocation.

3.8.2 **Suspension** – it is a temporary enforcement action and it can be reinstated.

3.8.3 [CAA] will suspend an aerodrome certificate in the following cases:

- A. The holder of an aerodrome certificate is unable to perform the duties as stated in [CA Act/CAR-Aerodromes] and the [DG] has ordered rectification of the operation but the operation cannot be rectified to attain safety within the period of time pursuant to the order, the [DG] shall determine a period of suspension as may be appropriate. Each period of the suspension shall not exceed [XX] months;
- B. [list of any other cases]

3.8.4 **Revocation** – This enforcement action is a potentially permanent removal of privileges to operate the public aerodrome.

3.8.5 [CAA] has the power to revoke an aerodrome certificate in the following cases:

- A. There is a major change concerning the physical characteristics of an aerodrome or areas near the aerodrome, which is so different from the time of issuance of the Aerodrome Certificate that it causes unsafe condition for the use of such aerodrome;
- B. There are orders of suspension of an aerodrome certificate [XX] or more within a period of [XX] years;
- C. [list of any other cases]

3.8.6 An aerodrome certificate that has been revoked must be returned to the [CAA] within [XX] days from the date of acknowledgement of the order of revocation of the certificate.

3.9 Forms

All forms relevant to an Aerodrome Certification process are provided in [Appendix X].

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4. Aerodrome Manual

4.1 General

4.1.1 As part of the certification process, an aerodrome manual which will include all pertinent information on the aerodrome site, facilities, services, equipment, operating procedures, organization and management including a safety management system, must be submitted by an applicant/aerodrome operator for approval prior to granting an Aerodrome Certificate.

4.1.2 Information provided in the Aerodrome Manual will enable the [DASS] to assess the suitability of the aerodrome for the aircraft operations proposed and to judge the applicant's/aerodrome operator's fitness to hold an Aerodrome Certificate. It is also the basic reference guide for conducting site audits and inspections for granting an Aerodrome Certificate, and for subsequent safety oversight surveillance of the aerodrome to be carried out by the [DASS] at regular intervals.

4.1.3 The purpose of the Aerodrome Manual is also to provide all such information and instructions as may be necessary to enable the aerodrome operating staff to effectively perform their duties in ensuring that the aerodrome is safe for use by aircraft. To achieve this aim, the Aerodrome Manual shall contain instructions for operating procedures from the aerodrome operator to his operational staff, including contractors and agents working for the aerodrome operator, as well as details of organization structure such as key operational personnel and their areas of responsibility.

4.2 Format of an Aerodrome Manual

4.2.1 An Aerodrome Manual shall comprise of a document covering all matters that need to be addressed, as well as relevant supporting documents and manuals for aerodrome operations that are referred to in the Aerodrome Manual. The contents of aerodrome manual listed in [CA Act/CAR-Aerodromes] provides the minimum requirement to be included in an aerodrome manual.

Note: - Contents of an aerodrome manual are also available in ICAO Doc 9774, Manual on Certification of Aerodromes and ICAO Doc 9981, Procedures for Air Navigation Services — Aerodromes.

4.2.2 The Aerodrome Manual may be supplemented by other documents and manuals, airport circulars, notices and instructions issued by the aerodrome operator on airport operational matters from time to time. The contents of these supplementary materials shall be incorporated into the main Aerodrome Manual if they are permanent in nature.

4.2.3 The Aerodrome Manual is a 'living document' and subject to frequent amendment. As such it shall be contained in a binder designed to facilitate easy amendment. The page and paragraph numbering system shall also be designed to allow for easy addition and deletion of information. Information regarding each amendment record, the amendment history and a list of effective pages shall be included in each copy of the Aerodrome Manual.

4.2.4 As a working and reference document for aerodrome operational staff, the Aerodrome Manual must be user-friendly. The information and instructions contained therein must be clear, concise and unambiguous. The Aerodrome operator shall ensure that the Aerodrome Manual prepared for his aerodrome addresses the required contents clearly and comprehensively. The [CAA] reserves the right to reject an Aerodrome Manual and/or to request amendment to the Aerodrome Manual if it, or any part of it, is found to be unacceptable, incomplete or inadequate.

4.3 Maintenance and Control of Aerodrome Manual

- 4.3.1 [CAA] requires an aerodrome operator, under [CA Act/CAR-Aerodromes] to:
- A. produce an Aerodrome Manual for his aerodrome and provide the [CAA] with a copy thereof which is kept complete and current;
 - B. keep at least one complete and current copy of the Aerodrome Manual at the aerodrome and, if the aerodrome is not his principal place of business, keep another such copy of the Aerodrome Manual at his principal place of business;
 - C. make the Aerodrome Manual available for inspection by any authorized person;
 - D. make such amendment or addition to the Aerodrome Manual as the [CAA] may require for:
 - 1) maintaining the accuracy of the Aerodrome Manual;
 - 2) ensuring the safe and efficient operation of aircraft at the aerodrome; or
 - 3) ensuring the safety of air navigation.
 - E. [list of any other maintenance and control of an aerodrome manual]

4.4 Issue, Distribution and Amendment of an Aerodrome Manual

4.4.1 The Aerodrome Manual is an important safety document and must be issued under the authority of the aerodrome operator and signed by the senior executive of the organization. Any amendments to the Aerodrome Manual shall be approved by the aerodrome operator, or his delegate.

4.4.2 Copies of relevant sections of the Aerodrome Manual shall be made available to each supervisory member of the aerodrome operating staff including those employed by the operator's contractors or agents, where relevant, so that each member of the aerodrome operating staff:

- A. is aware of the contents of every part of the Aerodrome Manual relevant to his duties; and
- B. is aware of the requirement to undertake duties in conformity with the relevant provisions of the Aerodrome Manual.

4.4.3 For this manual, aerodrome operating staff shall mean all persons, whether or not employed directly by the aerodrome operator, who in the course of their duties are:

- A. concerned with ensuring that the aerodrome is safe for use by aircraft; or
- B. required to have access to the aerodrome maneuvering area or apron.

4.4.4 In addition, sufficient copies of the Aerodrome Manual should be placed at the aerodrome operator's library and at the workplace of other relevant operating staff concerned.

4.4.5 Apart from submission of the Aerodrome Manual to [CAA] and internal distribution of copies to relevant operating staff, copies of the Aerodrome Manual (or relevant parts of it) should also be made available to other external parties who have a part to play in aerodrome safety procedures. In particular, the airport emergency section of the Aerodrome Manual should also be extended to all external parties (e.g. Civil Defense, State Police, external Fire Departments or health agencies) involved in the aerodrome emergency plan.

4.4.6 The Aerodrome Manual shall be a controlled document. An aerodrome operator shall appoint a document controller to be responsible for updating and distributing its Aerodrome Manual. Each copy of the Aerodrome Manual shall be numbered, and a list of their holders maintained by the document controller. Amendments shall be recorded on the amendment page in each copy.

4.4.7 Each holder of the Aerodrome Manual shall be responsible for ensuring that his copy is kept up to date. For copies intended for common use, a person shall be designated to look after amendment of those copies.

4.4.8 Manuscript amendments by hand to the Aerodrome Manual are not acceptable. Changes or additions shall be made by an additional or replacement page suitably dated. If the amendment affects the action of external parties, an acknowledgement slip shall be requested from each external party concerned when amendments are circulated to confirm that each party concerned has received and taken notice of the amendment.

4.4.9 The aerodrome operator shall make prompt amendments to the Aerodrome Manual when there are updates to any part of the contents of the Aerodrome Manual or, when required by the [CAA] upon review of the Aerodrome Manual or any proposed updates or amendments. Such amendments required by the [CAA] shall be binding on the aerodrome operator.

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5. Aerodrome Audit and Inspection

5.1 Introduction

Note - The detailed information regarding aerodrome audit and inspection contains in Generic Aerodrome Inspector Handbook, Chapter 5.

5.1.1 Audit and Inspection are the main tools available to the [DASS] to ensure aerodromes meet regulations and maintain a safe operating environment and are operated and managed competently. [DASS] may initiate an audit/inspection at any time in response to adverse safety trends, accidents/incidents and during or after a significant change in aerodrome infrastructure, operation, system, or organisation.

5.1.2 Audit - An in-depth review of the activities of an organization to verify conformance to regulations and standards.

5.1.3 Inspection - The basic activity involving examination of a specific characteristic of an aerodrome operator.

5.2 Inspection/Audit Types

The type of inspection/audit is determined by the circumstances under which the Inspection/audit is convened. There are 3 types of aerodrome operator inspections/audits:

- A. Initial Certification Inspection/Audit,
- B. Surveillance Inspection/Audit, and
- C. Special-purpose Inspection/Audit.

5.2.1 Initial Certification Inspection/Audit

5.2.1.1 The initial certification inspection/audit consists of checking compliance of documents and information provided by aerodrome operators with the requirements of [CA Act/CAR-Aerodromes], followed by on-site verification, including physical characteristics, facilities, equipment, staffing and operating procedures for issuing an Aerodrome Certificate.

5.2.1.2 All aspects of the aerodrome operations, including the management structure, adequacy and competency of operations and maintenance staff, arrangements and provisions for their training, aerodrome site, facilities, equipment, related services and operating procedures, etc. will be assessed in relation to the scale, scope and circumstances of the applicant's proposed operations.

5.2.1.3 [DASS] may carry out an inspection/audit or testing of any aspect of the aerodrome or require substantiation of any information provided by applicant. However, it should be clearly understood that the [DASS] sample checking process does not absolve the applicant from the responsibility to provide accurate data and information.

5.2.1.4 Special assessment may be necessary if there are aerodrome facilities that are not in full compliance with the applicable standards and requirements contained in the [CA Act/CAR-Aerodromes]. This may involve more time and resources and may result in the application being refused or restrictions being imposed on aircraft operations.

5.2.1.5 A flight operations assessment may be required by [CAA] to ensure that the operation of the aerodrome at the location specified in the application will not endanger the safety of aircraft operations.

5.2.2 Surveillance Inspection/Audit

5.2.2.1 Once an aerodrome operator has been issued an aerodrome certificate, a surveillance inspection/audit will be conducted to ensure that the certificate holder meet their obligations under the terms of the certificate as set out in conditions, limitations and certification requirements. This will normally take place within XX - XX months following initial certification inspection/audit.

5.2.2.2 The inspection/audit interval will be determined by the [DASS], in consultation with the Aerodrome Inspector depending upon the complexity and compliance and safety record of the aerodrome – also known as risk-based oversight.

5.2.2.3 Periodic Cycle. Every aerodrome holding an aerodrome certificate will be inspected or audited on a periodic cycle ranging from XX to XX months. This periodic cycle can be extended to XX months maximum for those aerodromes with a strong internal audit program, a sound conformance record and a good safety record. Promptness with which previous non-conformances were corrected should also be a factor in the timing of the next audit.

5.2.3 Special-purpose Inspection/Audit

5.2.3.1 A special-purpose inspection/audit is one conducted to respond to special circumstances other than those requiring an initial certification or surveillance inspection/audit. A special-purpose inspection/audit may be convened with little or no notice and focus on specific areas of concern arising from safety issues.

5.2.3.2 A “no-notice” audit may preclude certain team-member activities and responsibilities that would be normally associated with other types of audits. Alternatively, a special purpose audit may be necessitated by a significant change in operation or planned development of the aerodrome, or after removal of wreckage to ensure safe aerodrome operations.

5.3 Aerodrome Inspection/Audit Activities

The following activities may be performed during inspection and audit of aerodrome.

5.3.1 Off-site Verification Activities

5.3.1.1 Off-site verification refers to the process of reviewing the document and information that are provided by the applicant/aerodrome operator. Off-site verification can be conducted during both Document Evaluation Phase and Demonstration, Audit and Inspection Phase. It provides [DASS] with information about both current and impending issues within an aerodrome that may not have been otherwise detected until the next on-site verification. The off-site verification allows [DASS] to evaluate the effectiveness of implemented corrective action(s) of the identified finding of non-compliance without an on-site verification activity.

5.3.1.2 Document Evaluation Phase. The Aerodrome Manual and any other required documents provided by an applicant/aerodrome operator will be assessed to ensure the intention to full comply with the [CA Act/CAR-Aerodromes] as applicable to the scale of the proposed aerodrome operation. Any non-compliance, deficiency or deviation from the [CA Act/CAR-Aerodromes] should be discussed with the applicant/aerodrome operator and the rectification within the specify period is required in order to proceed to the next certification phase.

5.3.1.3 Demonstration, Audit and Inspection Phase. During an off-site verification activity, a subject matter expert assesses Corrective Action Plans (CAPs) and/or corrective actions implemented by an applicant/aerodrome operator to address certain findings without an on-site visit to the aerodrome by validating submitted supporting evidence. This type of activity is limited to eligible findings of non-compliance that do not require on-site verification, i.e. mainly those related to the establishment of policies, procedures and records.

5.3.2 On-site Verification Activities

5.3.2.1 The term “on-site” means that the inspection takes place wherever the subject of the inspection happens to be located. The scope of inspection and audit of aerodrome operations and SMS sometimes extends to all users/stakeholders of aerodrome, including fixed- base operators, ground handling agencies and other organizations that perform activities independently at the aerodrome in relation to flight or aircraft handling.

5.3.2.2 Demonstration, Audit and Inspection Phase. An on-site verification of initial certification is an on-site activity during which a certification team of subject matter experts determines an applicant’s/aerodrome operator’s capability for the scale of the proposed aerodrome operation with regard to safety at the aerodrome by verifying that the aerodrome operations are carried out effectively in accordance with the applicable [CA Act/CAR-Aerodromes] and procedures described in the approved Aerodrome Manual.

5.3.2.3 An on-site verification in this phase, also includes the on-site activity during which a certification team of subject matter experts collects and assesses evidences provided by the applicant/aerodrome operator demonstrating that the applicant/aerodrome operator has implemented corrective actions or mitigating measures as agreed in the Corrective Action Plans (CAPs).

5.3.2.4 If the applicant/aerodrome operator is not directly responsible for some of the activities within the scope of certification, the on-site verification ensures that there is appropriate coordination between the applicant/aerodrome operator and the other users/stakeholders.

5.4 Findings of Non-Compliance

5.4.1 An inspection/audit finding is a non-compliance with a particular regulation and/or standard. It is generated in an off-site or on-site verification activity as a result of a lack of compliance with applicable [CA Act/CAR-Aerodromes] and/or a lack of application of [CAA] advisory circular/guidance material or good aviation safety practices. The lack of compliance is expressed in terms of one or more deficiencies.

5.4.2 For all finding of non-compliance identified by the Aerodrome Inspector, details regarding the non-compliance such as root cause analysis and corrective/ preventative actions, will be recorded and communicated via Non-Compliance Form presented in [Appendix X].

5.4.3 The terminology used for the assessment of compliance follows the same terminology used by ICAO for its continuous monitoring approach.

Compliance	Definition of Compliance
<i>Exceeds</i>	Compliant: the aerodrome's standard exceeds ICAO Annex 14/ [CA Act/CAR-Aerodromes] .
<i>Complies</i>	Complies with [CA Act/CAR-Aerodromes] and Annex 14 (as applicable).
<i>Shortfall</i>	Complies with [CA Act/CAR-Aerodromes] and Annex 14 but does not comply with the aerodrome manual.
<i>Different</i>	The aerodrome's standard is different in character from ICAO Annex 14/ [CA Act/CAR-Aerodromes], and compliance/non-compliance cannot be determined.
<i>LESS</i>	Not compliant: the audit found the aerodrome's standard on this issue to be non-compliant with ICAO Annex 14/[CA Act/CAR-Aerodromes]
<i>N/A</i>	Not applicable.

5.4.4 Any audit item or combinations of items assessed as Shortfall, Different or Less will then be considered by the Aerodrome Inspector for an Aerodrome Safety audit finding(s), which in turn shall be classified as follows:

Level	Description
1	Any non-compliance is detected with the regulations, requirements, standards, aerodrome procedures and manuals, the terms of an approval or certificate which lower standard or has the potential to result in loss of life, serious injury or damage to facilities. <i>Note: the immediate corrective action might be either a withdrawal or reduction of facilities, or correction of the shortcoming.</i>
2	Any non-compliance is detected with the regulations, requirements, standards, aerodrome procedures and manuals, the terms of an approval or certificate which could lower standard or has the potential to cause significant safety problems.
Observation	A comment intended to identify possible improvement or trends toward non-compliances. Probable non-compliance with upcoming standards

5.4.5 In case of level 1 finding(s), the Aerodrome Inspector shall take immediate and appropriate action to prohibit or limit activities, and if appropriate, it shall proceed to revoke the Aerodrome Certificate or specific approval, or to limit or suspend it in whole or in part, depending upon the extent of the level 1 finding, until successful corrective action has been taken by the aerodrome operator.

5.4.6 The aerodrome operator is required to submit a Corrective Action Plans (CAPs) addressing all other audit findings together with the determined root cause and planned implementation date to [DASS] for approval within XX days from the date of receipt of the audit report. Normally, this deadline will not be extended without full justification and [DASS] approval.

5.5 Corrective Action Plan

5.5.1 The Corrective Action Plan (CAP) is a written confirmation by the aerodrome operator detailing the measures they intend to take, to address all of the findings of non-compliance. The plan must incorporate actions that will mitigate or remove the deficiency in the short-term and prevent a future re-occurrence.

5.5.2 Every Corrective Action Plan (CAP) generated as a result of inspection/audit finding(s) must contain, as a minimum:

- A. determined root cause(s);
- B. the recommendations in need of improvement (from the agreed audit report);
- C. the planned corrective action(s);
- D. the person(s) responsible for implementing and finalizing the corrective action(s); and
- E. time frame for completion.

5.5.3 Where the aerodrome operator fails to submit an acceptable corrective action plan, or to perform the corrective action(s) within the time period accepted or extended by [DASS], the enforcement action, including possible sanctions against an aerodrome operator may be applied.

5.5.4 Corrective action(s) can be classified into four categories, based on a period of time for completion of the corrective action(s), as follows:

- A. Corrected Immediately; A corrective action must be carried out immediately for level 1 finding to stop the unsafe activities. The finding should be written into the report and corrective action plan must be filed.
- B. Corrected within [XX] days; normally the majority of findings should fall into this category. The accepted CAPs must indicate corrective actions put in place within [XX] days. The applicable principal inspector or other assigned person will ensure follow-up.
- C. Corrected between [XX] days and [XX] months; in cases where it is anticipated that the corrective actions will take more than [XX] days after CAP acceptance, or request for extension of CAPs progress will be communicated using the “Non-Compliance Extension Form” provided in [Appendix X]. The principal inspector or other assigned person will follow-up the aerodrome operator progresses and update the findings status.
- D. Longer than [XX] months; in cases where it is not possible or reasonable to apply the corrective action within [XX] months of acceptance of the CAPs, a risk assessment should be completed by the aerodrome operator. The Aerodrome Inspector will evaluate this risk assessment for acceptance or otherwise. The risk remains with the aerodrome operator and its accountable manager. If the risk assessment confirms that the proposed period of time is justified, an exemption should be issued. The corrective actions would therefore be completed.

5.6 Dispute or Disagreement

5.6.1 In cases where the aerodrome operator being audited/inspected does not agree with any of the finding of non-compliance, it should direct a formal written notice of disagreement to the [CAA] within [XX] days after the closing audit meeting, detailing the reasons for the disagreement. The [CAA] may review this and determine subsequent action in accordance with the regulatory requirements and the best interests of aviation safety.

5.6.2 In cases where the aerodrome operator does not agree with the audit report, it should direct a formal written notice of disagreement to the [CAA] within [XX] days after receiving of the audit report, detailing the reasons for the disagreement. [CAA] may review this and determine subsequent action in accordance with the regulatory requirements and the best interests of aviation safety. If the aerodrome operator does not provide any comments or does not acknowledge receipt of the draft report within the specified timeframe, the audit report shall automatically become effective.

5.6.3 Disputes encountered throughout the inspection/audit process that cannot be resolved by the assigned Aerodrome Inspector and team leader shall be reported to [DASS] Manager. If [DASS] cannot resolve the dispute, the matter shall be referred to the [DG] of [CAA] for resolution.

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6 Safety Risk Assessment

Please refer to ICAO Doc 9981 *Procedures for Air Navigation – Aerodromes*, Part I, Chapter 3 and the *Generic Procedures for Accepting Non-Compliances in Aerodromes*.

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Appendix [X] – Other Related Regulations

[Remarks to CAA – List the relevant regulations that are applicable to aerodromes]

[X].1 Air Navigation Services

- [CA Act/CAR-Aerodromes]

[X].2 Security

- [CA Act/CAR-Aerodromes]

[X].3 Facilitation

- [CA Act/CAR-Aerodromes]

[X].4 Environment

- [CA Act/CAR-Aerodromes]

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Appendix [X] - Forms

[X].1 Application/Renewal of Aerodrome Certificate

APPLICATION / RENEWAL OF AERODROME CERTIFICATE

☐ Application ☐ Renewal		
1. Particulars of the Applicant		
Full Name:		
Address:		
Position:		
Phone:	Fax:	Email:
2. Particulars of the Aerodrome Site		
Aerodrome Name:		
Real Property Description:		
Geographical Coordinates of the Aerodrome Reference Point:		
Latitude: _____ Longitude: _____ (in degrees, minutes and tenths of minutes and in WGS-84 format)		
3. Is the Applicant Owner of the Aerodrome Site?		
☐ Yes ☐ No		
If No, please provide: 1. Details of rights held in relation to the site; and 2. Name and address of the owner of the site and written evidence that permission has been obtained for the site to be used by the applicant as an aerodrome.		
4. Details of Aerodrome		
Intended commencement date of aerodrome operations:		
Operating hours:		
Largest type of aircraft expected to operate at aerodrome:		
Intended aerodrome reference code ^a :		
Intended type of runway:		
☐ Non-instrument	☐ Non-precision	
☐ Precision CAT I	☐ Precision CAT II	☐ Precision CAT III
Aerodrome traffic density:		
Intended rescue and fire-fighting category ^b :		

5. Is the aerodrome to be used for regular public transport operations?	
☐ Yes ☐ NO	
6. Details to be shown on the Aerodrome Certificate	
Aerodrome Name:	
Aerodrome Operator:	
Address:	
On behalf of the Aerodrome Operator shown above, I hereby apply for a certificate to operate the aerodrome. My authority to act on behalf of the applicant is:	
Signed:	Date:
Name of person making the declarator	
NOTE: 1. One copy of the Aerodrome Manual, prepared in accordance with the [CA Act/CAR-Aerodromes], and relevant regulations commensurate with the aircraft activities expected at the aerodrome, is required as part of this application. 2. Documentary evidence in support of all matters in this application may be requested.	
REMARKS: a. [Articles/Sections of CA Act/CAR-Aerodromes]. b. [Articles/Sections of CA Act/CAR-Aerodromes].	

[X].2 Request for Grant of Exemption(s)

REQUEST FOR GRANT OF EXEMPTION(S)

Aerodrome Name:		Date:
Aerodrome Address:		
Geographical Coordinates of the Aerodrome Reference Point:		
Latitude: _____		Longitude: _____
(in degrees, minutes and tenths of minutes and in WGS-84 format)		
Reference clause(s) in [CA Act/CAR-Aerodromes] .:		
Reason(s) for exemption:		
Date for complying with the stated [CA Act/CAR-Aerodromes] . clause(s), if applicable:		
Comments:		
A copy of appropriate risk assessment and/or aeronautical studies attached ☐ Yes ☐ NO		
DECLARATION 1. I give my consent for the [DASS] to obtain and verify from or with any source, as [DASS] deem appropriate for the assessment of my request. 2. I declare that the particulars given by me in this application and the attached sheets are true to the best of my knowledge and understanding, and I have not willfully suppressed any material fact. I accept that if any of the information given by me in this application is any way false or incorrect. I shall be disqualified from exemption process.		
Name of Applicant / Signature:		Designation:
Contact Number / Fax:		E-mail:
For official use only:		
Verified by:		
Name of Aerodrome Inspector / Signature:		Date:
Designation:		Contact Number / Fax / E-mail:
Comments:		
Supported by:		
Name of Supporting Officer / Signature:		Date:
Designation:		Contact Number / Fax / E-mail:
Comments:		

X].3 Application for Replacement of Aerodrome Certificate

[X].4 Application for Changes to Aerodrome Certificate

[To be developed]

[X].5 Application for Transfer of Aerodrome Certificate

[To be developed]

[X].6 Sample of Aerodrome Certificate

Note – ICAO Manual on Certification of Aerodromes (Doc 9774) also provides a sample aerodrome certificate.

[DASS] AERODROME CERTIFICATE By virtue of [CA Act/CAR-Aerodromes], the [DG] of [DASS] issues this certificate to [Aerodrome Operator] For the operation of the following aerodrome. [Name of Aerodrome] [Latitude, Longitude] This certificate is used for [type of aerodrome]. The holder of this certificate shall operate the aerodrome listed above in accordance with the conditions and limitations attached to this certificate and shall also comply with the Aerodrome Manual approved by the [DG]. This certificate is effective from [DATE MONTH YEAR] to [DATE MONTH YEAR] until surrendered, suspended or revoked. The [DG] may suspend or revoke this certificate if it appears that the holder of the certificate violates or fails to comply with [CA Act/CAR-Aerodromes], the Aerodrome Manual, the conditions or limitations on operations specified by the [DG] or any other grounds as set out in [CA Act/CAR-Aerodromes]. The holder of this Aerodrome Certificate shall not transfer the rights under the certificate to other persons. Given On [DATE MONTH YEAR] Signature [DG] of [DASS]

[X].7 Sample of Conditions and Limitations of the Aerodrome Certificate

**CONDITIONS AND LIMITATIONS OF
AERODROME CERTIFICATE [Certificate No.]**

By virtue of [CA Act/CAR-Aerodromes], the [DG] of [DASS] issues the conditions and limitations specified below,

1. Type of operation
2. Aerodrome reference code
3. Type of runway
4. Type of approaches
5. General Conditions
 - 5.1 The Aerodrome Operator shall ensure that all the aerodrome facilities, equipment, services and procedures are operated and/or maintained properly and efficiently in accordance with the Aerodrome Manual submitted to the [DASS], the applicable standards and recommended practices set out in the [name of aerodrome] Manual of Implementing Aerodromes Standards and any condition specified in this Aerodrome Certificate.
 - 5.2 The Aerodrome Operator shall ensure that the copy of the Aerodrome Manual submitted to and kept by [DASS] are always complete and current.
 - 5.3 [list of any other conditions]
6. Special Conditions
 - 6.1 [list of any other conditions]

Signature

[DG] of [DASS]

[X].8 Non-Compliance Form

Non-Compliance Form			
Organization:		Date of Non-Compliance finding:	
Representative:		Type of Audit / Oversight Activity:	
NON-COMPLIANCE			
Level of Non-compliance	1 / 2 / Observation	Deadline for Correction Implementation	
Is Corrective Action requested?	☐ Yes ☐ No	Deadline for Corrective Action Implementation if requested	
Reference:			
Non-Compliance Statement (<i>Description of the Non-Compliance</i>)			
Auditor / [DASS] Authorized staff	NCF Opening		NCF Closing
	Name: Signature: Date:		Name: Signature: Date:
NCF acceptance by Representative	Name: _____ Position: _____ Signature: _____ Date: _____		
NON-COMPLIANCE MANAGEMENT			
Correction (Action to eliminate a detected non-compliance):			

Submitted by:	Name:	Signature:	Date:
Acceptance ☐ Yes ☐ No	Name:	Signature:	Date:
Remark:			
Root Cause & Corrective Action Plan			
Corrective Action Implementation and evidences			
Submitted by:	Name:	Signature:	Date:
Acceptance ☐ Yes ☐ No	Name:	Signature:	Date:
Remark:			

[X].9 Non-Compliance Extension Request Form

Non-compliance extension request Form			
General Information			
NCF No.			
Name of aerodrome			
Date			
Description of non-compliance extension request (This section for aerodrome operator)			
Description			
Root cause			
Proposed corrective action			
Reason(s) for extension (Attach evidence to support the request)			
Original deadline			
Estimated date of completion			
Submitted by:	Name:	Signature:	
	Position:	Date:	
Acceptance of non-compliance extension request (This section for [DASS])			
Acceptance:	☐ Yes	☐ No	If no, state reason(s):
	Name:		Signature:
	Date:		

.....

Appendix [X] – Sample Letters**[X].1 Granting of an Aerodrome Certificate**

(File reference no. _____)

Date: _____

(Addressee):

Subject: Granting of an Aerodrome Certificate

Dear (Mr./Ms./as appropriate),

This has reference to your letter dated _____ and your application requesting the certification of your aerodrome _____ located at _____

The aerodrome certification process has been completed and your application has been approved. The Aerodrome Certificate is hereby granted and enclosed with this letter.

Under the requirements of [CAA] on its aerodrome surveillance program, your aerodrome will be subject to surveillance and routine inspection by [CAA]. The certification of your aerodrome enables appropriate aeronautical data to be published in the Aeronautical Information Publication (AIP).

Other operational matters in relation to your aerodrome will be undertaken by the assigned aerodrome inspector(s) particularly on the aspect of safety related oversight functions.

Inquiries regarding the certificate and other aerodrome related matters are welcome. Please contact [telephone number] or coordinate with your assigned aerodrome inspector(s).

Very truly yours,

(Name)

(Position)

[X].2 Refusal to Grant an Aerodrome Certificate

(File reference no. _____)

Date: _____

(Addressee):

Subject: Refusal to grant an Aerodrome Certificate

Dear (Mr./Ms./as appropriate),

This refers to your letter dated _____ and your application requesting the certification of your aerodrome _____ located at _____

The application has been assessed in accordance with [CA Act/CAR-Aerodromes] governing Aerodromes and refused for the following reasons:

(Delete whichever items in the following paragraphs do not apply)

a) Following an inspection conducted on the aerodrome's facilities and equipment, it was determined of not meeting the standards specified for certified aerodromes;

b) The assessment of the aerodrome operating procedures revealed that they did not meet the provisions regarding safety of aircraft;

c) The Aerodrome Manual submitted does not contain the particular standards set out in the [Manual of Standards for Aerodromes (MOS)];

d) The foregoing facts and other factors listed below manifested that the aerodrome will not be properly operated and maintained unless full compliance of all the requirements are met as required by civil aviation regulations for aerodromes

(Give the details of each determination)

You were advised of the above-mentioned deficiencies reference our letter dated _____ and your response gave some reservations on compliance with the aerodrome standards.

Inquiries regarding this matter are welcome. Please contact [telephone number] or [telefax no.].

Very truly yours,

(Name)

(Position)

[X].3 Granting an Interim Aerodrome Certificate

(File reference no. _____)

Date: _____

(Addressee):

Subject: Granting of an Interim /Temporary Aerodrome Certificate for **[name of airport]**

Pursuant to **[CA Act/CAR-Aerodromes]** and the **[Manual of Standards for Aerodromes (MOS)]**, in compliance to ICAO Annex 14 Standards and Recommended Practices (SARPs), having found the airport compliant with **[CAA]** standards on aerodrome certification as independently audited by **[DASS]**, hereby approved the issuance of Temporary Aerodrome Certificate to _____ located at _____

Validity: [XX] Months, from _____ to _____, [year].

The temporary aerodrome certificate signifies that the aerodrome has acceptable facilities, safety procedures and system, the airport operator is capable of operating and maintaining the aerodrome in accordance with **[CAA]** requirements, no major safety issues are present, and that continuing actions to correct deficiencies **[findings]** have been established and are required to be validated within the duration of the Temporary Certificate.

(Name)

(Position)

Appendix B to the Report of AP-

CIVIL AVIATION AUTHORITY OF THE [STATE]

Generic Aerodrome Inspectors Handbook

DRAFT Version 0.1, November 2020

Introductory Notes

This is a draft generic document ~~was~~ developed by the ICAO Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG) for ~~reference~~ advance information ~~by of~~ States in the APAC Regions. When ~~adopting~~ referring to this draft generic document, States are expected to customize the content in accordance to the States' legislations, regulations and situations.

ICAO Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services and Guidance Material shall take prevalence in the event of any conflict between the aforementioned provisions and this generic document.

Enquiries and feedbacks regarding this draft generic document can be made to ICAO APAC Office at apac@icao.int.

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This is a CAA safety programme document. It contains processes determined to be necessary for supporting operational safety elements at aerodromes in ~~the Republic of the~~ [STATE], and for ensuring the effective safety oversight of aerodrome related activities by officers of CAA.

This manual is issued under the authority of the Director General for Civil Aviation, CAA.

This manual may be amended from time to time, and Director General of Civil Aviation will provide such amendment service.

Copies of this manual are available from the Chief, [DASS], CAA. Comments about the content are welcome from staff members of CAA or members of the aviation industry. Any requests for issue of the document or comments or requests for clarification should be directed to:

Chief, [DASS] Civil Aviation Authority of [STATE]
[ADDRESS]

Phone : xxxxxxxx
Fax : xxxxxxxx
Email : xxxxxxxx

FOREWORD

The Civil Aviation Authority of the [STATE] is responsible under [CIVIL AVIATION ACT], the [CAA ACT], for the regulation of civil aviation activities, including activities in the aerodrome sector of the air transportation industry, within the Republic of the [STATE].

This handbook for aerodrome inspectors is one in a series of manuals that have been adopted by CAA to meet the responsibilities devolved from the Civil Aviation Authority Act to ensure the safety regulation of aerodrome matters. This manual describes how staff will implement the procedures specified for conducting certification and surveillance of domestic and international aerodromes throughout the nation.

The information contained within this Aerodrome Inspector Handbook has been developed to be in conformity with ICAO standards and recommended practices and the applicable [STATE] legal requirements including the Civil Aviation Regulations governing Aerodromes ([CAA ACT]), the [ANNEX 14] and the Manual of Aerodrome Regulatory Procedures.

I expect CAA officers will comply with the specified processes and activities that are provided in this document. It is important that the CAA is able to demonstrate consistency, equity and leadership in its day to day regulatory activity to the aviation industry, and compliance with our own published procedures is one way that we can demonstrate effective discharge of our functions and obligations to industry participants and the travelling public.

Users of this document are invited to pass advice of errors, inconsistencies or suggestions for improvements to Chief, [DASS].

Director General

Date: _____

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Note:

Finalization of this distribution list is subject to the completion of organizational structure and staffing arrangements. The distribution list is provided as an example only and is to be completed when appropriate.

AMENDMENTS RECORD OF REVISION

The amendments-revision listed below have been incorporated in this copy of the Inspector Handbook.

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<u>Version</u> <u>Number</u>	<u>Issue</u> <u>No.</u>	<u>Affected</u> <u>Parts</u> <u>Revision</u> <u>No.</u>	<u>Affected</u> <u>Pages</u> <u>Effective</u> <u>Date</u>	<u>Revised by</u> <u>(Signature)</u>	<u>Date</u> <u>Reason</u>
0.1		DRAFT			

REVISION HISTORY

The Aerodrome Inspectors Handbook has been revised as indicated by the changes listed in the following table.

Amendment Number	Date	Items Affected	Details
0.1		INITIAL DRAFT	

LIST OF EFFECTIVE PAGES

Part	Page Nos.	No. of Pages	Version	Date of Issue
Cover	1	1	DRAFT	[JANUARY 2020]
Authority statement	3	1	DRAFT	[JANUARY 2020]
Foreword	4	1	DRAFT	[JANUARY 2020]
Distribution list	5	1	DRAFT	[JANUARY 2020]
Amendment record	6	1	DRAFT	Feb 2010
Revision history	7	1	DRAFT	Feb 2010
List of effective pages	8	1	DRAFT	Feb 2010
Table of Contents	10	1	DRAFT	Feb 2010
Chapter 1: About this manual	12 to 14	4	DRAFT	[JANUARY 2020]
Chapter 2: Authority and responsibility	15 to 19	5	DRAFT	[JANUARY 2020]
Chapter 3: Aerodrome manual	20, 21	2	DRAFT	[JANUARY 2020]
Chapter 4: Aerodrome safety oversight	22 to 25	4	DRAFT	[JANUARY 2020]
Chapter 5: Aerodrome safety system audit	26 to 32	7	DRAFT	[JANUARY 2020]
Chapter 6: Aerodrome Safety Review	33 to 36	4	DRAFT	May 2012
Chapter 7: Regulatory enforcement	37	1	DRAFT	May 2012
Appendices	35 to 37	3	DRAFT	[JANUARY 2020]
Appendix 1 - definitions	38	1	DRAFT	[JANUARY 2020]
Appendix 2 - Amendment of the manual	39 to 40	2	DRAFT	[JANUARY 2020]
Appendix 3 - Auditor feedback form	42 to 43	2	DRAFT	[JANUARY 2020]
Appendix 5 - Pre-audit questionnaire	44 to 45	2	DRAFT	[JANUARY 2020]
Appendix 6 - Opening meeting agenda items	46	1	DRAFT	[JANUARY 2020]
Appendix 7 - Audit checklist	46 to 88	43	DRAFT	[JANUARY 2020]
Appendix 8 - Exit meeting agenda items	89	1	DRAFT	[JANUARY 2020]
Appendix 9- Sample standard audit report	90 to 93	4	DRAFT	[JANUARY 2020]
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CHAPTER - 1 About this manual

1.1. Objective

- 1.1.1. This handbook provides information and guidance for activities by Aerodrome Inspectors conducting CAA safety oversight functions. It provides guidance for Inspectors involved in system safety audits of aerodromes. Specific procedures associated with ~~the entry control functions of aerodrome certification and registration, and approving persons to conduct annual safety inspection of aerodromes;~~ aerodrome certification can be found in the ~~CAA Manual of Aerodrome Regulatory Procedures~~ [Generic Aerodrome Certification Procedure].
- 1.1.2. This handbook establishes various actions required to be undertaken by Aerodrome Inspectors so that aerodrome operations within ~~the Republic of the~~ [STATE] are maintained in accordance with:
- relevant aviation legislation that impacts on safe aerodrome operations, and specifically that which addresses aerodromes - Civil Aviation Regulations governing Aerodromes ([CAA ACT]);
 - Manual of Standards for Aerodromes;
 - Annex 14 to the ~~Chicago~~ Convention of the on International Civil Aviation Organization (ICAO), Aerodromes, Volume ~~4I~~ (ICAO Annex 14 Volume I); and
 - any other directive issued by the CAA relevant to civil aerodromes.

1.2. Applicability

- 1.2.1. This handbook contains information for safety audit processes to be adopted for:
- a) Certified aerodromes;
 - b) Uncertified/registered aerodromes ~~used for domestic operations~~; and
 - c) any other aerodrome specified by the CAA;
- 1.2.2. Responsibility for the development, implementation and maintenance of aerodrome standards rests with the CAA. Specifically designated CAA Aerodrome Inspectors are accountable for the ongoing tasks required to ensure that the contents of this handbook are being effectively implemented in order to satisfy the following objectives;
- a) verify the effective implementation of aerodrome standards;
 - b) monitor the level of compliance with the provisions of [CAA ACT].
 - c) determine the adequacy and effectiveness of the handbook through the establishment of legislation, regulations, inspections and audits;
 - d) ensure all persons who are assigned aerodrome audit duties or responsibilities are trained and instructed to carry out such duties;
 - e) ensure that violation of standards are investigated; and
 - f) review and re-evaluate aerodrome standards and controls immediately following an act of violation and on a periodic basis.
- 1.2.3. Appropriate legislation

- 1.2.3.1. The legal authority governing the implementation of this handbook derives from CAA Act [XXX] that empowers the Director General with authority to issue certificates for aerodromes. The Civil Aviation Regulations governing Aerodromes, contains details of the mandatory requirements associated with [STATES] aerodromes.
- 1.2.4. Under the CAA Act [XXXX], an aerodrome operator is obligated to allow the Director General or his authorized representative access to any aerodrome to carry out safety inspections or evaluations.
- 1.2.5. Power of access to aerodrome for inspections under CAR (XXX) provides that:
- The operator of an aerodrome must allow CAA to inspect and conduct tests on aerodrome facilities, equipment, services or operating procedures and inspect the aerodrome operator's documents and records and –verify the Aerodrome Safety Management System at the aerodrome for the purpose of aviation safety;
 - The aerodrome operator must allow access for personnel authorized by CAA to any part of the aerodrome, or any aerodrome facilities, equipment, records, documentation or records for the purpose referred to in -paragraph (1) above; and
 - CAA must give reasonable notice to the operator about the tests to be conducted and carry out the tests at a reasonable time.

1.3. Overview and concepts

- 1.3.1. The system described in this handbook covers the following basic elements;
- Conduct of surveys by CAA of various airports and other aviation stakeholders to determine aerodrome requirements;
 - Setting of operational standards by the CAA through the requirement for, and approval of, aerodrome certificate (AC);
 - Voluntary compliance(internal quality assurance) by the holders of aerodrome certificates;
 - Surveillance, including the detection of non-conformity with standards, conducted by the CAA;
 - Investigation and reporting of non-compliance by the CAA;
 - Notification of violations to stated aerodrome operation requirements by the CAA to aerodrome operators;
 - Enforcement action by CAA in case of non-compliance with requirements by aerodrome operators;
 - Surveillance and detection of non-conformity with aerodrome regulatory requirements as applied within The-[STATE], conducted by foreign governments, airlines, and ICAO under the Universal Safety Oversight Audit Programme (USOAP).
- 1.3.2. Under the [civil air regulations] there is a requirement for specified entities to develop and submit an aerodrome manual to the CAA. Aerodrome manuals describe in detail how operators implement the various standards required of them. If an aerodrome manual is accepted by the CAA, it is an indication that, at the time, information and processes contained within the manual were to the standards required to be met by the operator, and that the aerodrome certificate holder is expected to consistently maintain compliance with the mandatory safety requirements. The contents of the manual form

the basis for any audit or inspection conducted by the CAA.

1.4. Definitions

- 1.4.1. Within the contents of this handbook, certain terms are referred to that have a specific technical meaning. A list of these terms and the definition of their technical meanings is included at Appendix 1.

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CHAPTER - 2 Authority and responsibility

2.1. CAA responsibilities

2.1.1. The organizational structure of the CAA

The organizational structure of the CAA is shown on the following organization chart (See next page).

2.1.2. Tasks and responsibilities of the [DASS]

The tasks and responsibilities of the [DASS] include, but are not limited to:

- a) Receiving, recording, reviewing and processing an expression of interest received from an intending applicant for an aerodrome certificate;
- b) Receiving, recording, reviewing and processing a formal application for an aerodrome certificate including the initial inspection review of the aerodrome manual, on-site audit and verification, inspection and testing –of aerodrome particulars, facilities and equipment including aeronautical studies;
- c) Grant or refusal of an aerodrome certificate;
- d) Receiving, recording, reviewing & processing applications for the registration of an aerodrome;
- e) Grant or refusal for registration of an aerodrome;
- f) Receiving, recording, reviewing & processing applications for the surrender of an aerodrome certificate;
- g) Cancelling or suspending an aerodrome certificate; and
- h) Approval of persons to conduct aerodrome safety inspections.

2.1.3. Aerodrome Inspectors/Auditors Code of Conduct

2.1.3.1. As the leader of or as a participant in a CAA audit team, each individual auditor is required to comply with a code of conduct that directs his/her actions during the entire process of the audit. These rules of conduct for each individual auditor are as follows;

- a) To exercise in all loyalty, discretion and conscience the functions entrusted to them as a member of the CAA aerodrome safety oversight audit team;
- b) To discharge these functions to the best of their ability;
- c) To conduct themselves with integrity, impartiality and honesty;
- d) To abide by the rules, procedures and guidance prescribed in this handbook;
- e) Not to misuse their official position as part of the CAA aerodrome safety oversight audit team;
- f) Not to receive benefits of any kind from a third party which might reasonably be seen to compromise their personal judgment or integrity;

CAA ORGANIZATIONAL STRUCTURE

[STATE ORGANIZATION CHART]

- g) To avoid giving cause for resentment and abstain from conduct which would reflect adversely on the CAA; and
- h) Not to disclose any information of a confidential nature related to the findings of the audit to any other party other than those identified in this handbook.

2.1.4. Auditor Feedback

2.1.4.1. Following the conclusion of an audit and the compilation of the audit report, each individual auditor is required to complete and submit an Auditor Feedback Form (see Appendix 3) –providing his/her observations on the conduct of the audit. These forms will be utilized to provide a qualitative assessment on the audit process so as to identify areas of improvement for future audits. The assessment will be carried out by the Chief, [DASS].

2.1.4.2. If an individual auditor or group of auditors has reason to believe that they are under any pressure to act illegally, improperly or in an unethical manner, or are asked to take any action that is in contravention of the procedures laid out in ~~the AIA~~ this Handbook, they ~~are to~~ shall report this matter in writing to the Director General CAA through the Chief, [DASS] without delay.

2.1.5. Aerodrome Inspector powers and authority

2.1.5.1. Aerodrome Inspectors carry formal authorizations, to be produced if required, enabling them to exercise their powers in accordance with all the elements of the [CA ACT] and [CAR/Aerodromes]. These powers include the ability:

- a) to inspect any part of any aerodrome;
- b) to investigate and test the effectiveness of aerodrome practices and procedures;
- c) to require an aerodrome operator, aerodrome manager or occupier of land outside the aerodrome occupied for business purposes in connection with the aerodrome to provide information relevant to inspections, surveys, tests and investigations;
- d) to enter on any land or in any buildings, access to which is necessary, for the purpose of inspecting an aerodrome; and
- e) to record an operation, procedure or installation in written, photographic or other electronic form.

2.1.5.2. The above powers apply equally to air navigation installations. Furthermore, Aerodrome Inspectors are allowed to take into restricted zones of airports, and use, any equipment necessary to their duties, including ~~(as examples)~~ but not limited to cameras, video recorders and tape recorders. These powers may be exercised when CAA Aerodrome Inspectors are conducting audits, surveys and inspections.

2.2. Aerodrome Certificate holder's responsibilities**2.2.1. Tasks and responsibilities of the aerodrome operator:**

The tasks and responsibilities of the aerodrome operator include:

- a) The aerodrome operator shall arrange for internal audits of the safety management system, including inspections of the aerodrome facilities and equipment.
- b) The aerodrome operator shall ensure that the internal audit reports, including the report on the aerodrome facilities, services and equipment, are prepared by suitably qualified safety personnel.
- c) The aerodrome operator shall retain a copy of the report(s) referred to in paragraph (b) above for a period to be agreed with the CAA. The CAA may request a copy of the report(s) for its review and reference.
- d) The report(s) referred to in paragraph (b) above must be prepared and signed by the persons who carried out the audits and inspections.
- e) ~~The aerodrome operator shall maintain A~~a procedure for preventive action to ensure that potential causes of problems that have been identified within the system are remedied;
- f) ~~The aerodrome operator shall maintain a~~A process to capture staff suggestions for improvement, followed by management review and possible implementation of those suggestions;
- g) ~~The aerodrome operator shall maintain A~~an internal quality audit programme to audit the aerodrome certificate holder's organization for conformity with the procedures in its manual and achievement of the goals set out in it.

2.2.1.2. Each certified aerodrome operator will incorporate an internal audit process to provide factual information for management to make appropriate decisions in accordance with the aerodrome manual. This internal audit should be able to;

- a) Determine the compliance or non-compliance of the audit elements with specified requirements;
- b) Determine the effectiveness of the implemented standards in meeting the specified objectives; and
- c) Provide ~~the~~ audited organization with the opportunity to improve the operational standard and overall performance.

2.2.1.3. The ~~aerodrome~~ operator's audit process will be contained in an internal quality audit programme that shall;

- a) Specify the frequency and the ~~location~~ scope(s) of the audits taking into account the nature of the activity to be audited;
- b) Ensure audits are carried out by trained auditing personnel who are independent of those having direct responsibility for the activity being audited;
- c) Ensure the results of audits are recorded and reported to the personnel responsible for the activity being audited and the manager responsible for internal audits;
- d) Require preventive or corrective action to be taken by the personnel responsible for the activity being audited if problems are found by the audit; and

- e) Ensure follow up audits to review the effectiveness of any preventive or corrective actions taken are regularly carried out.

2.2.2. Corrective Action

2.2.2.1. The procedure for corrective action shall specify how;

- a) to correct an existing problem;
- b) to follow up a corrective action to ensure the action is effective; and
- c) management will measure the effectiveness of any corrective action.

2.2.3. Preventive Action

2.2.3.1. The procedure for preventive action shall specify how;

- a) to correct a potential problem;
- b) to follow up a preventive action to ensure the action is effective;
- c) to amend any operational procedure as a result of a preventive action; and
- d) management will measure the effectiveness of any preventive actions taken.

2.2.4. Management Review

2.2.4.1. The procedure for management review shall;

- a) specify the frequency of management reviews of the quality assurance system taking into account the need for the continuing effectiveness of the system;
- b) identify the responsible manager who shall review the operational standards; and
- c) ensure the results of the review are evaluated and recorded.

2.2.5. Tests

2.2.5.1. Each aerodrome certificate holder shall test its level of compliance with standards, the objective of which is to determine the effectiveness of both the processes and systems involved and the individual performance of staff members tasked with carrying out those processes in the system.

2.2.6. Records

2.2.6.1. Each aerodrome certificate holder shall maintain records to demonstrate the achievement of quality operational standards. ~~IMAS~~ Most of the ~~recording records~~ will be normal business processes and statistical information, however such records should include:

- a) Training reports and training records of all members of the organization, including management;
- b) Incident and occurrence reports;
- c) Internal audit reports;
- d) External audit reports;
- e) Recurrent testing reports;

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- f) Equipment testing and servicing reports;
- g) Proposals for change;
- h) Records of work improvement coordination meetings and outcomes; and
- i) Management review meetings and reports.

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CHAPTER - 3 Aerodrome manual**Chapter - 3***Note – Also see Generic Aerodrome Certification Procedure, Chapter 4.***3.1. Requirement for aerodrome operation**

3.1.1. The general requirement for ~~some~~ certain aviation entities and service providers to develop aerodrome manuals and submit them to the CAA for formal review derives its authority from the [Civil Aviation Act XXXX]. Additionally, the [Civil Air Regulations governing Aerodromes] ([CAA ACT]) specifically requires certain aerodromes to be certified by CAA.

3.1.2. Aerodromes must be certified if:

- a) international operations are conducted; or
- b) ~~*~~domestic operations are conducted by aircraft certified to carry more than 30-### passengers; or
- c) ~~*~~the aerodrome is open to public use and has a published instrument approach procedure, ~~unless the aerodrome has been registered with CAA.~~

~~e) **Note to CAAs – Please refer to the State's legislation and policy for these sub-items to determine if these sub-items are appropriate. The Standards and Recommended Practices regarding aerodrome certification are available in Annex 14, Volume I, Paragraph 1.4.*~~

3.1.3. Certified aerodromes must have a current acceptable aerodrome manual to describe aeronautical data and other information specific to each particular aerodrome.

3.2. Aerodrome manuals**3.2.1. Submission of aerodrome manuals**

3.2.1.1. An aerodrome manual is required to be submitted to CAA as a component of a formal application for certification.

3.2.2. Acceptance of aerodrome manuals

3.2.2.1. Upon receipt of a submitted aerodrome manual, the Chief, [DASS], has authority to accept, reject or require modification to the submitted aerodrome manual. Notification to the aerodrome operator of any disapproval or requirement for modification will be made in writing to the operator. Where an aerodrome manual is acceptable and the other elements of certification have been complied with, an aerodrome certificate will be issued.

3.2.2.2. An accepted aerodrome manual also provides a basis for on-going surveillance of aerodromes and aerodrome operators by CAA Inspectors after initial certification has been achieved.

3.2.3. Amendment of aerodrome manuals

3.2.3.1. Whenever necessary to retain currency or if directed by the CAA, an aerodrome operator shall amend the aerodrome manual and provide copy of the amendment(s) to CAA. The Chief, [DASS], has authority to accept, reject or require modification of the submitted aerodrome manual amendment.

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- 3.2.3.2. Acceptance will result in an amended aerodrome manual. Notification to the aerodrome certificate holder of that acceptance, or rejection, or requirement for change to the amendment as a result of a submitted amendment or adjustment will be made in writing to the operator as soon as is practicably possible, and wherever possible prior to the proposed effective date of implementation of the proposed amendment or adjustment.

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CHAPTER - 4 Aerodrome safety oversight

4.1. Aerodrome safety oversight

- 4.1.1. Aerodrome safety oversight in the broad sense means the total scope of activity conducted by CAA to assess that aerodrome operations are conducted to a level that is as safe as is reasonably practicable. Aerodrome certification and registration involves, but is not limited to, initial entry (via a permission from CAA in the form of a certificate or entry of data onto a formal registration list), continuing oversight action by way of audits and/or inspections, education activity and, where necessary, enforcement action (ranging from warnings to action to suspend or cancel certificates) as well as the imposition of fines.
- 4.1.2. Aerodrome safety oversight is a CAA function and is additional to any internal audit conducted by an individual aerodrome operator.
- 4.1.3. In this manual the safety oversight activity is limited to inspection and audit processes as they may be applied to certification, registration and surveillance activity by CAA. Although enforcement is mentioned, staff will be required to undertake specific additional actions when a need for certificate action (suspension or ~~cancellation~~revocation) is determined or a decision to impose a fine is taken, such procedure should be contained within the CAA Enforcement Manual.

4.2. Safety oversight audit

- 4.2.1. Distinct differences between the aims and objectives of audits and inspections

There are distinct differences between the aims and objectives of audits and inspections, and the methodologies used to conduct each ~~one~~of them. An audit is a systematic and independent comparison of the way in which an aerodrome standard is being implemented, against the way in which the published procedures say it should have been implemented. See Fig 4-1 Overview of Audit Activities. An inspection is basically the act of observing a particular aerodrome operation, action, facility, equipment or document to verify whether the established procedures and requirements are followed, and whether the required standard of performance is achieved.

Audits are more comprehensive, focusing on system issues, and are more complex and time consuming than inspections. Inspections, by comparison, are more specifically focused on specific integral parts of aerodrome operations and are usually of shorter duration. Each of the two types needs to be planned for and a schedule created that allows for the regular conduct of both.

- 4.2.2. Safety Oversight Auditors and Inspectors

Aerodrome safety oversight audits and inspections shall only be carried out by CAA authorized and certified personnel. These personnel will have undergone audit training and be in possession of competency certificates in the conduct of aerodrome audits issued by the CAA. Staff appointed as CAA Aerodrome Inspectors will be required to ~~hold internationally recognized certificates~~possess the necessary qualifications and experience to serve as aviation safety lead auditors. Those without the necessary qualifications or experience may carry out audits and inspections only under the supervision of a person who is appropriately qualified and experienced.

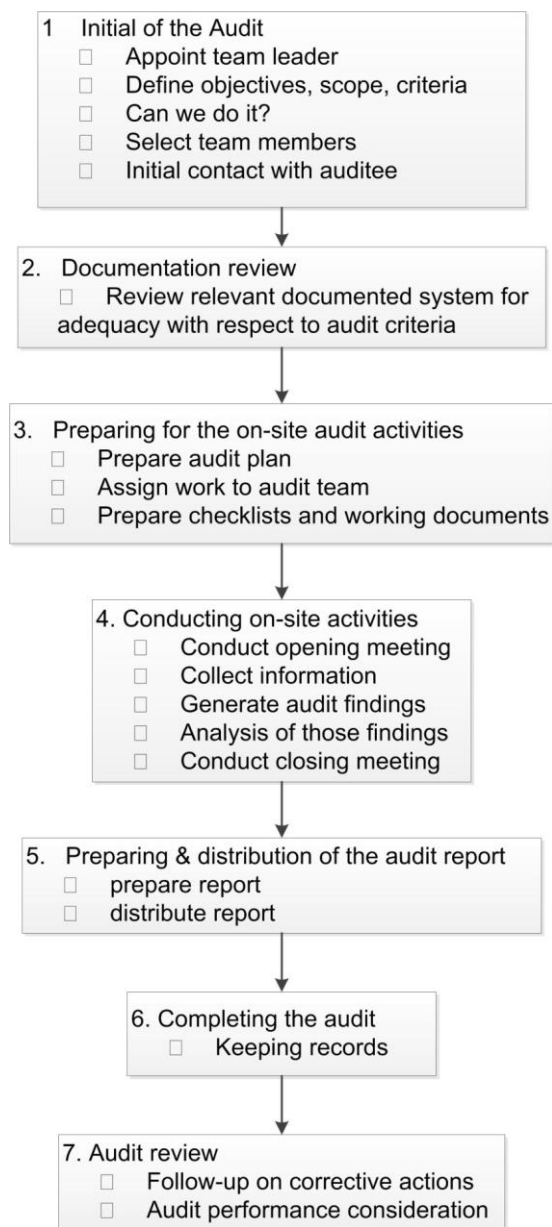


Fig. 4-1 Overview of Audit Process and Activities

4.2.3. Scheduling Audits/Inspections

4.2.3.1. The Chief, [DASS], is responsible for scheduling inspections and audits of all aerodrome certificate holders and other aerodrome operators.

4.2.3.2. The selection of the aerodrome and the frequency of the inspections and audits will be at the discretion of the Chief, [DASS], subject to the following;

a) In normal circumstances each nominated aerodrome certificate holder will be the subject of audit at least once (1) per calendar year;

b) In normal circumstances each registered aerodrome operator will be subject to audit at least once every two years;

Note – Applicable only when a State has “registered” but uncertified aerodromes.

c) Other aerodromes will be subject to inspection from time to time as determined by the Chief, [DASS];

d) In the intervening period between scheduled audits, inspections of relevant parts of aerodrome operations may take place, e.g. Inspectors may attend at aerodrome emergency exercises;

e) In certain situations, or following the occurrence of an accident/incident, or at the discretion of the Director General, additional full or partial audits may be scheduled in addition to any other action that may take place.

4.2.4. Notifying Audits/Inspections

4.2.4.1. The Chief, [DASS] shall notify in writing each selected aerodrome operator that an audit has been planned for that facility or service provider (See Appendix 4).

4.2.4.2. Every notification shall include;

a) The dates of the intended audit;

b) ~~Identities~~ The details of the CAA auditors;

c) Scope of activities to be covered under the audit;

d) List of persons to be made available to the audit team for interview;

e) Deadlines for the submission of the pre-audit questionnaire (if applicable); and

f) Request for essential documentation, as specified by the CAA that may be required to be reviewed prior to the actual audit.

4.2.5. Roles of Auditors

4.2.5.1. All auditors (including the audit leader) are responsible for:

a) complying with the CAA aerodrome audit procedures;

b) clarifying audit requirements if necessary;

c) planning and preparing for the audit;

d) carrying out the audit,

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- e) documenting observations;
- f) reporting the audit results;
- g) recording findings in the CAA aerodrome audit database;
- h) ensuring corrective and preventative actions are followed up for effective completion;
- i) safeguarding all documents relating to the audit;
- j) maintaining confidentiality and treating privileged information with discretion;
- k) cooperating with and supporting the audit leader.

4.2.6. Roles of Audit Leader

4.2.6.1. ~~As well as fulfilling~~In addition to the roles of an auditor, the audit leader has additional responsibility for:

- a) liaison with the aerodrome certificate holder regarding the date and time of the audit;
- b) ensuring travel and accommodation is booked, if required;
- c) assigning responsibilities to team members;
- d) preparation of the audit timetable;
- e) ensuring team members are adequately prepared
- f) resolving any issues regarding written programmes and manuals before the audit;
- g) carrying out the opening meeting;
- h) leading and supporting the audit team throughout the audit;
- i) raising and resolving issues with the aerodrome certificate holder during the audit;
- j) ensuring findings are soundly based, and properly recorded;
- k) coordinating preparation of the audit report;
- l) writing the draft and final audit/inspection report;
- m) ensuring adequate preparation for the exit meeting;
- n) carrying out the exit meeting; and
- o) presenting findings, identifying causal factors, and negotiating corrective and preventive actions;

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CHAPTER - 5 Aerodrome safety system audit

Note – See Generic Aerodrome Certification Procedure, Chapter 5 for information on different types of audit/inspection and off-site or on-site verification activities.

Chapter – 5**5.1. System safety audit process**

- 5.1.1. Three (3) stages to an audit,
 - a) Preparation for the audit;
 - b) Conduct of the audit on-site; and
 - c) Recording of findings, reporting and follow-up.
- 5.1.2. Preparation for Audit/Inspection
 - 5.1.2.1. As mentioned in Section 4.2.1, there are distinct differences between audits and inspections. However, many of the processes for the two remain essentially the same, albeit that an audit is far more detailed.
 - 5.1.2.2. There are four (4) phases to the preparation for an audit or inspection, namely:
 - a) Identification and review of all pertinent documentation, including receipt and review of pre-audit questionnaire;
 - b) Development of checklists;
 - c) Preparation of audit timetable.
 - d) Confirmation of audit arrangements with the aerodrome certificate holder being audited.
- 5.1.3. Review of Documentation
 - 5.1.3.1. With regard to the essential documentation that needs to be reviewed, this depends on the aerodrome certificate holder being audited and the scope of their operations. Generally speaking, the following documents need to be reviewed before each audit is carried out;
 - a) The aerodrome documents for the entity being audited; e.g. Aeronautical data, Aerodrome Operations procedures, AEP Manual, SMS Manual;
 - b) Appropriate regulatory and other legislative texts; e.g. Manual of Standards for Aerodromes;
 - c) Operating manuals and/or standard operating procedures;
 - d) Site plans and descriptions of the aerodrome certificate holders operations;
 - e) Log books on facilities and equipment;
 - f) Flight schedules;
 - g) Previous audit or inspection reports; and
 - h) Information contained in the pre-audit questionnaire.
 - 5.1.3.2. The purpose of this review is to determine the status of the documentation as it relates to the entity being audited, and to identify key areas that need to be observed and

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analyzed during the actual audit. Particular attention should be paid to previously identified items of non-compliance from previous reports. This review will also assist in the preparation of checklists to be used by the audit team during the actual conduct of the audit.

5.1.3.3. The pre-audit questionnaire may provide an opportunity to gather useful information about the entity being audited. This questionnaire shall be developed by the audit leader and transmitted to the aerodrome certificate holder in accordance with the requirements of this handbook. See Appendix 5 for a pre-audit questionnaire for an airport operator.

5.1.4. Preparation of Checklists

5.1.4.1. The use of checklists is ~~to be utilized~~ to provide a structure to the audit that allows for consistent and standardized conduct of audits. Standardizing the conduct of audits guarantees objectivity, impartiality and credibility. In addition, this will also provide a degree of transparency for all stakeholders subject to audit.

5.1.4.2. Checklists will be prepared by Team Leader and distributed to the members of the audit team in advance of the audit in order that they are fully prepared. Generic checklists have been developed and are included in this handbook, and they are applicable to each category of aerodrome (such as certified aerodromes, registered aerodromes and heliports). However, the operational details may vary from one aerodrome to any other, so checklists specific to that aerodrome operator need to be developed prior to the audit.

5.1.5. Preparation of Audit Timetable

5.1.5.1. An integral part of the preparation phase of an audit is the development of the audit timetable. This is done by the audit team leader once the notification process has been completed and all necessary documentation has been received and reviewed.

5.1.5.2. When determining the audit timetable, the audit leader will take into consideration the following elements;

- a) Determine the principal persons needed to be interviewed; (e.g. Fire Chief, Apron Supervisor, SMS Manager);
- b) Determine the sequence of the audit, including meetings, interviews, document / record review, observations of facilities and operations, and discussions with operational staff;
- c) Estimate the time needed to complete each anticipated activity;
- d) Make allowances for travelling between areas being audited (if necessary);
- e) Schedule entry and exit meetings;
- f) Make allowances for peak, off-peak, and out of normal hours observations of activities, facilities and equipment;
- g) ~~allow~~ Allow for review of operational documentation not received prior to the audit; and
- h) Allow time for delays and unforeseen occurrences.

5.1.6. Confirmation of Audit Arrangements

5.1.6.1. Prior to the scheduled date of the audit, the audit leader should confirm to the

aerodrome certificate holder the date(s) and location of the audit, and the availability of senior management and key staff identified in the preparation of the timetable. It is highly desirable to forward the audit timetable to the aerodrome operator to assist in their preparation for the audit.

5.1.7. On-site conduct of Audits and Inspections

5.1.7.1. The purpose of the conduct phase of the audit is to gather information and then compare that gathered information to the information contained within the approved documentation which establishes the standards for operation of the entity being audited. In this case:

- a) [Civil Air Regulations governing Aerodromes];
- b) Aerodrome standards to which the aerodrome certificate holder may be subject; and
- c) The aerodrome manual and other documents of the entity being audited.

5.1.7.2. Information can be gathered by:

- a) Observations;
- b) Review of documentation; and
- c) Formal and informal interviews.

5.1.8. Entry meeting

5.1.8.1. The first action taken when commencing an audit is the conduct of an entry meeting. The purpose of the entry meeting is to:

- a) Establish communication between the audit team and representatives of the aerodrome certificate holder;
- b) Ensure there is clear understanding of the purpose of the audit;
- c) Explain how the audit will be carried out;
- d) ~~brief~~ Brief the auditee about expectations for support for the audit team;
- e) Clarify and confirm the audit timetable; and
- f) Resolve any other matters of concern.

5.1.8.2. A sample of the typical agenda items for an opening meeting can be found at Appendix 6.

5.1.9. Evidence of conformity

5.1.9.1. Observations of operational equipment, activities and procedures form the main source of evidence that the aerodrome is conforming to regulatory requirements or otherwise. Verifiable evidence is necessary to provide the true measure of compliance or non-compliance with required standards and procedures. Checklists for the inspectors' guidance can be found in Appendix 7. Evidence provides the verification that written procedures are in fact implemented.

5.1.9.2. Additionally evidence by assessment of each facility, equipment or procedure through observations and discussions to determine compliance with requirements and documentation plus implementation assists to establish compliance with mandatory obligations.

- 5.1.9.3. If non conformities are found, look for facts to establish proof and make a formal record (~~copy of relevant document~~, checklist notes, photos etc.).
- 5.1.9.4. Exercise discretion when making observations in the workplace ~~(Don't interview while in their work)~~. The presence of an auditor (often accompanied by a senior person within the organization) can have a disrupting impact on the workflow in what may be a potentially hazardous environment. Take care to ensure the presence of the auditor does not create an abnormal situation that could lead to errors or omissions being made by those being observed. Do not do anything that could disrupt the workflow, or refocus staff away from their primary tasks.
- 5.1.9.5. Where appropriate, watch as technical processes are performed, and observe the work practices of those involved. Observe the facilities and equipment that are being used, the work instructions provided, and the working environment. Talk to the people in the workplace. Establish how many people are involved, and if they have duties other than those they perform in support of aerodrome operations.
- 5.1.9.6. Identify reporting actions for identified or perceived problems. ~~Also identify~~ ~~What is~~ the actual documentation process ~~is~~ and ~~does whether~~ it conforms to the required process. If deficiencies are seen, discuss them with the management representatives away from the workplace.
- 5.1.9.7. Make use of the checklists developed for the audit to structure and record the observations.
- 5.1.10. Interviewing
~~Somebody write the response as the auditor ask questions) acknowledgement from the lead auditor to be recognized when asking separate question.~~
- 5.1.10.1. Another principal element of the audit is the interview of selected staff members from the aerodrome certificate holder. The position and job function of the interviewee will determine the type and scope of questions to be put to the interviewee. It is always best to interview the ~~(MAS)~~ ~~most~~ senior representative available first, (manager can have a viewpoint/overview of all operations) and follow this with interviews of other managers and key personnel identified in the audit plan. This can extend to individual staff members if necessary, but normally an informal conversation at their workplace would achieve the same result.

- 5.1.10.2. Establish how the senior person expects the aerodrome certificate holder to operate from an aerodrome operation perspective. Identify any changes that have been made, or are being planned. Gain knowledge of other issues that may be affecting the organization, for example, changes in the scope of work carried out, industrial relations (union, agreement) etc. Establish how the senior person satisfies him or herself that the entity is in compliance with the approved aerodrome documents. Determine how identified or perceived problems are recorded and handled.
- 5.1.10.3. Ask open questions based on the checklists. If necessary, and depending on the information received, adjust the depth of examination. Try to avoid asking questions that can be answered with a simple 'yes' or 'no'. Try to focus on what is occurring now, not what might occur in the future ~~(as the audit finding relies on verifiable evidence).~~
- 5.1.10.4. Formal interviews need to be carefully structured. The objective of the formal interview is to meet the main representatives of the aerodrome certificate holder and discuss existing measures. Interviews are usually preceded by on-site observations so the auditor is already aware of the situation and has perhaps already noticed discrepancies or exceptional performance. Any discrepancy must be mentioned to the audited party during subsequent interviews. The location of the interview is important. The selection of the person's office is usually the best option, as interviewing him/her in his/her natural environment might make it easier to establish a climate of trust and reduce possible tension. The auditor is the one who, as a rule, travels to meet the interviewee. This is preferable to having individuals meet in the auditor's office and helps avoid the impression of an interrogation.
- 5.1.11. Recording of Audit Findings
- 5.1.11.1. Findings are the result of an observed action once it has been compared to the required approved documentation. An observation of a documented requirement or an implemented requirement will indicate whether compliance with required procedures is achieved or not. A non-compliance is classified as a finding, and it should be accompanied by a request for corrective action. Findings are not opinion, but statements of facts as observed by the auditor. As such they must be backed up by proof, or other evidence of non-compliance, such as a photograph or the completed checklist, explanation of deficiency, or a statement of findings by the auditor.
- 5.1.11.2. Audit findings shall be classified into different categories, as follows:
- Non-compliance ~~Category A~~ Level 1 finding, defined as a finding with the regulations, requirements, standards, aerodrome procedures and manuals, the terms of an approval or certificate which lower standard or has the potential to result in loss of life, serious injury or damage to facilities, and require immediate corrective action. ~~that is critical to in that it has the potential to result in loss of life, serious injury or damage to facilities and which requires corrective action to be completed immediately. Such action may involve closure of a facility.~~ The risk shall be assessed in accordance with [MAS] 4-9, ~~[risk categorization]~~ Reference to provision on SMS. Risks associated with Category A finding are considered unacceptable.
 - Non-compliance ~~Category B~~ Level 2 finding, defined as finding with the regulations, requirements, standards, aerodrome procedures and manuals, the terms of an approval or certificate which could lower standard or has the potential to cause significant safety problems. ~~an occurrence, situation or deficiency involving an item of equipment, an aerodrome facility or a procedure within a system that caused, or has the potential to cause, significant safety problems within the system,~~ and which requires corrective action to be completed within an agreed time frame. Risks

associated with Category B finding are considered tolerable but will require mitigations to become acceptable.

- c) Not Applicable (NA), being an element or item on a check list that does not apply to the entity being audited although a standard may exist, (e.g. de-icing facility).
- d) Not Confirmed (NC), being an element whose compliance with required documentation could not be verified during the audit for whatever reason, (e.g. lack of time, absence of key personnel).
- e) Observations ~~are comments intended to identify possible improvement or trends toward non-compliances, or comments, being references to circumstances where there is conformity, but improvement may be desirable, e.g. in the light of knowledge about a coming change to standards.~~ Comments are not binding on the auditee and are made for ~~information only~~ consideration.

5.1.11.3. It is important that the senior management of organizations being audited are made aware of the results of the audit, including the specific findings. Obviously Category A finding needs to have priority. Therefore, it is necessary to conduct a post audit or exit meeting where these findings can be communicated. It may not be necessary to inform the aerodrome certificate holder of everything that may be included in the final written report, as the audit team may need time to reflect upon their observations before concluding a finding, so the onus is on providing the aerodrome operator with an initial explanation of the major findings. Additionally, all issues of concern may be communicated to the auditee's staff during the audit as they arise.

5.1.12. Exit meeting

5.1.12.1. The objectives and activities of the post audit, or exit, meeting are to;

- a) Review the purpose of the audit and how it was carried out;
- b) Record attendance at the meeting;
- c) Present the major audit findings;
- d) Request comments or explanations on any of the findings;
- e) ~~confirm~~ Confirm corrective actions (if possible) and agree time frames for ~~their~~ implementation;
- f) ~~Advise~~ what to expect in the final audit report together with time frame for delivery; and
- g) Identify, and where possible resolve, any other issues of concern.

5.1.13. Audit/Inspection Reports

5.1.13.1. The audit report formally documents the compliance performance of the aerodrome operator by recording matters of non-compliance with mandatory regulatory standards and other safety-related obligations. The report must accurately record all that took place during the audit, should reflect the tone of the audit and contain no surprises.

5.1.13.2. It is the responsibility of the team leader to coordinate the development of the audit report. The team leader must sign the report.

- 5.1.13.3. While each report will contain factually varying information, it is important that the reports should be similarly structured and formatted to allow for comparison and analysis and to ensure that each audit completed ~~is~~ conforms to a consistent standard. A standardized report format is contained in Appendix 9.
- 5.1.13.4. Audit reports generally will not include recommendations to address findings. The responsibility for proposing and implementing appropriate remedial ~~activity~~ activities rests with the aerodrome operator.
- 5.1.13.5. The audit or inspection report shall also specify a time frame for the organization being audited or inspected to respond to the findings made in the report.
- 5.1.13.6. It is the responsibility of the team leader to ensure that the completed audit or inspection report is sent/delivered to the aerodrome operator within ~~three (3)~~ XX weeks from the on-site audit or inspection exit meeting. This period must be adhered to.

5.1.14. Corrective Actions

~~5.1.14.~~ Note – Also see Generic Aerodrome Certification Procedure, Para. 5.5

- 5.1.14.1. On receipt of an audit or inspection report, the organization concerned is required to submit a Corrective Action Plan (CAP) within an agreed period.
- 5.1.14.2. The CAP is a written confirmation by the aerodrome certificate holder detailing the measures they intend to implement, to address all of the findings of non-compliance. The CAP must incorporate actions that at least will remedy the deficiency in the short term and prevent a future re-~~oc~~urrence.
- 5.1.14.3. Failure to compile a CAP, or failure to comply with the deadline for submission of the CAP, or failure to implement the measures outlined in the CAP may result in enforcement action, including possible sanctions against an aerodrome certificate and/or imposition of a fine.
- 5.1.14.4. Every CAP generated as a result of findings communicated to an aerodrome certificate holder, following an inspection or audit, must contain, as a minimum;
- The recommendations/elements in need of improvement;
 - Planned corrective action;
 - Identification of the person(s) responsible for implementing and finalizing the corrective action; and
 - Time frame for completion.
- 5.1.14.5. Where the CAA has not received advice that corrective action has been taken by the due date, the aerodrome operator is to be advised that it is overdue, and that the CAA expects the matter to be resolved within ten (10) days. If a formal notice has not been received with satisfactory closing action, within the ten (10) day period, the aerodrome certificate holder should be advised in writing by the audit leader that, unless immediate action is taken to close the findings, then action may be taken against the aerodrome certificate holder in accordance with regulatory provisions.

- 5.1.14.6. In cases where the aerodrome certificate holder being audited or inspected does not implement action regarding the findings made by the audit team because it disagrees with any of them, it should direct a formal written notice of disagreement to ~~the Director General~~ [CAA] with [XX] days after receiving the audit report, laying down the reasons for the disagreement. ~~The Director General~~ [CAA] may review this and determine subsequent action in accordance with the regulatory requirements and the best interests of safety for the industry within the [STATE].
- 5.1.14.7. The team leader is responsible to ensure that a follow-up audit or inspection takes place as necessary after the actions mentioned in the CAP have been advised as completed, in order to ensure that the stated corrective action has taken place within the agreed time frame, and that the corrective action has been successful in ensuring compliance with the aerodrome standards and/or other regulatory obligation.
- 5.1.14.8. The Chief, [DASS], is responsible for maintaining a database of audit and inspection findings. Each team leader is to enter their respective results onto this database, and review the contents on a regular basis to ensure that timeframes are being respected and overdue actions are identified.
- 5.1.15. Audit Records
- 5.1.15.1. All documents relevant to the audit or inspection should be retained and placed on the aerodrome certificate holder's file after completion of the audit. These should include, where applicable, the following;
- A copy of the initial notification of the audit;
 - The audit timetable;
 - Completed checklists;
 - All notes made during the audit by the audit team;
 - Records of any interviews;
 - Records of entry and exit meetings;
 - A copy of the Corrective Action Plan (CAP);
 - Results of follow-up activities to ascertain compliance;
 - Post Audit feedback form from operator (See Appendix 9)
- 5.1.15.2. It is the responsibility of the Chief, [DASS] to establish and maintain an audit database that will contain all the findings gained from the audits and inspections of all aerodrome certificate holders. This database will be utilized by CAA to monitor the constant surveillance on all aerodrome certificate holders and registered aerodrome operators, and in the development of audit and inspection schedules and timetables.

5.2. Guidance for Inspection

5.2.1. Evaluation of Aerodrome Data

5.2.1.1. Purpose

The purpose to provide guidance and information to aerodrome inspectors to use when checking or evaluating aerodrome data required to be published in the Aeronautical ~~information~~ Information Publication.

5.2.1.2. References

- a) [CAA ACT XXXX] or [MAS]
- b) Checklist reference:
 - 1) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 3
 - 2) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 4.1 Aerodrome Reporting
 - 3) AIH Appendix 7A – Aerodrome Manual Checklist, Part 3

5.2.1.3. Guidance and Procedures

- a) General Information
 - 1) [MAS] 5.1.3 contains a complete list of aerodrome data to be originated and included by the Aerodrome Operator in the Aerodrome Manual. The information must be available to the operator prior to initial certification.
 - 2) Before being sent to the Aeronautical Information Services for publication in the AIP, the Authority must be satisfied that the information is adequate. It must be ensured that all parties in the data chain including the data originator, the data provider and the data publisher have quality systems for maintaining the integrity of aeronautical data.
 - 3) Any proposed changes by the Aerodrome Operator to published information in the AIP must be checked and approved by the Authority before being sent to AIS for publication.
- b) Checklist
 - 1) Part 3 of Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) contained in Appendix C.5 of the [MAS] relating to aerodrome data and aerodrome reporting procedures must be completed by the Aerodrome Inspector when assessing aerodrome data during initial certification and during inspection for certificate renewal. Subpart 4.1 of Part 4 Aerodrome Reporting of the same Checklist could also be used in evaluating reporting procedures during surveillance inspections. AIH Appendix 7A – Aerodrome Manual Checklist, Part 3 can also be utilized.
- c) Evaluation

The AI must determine if:

 - 1) There is a system to forward any new data or variation of existing data to the aeronautical information service;
 - 2) There is a quality system for protecting aeronautical data from the point of origination in the data chain to the next intended user;
 - 3) There is a system for prompt notification of changes to variable and permanent data.

Note: Information requiring engineering survey and assessment should be gathered for verification by qualified technical person.

Examples of temporary data are limitations and warnings such as temporary runway or taxiway closure, temporary obstacles, runway surface condition reports, system failures and bird hazards. Examples of variable data are runway declared distances, hours of operation, visual

aids and such facilities as rescue and firefighting. Examples of permanent data are aerodrome reference point, runway strength, runway dimensions and layout, elevations and permanent obstacle.

5.2.2. Evaluation of Aerodrome Physical Characteristics

5.2.2.1. Purpose

The purpose is to provide guidance and information to aerodrome inspectors to use when evaluating the aerodrome physical characteristics of an aerodrome.

5.2.2.2. Reference

- a) CAR- Aerodromes 2.2.135; [MAS] 6; [MAS] 4
- b) [MAS] 6.2-6.6 (Runways, Clearway and Stopway)
- c) [MAS] 6.7, 6.8 and 6.9 (Taxiways, Holding Bays, etc. and Aprons)
- d) Checklist reference/s:
 - 1) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 4.5;
 - 2) AIH Appendix 7B-2: Physical Characteristics, Visual Aid and Aerodrome Facilities FORM AGA-ATI-0002;
 - 3) AIH Appendix 7C-1: On-site verification Checklist; -and
 - 4) AIH Appendix 11: Aerodrome Surveillance Checklist.

5.2.2.3. Guidance and Procedures

- a) General Information.
 - 1) Prior to initial certification, the aerodrome designs and drawings must be evaluated by appropriate aerodrome standards inspectors, who would ensure that they meet requirements before initial approval is given by the Authority and in case of construction activities, prior to commencement of aerodrome construction work.
 - 2) Details relating to the physical characteristics in approved designs/drawings must be consistent with what is to be provided in the aerodrome manual and on site.
 - 3) After initial certification and where a change to the physical characteristics of the airside facilities is proposed by the Aerodrome Operator, such a proposal must be processed in accordance with the procedure in the [MAS] MOWP, [MAS] and SMS requirement on management of change.
 - 4) Changes to physical characteristics of airside facilities at an aerodrome ~~may~~ include but not limited to:
 - i) Construction, realignment, or alteration ~~any runway or other aircraft landing or take-off area of an aerodrome~~ of the manoeuvring area;
 - ii) Construction ~~or~~, realignment ~~or alteration~~, of a taxiway associated with a landing or takeoff area of an Aerodrome apron.

b) Checklist.

AIH Checklist, Physical Characteristics, Visual Aid And Aerodrome Facilities FORM AGA-ATI-0002 presented in Appendix 7B-2 and [MAS] Appendix C.5 Aerodrome

Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 4.5 relating to aerodrome movement area, must be completed prior to initial certification and during the inspection for certificate renewal.

c) Evaluation

- 1) During initial certification inspection, the AI must check the dimensions and surface conditions of runway(s), runway shoulders, runway strip(s), runway end safety areas, stopway(s) and clearways, taxiway(s), taxiway shoulders, taxiway strips and aprons.

2) Pavement.

~~The auditor should not add additional sub-items to the checklist.~~

- i) Check the pavement lips the area between full-strength pavement and shoulders or paved shoulders and safety areas to assure that they are no greater than necessary to allow water to drain off the pavement. ~~check the pavement edges to assure that they are no greater than necessary to allow water to drain off the pavement. A lip height not greater than 25 mm to 35 mm is usually sufficient to allow proper drainage. Any edge of 75 mm or more would be considered to be a hazard to aircraft.~~
- ii) ~~Determine if there are any cracks wide enough to cause directional control problems for an aircraft.~~
- iii) ~~Determine if there are any holes that could cause directional control problems for an aircraft. A hole exceeding 125 mm in diameter that exceeds 75 mm in depth with a side slope of 45 degrees or greater, is considered to be a hazard to aircraft and requires immediate rectification.~~
- iv) ~~Check the condition of pavement areas for cracks, scaling, spalling, bumps, low spots, and for debris that could cause foreign object damage to aircraft.~~
- v) ~~Check for vegetation growth along runway and taxiway edges that may impede drainage from the pavement surface.~~
- vi) ~~Check for vegetation growth in cracks.~~
- vii) ~~Report and monitor any cracks, holes, variations and vegetation that can cause loss of aircraft directional control or may cause pavement damage, including damaged caused by damming or ponding water.~~
- viii) ~~If a crack or surface variation is found and appears to create a marginal condition which could impair directional control of aircraft, advise aerodrome management so that corrective action can be taken as needed.~~

~~Where conditions are found involving possible pavement deterioration (evidence of cracking, ponding, settling, blow-ups, etc.), the operator should be made aware of the possible pavement deterioration immediately. Longitudinal cracks are more likely to affect directional control of aeroplanes than transverse cracks. Each case should be evaluated at the discretion of the AI.~~ [To be developed]

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Commented [L2]: To be checked with MOS and proposed GM on maintenance

Commented [PSKHP3]: Please revisit the specification of "lip height" with the following A14V1 SARPs:
3.2.3 – runway shoulders abuts runway should be flush with runway surface
3.4.10 – surface of runway strip portion abuts runway, shoulder or stopway shall be flush with that surface
3.11.5 – surface of taxiway strip should be flush at edge of taxiway / shoulder

Commented [PSKHP3]: Please revisit the specification of "lip height" with the following A14V1 SARPs:
3.2.3 – runway shoulders abuts runway should be flush with runway surface
3.4.10 – surface of runway strip portion abuts runway, shoulder or stopway shall be flush with that surface
3.11.5 – surface of taxiway strip should be flush at edge of taxiway / shoulder

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3) Safety Areas.

The AI should:

- i) Determine if there are any hazardous ruts, depressions, humps or variations from the normal smooth surface.
- ii) Check to ensure no object is located in a safety area, except objects that must be in the safety areas because of their functions (such as runway lights, signs, or navigational aids). These objects must be constructed on frangibly mounted structures of the lowest practical height.
- iii) Determine if the base for any equipment in safety areas flushes with surrounding ground –and equipment and NAVAIDs mounted on frangible couplings.
- iv) Check to ensure that manhole and handhole covers are at grade level and can support vehicles and aircraft. Check to ensure that mounts for light fixtures are at grade level.
- v) Check for surface variation and other damage caused by rodents or other animals.
- vi) Take note of any objects that are not frangible or not at grade level. Also note extraneous equipment and objects, such as construction equipment, and surface variations that would cause damage to an aircraft or impede emergency response vehicles.
- vii) The AI must determine if all unpaved areas available for aeroplanes, including loading aprons and parking areas, are maintained to meet the required conditions; if the safety areas and runway strips are maintained to the required conditions. Unusual aerodrome conditions caused by seasonal variations, such as, mud, water, etc., are evaluated on a case-by-case basis. The AI may have the vehicle operator drive in portions of the safety areas to evaluate surface conditions, provided conditions allow it. ~~The safety area and strips would extend only to the culvert or ditch.~~

Commented [PSKHP5]: Does it mean that culvert or ditch should not appear with a safety area?

5.2.3. Evaluation of Obstacles

5.2.3.1. Purpose

The purpose is to provide guidance and information to aerodrome inspectors to use when evaluating obstacle limitation surfaces associated with aerodromes.

5.2.3.2. Reference

- a) [CAA ACT] 2.5.010;
- b) [MAS] 7: Obstacle Restriction and Limitation
- c) ICAO Doc. 9137 Part 6 (Control of Obstacles).
- d) Memorandum Circular No. XX-17: Creation of Memorandum Of Agreement Between Aerodrome Operators And The Local Government
- e) Checklist reference/s:

- 1) [MAS] Appendix C.1 Aerodrome Certification Information Checklist (Form AGA-001-ACIC) No.5 & 9
- 2) [MAS] Appendix C.2 Aerodrome Certification Application Checklist (Form AGA-002-ACAC) No.3
- 3) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 4.13
- 4) AIH Appendix 7A: Aerodrome Manual Checklist, Section 13
- 5) AIH Appendix 7B-1: Obstacle Restriction Form AGA-ATI-0001
- 6) AIH Appendix 7C-1: On-site Verification Checklist 4.13
- 7) AIH Appendix 7C-13: Obstacle Control 4.13
- 8) AIH Appendix 11: Aerodrome Surveillance Checklist, Area of Inspection, Aerodrome Operations III (vi), (xi), (xii)

5.2.3.3. Guidance and Procedures

a) General Information

- 1) It is required that a number of imaginary surfaces be established around the vicinity of aerodromes operated under [MAS] x. These surfaces must be free of penetration by any object including structures, vegetation (e.g. tree) and terrains.
- 2) The aerodrome operator is required to establish a process for monitoring the airspace around their aerodromes to ensure that they are free from these objects. Aerodrome operators are also required to report new or on-going construction around aerodrome to the Authority who is statutorily responsible for determining whether such construction would constitute a hazard to air navigation and subsequently providing aviation height clearance.
- 3) In determining whether an object constitutes a hazard to air navigation, an inspector must apply the ultimate aerodrome development approach in his evaluation. In the ultimate aerodrome development approach, the obstacle limitation surface of the ultimate aerodrome layout ~~of the system of runways~~ as provided in the aerodrome master plan is taken into account in determining whether or not a permanent obstacle would constitute a hazard. Temporary obstacles may be evaluated based on existing aerodrome development only.

b) Checklist

Checklists listed in 5.2.3.2 e) (i, ii, iii & iv) relating to obstacle limitation surfaces, would normally have to be completed during initial certification and certificate renewal inspections. Checklist in Appendix 7-11 may be used during surveillance and other special-purpose inspections. As circumstances warrant, depending on the objective and scope of the inspection, the checklist should be tailored to meet specific needs.

c) Evaluation

The AI must determine that:

- 1) All fixed and mobile objects, as defined in the manual of standards (or amend as appropriate) within the aerodrome operators authority are either marked or ~~—~~lighted or removed, unless determined to be unnecessary by an aeronautical study or the ~~by~~ shielding principle, where applicable.
- 2) There are no objects extending above the obstacle protection surface for visual approach slope indicator system and that the approach light plane is free of infringements.
- 3) The operator has conducted an obstacle survey to produce a chart and if follow-up surveys are conducted whenever significant changes occur. The Chart shall show a plan view of the entire aerodrome and its environs to the outer limit of the conical surface where established, together with profile views of all obstacle limitation surfaces. Each obstacle should be identified in both plan and profile with its description and height above the datum, which should be specified on the chart.
- 4) Electronic and visual aids which are obstacles are frangibly designed and constructed and mounted on frangible couplings (marking may be omitted if the obstacle ~~ef~~ ~~is~~ lighted by high intensity obstacle lights).
- 5) The operator has established a programme of regular and frequent visual inspection, of all areas around the aerodrome including a daily observation of all obstacle lights both on and off the aerodrome and corrective action in the case of light failure, in order to be sure that any construction activity or natural growth (i.e. trees) likely to infringe any of the OLS is discovered before it may become a problem.

5.2.4. Evaluation of Visual Aids for Navigation

5.2.4.1. Purpose

The purpose is to provide guidance and information to aerodrome inspectors to use when evaluating visual aids for navigation.

5.2.4.2. Reference

- a) [CAA ACT] x.x.xxx; x.x.xxx; x.x.xxx
- b) [MAS] 8.7; 8.8; 13; [MAS] 6.1.6
- c) ICAO Doc. 9157 Part 4 (Visual Aids).
- d) Checklist reference/s:
 - 1) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 3.2
 - 2) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 4.6
 - 3) AIH Appendix 7A: Aerodrome Manual Checklist, Part 2, 3 & Part 4, Section 6
 - 4) AIH Appendix 7B-1: Obstacle Restriction Form AGA-ATI-0001
 - 5) AIH Appendix 7B-2: Physical Characteristics, Visual Aid and Aerodrome Facilities Form AGA-ATI-0002
 - 6) AIH Appendix 7C-6: Visual Aids and Aerodrome Electrical Systems
 - 7) AIH Appendix 7-11: Aerodrome Surveillance Checklist, Area of Inspection, IC Operational Area (iii)

- 8) AIH Appendix 7-11: Aerodrome Surveillance Checklist, Area of Inspection; III. Aerodrome Operations (x)

5.2.4.3. Guidance and Procedures

a) General Information

- 1) It is required that all aerodromes operated under [CAA ACT] x.x.xxx; x.x.xxx; x.x.xxx and [MAS] x.x; x.x; xx be provided with visual aids. The type of aids to be provided would depend on traffic density, visibility condition and complexity of the aerodrome layout.
- 2) Where a change to the configuration and specification of visual aids at an aerodrome is proposed by the Aerodrome Operator, such a proposal shall be processed in accordance with the procedures.
- 3) Proposed change to visual aids at an aerodrome may arise from:
 - i) Construction, realignment, or alteration ~~any runway or other aircraft landing or take-off area of an aerodrome~~ of the manoeuvring area;
 - ii) Construction ~~of~~, realignment or alteration of the apron, ~~of a taxiway associated with a landing~~ takeoff area of an aerodrome;
 - iii) Change status from Visual Flight Rules (VFR) to Instrument Flight Rules (IFR); and
 - iv) Change in time of use from daylight operation only to day and night operations.

b) Checklist

Checklists listed in 5.2.4.2 e relating to Visual Aids, would normally have to be completed during initial certification and certificate renewal inspections. AIH Appendix 7-11: Aerodrome Surveillance Checklist, Area of Inspection; III. Aerodrome Operations (x) may be used when evaluating alterations made to an airside visual aids arising from the factors listed in 3) above. The checklist is to be used during surveillance inspection and other special- purpose inspections. As circumstances warrant, depending on the objective and scope of the inspection, the checklist should be tailored to meet specific needs.

c) Evaluation

1) Markings.

The AI must determine if:

- i) The status of markings with respect to correct color-coding, peeling, blistering, chipping, fading, and obscurity due to rubber buildup are adequate or not.
- ii) All runway hold position markings are clearly visible.
- iii) During and after construction projects, new markings for compliance with [Manual of Standards for Aerodromes, Chapter 8].
- iv) If the markings have glass beads, the reflectivity of glass beads is adequate at night.
- v) Road holding position marking is provided at runway/road intersections.

iv) —

faded or deteriorating.

vi) There are non-standard marking or markings that are obscured, faded or deteriorating.

2) Signs.

The AI must determine if:

- i) Signs are easy to read, in accordance with color standards, retro-reflective, and that all lighted signs are working and not obscured by vegetation, dirt, dust, etc.
- ii) Signs are frangibly mounted and concrete bases are properly.
- iii) Sign panels are not missing or damaged, that they have the correct legend and arrow orientation, and that they are not cracked or broken.
- iv) During and after construction projects, new signs are in compliance with specifications in the [MAS] x.x.
- v) During periods of darkness, signs are properly illuminated, if mandatory instruction signs are illuminated with the associated runway lighting system, check signs for correct operations; that they are on the correct circuits, they do not flicker and that they follow the intensity setting of the runway or taxiway lights.
- vi) There is non-standard sign or any sign that is not functioning, is faded or damaged.

3) Lighting.

The AI must determine if:

- i) The following are operable, if installed, and that vegetation or deposits of foreign material do not obscure the light fixture.
 - Runway and taxiway edge lights, including approach lighting and visual approach slope indicator system;
 - Taxiway centerline or edge markers (i.e. reflectors);
 - Apron edge lights;
 - Runway centerline and touchdown zone lights;
 - Taxiway centerline lights or centerline reflectors;
 - Runway threshold/end lights; Stop bars and no-entry bar; and
 - Intermediate holding position lights;
 - De-icing/anti-icing facility exit lights;
 - Runway guard lights (both elevated and in-pavement, if installed);
 - Apron floodlighting;
 - (Advanced) visual docking guidance system;
 - Aircraft stand manoeuvring guidance lights; and
 - Runway status lights.

- ii) The following are operable, if installed:
 - ~~Ramp Apron~~ lights and floodlights used in construction to ensure they ~~are properly shielded~~ do not cause glare or confusion to pilots and air traffic controllers;
 - Obstruction lights; and
 - Lighting in fuel storage areas within the aerodrome.
- iii) Note all fixtures missing and lights that are not working or appear dim.
- iv) Note any missing or broken light fixture lenses.
- v) Runway and taxiway lights and runway threshold lights are the proper color and are oriented correctly.
- vi) The aerodrome has an operational wind ~~cone~~ direction indicator to provide aerodrome surface wind direction information. If the aerodrome is open to flight operations during hours of darkness, the required wind direction indicators must be lighted. [MAS] x.x.x.x provides specification for the construction of a circular band around a wind cone. The segment circle must be clear of vegetation and be seen easily from the air.
- vii) An aeronautical beacon has been installed to specification where conditions necessitate such installation.
- viii) Performance level objectives for approach and runway lighting in a precision approach lighting system are in accordance with specification. Particular attention should be paid to situations where two or more consecutive lights are missing.
- ix) Road holding position ~~signs and marking~~ light ~~are~~ is provided at runway/road intersections.
- x) There is a visual docking guidance system which provides alignment and stopping position guidance, where marshaling services is not provided.

5.2.5. Evaluation of Visual Aids for Denoting Obstacles

5.2.5.1. Purpose

The purpose is to provide guidance and information to aerodrome inspectors to use when evaluating visual aids denoting obstacles.

5.2.5.2. Reference

- a) [CAA ACT] x.x.xxx, [MAS] x.xx.x; [MAS] x.xx.x;
- b) ICAO Doc. 9157 Part 4 (Visual Aids)
- c) Checklist reference/s:
 - 1) AIH Appendix 7B-2: Physical Characteristics, Visual Aid and Aerodrome Facilities Form AGA-ATI-0002.

5.2.5.3. Guidance and Procedures

- a) General Information

- 1) It is required that the operators of aerodromes regulated under [CAA ACT] x.x.xxx and [MAS] x.x.x.x –should establish a mechanism –for continually monitoring existing obstacles around their –aerodromes for the purpose of ensuring among others, that –markings and –lights fitted to these obstacles are maintained in serviceable condition.
 - 2) CAA must ensure that operators carry out a regular inspection or visual monitoring of their obstacle limitation surfaces around airport to ensure that serviceable marking and lighting are in place and the height of such structures have not been increased without approval.
- b) Checklist
- The checklist in 5.2.5.2 e) may be used during other special-purpose inspections to the extent applicable
- c) Evaluation
- The AI must:
- 1) Determine if marking and lighting are in accordance with specification in [MAS] x.xx.x and [MAS] x.xx.x
 - 2) Determine, if wind direction indicator, apron floodlighting and other tall structures within the airside are fitted with obstacle light and if obstacle lights are operable. Check the operator's Aerodrome Manual (AM) for a list of lighted obstructions.
 - 3) Check to see if construction is underway on or near the aerodrome that could affect aircraft operations, check for any vegetation, especially, trees, that may penetrate the obstacle limitation surfaces.
 - 4) Check to ensure that construction equipment, especially tall cranes being used at construction sites, are not an obstruction.
 - 5) Determine if obstructions are properly marked and lighted.
 - 6) Report any obstruction light that is missing, inoperative or damaged, and any object that appears to be an obstruction and is not properly marked or lit.

5.2.6. Evaluation of Visual Aids for Denoting Restricted Use Area

5.2.6.1. Purpose

The purpose is to provide guidance and information to aerodrome inspectors to use when evaluating visual aids denoting restricted use areas.

5.2.6.2. Reference

- a) [CAA ACT] x.x.xxx, [MAS] x.x
- b) ICAO Doc. 9157 Part 4 (Visual Aids)
- c) Checklist reference:
 - 1) AIH Appendix 7C-8: Aerodrome Works Safety 4.8

5.2.6.3. Guidance and Procedures

- a) General Information

- 1) It is required that aerodrome operators establish procedures for temporary and permanent movement area closures and safety precautionary measures to be taken during routine and major construction work on the airside of an aerodrome.
 - 2) Safety precautionary measures for major construction work in an aerodrome airside are to be incorporated in a work safety plan which must be approved by the Authority before the commencement of such work. A template work safety plan is provided in [MAS] xx.xx and xx.xx. Aerodrome Inspectors should use the template as guidance when reviewing an operator's plan.
 - 3) Where circumstances necessitate the imposition of restriction on the use of a runway ~~such as that~~ would result in a reduction in the length of the runway, the Aerodrome Operator is required to ensure that runway threshold is displaced using appropriate specification of markings and light if applicable.
 - 4) Where an aerodrome certificate is suspended or withdrawn by the Authority or voluntarily surrendered by the operator, the Authority shall carry out inspection to ensure that appropriate measures have been taken to prevent inadvertent use of the runway, taxiway or aerodrome as the case may be.
- b) Checklist
- The checklist in 5.2.6.2 e) is to be used by inspectors while inspecting aerodrome works, to review a draft work safety plan submitted by the operator to the Authority for approval and can also be used for inspection after withdrawal or voluntary surrender of an aerodrome certificate.
- c) Evaluation
- The AI must determine if:
- 1) Procedures have been established for temporary and permanent movement area closures, for reduction of declared distances or displacement of threshold. Where threshold have been displaced, displaced threshold marking and lighting should be evaluated.
 - 2) Procedures have been established by the aerodrome operator for briefing of contractors for avoiding damage to existing utilities or other underground facilities. When a complex construction project is in progress, the AI shall inquire about the existence of and adherence to the safety plan. Additional information is available in (Insert Advisory Circular on work safety plan).

- 3) Procedures have been established by the aerodrome operator for avoiding damage to existing utilities, such as the review of appropriate utility plans prior to construction.
- 4) Each construction area, construction equipment construction roadway, NAVAID area, and unserviceable area, is marked, and lighted if appropriate, in an acceptable manner.
- 5) Procedures are in place to repair any accidental damage to existing utilities.

5.2.7. Evaluation of Electrical Systems

5.2.7.1. Purpose

The purpose is to provide guidance and information to aerodrome inspectors to use when evaluating electrical systems.

5.2.7.2. Reference

- a) [CAA ACT] x.x.xxx; [MAS] x.x.x; [MAS] x.x.x; [MAS] x.x.xx;
- b) ICAO Doc. 9157 Part 5 (Electrical Systems)
- c) Checklist reference/s:
 - 1) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 4.6
 - 2) AIH Appendix 7A: Aerodrome Manual Checklist, Part 4, Section 6
 - 3) AIH Appendix 7B-2: Physical Characteristics, Visual Aid and Aerodrome Facilities Form AGA-ATI-0002, No.2 Aerodrome Facilities
 - 4) AIH Appendix 7C-6: Visual Aids and Aerodrome Electrical Systems

5.2.7.3. Guidance and Procedures

a) General Information

- 1) It is required that electrical systems provided at aerodromes are of adequate design to facilitate the steady operation of aerodrome lighting system.
- 2) The capacity of power supply and design of electrical systems at an aerodrome are dependent on the type of operation at the aerodrome and the category of lighting supported.
- 3) A proposed change by an aerodrome operator from a VFR to IFR or day only to ~~24~~ 24-hour operation would require an inspection of the aerodrome electrical system before a determination is made.

b) Checklist

The Checklist listed in 5.2.7.2 e) relating to power supply and electrical systems, would normally have to be completed during initial certification and certificate renewal inspections.

c) Evaluation

The AI must determine if:

- 1) Adequate primary and secondary power supply are available at the aerodrome for the safe functioning of visual and non-visual aids. Check, if steady power supply is assured through availability of automatic switchover system and see, if the switchover requirement for the category of operation, specified in the

[MAS] is met.

- 2) Adequate precautions have been put in place against system failure. Examples of such precautions are: interleaving of circuits supplying the runway lighting system, phasing of the supply to approach lighting system.
- 3) There is a monitoring and intensity control panel for airfield lighting, where applicable and control is from one point i.e. the control tower supported by a back-up control point in the event of failure of the panel in the control tower.

5.2.7.4. Aerodrome Operational Services, Equipment and Installations

5.2.7.5. Purpose

The purpose is to provide guidance and information to aerodrome inspectors to use when evaluating aerodrome operational services equipment and installations including aerodrome rescue and firefighting service ~~and~~ aerodrome emergency planning, apron management service and Aerodrome Fencing.

5.2.7.6. Reference

- a) [CAA ACT] x.x.xxx; x.x.xxx; x.x.xxx; x.x.xxx; [MAS] xx; [MAS] xx.x; [MAS] xx.x.x; [MAS] xx.xx.x; [MAS] xx,x,x. [MAS] x.x.x (x)
- b) ICAO Doc. 9137 Part 1 (Rescue and Fire Fighting)
- c) ICAO Doc. 9137 Part 7 (Aerodrome Emergency Planning)
- d) Advisory Circular No. AC 139-RFFS-02- RFFS Training Programme for Aerodromes)
- e) Advisory Circular No... (Aerodrome Emergency Planning)
- f) Checklist reference
 - 1) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 4.4
 - 2) AIH Appendix 7B-3: Rescue and Fire-Fighting FORM AGA-ATI-0003
 - 3) AIH Appendix 7C-4: Rescue and Fire-Fighting
 - 4) AIH Appendix 11:Aerodrome Surveillance Checklist, II. ARFF
 - 5) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 4.3
 - 6) AIH Appendix 7A: Aerodrome Manual Checklist, Part 4, Section 3
 - 7) AIH Appendix 7C-3: Aerodrome Emergency Plan
 - 8) AIH Appendix 11:Aerodrome Surveillance Checklist, III. Aerodrome Operations (iii)
 - 9) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 4.14
 - 10) AIH Appendix 7A: Aerodrome Manual Checklist, Part 4, Section 14
 - 11) AIH Appendix 7C-14: Removal of Disabled Aircraft
 - 12) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 4.10

- 13) AIH Appendix 7A: Aerodrome Manual Checklist, Part 4, Section 10
- 14) AIH Appendix 7C-10: Apron Safety Management
- 15) AIH Appendix 11: Aerodrome Surveillance Checklist, III. Aerodrome Operations (vii)
- 16) AIH Appendix 7B-3: Rescue And Fire-Fighting FORM AGA-ATI-0003, Question no.16 (Fencing)
- 17) AIH Appendix 7C-4: Rescue and Fire-Fighting
- 18) AIH Appendix 7C-5: Inspection of the Movement Area by the Aerodrome Operator
- 19) AIH Appendix 7C-7: Maintenance of the Movement Area
- 20) AIH Appendix 7C-12: Wildlife Hazard Management
- 21) AIH Appendix 11: Aerodrome Surveillance Checklist, IC. Operational Area, (i)

5.2.7.7. Guidance and Procedures

a) General Information

- 1) It is required that the level of rescue and fire fighting service provided at an aerodrome be adequate to support the designated fire fighting category of the aerodrome.
- 2) During initial certification, the evaluation of rescue and fire fighting service at the aerodrome should be based strictly on the dimensions of the longest aeroplane planned for the aerodrome, that is, the aeroplane overall length and fuselage width.
- 3) A provisional aerodrome emergency plan should be available before commencement of flight operations at the aerodrome. The aerodrome operator should be allowed some time to constitute an emergency committee that would test the emergency plan. The aerodrome emergency plan must be tested not later than nine (9) months.

b) Checklist

The checklist presented listed in 5.2.7.6 h) (ii) (iii) relating to rescue and firefighting, would normally have to be completed during initial certification and certificate renewal inspections. The same applies to 5.2.7.6 h) (xv-xvii), (xvi) and (xi) for Apron safety, Apron management service and Disable Aircraft Removal respectively.

Other checklists are available for special purpose inspections and should be further tailored to meet specific needs. Checklist in 5.2.7.6 h) (vii) can be used for evaluating emergency exercises (partial and full scale). Checklist in 5.2.7.6 h) (xxiii) can be used to check adequacy or otherwise of the surface movement guidance and control systems at the aerodrome Checklists in 5.2.7.6 h) (iii) (xvii) and can be used in evaluating an operators disable aircraft removal plan during surveillance inspection while checklist in 5.2.7.6 h) (xiv) (xv) can be used for assessing apron management service.

c) Evaluation

1) Aerodrome Emergency Plan

The AI must determine if:

- i) The operator should also be encouraged to include procedures for response to other utility failures in addition to electrical power failure such as fuel spills, hazardous materials, natural gas, water and sewage.
- ii) It is written in sufficient detail to give adequate guidance to all concerned parties.
- iii) The certificate holder has made adequate provisions for the agencies and personnel addressed in the AEP to participate in the development of the plan. Look for agency listing, or letters addressing meetings/reviews, and coordination.
- iv) The plan contains procedures for notifying facilities, agencies, and personnel of the location of an aircraft accident on the aerodrome, the number of persons involved, and any other necessary information as soon as it is available. At the discretion of the AI, conduct a communications test of the emergency plan notification procedures of mutual aid agencies to evaluate the timeliness and telephone numbers listed in the emergency plan and contact the mutual aid agency listed to verify telephone number currency.
- v) ~~If applicable, the AEP address water rescue provisions, to the extent practicable. Significant bodies of water or marsh lands are considered adjacent to the aerodrome if they are under the approach/departure flight paths, out to the "final approach fix" on runways with published approaches. If an aerodrome operator cannot obtain cooperation from other jurisdictions concerning water rescue provisions "to the extent practicable", documentation demonstrating that a reasonable attempt was made shall be maintained in the manual.~~ [Water rescue – to be developed]
- vi) All aerodrome personnel having duties and responsibilities under the AEP are familiar with their assignments and are properly trained. Randomly questions personnel in the AEP to determine validity of the training programme and to ensure that all aerodrome personnel having duties and responsibilities under the plan are familiar with their assignments and are properly trained. Testing, written or oral may be used if determined to be necessary by the AI.

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- vii) The AEP is reviewed with all participating agencies in the preceding 12 months. An annual review of the AEP may consist of the aerodrome operator conducting a tabletop exercise or a review meeting with a representative of each of the agencies with which the plan was coordinated or after a full-scale or partial emergency has been carried out. Look for letters addressing tabletop exercise, Full-scale and partial exercises AEP review meetings and AEP revisions. During pre-inspection preparation, look for letters concerning annual review in the aerodrome files.
- viii) The aerodrome operator has conducted a full scale exercise of its AEP in the preceding 2 years.
- ix) During pre-inspection preparation, look for letters concerning full scale exercise of the AEP. Examine any record of critique. The full-scale aerodrome exercise must involve, to the extent practicable, all mutual aid participants, a reasonable amount of equipment specified in the AEP, and include a summary report and/or critique. Aerodromes which have experienced an aircraft accident and exercised a substantial portion of their AEP related to, or as would respond to, an air carrier accident can substitute this accident for the full-scale exercise. If such a substitution is made, the certificate holder should conduct a critique of their performance during the accident response.
- x) For the purpose of this requirement, the biennial exercise may be conducted within the calendar month it is due. For example, if the last biennial exercise was held on August 4, 1990, the next biennial exercise is due by August 31, 1992. Unique or special cases may affect the need to vary the schedule slightly, and where supportable justification exists, a reasonable extension may be approved. For example: the biennial is due in April, but the county is planning a much larger exercise for June in which the aerodrome will play an important part and gain the same benefit.
- xi) The purpose of this biennial exercise is to test the effectiveness of AEP through a response of the aerodrome and its mutual aid for a disaster at the aerodrome. It should also be used to familiarize emergency mutual aid personnel with the location of staging areas and other aerodrome facilities.
- xii) For these reasons the full-scale exercise should be conducted at the aerodrome. However, at the discretion of the AI, the drill may be conducted on property adjoining or adjacent to the aerodrome (such as for a water rescue exercise) if the AEP can still be properly exercised.
- xiii) The AI should determine the adequacy of facilities in the Emergency Operations centre and the mobile command post. The communication equipment in these facilities should be tested for adequacy and serviceability. The AI should rely on guidance in the Advisory circular on Aerodrome Emergency in determining if human factor principle has been taken into account in preparing the Aerodrome Emergency Plan.
- xiv) When possible, aerodrome managers should be encouraged to participate in off-aerodrome disaster exercises involving downed aircraft and provide their expertise and resources.

- xv) AIs are encouraged to attend the full-scale exercise of the AEP whenever possible.
- 2) Rescue and Fire Fighting Service: Determination of Fire Category
- The AI must determine if:
- The aerodrome category shall be determined from the Aerodrome Standards Manual and shall be based on the longest aeroplanes normally using the aerodrome and their fuselage width. To categorize the aeroplanes using the aerodrome, first evaluate their overall length and second, their fuselage width. If, after selecting the category appropriate to the longest aeroplane's overall length, that aeroplane's fuselage width is greater than the maximum width for that category, then the category for that aeroplane shall actually be one category higher. Guidance on categorizing aerodromes for rescue and fire fighting purposes and on providing rescue and fire fighting equipment and services is given in [MAS] Attachment A, Section 5.3 and in the Aerodrome Services Manual, Part 1. During anticipated periods of reduced activity, the level of protection available shall be no less than that needed for the highest category of aeroplane planned to use the aerodrome during that time irrespective of the number of movements.
 - The following examples illustrate the method for determination of the aerodrome category.

Example 1

Aircraft	Overall Length	Fuselage width	Category
Tupolev Tu-154	47 m	3.45	7
B 707-320	46.61	3.55	7

The longest aeroplanes are categorized by evaluating, from Table 9-1, Annex 14 first their over-all length and second, their fuselage width. The aerodrome in this case would be category 7.

- 3) Extinguishing Agents.
- The AI must determine if:
- ARFF vehicle discharge capacities and agent capacities meet [MAS] Table 14-2 of [MAS] xx.x.x.
 - The amounts of water for foam production meet the requirement in [MAS] Table 14-2 of [MAS] xx.x.x.
 - The amount of water and foam concentrate separately provided on vehicles for foam productions are adequate.

- iv) The quantity of foam in reserve is adequate.
- v) The discharge rates of foam solution are adequate.
- vi) There is a means of supplementary water supply for expeditious replenishment.
- vii) Water tanker(s) or other suitable means is acceptable.
- 4) Emergency Rescue and Fire Fighting Vehicles

The AI must determine if:

 - i) The aerodrome is equipped with ARFF vehicles meeting the aerodrome firefighting category during flight operations. ARFF equipment required to meet the category must be listed in the AM.
 - ii) Each required ARFF vehicle is equipped with appropriate radio communications, beacon, and is marked in colors to contrast with the background and optimize daytime/nighttime visibility.
 - iii) Each required vehicle is operationally capable of performing the required functions. Technically, a required ARFF vehicle is inoperative during preventive maintenance if it cannot meet response requirements. At aerodromes which do not have extra ARFF equipment, maintenance must be scheduled during periods when aircraft operators are not operating. Notification to CAA and airlines would be expected when ARFF equipment required to meet Category requirements breaks down and cannot be immediately repaired.
- 5) Rescue Equipment.

The AI must determine if Rescue equipment commensurate with the level of fire protection is provided in accordance with [MAS] xx.x.x and ICAO Doc 9137 Part 1 Table 5-2.
- 6) Personnel

The AI must determine if:

 - i) Sufficient ARFF personnel are available to operate the required ARFF vehicles taking into account the requirement specified in CAA guidance document.
 - ii) Training requirement is available incorporating initial and recurrent training, and covering the subject areas enumerated in the ASM has been developed and is being implemented. Training programme shall include initial and recurrent training and training in human performance and team coordination.
 - iii) Training records are maintained and readily available and the records indicate that all ARFF personnel have participated in live-fire drill and pressure-fed fuel fires. "live-fire drill" has the same meaning as "simulated aircraft fire."
 - iv) All ARFF personnel are equipped in a manner needed to perform their duties.
 - v) Such equipment shall include protective coat, protective trousers,

protective helmet, gloves and respiratory equipment. This requirement does not apply to ARFF vehicle driver/operators unless they are expected to man handlines or effect rescue operations. The ARFF vehicle driver/operator shall have protective equipment readily accessible.

- vi) All personnel assigned to rescue duties have been given first aid and (cardio- pulmonary resuscitation) CPR training. At least two full time members per shift of the aerodrome rescue and firefighting service or other on-aerodrome personnel should be trained to an emergency medical treatment level.

7) Response Time.

The AI must determine if:

- i) At least one required ARFF vehicle achieves a response time not exceeding 3 minutes to any point of each operational runway. Any other vehicles should arrive no more than one minute after the first responding vehicles. At the option of the AI, a discharge of water may be used in lieu of other agents for a timed response. However, a demonstration of the discharge of the agents not used in the response drill is to be conducted for at least one required response vehicle before the conclusion of the inspection to insure the adequate capability.
- ii) During the certification inspection, the AI should request that a refractometer test be conducted by ARFF personnel on at least one required response vehicle with a foam proportioning system. By observing the preparation for and performance of this test the following will be achieved.
- iii) Get an indication of ARFF personnel knowledge of the vehicle and its systems. In some cases, ARFF personnel may have a refractometer but not know how to use it. In those cases be prepared to conduct a refractometer test and provide some basic training. If the ARFF department does not conduct periodic refractometer test advise them to do so. Other refractometer procedures may be used. Be sure to read manufacturer's instructions.
- iv) Gain some indication of the maintenance level for the foam proportioners and, therefore, vehicle systems. If the results of the refractometer test indicate a foam mixture that is too lean or rich, advise the ARFF officer in charge that the system needs to be checked to determine if the proportioning device is adjusted properly.
- v) ARFF response drills may be conducted at night or during inclement weather. However discretion shall be used to ensure that safety is not derogated. If there is a question as to whether or not a drill can be conducted safely, it should be postponed until later. When conducting the timed response, the AI should keep in mind that the times given in [MAS] xx.x.x and [MAS] xx.x.x are based on a direct path on dry pavement under good weather conditions. If the drill is conducted at night or in other than dry conditions, the times may be adjusted at the discretion of the AI to allow for the adverse condition.
- vi) It shall be at the AIs discretion as to the location from which he/she conducts the response drill on the aerodrome.

- vii) The alarm system is acceptable. The timing for the response requirement begins upon activation of the first alarm signal to the RFF unit responsible for ARFF at the aerodrome. This will normally be ATC activating whatever alarm system is used by the aerodrome. The signal may be audible (klaxon, telephone ring, siren, etc.), visual (dormitory illumination, strobe light, etc.), or a combination. The RFF unit is usually the fire house where the vehicles and crews are stationed. It is important that the timing begin with the activation of the first alarm signal and include any message passing, crew assembly, coordination, and other processes which occur as part of the response. If there are problems with meeting the response time it may be that the alarm enters the fire station at the wrong point, and that the system needs to be changed to modify or eliminate time consuming communications, coordination, etc.
- 8) Emergency Access Roads.

The AI must determine if all designated emergency access roads are maintained for all weather conditions. Emergency access roads are those required to meet ARFF requirements. Roads constructed specifically for use by emergency vehicles must be considered as an emergency access road. Additionally, service roads that are located in the safety area must be considered by the aerodrome operator as an emergency access road and maintained during all weather conditions.
- 9) Fire Station

The AI must determine if adequate shelter is provided to protect RFF vehicles from the harmful effects of exposure to the sun.

10) Communication and Alerting Systems.

The AI must determine if:

- i) A discrete communication system links all the fire stations within the aerodrome, the control tower and rescue and fire fighting vehicles.
- ii) An alerting system links all the fire stations within the aerodrome, the control tower and rescue and fire fighting vehicles. The alerting system should be such that it can be operated from the fire station.

11) Disabled Aircraft Removal Plan.

The AI must determine if:

- i) The aerodrome operator has developed a disabled aircraft removal plan. The plan should be developed in consultation with aircraft owners and operators. The extent of the plan will depend on user aircraft weights and sizes and the density of air traffic at the aerodrome.
- ii) The plan provides for permission to disturb the accident site to be obtained from Aircraft Accident and Incident Investigation Board (AAIIB). Where a disabled aircraft has been involved in an accident, notwithstanding this general rule, the aircraft may be moved where necessary to preserve life or to prevent additional hazard to persons or property. A claim for damages could follow an attempts to move a crashed aircraft if it was proven the act of moving worsened the damage. Therefore, the invariable rule is that only aircraft owner, operator or his appointed representatives should control the aircraft removal operation.
- iii) The plan includes:
 - Nominated person or organization authorized to act on their behalf at the aerodrome owner or operators using the aerodrome to avoid delay.
 - Nominated representative of the aerodrome operator to coordinate the aircraft removal operation. All major users of the aerodrome will be informed of the aerodrome management's preparations and capabilities, as well as policies regarding disabled aircraft removal. The officer assigned responsibility to coordinate this plan should be made known to all aircraft owners or operators.
 - A list of equipment available on or near the aerodrome on demand.
 - A list of additional equipment available from nearby aerodromes on request.
 - A list of nominated agents acting on behalf of each aircraft operator at the aerodrome.
 - A statement of the aircraft operator arrangements for the use of pooled specialist equipment.
 - A list of local contractors (with names and telephone numbers) with suitable removal equipment for hire.

12) Apron Management Service.

The AI must determine if:

- i) Responsibility for marshalling service, leader van service, gate and parking allocation, start up, push back and taxi clearances, control of vehicles on the apron, maneuvering areas are clearly and unambiguously assigned.
- ii) A written agreement exist between both parties defining method of coordination and points of transfer of responsibilities, where coordination between air traffic service unit and apron management unit is required.
- iii) Adequate aircraft stand clearances and apron safety lines have been provided in accordance with manual of standards. Apron safety lines include wing tip clearance lines and service road boundary lines.

13) Fencing.

The AI must determine if:

- i) The aerodrome operator has appropriate safeguards against inadvertent entry to the movement area by unauthorized persons or vehicles. These safeguards may consist of a combination of natural barriers, fencing and warning signs which are effective in deterring personnel or vehicles from inadvertently entering the movement area.
- ii) The aerodrome operator has provided reasonable protection of persons and property from aircraft blast. This includes persons who are required to use airstairs; and public areas adjacent to air carrier ramps and movement areas.

5.2.8. Evaluation of Operational Services- Wildlife Strike Management

5.2.8.1. Purpose

The purpose is to provide guidance and information to aerodrome inspectors to use when evaluating wildlife strike hazard management programmes at aerodromes.

5.2.8.2. Reference

- a) [CAA ACT] x.x.xxx; [MAS] xx.xx.x; [MAS] xx.xx.x
- b) ICAO Annex 14 Vol I chpt. 9 **or equivalent national reference** (Wildlife Strike Hazard Reduction)
- c) ICAO Doc. 9137 Part 3 (Bird Control and Reduction)
- d) Advisory Circular No AC 139-05-A: Establishment of Wildlife Hazard Management at Aerodromes by Aerodrome Operators
- e) Checklist reference

- 1) AIH Checklist Appendix 7B-4: Wildlife Hazard Management Form AGA-ATI-0004
- 2) AIH Appendix 7C-12: Wildlife Hazard Management
- 3) AIH Appendix 11: Aerodrome Surveillance Checklist, III. Aerodrome Operations, (viii)

5.2.8.3. Guidance and Procedures

a) General Information

It is required that aerodromes exposed to wildlife hazard analyse the level of risk posed by the existing hazards to enable a determination of the need for a wildlife hazard management plan. It is not anticipated that such a determination can always be reached before the commencement of initial operations at the aerodrome. Data collection on bird activity in the vicinity of the aerodrome and subsequent analysis may take sometime after aerodrome operations begin before a meaningful conclusions can be drawn concerning wildlife management programme to be implemented, where applicable. However it is anticipated that a procedure for monitoring bird activity and of recording and reporting bird strike be established and incorporated in the Aerodrome Manual before approval of the Manual is given by the Authority.

b) Checklist

Checklist listed in 5.2.8.2 f) relating to wildlife hazard management, would normally have to be completed during initial certification and certificate renewal inspections and surveillance. AIH checklist in Appendix 11: Aerodrome Surveillance Checklist, III. Aerodrome Operations, (viii) can be used for other special purpose inspection relating to wild life hazard management.

c) Evaluation

The AI must determine that:

- 1) the aerodrome operator has adequate procedures to take immediate measures to alleviate wildlife hazards whenever they are detected. During the movement area inspection, the AI should be on the lookout for wildlife of a size or in numbers capable of triggering the conduct of an ecological study. If the AI feels that wildlife activity on or in the vicinity of the aerodrome constitutes a wildlife hazard, the conduct of an ecological study must be addressed in the corrective plan of action. The ATC shall also be consulted concerning wildlife hazards.
- 2) if records of reported strike are maintained and transmitted to CAA for onward transmission to ICAO.
- 3) procedures are established by the aerodrome operator for the conduct of a wild life risk assessment
- 4) if a Wildlife Hazard Management Plan is in effect, the AI must review the following:
 - i) Its effectiveness in dealing with the wildlife hazard.
 - ii) Indications that the existence of the wildlife hazard, described in the ecological survey, should be reevaluated.

- iii) Personnel with responsibilities in the Wildlife Hazard Management Plan are adequately trained.
- iv) Procedures outlined in the Plan, such as inspections prior to air carrier operations, are carried out.
- v) Status of habitat modification projects or changes in land use identified in the Plan.

5.2.9. Evaluation of Operational Services - Ground Servicing of Aircraft

5.2.9.1. Purpose

The purpose is to provide guidance and information to aerodrome inspectors to use when evaluating aircraft ground servicing operations.

5.2.9.2. Reference

- a) [CAA ACT] x.x.xxx;
- b) [MAS] xx.xx.x.x (Ground Servicing of Aircraft)
- c) Advisory Circular No. 139-AMGT-01: Guidelines in Operational Procedures and Principles for Apron Management
- d) Checklist reference/s
 - 1) [MAS] Appendix C.5 Aerodrome Certification Manual Contents Checklist (Form [AGA CHECKLIST]) Part 4.10
 - 2) AIH Appendix 7A: Aerodrome Manual Checklist, Part 4, Section 10
 - 3) AIH Appendix 7C-10: Apron Safety Management
 - 4) AIH Appendix 11: Aerodrome Surveillance Checklist, III. Aerodrome Operations (ix) (Refueling and Defueling)

5.2.9.3. Guidance and Procedures

a) General Information

- 1) It is required that aerodrome operators have qualified personnel who are familiar with safety precautionary measures which should be in place during the fueling and defueling of aircraft by fueling companies.
- 2) The scope of inspection by aerodrome inspectors should cover both the facilities of the fueling companies at the operational base and at the actual aircraft fueling on the apron.

b) Checklist

The checklist in 5.2.9.2 e) are to be used during initial certification and certificate renewal inspections. Likewise, 5.2.9.2 e) (iii) checklist relating to aircraft fueling and defueling can be used for special purpose inspection relating to handling and storage of aviation fuel.

1) Evaluation

The AI must determine that:

- i) Fire extinguishing equipment are positioned sufficient close to areas designated for ground servicing of aircraft.
- ii) Extinguishing agents bear serviceability tags and the dates on tags.
- iii) An efficient means is available for quickly summoning rescue and firefighting service in the event of a fire or major fuel spill. Apron management unit and ARFF service are connected on a designated frequency. Where apron management unit is not available, check if airline or ground staff or aerodrome personnel who have responsibilities on the apron are familiar with the frequency on which to reach RFF service.

5.2.10. Evaluation of Operational Services- Ground Vehicle Operations

5.2.10.1. Purpose

The purpose is to provide guidance and information to aerodrome inspectors to use when inspecting and evaluating ground vehicle operations

5.2.10.2. Reference

- a) [CAA ACT] x.x.xxx;
- b) [MAS] 10.9: Control of Airside Access and Vehicle Control
- c) Advisory Circular No. 139-03-A, Ground Vehicle Operations at Aerodromes
- d) Checklist reference/s:
 - 1) AIH Appendix 7C-11: Airside Vehicle Control
 - 2) AIH Appendix 11: Aerodrome Surveillance Checklist, IC. Operational Areas, (ii), III Aerodrome Operations, (xiv)

5.2.10.3. Guidance and Procedures

a) General Information

Each employee, tenant, or contractor, who operates a ground vehicle on any portion of the airside of an aerodrome is required to be familiar with and complies with the aerodrome's airside driving rules and procedures. In order to comply with this section, the aerodrome operator shall develop an appropriate driver's training programme for aerodrome personnel, tenants, contractors and others who operate on, or have access to movement areas. The programme shall be consistent with the guidance provided by the Authority on Aerodrome Vehicle Operations and shall be approved by the Authority before being put to use.

b) Checklist

The checklist listed in 5.2.10.2 d) (i) relating to airside vehicle control, would normally have to be completed during initial certification and certificate renewal inspections. The checklist in 5.2.10.2 d) (ii) can be used for surveillance and other special purpose inspection relating to ground vehicle operations. The checklist may be further tailored to meet specific needs.

c) Evaluation

The AI must determine that:

- 1) Roads located on the movement areas and safety areas are restricted to only those vehicles necessary for aerodrome operations. During the course of the inspection, be on the lookout for unnecessary operations of vehicles on or adjacent to movement areas.
- 2) Vehicles authorized in the movement area include ARFF vehicles, ambulances, mowers, aerodrome operations and maintenance vehicles, fuel trucks catering vehicles, toilet service vehicles etc.
- 3) Procedures for these vehicles to cross the runway or taxiway such as two-way communications with the Control Tower or escort have been established for continued operations. Vehicles must be radio equipped or escorted. These procedures need to be clearly addressed in the Aerodrome Manual.
- 4) For aerodromes with Control Tower in operation, each vehicle operating on the movement areas is controlled by two-way radio, escort vehicle with two-way radio.
- 5) For aerodromes without Control Tower in operation, adequate procedures are established to control ground vehicles through prearranged signals or other procedures.
- 6) Look for distribution of aerodrome procedures/training curriculum or permit process to control applicable tenants. At aerodromes with a SMGCS Plan, requirements should also be included in the driver training as applicable.

5.2.11. Aerodrome Maintenance

5.2.11.1. Purpose

The purpose is to provide guidance and information to aerodrome inspectors to use when inspecting and evaluating aerodrome maintenance programmes and their levels of implementation at aerodromes.

5.2.11.2. Reference

- a) [CAA ACT] x.x.xxx; x.x.xxx;
- b) [MAS] 10.15: Aerodrome Maintenance
- c) Advisory Circular No (Movement Area Maintenance)
- d) Advisory Circular No. AC 139-AIPCR -01/17 Aerodrome Inspection Programme and Condition Reporting.
- e) ICAO Doc. 9137 Part 2 (Pavement Surface Condition)
- f) ICAO Doc. 9137 Part 9 (Pavement Maintenance Practices)
- g) Checklist reference/s:

- 1) AIH Appendix 7C-5: Inspection of the Movement Area by the Aerodrome Operator
- 2) AIH Appendix 7C-6: Visual Aids and Electrical Systems
- 3) AIH Appendix 7C-7: Maintenance of the Movement Area
- 4) AIH Appendix 11: Aerodrome Surveillance Checklist, IA. Physical Characteristics, (iii)
- 5) AIH Appendix 11: Aerodrome Surveillance Checklist, IB. Apron (i)

5.2.11.3. Guidance and Procedures

a) General Information

- 1) It is required that the frictional characteristic of runway pavements be periodically determined by the aerodrome operator using a continuous friction measuring device with self-wetting features for the purpose of the monitoring pavement friction characteristics and taking prompt preventive maintenance action.
- 2) The regulation obligates operators to include in their operations manual, maintenance programmes for paved and unpaved movement areas, runway strips and aerodrome drainage.
- 3) Although the subject of maintenance in the [MAS] xx.xx is presently limited to safety critical areas such as pavement and visual aids, the Aerodrome Inspectors should, for the purpose of promoting efficiency and regularity of aeronautical operations encourage operators to include maintenance programmes for other aspects, namely terminal facilities including passenger loading bridges, elevators, travelators, lifts, conveyor belts, chillers, Flight information displays, etc. Guidance for the development of maintenance programmes for these areas is contained in ICAO Doc 9137 Part 9 on Aerodrome Maintenance Practices.

b) Checklist

The checklist presented in 5.2.10.6 g) relating to Maintenance, would normally have to be completed during initial certification and certificate renewal inspections. The checklist in 5.2.10.6 g) (iv) (v) is to be used during surveillance inspections and other special purpose inspections relating to Airport Pavement Friction Assessment.

c) Evaluation

The AI must determine that:

- 1) Preventive maintenance procedures have been established for pavements, visual aids power supply drainage and buildings and specialized vehicles such as rescue and fire fighting vehicles. Check procedures for calibration of VASIS. These procedures should also be addressed in the AM.
- 2) Maintenance procedures are being implemented. Check maintenance records for airfield lighting, power supply and RFF vehicle and compare with sample maintenance schedules.
- 3) Debris, rubber deposit removal and friction measurement programmes have been developed. See when the last friction measurement was conducted and review result against minimum requirement. If the friction measuring equipment is owned and operated by aerodrome operator's personnel, check if personnel have been trained on the use of the equipment and if the equipment is calibrated as required before use.

- 4) The pavements are free of debris and surface irregularities (cracks depressions or other distress features). The AI should use his judgement to determine when a pavement distress is significant to constitute a finding.
- 5) Marking and lighting systems on the aerodrome are well maintained. Maintenance action shall includes: cleaning, replacing, or repairing any faded, missing, or nonfunctional item of marking or lighting; keeping each item clearly visible; and ensuring that each item provides an accurate reference (this includes alignment of fixtures) to the user. If the aerodrome operator owns a standby generator for movement area lighting, inquire about testing procedures. The AI should consider a test operation of the generator if periodic testing procedures do not appear to be adequate.
- 6) There are adequate spares for replacement of any electrical fixture that may become defective.

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CHAPTER - 6 Aerodrome safety review

6.1. General

In this Handbook, an aerodrome safety review refers to actions undertaken by an [DASS] Aerodrome Inspector regarding an evaluation of the impacts of specified changes at an airport on the continuing safety of existing operations.

An aerodrome safety review may be undertaken by an individual, team or group depending on the scope of impact and the specialist aviation knowledge required for an evaluation. The Chief of [DASS] will specify formal working and leadership arrangements for team or group activities.

6.2. Safety Review requirement

When a proposal is made which will involve a significant change to aerodrome physical characteristics, facilities or equipment, CAA shall initiate an aerodrome safety review.

The scope of an aerodrome safety review will generally be restricted to events associated with planned changes. Events associated with unplanned changes or emergency situations will be dealt with by use of appropriate alternative procedures to ensure safety is properly considered and to determine if continuing operations may be permitted.

6.3. References

The [CAA ACT] refers to matters that need to be considered in regard to aerodrome safety reviews. These references include but are not limited to:

- a) Matters to be notified regarding certified and registered aerodromes:
 - x.x.xxx Notice of changes in physical condition of aerodrome
 - x.x.xxx Notice of changes in information published in AIP
 - x.x.xxx Physical characteristics of movement area
 - x.x.xxx Notice of changes in physical condition of aerodrome (Registered)
 - x.x.xxx Notice of changes in information published in AIP
- b) CAA empowered to issue direction to aerodrome operator:
 - x.x.xxx Amendments of Aerodrome Manual
 - x.x.xxx Aerodrome Manual procedures
- c) Aerodrome operator to notify CAA:
 - x.x.xxx Notice of changes in physical condition of aerodrome
- d) Aerodrome operator to comply with standards:
 - x.x.xxx Physical characteristics of movement area
 - x.x.xxx Applicable standards for registered aerodromes

6.4. Safety review action plan

- 6.4.1. Aerodrome safety reviews may only be conducted, or supervised, by certified CAA personnel. Such CAA personnel shall be deemed to be certified if they have successfully completed an ICAO safety management system course, or a CAA equivalent training course.
- 6.4.2. Other CAA aviation specialist staff or external experts may be consulted for comment and advice during an aerodrome safety review to any extent necessary in the opinion of the Chief, [DASS].
- 6.4.3. Aerodrome safety reviews shall be conducted in accordance with the methodology for an aeronautical study as provided for in the CAA Manual of Regulatory Procedures, Chapter 9.
- 6.4.4. The Division Chief, [DASS] is responsible for scheduling aerodrome safety reviews, and for the nomination of an appropriate Aerodrome Inspector and/or review group. When a group activity is considered necessary, the Chief, [DASS], will nominate the group leader.
- 6.4.5. The nominated Aerodrome Inspector or Group Leader of the Review Team is responsible for conducting the review and providing a report that includes all appropriate recommendations to ensure satisfactory on-going operational safety.
- 6.4.6. The conduct of an aerodrome safety review should be timed so that outputs can be communicated effectively to all stakeholders prior to any changes coming into effect.
- 6.4.7. The outputs of an aerodrome safety review should include, but not limited to:
 - a) A statement summarizing the proposal under consideration;
 - b) The changes that will be generated as a result of the proposal;
 - c) Alternatives to the proposal that were considered, and reasons for selection of the proposal over the alternatives;
 - d) Whether or not a site visit was made;
 - e) Any non-conformity with mandatory standards;
 - f) Listing of hazards identified;
 - g) Listing of risks associated with non-compliances or hazards;
 - h) Safety analysis of each risk together with its ranking in priority order from highest to lowest;
 - i) Summary analysis of the proposal; and
 - j) Recommendations on the proposal.
- 6.4.8. The Aerodrome Inspector or Team Leader responsibilities include:
 - a) Record activities undertaken during the review;
 - b) Formulate conclusions;
 - c) Recommend resulting action requirements; and
 - d) Draft reports on safety review conducted.
- 6.4.9. The Chief, ARCID responsibilities include:

- a) Review the draft safety review report;
- b) Make recommendations to Chief, [DASS]; and
- c) Direct the Aerodrome Inspector/Team Leader if additional activity is required.

6.4.10. The Chief, [DASS], is responsible to:

- a) If in agreement with the recommendations, refer them to the Director General for formal approval before initiating action as necessary; and
- b) If not in agreement, refer the issues back to the Aerodrome Inspector/Team Leader with instruction for additional activity.

6.5. Aerodrome Safety Review work flow process

6.5.1. The process of work undertaken in an aerodrome safety review will broadly follow that which is used in an aeronautical study, and is described in Fig 6-1 below.

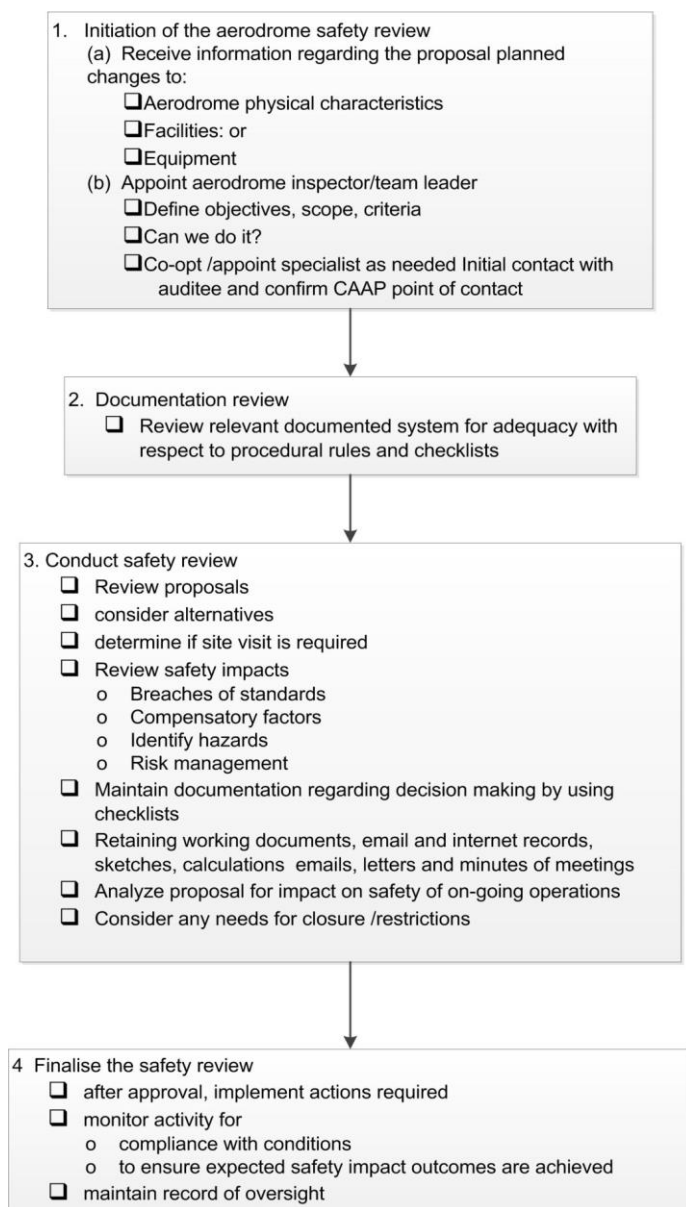


Fig 6-1 Aerodrome Safety Review

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CHAPTER - 7 Regulatory enforcement

[Please refer to Aerodrome Certification Procedure Manual]

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CHAPTER - 8 COMPETENCE OF PERSONNEL AT CERTIFIED AERODROMES

8.1. General

- 8.1.1. This chapter is details on the existing regulatory requirements regarding the appointment of specific aerodrome safety, maintenance, operational and management personnel. It also establishes a framework to obtain formal CAA acceptance of the person prior to the individual taking up responsibilities and accountabilities of the position.
- 8.1.2. Pursuant to [CAA ACT] x.x.xxx, an operator shall ensure that there are an adequate number of qualified and skilled personnel to perform activities for aerodrome operation and maintenance.
- 8.1.3. It is emphasized that such qualifications and number of personnel are established: firstly, prior to certification of an aerodrome; and secondly, during any change to Aerodrome Post Holders at an aerodrome which is already certified.

8.2. KEY POST HOLDERS AT A CERTIFIED AERODROME

8.2.1. General

- 8.2.2. An aerodrome will have a number of key management personnel. The following are positions which shall be referred to as Aerodrome Post Holders in relation to Aerodrome Certification are as follows:
- Accountable Manager (or Airport Director)
 - Head of Aerodrome Safety and Compliance (responsible for safety management and compliance with the regulatory requirements);
 - Head of Aerodrome Operations;
 - Head of Aerodrome Maintenance;
 - Head of Aerodrome Emergency Services (Chief Fire Officer)

8.3. PERSONNEL REQUIREMENTS AT A CERTIFIED AERODROME

- 8.3.1. An Aerodrome Operator under the certification process and prior to the grant of an Aerodrome Certificate and on an on-going basis shall engage, employ or contract: Aerodrome Post Holders to include the following:
- Airport Manager/ General Manager** - a senior person who has the authority within the Aerodrome Operator's organization to ensure that all activities undertaken by the organization can be financed and carried out in accordance with the requirements prescribed by the Regulations;
 - Head of Aerodrome Safety and Compliance** - a person who shall be the responsible individual and focal point person for the development and maintenance of an effective safety management system and compliance with the regulations;
 - Head of Aerodrome Operations** – a senior person who is responsible for ensuring that the aerodrome and its operation comply with the requirements of these

Regulations. Such nominated person or persons shall be ultimately responsible to the Accountable Manager;

- d) **Head of Aerodrome Maintenance** – a senior person who is responsible for ensuring that the aerodrome's maintenance programmes for safety critical infrastructure comply with the requirements of these Regulations. Among the maintenance responsibilities include the pavements, visual aids and electrical systems;
- e) **Head of Aerodrome Emergency Services (CFO)** – a senior person who is responsible for ensuring that the aerodrome's emergency services comply with the requirements of the Regulations. Such nominated person or persons shall be ultimately responsible to the Accountable Manager; and sufficient and appropriately qualified personnel to manage, operate and maintain the aerodrome and its services and facilities, taking into account the structure of the organization and the number of personnel employed, in accordance with the requirements of these Regulations.

8.3.2. The Aerodrome Operator should inform the Authority prior to any changes of Aerodrome Post Holders.

8.3.3. The Aerodrome Operator shall update its Aerodrome Manual including the organizational structure with respect to the accepted Aerodrome Post Holders.

8.3.4. Where the Authority has prescribed a competency certification requirement or medical standards for operations or maintenance personnel, the Aerodrome Operator shall employ only those persons possessing such certificates or meeting such medical and fitness requirements.

8.3.5. 4.5 The Aerodrome Operator shall implement a programme to maintain the competency of the safety critical personnel including training.

8.4. CRITERIA FOR ASSESSMENT OF AERODROME OPERATION POST HOLDERS

8.4.1. During the assessment process which under normal circumstances will be conducted during an on-site verification of aerodrome manual. CAA will inquire the post holders capabilities in areas that includes:

- a) understanding and knowledge the roles and responsibilities of the operator and regulatory authority, the regulatory framework and specifically Safety Management System requirements;
- b) information from the nominated person concerning his knowledge on work area;
- c) enforcement methodology of the CAA;
- d) the roles and responsibilities of the Aerodrome Post Holder;
- e) competence requirement of the nominated person in relation to present personal status and experience presented in their curriculum vitae or equivalent documentation;
- f) discussion concerning depth of knowledge and understanding of the applicable legislation and regulations;
- g) understanding of aviation in general and for the specific nominated post, how operators/activities at the aerodrome;

8.4.2. Details of criteria for assessment of aerodrome operation post holders at a certified aerodrome are provided as Appendix 7D.

8.5. OBLIGATIONS OF AERODROME OPERATOR ON COMPETENCE OF OPERATIONAL PERSONNEL

8.5.1. An aerodrome operator is required to ensure that all technical and operational personnel are competent and skilled in their areas of jurisdiction.

8.5.2. It is also imperative that the aerodrome operator provides continuous and relevant training to acquaint all personnel with the current operational practices and remain competent on their responsibilities in line with the regulatory requirements

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APPENDICES

APPENDIX - 1: Definitions

For the purposes of this Handbook, the following terms and words have the following meanings;

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

Aerodrome Beacon. Aeronautical beacon used to indicate the location of an aerodrome from the air.

Aerodrome Certificate. The certificate to operate an aerodrome issued by the CAA under the provisions of [CAA ACT] for the operation of an aerodrome.

Aerodrome Elevation. The elevation of the highest point of the landing area.

Aerodrome Facilities and Equipment. Facilities and equipment, inside or around the boundaries of an aerodrome, that are constructed or installed and maintained for the arrival, departure, and surface movement of aircraft.

Aerodrome Manual. The manual that forms part of the application for an aerodrome certificate pursuant to [CAA ACT], as amended from time to time.

Aerodrome Operator. The holder of an aerodrome certificate issued under the Civil Aviation Regulations governing Aerodromes.

Aerodrome or Airport Tenant. Any enterprise that is resident at an aerodrome and offers services and products at that aerodrome.

Aerodrome Reference Point. The designated geographical location of an aerodrome.

Aeronautical Study. A study of an aeronautical problem to identify possible solutions and select a solution that is acceptable without degrading safety.

Apron. A defined area on an aerodrome intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fueling, parking or maintenance.

Apron Management Service. A service provided to regulate the activities and the movement of aircraft and vehicles on an apron.

Aircraft. Any machine that can derive support in the air at [MAS] sphere from the reactions of the air other than the reactions of the air against the earth's surface.

Aircraft Operator. A national or foreign aircraft operator.

Aircraft stand. A designated area on an apron intended to be used for parking an aircraft.

Airside. The movement area of an airport, adjacent terrain and buildings or portions thereof, access to which is controlled.

Apron passenger vehicle. Any vehicle used to convey passengers between aircraft and terminal buildings.

Audit. A systematic, independent and documented process for obtaining compliance status of the facility with mandatory regulatory requirements including aerodrome standards.

Auditor. A person with competence to conduct audits at national level.

Audit criteria. Legislation and CAA approved standards, policies, procedures or requirements.

Audit evidence. Records, statements of fact or other information, which are relevant to the audit criteria and are verifiable.

Audit Finding. Results of the collected audit evidence as compared against audit criteria.

Audit Programme. A set of one or more audits planned for a specific time frame and directed towards a specific purpose

Note: An audit programme includes all activities necessary for planning, organizing and conducting audits).

Audit Plan. A description of the activities and arrangements for an audit.

Certified Aerodrome. An aerodrome whose operator has been granted an aerodrome certificate by the Authority.

Director General means the Director General of the Civil Aviation Authority of the [STATE] (CAA).

Deficiency. A failure to comply with mandatory requirements.

Frangible Object. An object of low mass designed to break, distort or yield on impact so as to present the minimum hazard to aircraft.

General Aviation. An aircraft operation other than a commercial air transport operation.

Human Factors Principles. Principles which apply to design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.

Human performance means human capabilities and limitations which have an impact on the safety, security and efficiency of aeronautical operations.

Heliport. An aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure, and surface movement of helicopters.

International Airport. An airport designated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out.

Lighting System Reliability. The probability that the complete lighting installation operates within the specified tolerances and that the system is operationally usable.

Movement Area. That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft consisting of the maneuvering area and the apron(s).

Maneuvering Area. That part of an aerodrome to be used for the take-off, landing, and taxiing of aircraft, excluding aprons.

Marker. An object displayed above ground level in order to indicate an obstacle or delineate a boundary.

Marking. A symbol or group of symbols displayed on the surface of the movement area in order to convey aeronautical information.

Obstacle. All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for the surface movement of aircraft or that extended above a defined surface intended to protect aircraft in flight.

Obstacle Free Zone (OFZ). The airspace above the inner approach surface, inner transitional surfaces and balked landing surface and that portion of the strip bounded by these surfaces, which is not penetrated by any fixed obstacle other than a low-mass and frangibly mounted one required for air navigation purposes.

Obstacle Limitation Surfaces (OLS). A series of surfaces that define the volume of airspace at and around an aerodrome to be kept free of obstacle in order to permit the intended aircraft operations to be conducted safely and to prevent the aerodrome from becoming unusable by the growth of obstacles around the aerodrome.

Record. Any writing, drawing, map, tape, film, photograph or other means by which information is preserved.

Runway. A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

Runway Strip. A defined area including the runway and stopway intended:

- a) to reduce the risk of damage to aircraft running off a runway. and
- b) to protect aircraft flying over it during take-off or landing operations.

Runway Visual Range (RVR). The range over which the pilot of an aircraft on the center line of a runway can see the runway surface markings or the lights delineating the runway or identifying its center line.

Shoulder. An area adjacent to the edge of a pavement so prepared as to provide a transition between the pavement and the adjacent surface.

Safety Management System (SMS). A system for the management of safety at aerodromes including the organization structure, responsibilities, procedures, processes and provisions for the implementation of aerodrome safety policies by an aerodrome operator, which provides for the control of safety at, and the safe use of the aerodrome. SMS is a systematic, explicit and comprehensive process for managing safety risks.

Runway End Safety Area (RESA). An area symmetrical about the extended centerline and adjacent to the end of the strip primarily intended to reduce the risk of damage to an aeroplane undershooting or overrunning a runway.

Taxiway strip. An area including a taxiway intended to protect an aircraft operating on a taxiway and to reduce the risk of damage to an aircraft accidentally running off the taxiway.

Unserviceable Area. A part of the movement area that is unfit and unavailable for use by aircraft.

Work Area. A part of an aerodrome in which maintenance or construction works are in progress.

Wildlife hazard. A potential for a damaging aircraft collision with birds or animals on or near an aerodrome.

APPENDIX - 2: Amendment of this Manual

1. This manual is issued as a controlled document. Each page is uniquely identifiable and amendments will be made from time to time to reflect necessary changes. All copies of the handbook are numbered and issued in accordance with the distribution list. All copy holders are responsible for the safe custody and maintenance of their numbered copy of the handbook.
2. The Chief, [DASS] (See Organizational structure diagram in Chapter 2.1.1) is responsible for the development, issue and control of amendments to this handbook. Individual handbook copy holders indicated on the distribution list are responsible for insertion of all amendments.
3. Within thirty days of the issue of an amendment, confirmation will be provided to the Chief, [DASS] that the required amendment action has been accomplished by the return of the amendment control page, signed and dated by the individual amending an issued Inspector Handbook.
 - a) Each handbook issued must show the amendment number and the date, as described in the list of effective pages.
 - b) All amendments will be shown in the Record of Amendment.
4. Minor changes (e.g. telephone number, typographical errors) can be accommodated by 'pen and ink' if so indicated in any amendment documentation issued by Chief, [DASS] prior approval. All such changes will be incorporated accordingly. Distribution of the changes will be the same as described above and a record of these changes will be shown in the Record of Amendments. However, minor changes will generally be collated over a period of three to six months and actioned by a formal amendment.

APPENDIX - 3: Auditor Feedback Form**1. General Conduct of the Audit**

Audit Component	Answers and Comment (If "Yes", provide explanation)	
1. Did the team experience difficulties working together? If so what aspects could be improved? Were there any individual auditors who did not function as part of the team? If so, who were they?	☐ Yes ☐ No	
2. Did the audit team leader function effectively as a team leader? Were the functions of the team adequately and fairly distributed?	☐ Yes ☐ No	
3. Was all the documentation used by the team the current version? Were there adequate copies of all documents, manuals and guidance material made	☐ Yes ☐ No	
4. Were there any major impediments to the successful conclusion of the audit? If 'yes', were they resolved or not? If answer to Q4 is yes, describe how impediments were resolved.	☐ Yes ☐ No	

2. Preparation for the Audit

Audit Component	Answers and Comment (If "Yes", provide explanation)	
1. Did you experience any difficulties with travel arrangements, such as air tickets, hotels, allowances etc.?	☐ Yes ☐ No	
2. Were all the documents required from the audited organization supplied on time prior to the audit? If no, was there a reason for this?	☐ Yes ☐ No	
3. Were the pre-audit questionnaire fully completed and submitted in sufficient time before the audit? Did the answers help, or were they of limited use? How best can this be improved?	☐ Yes ☐ No	
4. Were there any scheduling problems with the audited organization, or failures in communication with the audited organization?	☐ Yes ☐ No	
5. Did you have sufficient time to review all the documentation prior to the actual audit?	☐ Yes ☐ No	
6. Was the audit timetable realistic and achievable?	☐ Yes ☐ No	

3. Conduct of the Audit

Audit Component	Answers and Comment (If "Yes", provide explanation)	
1. Was the entry briefing of value? Did it sufficiently deliver the scope and objectives of the audit to the audited organization? If not, why?	☐ Yes ☐ No	
2. Did you experience any difficulties in communicating with representatives of the audited organization, and if so, why?	☐ Yes ☐ No	
3. Did you experience any lack of cooperation or reluctance on the part of the audited organization during the audit?	☐ Yes ☐ No	
4. Were there any incidents during the audit that require management attention? If so please describe.	☐ Yes ☐ No	
5. Was the guidance material provided current and adequate?	☐ Yes ☐ No	
6. Were the checklists current and adequate?	☐ Yes ☐ No	
7. Did the exit briefing cover all the findings of the team?	☐ Yes ☐ No	
8. Did the audited organization respond positively or negatively to the findings in the briefing?	☐ Yes ☐ No	

4. Reporting and Other Issues

Audit Component	Answers and Comment (If "Yes", provide explanation)	
9. Did you experience any difficulties with the preparation of the audit report? If so, what aspects need improving?	☐ Yes ☐ No	
10. Were there any other issues that need to be brought to the attention of senior Management? Describe them.	☐ Yes ☐ No	
11. Are there any areas of the audit process that require revision or could be done better? If so, please describe.	☐ Yes ☐ No	
12. Are there any areas in the Civil Aviation Regulations Part 12 (aerodromes) or any other supplied guidance material that warrants revision or amendment?	☐ Yes ☐ No	

APPENDIX - 4: Audit Notification Letter to Aerodrome Operator

Address information

Dear Sir,

Civil Aviation Authority of the [STATE] (CAA) Aerodrome
Audit

As part of the CAA safety oversight of aerodrome safety, an audit of your organization is required and has been scheduled during the week commencing mm/dd/yyyy.

The demonstrated performance of organizations (personnel, equipment, information, facilities, etc) as observed during these audits is the prime means used by the CAA when establishing the approval of, and continuing compliance for, certificated and registered aerodromes, as well as providing an indicator for the frequency and scope of future surveillance programmes.

Audit Reference Number

All enquiries relating to this audit should refer to Aerodrome Audit Reference Number nnn.

Objective

The objective of the audit is to assess your organization's aerodrome safety compliance in respect to aviation legislation and safety standards specified by the CAA.

Documents, records, equipment and facilities

Documents and records will be sampled, and a physical inspection of the relevant procedures, equipment or facilities is likely to be carried out. To facilitate this process would you please have available any of the following that may be relevant to the audit:

- ☐ Local training records;
- ☐ Personnel competency records for individual aerodrome Officers;
- ☐ Recurrent testing procedures and records;
- ☐ Operations Manuals and/or Standard Operating Procedures (SOPs);
- ☐ Records of meetings and decisions taken regarding safety matters; and
- ☐ Management must be available for interview.

Access to key staff associated with aerodrome operations and management will also be required.

Personnel

At the commencement of the audit the Senior Executive of the aerodrome should be present and available. The person responsible within your organization for quality assurance is welcome to attend.

The requirements for their ongoing presence throughout the audit will be discussed at that time. If for any reason a senior person is unavailable to attend this audit then please contact the Audit Leader.

Confirmation of date and time

The audit leader for this audit will be Mr Nnn NNnnnn and he will contact you directly to confirm the audit dates. Any audit enquiries should be addressed directly to him.

Yours faithfully

Name
Chief, _____,
[DASS]
Date: _____

APPENDIX - 5: Aerodrome Pre-Audit Questionnaire**AERODROME PRE-AUDIT QUESTIONNAIRE AIRPORT OPERATOR:**

Name of Airport: _____

Name of Airport Manager _____ Contact # _____

Name of Head of Operations _____ Contact # _____

Part 1 - Airport

S/N	QUESTION	ANSWERS BY AIRPORT OPERATOR
1.1	Does the airport have an approved aerodrome manual?	
1.2	Who is responsible within the airport management for the maintenance of this manual?	
1.3	Who is responsible for coordinating the implementation of the contents of the manual at the airport?	
1.4	Has the airport established procedures for the amendment of this manual, and if so, where are these measures described.	
1.5	When was the manual last amended?	
1.6	List ground handling agencies, and their functions, at the airport. e.g. airlines, ground service providers and fuel organizations	
1.7	Is there any document on Airport Emergency Procedures?	
1.8	Who are the officers responsible for its implementation?	
1.9	Is there any Aerodrome plan?	
2.0	Is there any Aerodrome development programme in place?	
2.1	Any Safety Management Systems in place?	
2.2	Who monitors implementation?	
2.3	Any Quality Management System in place?	
2.4	How effective is the system?	
2.5	Does the airport have a copy of the	

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S/N	QUESTION	ANSWERS BY AIRPORT OPERATOR
	Manual of Standards for Aerodromes?	
2.6	Is it being implemented?	
2.7	Have you received the Audit checklist and other relevant documentation manual?	

APPENDIX - 6: Suggested agenda items for an Opening Meeting

- a) Welcome
- b) Introduction of the auditors and interviewees from the audited sectors
- c) Presentation of the audit team members (if not already done)
- d) Presentation of the audit approach
- e) Presentation of the audit context
- f) If appropriate, mention the previous audit
- g) Review of objectives and the field of application of the audit
- h) Brief presentation of the audit methodology while insisting on its standardized nature
- i) Presentation of the audit sequence: discussions, visits (ask if it is possible to take photos), consulting of documents
- j) Auditor's code of ethics: non-argumentative, non-intrusive, non-accusatory, confidentiality assured
- k) Presentation of the advantages of the audit (progress and improvements in the aerodrome programme)
- l) Presentation of the audit plan with possible last-minute changes
- m) Confirmation of the date and time of all discussions and of the final meeting
- n) Clarification of any unclear aspects of the audit plan
- o) Resolution of material aspects: Confirmation of the availability of the necessary equipment and installations
- p) Clarification of any unclear aspect of the aerodrome certificate holders aerodrome programmes or pre-audit questionnaire
- q) Answer the questions of the representatives from the different services responsible for aerodrome operations.
- r) Record of attendees
- s) Audit termination
- t) Conclusion

APPENDIX - 7: Aerodrome Audit Checklists

A system safety audit is the usual means for a regulatory organization to assess initial and on-going compliance of a service provider with the minimum mandatory obligations that are associated with activity in the aviation industry. These checklists pertain to aerodrome operations, and encompass the full gamut of activity required by CAA for initial audit of a complex airport to determine if a certificate can be issued. The checklists may need to be reviewed at subsequent surveillance audits or inspections depending on the scope and depth of regulatory oversight activity that is planned to occur.

It is important to consider [at least] the following when verifying a process:

- a) The adequacy of the available Infrastructure and how it supports the process.
- b) How does the auditee monitor the performance of the process and determine the need for, and implement, any improvements?
- c) Has the organization assigned a responsible and competent person to ensure the process remains adequate and the documentation is current?
- d) Is there a competent person who has the appropriate authority to change the process?
- e) Are the people involved adequately trained?

When identifying a non-compliance with the regulations standards and mandatory obligations, look beyond the immediate occurrence and ask:

- a) Why?
- b) Who?
- c) When?
- d) What led to this? What's the history?
- e) What are the broader factors involved, and how do they inter-relate in the chain of events leading to the conditions that allowed the non-compliance to exist?

For a certification audit the required elements are to be tested for conformity with mandatory obligation imposed by [CAA ACT] and the safety specifications of the [ANNEX 14] (and ICAO Annex 14 Volume 1, if appropriate).

Within the checklists, status of individual items may be 'Yes', 'No', 'Not Applicable', (NA), for remarks: the entry may be 'Satisfactory' (S), 'Not Satisfactory' (NS), and/or description of observation/s.

Appendix 7A: Aerodrome Manual Checklist

This checklist is a tool for inspectors in evaluating the initial submission of an aerodrome manual by the aerodrome operators. This checklist is in accordance with the ICAO format for aerodrome manual detailed in ICAO Document 9774-Manual on Aerodrome Certification as referenced in the [ANNEX 14]([MAS]) and ICAO Doc. 9981 (PANS-Aerodromes).

The checklist is organized as follows:

PART 1	GENERAL INFORMATION
PART 2	AERODROME SITE INFORMATION
PART 3	AIS INFORMATION
PART 4	AERODROME OPERATING PROCEDURES
PART 5	AERODROME ADMINISTRATION

PARTICULARS	NO.	DETAILS	STATUS	REMARKS
FIRST PAGE:				
Signature	1.	The aerodrome manual must be signed by the [MAS]t senior officer who is responsible and directly accountable for general management of the aerodrome.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Foreword	2.	A general statement indicating the importance of the manual and that the contents are binding on staff.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3.	The foreword also provides a convenient mechanism for the manual to be signed by the [MAS]t senior officer responsible for the general management of the aerodrome.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
PART 1: GENERAL INFORMATION				
Conditions of use	4.	Airport operates 24 hours per day for take-off and landing of aircraft and when it is so available it shall be so under equal terms and conditions to all persons and operators.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Aeronautical Information	5.	All data relating to the aeronautical aspect of this aerodrome are published in the Republic of the [STATE] Aeronautical Information Publication.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
	6.	The Airside Safety Manager is responsible for complete and correct promulgation of data to AIS section of the CAA in accordance with procedures described in [MAS].	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Recording Aircraft Movements	7.	All data relating to the recording of aircraft movements is collected and recorded by Air Traffic Control.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8.	The Tower Team Leader is responsible for complete and correct collection recording and reporting to the Airport General Manager in accordance with procedures described in [MAS].	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Obligation of the Aerodrome Operator	9.	[MAS] Appendix 1- Part 1.4 a) Comply with mandatory standards and practices;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10.	b) Employ an adequate number of qualified and skilled staff;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11.	c) Operate the aerodrome in accordance with the procedures set out in the Aerodrome Manual;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	12.	d) Have an acceptable aerodrome safety management system;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	13.	e) Arrange for audit of the safety management system and the management of airport organizations;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	14.	f) Permit access to authorized ATO officers for inspection and testing purposes related to ensuring safety at the aerodrome;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	15.	g) Make required notifications to the CAA, ATC or pilots;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
	16.	h) Conduct special inspections as necessary;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	17.	i) Remove obstructions on the aerodrome that are likely to be a hazard; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	18.	j) Erect warning signs if low flying or taxiing aircraft are likely to be hazardous to people or vehicles.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
PART 2: AERODROME SITE INFORMATION				
Aerodrome Plan	19.	DOC 9774 Appendix 1 - Part 2 a) A plan of the aerodrome showing the main aerodrome facilities for the operation of the aerodrome including, particularly, the location of each wind direction indicator;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	20.	b) A plan of the aerodrome showing the aerodrome boundaries;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	21.	c) A plan showing the distance of the aerodrome from the nearest city, town or other populous area, and the location of any aerodrome facilities and equipment outside the boundaries of the aerodrome; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	22.	d) Particulars of the title of the aerodrome site. If the boundaries of the aerodrome are not defined in the title documents particulars of the title to, or interest in, the property on which the aerodrome is located and a plan showing the boundaries and position of the aerodrome.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
Aerodrome Land Titles	23.	Parcellary Plan/s	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
PART 3: AIS INFORMATION				
Aerodrome Dimensions	24.	Doc 9774 Appendix 1 - Part 3.2 True bearing, designation number, length, width, displaced threshold location, slope, surface type, type of runway and, for a precision approach runway, the existence of an obstacle free zone	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Runway				
- Strip	25.	length, width and surface type of strip, runway end safety areas, stop ways.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Taxiway	26.	length, width and surface type of taxiways	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Apron	27.	apron surface type and aircraft stands	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Clearway	28.	clearway length and ground profile	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- visual aids for approach procedures	29.	approach lighting type and visual approach slope indicator system (PAPI/APAPI and T-VASIS/AT-VASIS); marking and lighting of runways, taxiways, and aprons; other visual guidance and control aids on taxiways (including runway holding positions, intermediate holding positions and stop bars) and aprons, location and type of visual docking guidance system; availability of standby power for lighting.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Radio frequency of VOR	30.	the location and radio frequency of VOR aerodrome checkpoints	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- standard taxi routes	31.	the location and designation of standard taxi routes	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
- geographical coordinates	32.	the geographical coordinates of each threshold	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	33.	the geographical coordinates of appropriate taxiway center line points	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	34.	the geographical coordinates of each aircraft stand	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	35.	the geographical coordinates and the top elevation of significant obstacles in the approach and take-off areas, in the circling area and in the vicinity of the Aerodrome.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- pavement surface type and bearing strength	36.	pavement surface type and bearing strength using the Aircraft Classification Number — Pavement Classification Number (ACN-PCN) method.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- pre-flight altimeter check locations	37.	one or more pre-flight altimeter check locations established on an apron and their elevation	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- declared distances	38.	take-off run available (TORA), take-off distance available (TODA), accelerate-stop distance available (ASDA), landing distance available (LDA)	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- disabled aircraft removal plan	39.	the telephone/telex/facsimile numbers and e-mail address of the aerodrome coordinator for the removal of a disabled aircraft on or adjacent to the movement area, information on the capability to remove a disabled aircraft, expressed in terms of the largest type of aircraft which the aerodrome is equipped to remove.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- rescue and fire-fighting	40.	the level of protection provided, expressed in terms of the category of the rescue and fire-fighting services,	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		which should be in accordance with the longest aeroplane normally using the aerodrome and the type and amounts of extinguishing agents normally available at the Aerodrome.		
AIP Data - Aerodrome diagram	41.	[MAS] Chapter x.x.x.x a) layout of runways, taxiways and apron(s);	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	42.	b) nature of the runway surfaces;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	43.	c) designations and length of runways;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	44.	d) designations of the taxiways, where applicable;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	45.	e) location of illuminated and non-illuminated wind direction indicators;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	46.	f) location of the aerodrome reference point;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	47.	g) the direction and distance to the nearest town;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	48.	h) location of terminal buildings; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	49.	i) location of helipads	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Aerodrome operation	50.	a) name, address, telephone and facsimile numbers of the aerodrome operator; including after-hours contacts;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	51.	b) aerodrome usage, public or private;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	52.	c) aerodrome charges, where notification is desired	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Aerodrome location	53.	a) name of aerodrome;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	54.	b) World Aeronautical Chart number, if known;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	55.	c) latitude and longitude, based on the aerodrome reference point;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	56.	d) magnetic variation;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	57.	e) time conversion-universal time coordinated (UTC) plus local time difference;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	58.	f) aeronautical location code indicator, if known;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	59.	g) aerodrome elevation;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	60.	h) currency of Type A charts, if provided	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Movement area	61.	a) aerodrome reference code number;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	62.	b) runway bearings - in degrees magnetic;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	63.	c) runway length and surface type;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	64.	d) runway pavement strength rating;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	65.	e) runway and runway strip width;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	66.	f) runway slope;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	67.	g) runway declared distances, and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	68.	h) elevation of the midpoint of runway threshold, for instrument runways	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Lighting systems	69.	a) lighting systems for runways;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	70.	b) approach lighting system;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	71.	c) visual approach slope indicator system;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	72.	d) lighting systems for taxiways; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	73.	e) any other lighting systems	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Navigation aids	74.	Details of any navigation aid provided by the aerodrome Operator	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Rescue and fire-fighting services	75.	The category of aerodrome-based rescue and fire-fighting services provided by CAA or the aerodrome operator	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Ground services	76.	a) fuel suppliers and their contact details, including after hours;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	77.	b) automatic weather information broadcast if provided by aerodrome operator; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	78.	c) any other services available to pilots	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Special procedures	79.	Include any special procedures unique to the aerodrome, which pilots need to be advised.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
- Notices	80.	Include important cautionary or administrative information relating to the use of the aerodrome.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
PART 4: AERODROME OPERATING PROCEDURES				
Sec 1: Aerodrome Reporting	81.	Doc 9774 Appendix 1 - Part 4.1 a) arrangements for reporting any changes to the CAA and recording the reporting of changes during and outside the normal hours of aerodrome operations;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
	82.	b) the names and roles of persons responsible for notifying the changes, and their telephone numbers during and outside the normal hours of aerodrome operations; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	83.	c) The address and telephone numbers, as provided by the CAA, of the place where changes are to be reported to the CAA.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 2: Access to Aerodrome Movement Area	84.	Doc 9774 Appendix 1 - Part 4.2 a) The role of the aerodrome operator, the aircraft operator, aerodrome fixed-base operators, the aerodrome security entity, the CAA and other government departments, as applicable; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	85.	b) The names and roles of the personnel responsible for controlling access to the aerodrome, and the telephone numbers for contacting them during and after working hours.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 3: Aerodrome Emergency Plan	86.	Doc 9774 Appendix 1 - Part 4.3 a) plans for dealing with emergencies occurring at the aerodrome or in its vicinity, including the malfunction of aircraft in flight; structural fires; sabotage, including bomb threats (aircraft or structure); unlawful seizure of aircraft; and incidents on the airport covering "during the emergency" and "after the emergency" considerations;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
	87.	b) details of tests for aerodrome facilities and equipment to be used in emergencies, including the frequency of those tests;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	88.	c) details of exercises to test emergency plans, including the frequency of those exercises;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	89.	d) a list of organizations, agencies and persons of authority, both on- and off-airport, for site roles; their telephone and facsimile numbers, e-mail and SITA addresses and the radio frequencies of their offices;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	90.	e) the establishment of an aerodrome emergency committee to organize training and other preparations for dealing with emergencies; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	91.	f) The appointment of an on-scene commander for the overall emergency operation.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 4: RFFS	92.	Doc 9774 Appendix 1 - Part 4.4 Particulars of the facilities, equipment, personnel and procedures for meeting the rescue and fire-fighting requirements, including the names and roles of the persons responsible for dealing with the rescue and fire-fighting services at the aerodrome.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 5: Inspection of the Aerodrome Movement Area and Obstacle Limitation Surface by the Aerodrome Operator	93.	Doc 9774 Appendix 1 - Part 4.5 a) arrangements for carrying out inspections, including runway friction and water-depth measurements on runways and taxiways, during and outside the normal hours of aerodrome operations;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
	94.	b) arrangements and means of communicating with air traffic control during an inspection;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	95.	c) arrangements for keeping an inspection logbook, and the location of the logbook;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	96.	d) details of inspection intervals and times;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	97.	e) inspection checklist;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	98.	f) arrangements for reporting the results of inspections and for taking prompt follow-up actions to ensure correction of unsafe conditions; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	99.	g) The names and roles of persons responsible for carrying out inspections, and their telephone numbers during and after working hours.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 6: Visual Aids, Electrical Systems and Lighting	100.	Doc 9774 Appendix 1 - Part 4.6 a) Arrangements for carrying out inspections during and outside the normal hours of aerodrome operation, and the checklist for such inspections;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	101.	b) Arrangements for recording the result of inspections and for taking follow-up action to correct deficiencies;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	102.	c) Arrangements for carrying out routine maintenance and emergency maintenance;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
	103.	d) Arrangements for secondary power supplies, if any, and, if applicable, the particulars of any other method of dealing with partial or total system failure; and [] Yes [] No [] N/A		☐ S ☐ NS
	104.	e) The names and roles of the persons responsible for the inspection and maintenance of the lighting, and the telephone numbers for contacting those persons during and after working hours. [] Yes [] No [] N/A		☐ S ☐ NS
Sec 7: Maintenance of The Movement Area	105.	Doc 9774 Appendix 1 - Part 4.7 a) Arrangements for maintaining the paved areas; [] Yes [] No [] N/A		☐ S ☐ NS
	106.	b) Arrangements for maintaining the unpaved runways and taxiways; [] Yes [] No [] N/A		☐ S ☐ NS
	107.	c) Arrangements for maintaining the runway and taxiway strips; and [] Yes [] No [] N/A		☐ S ☐ NS
	108.	d) Arrangements for the maintenance of aerodrome drainage. [] Yes [] No [] N/A		☐ S ☐ NS
Sec 8: Aerodrome Works Safety	109.	Doc 9774 Appendix 1 - Part 4.8 a) Arrangements for communicating with air traffic control during the progress of such work; [] Yes [] No [] N/A		☐ S ☐ NS
	110.	b) The names, telephone numbers and roles of the persons and organizations responsible for planning and carrying out the work, and arrangements for contacting those persons and organizations at all times; [] Yes [] No [] N/A		☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
	111.	c) The names and telephone numbers, during and after working hours, of the aerodrome fixed-base operators, ground handling agents and aircraft operators who are to be notified of the work;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	112.	d) A distribution list for work plans, if required.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 9: Aircraft Parking Control	113.	Doc 9774 Appendix 1 - Part 4.9 a) Arrangements between air traffic control and the apron management unit;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	114.	b) Arrangements for allocating aircraft parking positions;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	115.	c) Arrangements for initiating engine start and ensuring clearance of aircraft push-back;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	116.	d) Marshaling service; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	117.	e) Leader (van) service.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	118.	Doc 9774 Appendix 1 - Part 4.10 a) Protection from jet blasts;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 10: Apron Safety Management	119.	b) Enforcement of safety precautions during aircraft refueling operations;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	120.	c) Apron sweeping;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	121.	d) Apron cleaning;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	122.	e) Arrangements for reporting incidents and accidents on an apron; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	123.	f) Arrangements for auditing the safety compliance of all personnel working on the apron.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
Sec 11: Airside Vehicle Control	124.	Doc 9774 Appendix 1 - Part 4.11 a) Details of the applicable traffic rules (including speed limits and the means of enforcing the rules); and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	125.	b) The method of issuing driving permits for operating vehicles in the movement area.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 12: Wildlife Hazard Management	126.	a) arrangements for assessing wildlife hazards	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	127.	b) Arrangements for implementing wildlife control programmes; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	128.	c) The names and roles of the persons responsible for dealing with wildlife hazards, and their telephone numbers during and after working hours.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 13: Obstacle Control	129.	Doc 9774 Appendix 1 - Part 4.13 a) Monitoring the obstacle limitation surfaces and Type A Chart for obstacles in the take-off surface;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	130.	b) Controlling obstacles within the authority of the operator;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	131.	c) Monitoring the height of buildings or structures within the boundaries of the obstacle limitation surfaces;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	132.	d) Controlling new developments in the vicinity of aerodromes; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	133.	e) Notifying the CAA of the nature and location of obstacles and any subsequent addition or removal of obstacles for action as necessary, including amendment of the AIS publications.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
Sec 14: Removal of Disabled Aircraft	134.	Doc 9774 Appendix 1 - Part 4.14 a) The roles of the aerodrome operator and the holder of the aircraft certificate of registration;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	135.	b) Arrangements for notifying the holder of the certificate of registration;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	136.	c) Arrangements for liaising with the air traffic control unit;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	137.	d) Arrangements for obtaining equipment and personnel to remove the disabled aircraft; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	138.	e) The names, role and telephone numbers of persons responsible for arranging for the removal of disabled aircraft.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 15: Handling of Hazardous Materials	139.	Doc 9774 Appendix 1 - Part 4.15 a) Arrangements for special areas on the aerodrome to be set up for the storage of inflammable liquids (including aviation fuels) and any other hazardous materials; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	140.	b) The method to be followed for the delivery, storage, dispensing and handling of hazardous materials.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 16: Low Visibility Operations	141.	Doc 9774 Appendix 1 - Part 4.16 Particulars of procedures to be introduced for low-visibility operations, including the measurement and reporting of runway visual range as and when required, and the names and telephone numbers, during and after working hours, of the persons responsible for measuring the runway visual range.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
Sec 17: Protection of Radar & Navigation Aids	142.	Doc 9774 Appendix 1 - Part 4.17 a) Arrangements for the control of activities in the vicinity of radar and navaid installations;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	143.	b) Arrangements for ground maintenance in the vicinity of these installations; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	144.	c) Arrangements for the supply and installation of signs warning of hazardous microwave radiation.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
PART 5: AERODROME ADMINISTRATION				
Sec 1: Organization Contacts & Structure	145.	Doc 9774 Appendix 1 - Part 5 a) an aerodrome organizational chart showing the names and positions of key personnel, including their responsibilities;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	146.	b) The name, position and telephone number of the person who has overall responsibility for aerodrome safety; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	147.	c) Airport committees.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 2: Exemptions, Directions, Approvals	148.	Are there exemptions applied at the aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Sec 3: Aerodrome Safety Management System	149.	Doc 9774 Appendix 1 - Part 5 a) the safety policy, insofar as applicable, on the safety management process and its relation to the operational and maintenance process;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	150.	b) The structure or organization of the SMS, including staffing and the assignment of individual and group responsibilities for safety issues;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
	151.	c) SMS strategy and planning, such as setting safety performance targets, allocating priorities for implementing safety initiatives and providing a framework for controlling the risks to as low a level as is reasonably practicable keeping always in view the requirements of the Standards and Recommended Practices in Volume I of Annex 14 to the Convention on International Civil Aviation, and the national regulations, standards, rules or orders;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	152.	d) SMS implementation, including facilities, methods and procedures for the effective communication of safety messages and the enforcement of safety requirements;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	153.	e) A system for the implementation of, and action on, critical safety areas which require a higher level of safety management integrity (safety measures programme);	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	154.	f) measures for safety promotion and accident prevention and a system for risk control involving analysis and handling of accidents, incidents, complaints, defects, faults, discrepancies and failures, and continuing safety monitoring;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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PARTICULARS	NO.	DETAILS	STATUS	REMARKS
	155.	g) The internal safety audit and review system detailing the systems and programmes for quality control of safety;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	156.	h) The system for documenting all safety-related airport facilities as well as airport operational and maintenance records, including information on the design and construction of aircraft pavements and aerodrome lighting. The system should enable easy retrieval of records including charts;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	157.	i) Staff training and competency, including the review and evaluation of the adequacy of training provided to staff on safety-related duties and of the certification system for testing their competency; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	158.	j) The incorporation and enforcement of safety-related clauses in the contracts for construction work at the aerodrome.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7B: Technical Inspection Checklist (Aerodrome Infrastructure and Ground Aids)**Appendix 7B-1: OBSTACLE RESTRICTIONS FORM AGA-ATI-0001**

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	1.1 OBSTACLE RESTRICTIONS		
	1. Are the OLS surfaces defined?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Are objects infringing the OLS?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Are obstacles that penetrate the OLS appropriately marked or lit?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Are the OFZ surfaces defined, when required?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. Are objects penetrating the OFZ and is frangible?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6. Are the objects near the following areas comply with the OLS requirements? • Runway • Runway strip • Clearway • Stopway • RESA • Taxiway • Taxiway strip • Pre-threshold area • Radio altimeter operating area	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Are fixed objects, temporary and permanent, which extends above the OLS but are permitted to remain or objects which are present on the movement area regarded as obstacles explicitly marked?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. Are there procedures for monitoring the obstacle limitation surfaces and Type A Chart for obstacles in the take-off surface?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. controlling obstacles within the authority of the operator;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10. monitoring the height of buildings or structures within the boundaries of the obstacle limitation surfaces	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. controlling new developments in the vicinity of aerodromes; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	12. notifying the CAA of the nature and location of obstacles and any subsequent addition or removal of obstacles for action as necessary, including amendment of the AIS publications.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix D to Report of AOP/SG/4

CIVIL AVIATION AUTHORITY

GENERIC AERODROME INSPECTORS
HANDBOOK

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	13. And the procedure for monitoring building developments (in relation to the height of buildings and other structures) within the horizontal limits of the obstacle limitation surfaces?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	14. And if the aerodrome has instrument approach procedures, the procedures for monitoring for new objects or building developments in any other areas nominated by the instrument procedure designers?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	15. And the arrangements with CAA, local planning authorities and other relevant organizations in relation to the approval of building developments that may infringe the obstacle limitation surfaces?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Including the process for asking CAA to assess proposed obstacles? (If applicable to the aerodrome)	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7B-2: PHYSICAL CHARACTERISTICS, VISUAL AID AND AERODROME FACILITIES FORM AGA-ATI-0002

No.	Ref.	Audit Area	Actual	Standard	Remarks
1.)		Aerodrome Physical Characteristics and visual aids			
		a) Runway			☐ S ☐ NS
		• Runway Threshold Location			☐ S ☐ NS
		• Runway length		Refer to Table 2.1-2	☐ S ☐ NS
		• Runway Width		Refer to Table 6.2-1	☐ S ☐ NS
		• Runway turn pads		Refer to Table 6.2-2	☐ S ☐ NS
		• Spacing for parallel runways		N/A	☐ S ☐ NS
		• Runway longitudinal slope		Refer to Sec. 6.2.6	☐ S ☐ NS
		• Runway sight distance		Refer to Table 6.2-3	☐ S ☐ NS
		• Transverse slopes on runways		Refer to Table 6.2-4	☐ S ☐ NS
		• Runway surface		Refer to Sec. 6.2.9	☐ S ☐ NS
		• Runway bearing strength		Refer to Sec. 6.2.10	☐ S ☐ NS
		b) Runway shoulders		Refer to Sec. 6.2.11	☐ S ☐ NS
		• Characteristics of runway shoulders		Refer to Sec. 6.2.12	☐ S ☐ NS
		• Surface of runway shoulder		Bituminous seal, asphalt or concrete	☐ S ☐ NS
		• Width of runway shoulder		(a) 60 m where the code letter is D or E; and (b) 75 m where the code letter is F.	☐ S ☐ NS
		• Slopes on runway shoulder		Shall not exceed 25%	☐ S ☐ NS
		• Strength of runway shoulder		ICAO Aerodrome Design Manual, Part 1	☐ S ☐ NS

		c) Runway Markings		Color white on all concrete, asphalt or sealed runway surfaces	☐ S	☐ NS
		• Pre-runway-end markings		• 60m length • 0.9m wide • Yellow chevrons, spaced 30m apart • Angled 45° to the runway centerline	☐ S	☐ NS
		• Runway centerline markings		• Uniformly spaced gaps • White stripes	☐ S	☐ NS
		➤ Length		Equal to gaps= 30m whichever is greater	☐ S	☐ NS
		➤ Dist. of 1 st stripe		12m from the runway designation number	☐ S	☐ NS
		➤ Width		(a) 0.3 m on all non-instrument runways, and instrument non-precision approach runways where the code number is 1 or 2; (b) 0.45 m on (i) instrument non-precision approach runways where the code number is 3 or 4; and (ii) Category I precision approach runways; and (c) 0.9 m on category II and category III precision approach runways.	☐ S	☐ NS
		• Runway designation markings		• Two-digit number • Size and form in accordance with [MAS] Fig.8.3-8	☐ S	☐ NS
		• Runway transverse stripe markings		White line	☐ S	☐ NS

		➤ Width		1.8m	☐ S	☐ NS
		➤ Length		Extending the full width of the runway	☐ S	☐ NS
		• Runway side-stripe markings		One continuous white line.	☐ S	☐ NS
		➤ Width		The width of each runway side-stripe marking shall be 0.3 m, except for: (a) non precision approach runways where the code letter is 3 or 4, and all precision approach category I runways, where the width shall be 0.45 m; and, (b) precision approach category II or III runways where the width shall be 0.9m.	☐ S	☐ NS
		• Runway aiming point markings		For code 2, 3 or 4	☐ S	☐ NS
		➤ No. of stripes		• Two (2); painted white	☐ S	☐ NS
		➤ Dimensions & lateral spacing's		Refer to [MAS] Table 8.3-1	☐ S	☐ NS
		• Runway touch down zone markings		• White rectangular pair markings • Displayed equally about the runway centerline	☐ S	☐ NS
		➤ Distance between thresholds		Refer to [MAS] Table 8.3-2	☐ S	☐ NS
		➤ Rectangular dimension		• 22.5m long • 3m wide	☐ S	☐ NS
		➤ Longitudinal spacing		• 150m beginning from the threshold	☐ S	☐ NS
		• Runway threshold markings		• White "piano key" markings • Uniformly spaced	☐ S	☐ NS

		➤ Length		30m	☐ S	☐ NS
		➤ Width		Refer to [MAS] Fig.8.3-8	☐ S	☐ NS
		• Runway end markings		Transverse white stripe	☐ S	☐ NS
		➤ Width		1.8m and may be reduced to 1.2	☐ S	☐ NS
		➤ Length		Extending the full width of the runway	☐ S	☐ NS
		• Temporary displaced threshold markings		White line in accordance with [MAS] Figs. 8.3-9 and 8.3-10	☐ S	☐ NS
		➤ Width		1.2m, across the full width of the runway	☐ S	☐ NS
		➤ Arrowheads		• 10m long • 1m wide	☐ S	☐ NS
		d) Stopway		At the end of the runway	☐ S	☐ NS
		• Dimensions of stopways		Any decision to provide a length of stopway.	☐ S	☐ NS
		➤ Dist. Before the runway strip		60 m	☐ S	☐ NS
		➤ width		Equal to the width of the associated runway at the line of threshold	☐ S	☐ NS
		• Surface of stopway		Bituminous seal or asphalt surface; have frictional characteristics	☐ S	☐ NS
		• Stopway slopes and slope changes		• 0.8% for 1st & last quarter of the runway need not be applied to the stopway • Max. rate of slope change may be increased to 0.3% per 30m at the junction of runway & stopway • Min. radius of curvature= 10,000m	☐ S	☐ NS
		• Bearing strength of stopway		Must be able to support at least 1 single pass of the critical aircraft	☐ S	☐ NS

		e) RESA		- At the end of the runway - For code 1 or 2 - Not an instrument runway	☐ S	☐ NS
		Length		90m min. (3 or 4) - Other cases, 60m	☐ S	☐ NS
		width		$\geq (2 \times \text{rwy width})$	☐ S	☐ NS
		Downward longitudinal slope		5% downward	☐ S	☐ NS
		Transverse slope		5% upwards or downwards	☐ S	☐ NS
		f) Clearway		- Obstruction-free rectangular plane - May be provided at the end of a runway	☐ S	☐ NS
		Location of clearways		At the end of the take-off run available on the runway	☐ S	☐ NS
		Dimensions of clearways		The width of a clearway must not be less than: (a) 150 m If the runway code number is 3 or 4; (b) 80 m If the runway code number is 2 ; and (c) 60 m If the runway code number is 1.	☐ S	☐ NS
		➤ Length of Clearway		Not more than half the length of the take-off run available on the runway.	☐ S	☐ NS
		➤ Width of clearway		150m= code 3 or 4 80m= code 2 60m= code 1	☐ S	☐ NS
		Slopes on clearways		The surface below a clearway must not project above a plane with an upward slope of 1.25%, the lower limit of which is a horizontal line that:	☐ S	☐ NS

				(a) is perpendicular to the vertical plane containing the runway centerline; and (b) passes through a point located on the runway centerline at the end of the take-off run available.		
		• Objects on clearways		Free of fixed or mobile objects other than visual or navigational aids	☐ S	☐ NS
		g) Runway Strip		Graded area around the runway and stopway	☐ S	☐ NS
		• Runway strip length		(a) 30 m if the runway's code number is 1 and it is a non-instrument runway; or (b) 60 m in any other case.	☐ S	☐ NS
		• Runway strip width		Refer to [MAS] Table 6.3-5 ; 6.3-6 and 6.3-7	☐ S	☐ NS
		• Longitudinal slope on graded area of runway strip		(a) 1.5% if the runway code number is 4; (b) 1.75% if the runway code number is 3; or (c) 2.0% if the runway's code number is 1 or 2.	☐ S	☐ NS
		• Longitudinal Slope Changes on Graded Area of Runway Strip		Must not exceed 2.0%	☐ S	☐ NS
		• Surface of graded area of runway strip		Must be prepared to resist blast erosion	☐ S	☐ NS

		Radio Altimeter Operating Area		(a) be established in the pre-threshold area of a precision approach runway. (b) extend before the threshold for a distance of at least 300 m. (c) extend laterally, on each side of the extended centerline of the runway, to a distance of 60 m, except that, when special circumstances so warrant, the distance may be reduced to no less than 30 m if an aeronautical study indicates that such reduction would not affect the safety of operations of aircraft. (d) be avoided or kept to a minimum. Where slope changes cannot be avoided, the slope changes should be as gradual as practicable and abrupt changes or sudden reversals of slopes avoided. The rate of change between two consecutive slopes should not exceed 2 % per 30 m.	☐ S	☐ NS
		Runway Strip Transverse Slope		(a) 2.5%; if the runway's code number is 3 or 4; and (b) 3%; if the runway's code number is 1 or 2.	☐ S	☐ NS
		Grading of Runway Strips		That portion of a strip of an instrument runway within a distance of at least: (a) 75 m where the code number is 3 or 4; and	☐ S	☐ NS

				(b) 40 m where the code number is 1 or 2; That portion of a strip of a non-instrument runway within a distance of at least: (a) 75 m where the code number is 3 or 4; (b) 40 m where the code number is 2; and (c) 30 m where the code number is 1;	
		Objects on runway strips		- No fixed object, other than visual aids required for air navigation or those required for aircraft safety purposes and which must be sited on the runway strip, and satisfying the relevant frangibility requirement in ([MAS] 8 and 9), shall be permitted on a runway strip: - No mobile object shall be permitted on a runway strip while the runway is in use for takeoff or landing.	☐ S ☐ NS
		Runway strip strength		Shall be constructed to minimize hazards arising from differences in load bearing capacity to aeroplanes	☐ S ☐ NS
		h) Taxiways			☐ S ☐ NS
		Taxiway width		Refer to [MAS] Table 6.7-1	☐ S ☐ NS
		Taxiway edge clearance		Refer to [MAS] Table 6.7-2	☐ S ☐ NS
		Taxiway curves		Refer to [MAS] Table 6.7-3	☐ S ☐ NS
		Taxiway Longitudinal Slope		(a) 1.5%; if the taxiway's code letter is C, D, E or F; and	☐ S ☐ NS

				(b) 3.0%; if the taxiway's code letter is A or B		
		• Taxiway Transverse Slope		(a) 1.5% if the taxiway's code letter is C, D, E or F; and (b) 2.0% if the taxiway's code letter is A or B.	☐ S	☐ NS
				Refer to [MAS] Table 6.3-4	☐ S	☐ NS
		i) Taxiway Markings		Painted yellow	☐ S	☐ NS
		• Taxiway centerline marking		• continuous yellow line 0.15 m wide	☐ S	☐ NS
		• Runway holding position markings		Must be provided on all asphalt, sealed or concrete taxiways wherever these join or intersect with a runway.	☐ S	☐ NS
		➤ Markings for Pattern A		• Only one runway holding position is marked. • See [MAS] Fig. 8.4-2	☐ S	☐ NS
		➤ Markings for Pattern B		• Two or three runway holding positions are provided at an intersection of a taxiway with precision approach runway. • See [MAS] Fig. 8.4-2	☐ S	☐ NS
		• Intermediate holding position markings		• Must be provided on all asphalt, sealed or concrete taxiway intersections or on any location of a taxiway where air traffic control requires the aircraft to hold. • Single yellow broken line.	☐ S	☐ NS
		➤ Width		0.15m wide, extending across the full width of the taxiway at right angles to the taxi guideline.	☐ S	☐ NS
		➤ Length of lines and gaps		1.0m long	☐ S	☐ NS

		• Taxiway edge markings		• Located at the taxiway edge. • Two continuous yellow lines	☐ S	☐ NS
		➤ Width		0.15m wide	☐ S	☐ NS
		➤ Spacing of two yellow lines		0.15m apart	☐ S	☐ NS
		• Holding bay markings		The holding position marking must be painted in accordance with the intermediate holding position marking, unless that is also a runway holding position, in which case the Pattern A runway holding position marking applies.	☐ S	☐ NS
		• Taxiway pavement strength limit markings		• Used at the entrance of a taxiway of low strength pavement • Letters and numbers must be painted yellow	☐ S	☐ NS
		➤ Height		2.0m	☐ S	☐ NS
		➤ Width		0.75m	☐ S	☐ NS
		➤ Line width		0.15m	☐ S	☐ NS
		➤ Spacing		0.5m	☐ S	☐ NS
		j) Taxiway shoulders		• If the taxiway code is C,D,E or F • Used by jet propelled aeroplanes	☐ S	☐ NS
		• Width of Taxiway shoulders		(a) 60 m if the taxiway's code letter is F; or (b) 44 m if the taxiway's code letter is E; or (c) 38 m if the taxiway's code letter is D; or (d) 25 m if the taxiway's code letter is C.	☐ S	☐ NS
		• Surface of Taxiway shoulders		(a) resistant to engine blast erosion and ingestion of the surface	☐ S	☐ NS

				material by aeroplane engines if the taxiway is used by jet-propelled aircraft ; and (b) sealed to a width of at least 3 meters on both sides of the taxiway if the taxiway is intended to serve a wide body jet, such as a Boeing 747, Airbus A340 or A380 or similar aeroplane, whose engines overhang the shoulders.	
		k) Taxiway strips			☐ S ☐ NS
		Width of taxiway strip		(a) 51 m if the taxiway's code letter is F; or (b) 43.5 m if the taxiway's code letter is E; or (c) 37 m if the taxiway's code letter is D; or (d) 26 m if the taxiway's code letter is C; or (e) 20 m if the taxiway's code letter is B; or (f) 15.5 m if the taxiway's code letter is A.	☐ S ☐ NS
		Width of graded area of taxiway strip		(a) 30 m if the taxiway's code letter is F; or (b) 22 m if the taxiway's code letter is E; or (c) 19 m if the taxiway's code letter is D; or (d) 12.5 m if the taxiway's code letter is B or C; or (e) 11 m if the taxiway's code letter is A.	☐ S ☐ NS

		• Slope of Taxiway Strip		• upward transverse slope • downward transverse slope • Upward slope	☐ S	☐ NS
		• upward transverse slope		(a) 2.5% if the taxiway's code letter is C, D, E or F; or (b) 3% if the taxiway's code letter is A or B;	☐ S	☐ NS
		• downward transverse slope		must not exceed 5.0%, measured relative to the horizontal.	☐ S	☐ NS
		• Upward slope		Not exceed an upward or downward slope of 5.0% as measured in the direction away from the taxiway.	☐ S	☐ NS
		• Objects on taxiway strip			☐ S	☐ NS
		• Taxiways on bridges (minimum width)		• Not less than total width of the graded area of the taxiway strip (if measured perpendicular to the taxiway centerline. • May be reduced not less than the width of the associated taxiway.	☐ S	☐ NS
		• Taxiway minimum separation distances		Refer to [MAS] Table 6.7-5	☐ S	☐ NS
		• Rapid exit taxiway		A rapid exit taxiway shall be designed with a radius of turn-off curve of at least: (a) 550 m where the code number is 3 or 4; and (b) 275 m where the code number is 1 or 2; to enable exit speeds under wet conditions of: (c) 93 km/h where the code number is 3 or 4; and (d) 65 km/h where the code number is 1 or 2.	☐ S	☐ NS

		l) Holding Bays, Runway-Holding Positions, Intermediate Holding Positions and Road-Holding Positions.			☐ S ☐ NS
		Provision of a Holding Bay, Runway-holding Position, Intermediate Holding Position and Road-holding Position		The provision of a holding bay is the prerogative of the aerodrome operator, however if it is provided, it must be located such that any aeroplane on it will not infringe the inner transitional surface.	☐ S ☐ NS
		Location of Holding Bay, Runway-holding Position, Intermediate Holding Position or Road-holding Position		A holding bay, intermediate holding position or road-holding position must not be placed where an aircraft or vehicle using it would: (a) infringe the obstacle free zone, approach surface, take-off climb surface or ILS critical or sensitive areas, or, in other cases, the graded area of the runway strip; or (b) interfere with the operation of radio navigation aids.	☐ S ☐ NS
		Distance from Runway-holding Position, Intermediate Holding Position or Road-holding Position to Runway Centerline		Refer to [MAS] Table 6.5-1:	☐ S ☐ NS
		m) Aprons			
		• Location of apron		Must be located so that aeroplanes parked on it do not infringe an obstacle limitation surface, and in	☐ S ☐ NS

				particular, the transitional surface		
		• Clearance distances on Aircraft stands		Refer to [MAS] Table 6.9-1	☐ S	☐ NS
		• Slopes on Aprons		• 1%= on aircraft parking position • 2%= on any other part of an apron	☐ S	☐ NS
		• Apron road		• Provided for surface vehicles	☐ S	☐ NS
		n) Apron markings		Must ensure that all relevant clearance standards are met.	☐ S	☐ NS
		• Apron taxi guideline markings		• Dependent on whether the aircraft is being directed by a marshaller or the pilot • Must be designed using the cockpit position principle at aerobridges. • Must ensure that all required clearances are met.	☐ S	☐ NS
		• Apron edge markings		2 continuous yellow lines	☐ S	☐ NS
		➤ Width		0.15m	☐ S	☐ NS
		➤ Spacing		0.15m apart	☐ S	☐ NS
		➤ Edge of gravel, grass or other natural surface aprons		Identified by cones, spaced maximum of 60m, painted yellow except for dedicated helicopter aprons w/c must be light blue.	☐ S	☐ NS
		• Apron Safety Line (Parking clearance line)		Continuous red line with continuous yellow or white line on either side to enhance the parking clearance line.	☐ S	☐ NS
		➤ Width of red line		0.10m, if desired 0.20m wide	☐ S	☐ NS
		➤ Width of yellow or white line		0.10m wide	☐ S	☐ NS
		➤ The word "PARKING CLEARANCE"		• Painted yellow on the side where the light aircraft are parked.	☐ S	☐ NS

				• Must be repeated at intervals not exceeding 50m • 0.3m high • Located 0.15m from the line	
		• Aircraft type limit line		Broken yellow line	☐ S ☐ NS
		➤ Comprising strip length		3m	☐ S ☐ NS
		➤ Width		0.3m	☐ S ☐ NS
		➤ Spacing		1m	☐ S ☐ NS
		➤ Distance of designator from the line		0.15m above the line	☐ S ☐ NS
		➤ Height of letters & numbers		0.5m high	☐ S ☐ NS
		➤ Marking intervals		Not exceeding 50m	☐ S ☐ NS
		• Parking weight limit line		Broken yellow line	☐ S ☐ NS
		➤ Comprising strip length		3m long	☐ S ☐ NS
		➤ Width		0.3m wide	☐ S ☐ NS
		➤ Spacing of strips		1m	☐ S ☐ NS
		➤ Distance of designator from the line		0.15m above the line	☐ S ☐ NS
		➤ Height of letters & numbers		0.5m high	☐ S ☐ NS
		➤ Marking intervals		Not exceeding 50m	☐ S ☐ NS
		• Leased area line		• 0.15m solid line • Painted lime green	☐ S ☐ NS
		• Equipment clearance line		Red stripes	☐ S ☐ NS
		➤ Length of stripe		1m long	☐ S ☐ NS
		➤ Width of each stripe		0.15m wide	☐ S ☐ NS
		➤ Gap distance		1m gap	☐ S ☐ NS
		➤ Designation of "EQUIPMENT"		• painted on the side of the line occupied on the equipment.	☐ S ☐ NS

		CLEARANCE"		• Readable from the side • Repeated not more than 30m • Painted red	
		➤ Height of letters & numbers		0.3m high	☐ S ☐ NS
		➤ Distance of designator from the line		0.15m from the line	☐ S ☐ NS
		• Equipment storage markings		Continuous red painted line, 0.1m wide.	☐ S ☐ NS
		➤ Designation of "EQUIPMENT STORAGE"		• Painted red on the side where equipment is stored • Readable from the side	☐ S ☐ NS
		➤ Height of letters & numbers		0.3m high	☐ S ☐ NS
		➤ Distance of designator from the line		0.15m from the line	☐ S ☐ NS
		➤ Marking intervals		Not exceeding 50m along the boundary	☐ S ☐ NS
		• Apron service road markings		• Continuous white painted line, 0.1m wide • Both sides of the road • Zipper pattern	☐ S ☐ NS
		• Aircraft parking position markings		Classified as primary or secondary positions	☐ S ☐ NS
		➤ Primary positions		For normal apron demand	☐ S ☐ NS
		➤ Secondary positions		Either for use during abnormal circumstances or allow a larger number of smaller aircraft to be parked.	☐ S ☐ NS
		• Lead-in line		Provided on all sealed, concrete and asphalt aprons w/ aircraft parking	☐ S ☐ NS

				position markings		
		➤ Lead-in lines to primary aircraft parking position		• Continuous yellow painted line • 0.15m wide • Same characteristics as a taxi guideline.	☐ S	☐ NS
		➤ Lead-in lines to secondary parking position		• Series of solid yellow circles • 0.15m in diameter • Spaced 1m intervals • Must be solid for a distance of 2m before and after the turn.	☐ S	☐ NS
		• Taxi lead-in line designation		• Located at the beginning of each diverging taxi guideline or lead-in line • Three types (parking position number designation, aircraft type limit designation and aircraft weight limit designation)	☐ S	☐ NS
		➤ parking position number designation		• 2m high • Painted yellow • 0.3m from the lead-in line • In accordance with [MAS] Fig. 8.5-8	☐ S	☐ NS
		➤ aircraft type limit designation		• painted yellow • 2m high • 0.3m spacing from the lead-in line • In accordance with [MAS] Fig. 8.5-9	☐ S	☐ NS

		➤ aircraft weight limit designation		• specifies maximum weight allowable • painted yellow • 2m high • 0.3m space from the lead-in line with [MAS] Fig. 8.5-10	☐ S	☐ NS
		• Pilot turn line		• Placed at right angles to the lead-in line • Located on the left side as viewed by the pilot. • Painted yellow	☐ S	☐ NS
		➤ Line length		6m long	☐ S	☐ NS
		➤ Width		0.3m wide	☐ S	☐ NS
		➤ aircraft type designation		• painted in yellow letters • 1m high • Spaced 0.15m below the bar, facing the direction of incoming aircraft	☐ S	☐ NS
		➤ Offset distance of designation from the lead-in line		Refer to [MAS] Table 8.5-1	☐ S	☐ NS
		• Primary aircraft parking position markings		Straight yellow lines	☐ S	☐ NS
		➤ Alignment line width		0.15m wide	☐ S	☐ NS
		➤ Stop line width		0.3m wide	☐ S	☐ NS
		• Marshaller stop line		Located where the aircraft nose wheel is to stop	☐ S	☐ NS
		➤ aircraft type designation		• painted yellow • 0.3m high • Spaced 0.15m below the stop line • Refer to [MAS] Fig. 8.5-11	☐ S	☐ NS

		• Pilot stop line		Line is immediately on the left of the pilot	☐ S	☐ NS
		➤ Line length		6m long	☐ S	☐ NS
		➤ Offset distance from the alignment line		- Refer to [MAS] Table 8.5-2 1m= code letter C where all aircraft codes are to be accommodated at one parking position	☐ S	☐ NS
		➤ aircraft type designation		- Yellow letters 1m high - Spaced 0.15m below the pilot stop line	☐ S	☐ NS
		• Alignment line		- Extend backwards at distance X - Extend forward, commencing at a point 3m past the [MAS]t forward nose wheel position & extend at distance Y - Refer to [MAS] Table 8.5-3	☐ S	☐ NS
		➤ 1m long section of the alignment line		- Placed in the center of the 3m gap - Refer to [MAS] Fig. 8.5-13	☐ S	☐ NS
		• Secondary aircraft parking position markings		- Used during abnormal circumstances or to allow a larger number of smaller aircraft - Keyhole or triangle markings - Painted yellow - Painted white if it overlaps the primary position markings	☐ S	☐ NS
		• Keyhole marking		- Designed for aircraft with wingspan 15m or greater (secondary position) - With a parking position designator - Painted yellow	☐ S	☐ NS

		➤ Diameter of the keyhole		1m	☐ S	☐ NS
		➤ Alignment line length		5m	☐ S	☐ NS
		➤ Width		0.15m	☐ S	☐ NS
		➤ Distance of designator from the alignment line		1m	☐ S	☐ NS
		➤ Height of letters and numbers		2m high	☐ S	☐ NS
		• Triangle marking		• Designed for aircraft w/ a wingspan of less than 15m (secondary position) • Painted yellow • With a parking position designator	☐ S	☐ NS
		➤ Side length of triangle		3m	☐ S	☐ NS
		➤ Alignment line length		5m	☐ S	☐ NS
		➤ Distance of designator from the alignment line		1m	☐ S	☐ NS
		➤ Height of letters and numbers		2m high	☐ S	☐ NS
		• Lead-out line		• Broken line • Painted yellow	☐ S	☐ NS
		➤ Stripe length		1m	☐ S	☐ NS
		➤ Width		0.15m wide	☐ S	☐ NS
		➤ Intervals		1m	☐ S	☐ NS
		➤ Distance of 1 st arrow from the alignment line (if arrow indicators are inserted)		15m with subsequent arrows at 30m spacing.	☐ S	☐ NS
		• Designation markings		Provide supplementary information on all asphalt, sealed and concrete aprons where there is more than one aircraft parking position.	☐ S	☐ NS

		Aircraft parking position designation		Located adjacent to the parking position, either on the ground or on the aerobridge.	☐ S	☐ NS
		➤ Position designation for fixed wing a/c		- Marked on the ground - Placed 4m forward of the nose wheel position and 5m to the left - Painted yellow - Consist of characters 1m high 2m inside diameter w/ 0.15m line thickness	☐ S	☐ NS
		➤ Aerobridge position		Same as the associated parking position designation.	☐ S	☐ NS
		Designation characters for taxi and apron markings		- Must conform in style and proportion - Grid spacing used is 0.20m - Refer to [MAS] Fig. 8.5-19 to Fig. 8.5-23	☐ S	☐ NS
		Tug operator guidance marking		Must be provided on aprons where aircraft are being pushed back by tugs.	☐ S	☐ NS
		Aircraft push-back lines		- Broken line - Painted white - Used for tug operations - For code letter C,D and E	☐ S	☐ NS
		➤ Comprising stripe length		1m long	☐ S	☐ NS
		➤ Width of stripes		0.15m wide	☐ S	☐ NS
		➤ Intervals of stripes		1m	☐ S	☐ NS
		Tug parking position lines		- Provided at aerobridges & other power-in/push-out aircraft parking positions - Red line	☐ S	☐ NS

		➤ Line width		0.10m wide	☐ S	☐ NS
		➤ Shape		"U" (3.5m by 1m) commencing 3m from the nose of the critical aircraft.	☐ S	☐ NS
		➤ Height of shape "U"		1m	☐ S	☐ NS
		➤ Width of shape "U"		3.5m	☐ S	☐ NS
		• Tow bar disconnect markings		• White line • Located at the point of disconnection • Located at the left side of the taxi guideline or push-back line	☐ S	☐ NS
		➤ Line length		1.5m long	☐ S	☐ NS
		➤ Line width		0.15m wide	☐ S	☐ NS
		• Push-back limit markings		• Two parallel white lines • At right angles and symmetrical about the push back line.	☐ S	☐ NS
		➤ Line Length & gap		1m long	☐ S	☐ NS
		➤ Line width		0.15m wide	☐ S	☐ NS
		➤ Line spacing		0.15m apart	☐ S	☐ NS
		• Push-back alignment Bars		• Provided to assist tug operators to align an aircraft correctly at the end of the push-back manoeuvre. • Broken white line • Marking must commence 3m past the tow disconnect marking.	☐ S	☐ NS
		➤ Comprising stripe length		1m long	☐ S	☐ NS
		➤ Stripe width		0.15m wide	☐ S	☐ NS
		➤ Intervals		1m	☐ S	☐ NS
		➤ Total Alignment desired direction		30m	☐ S	☐ NS
		• Passenger path markings		• In accordance with the pattern	☐ S	☐ NS

				and color of the relevant State Road Authority pedestrian crossing marking standards.	
		➤ Width of the passenger pathway		• To be commensurate w/ the expected pedestrian traffic • Typical layout for a pedestrian crossing in accordance with [MAS] Fig. 8.5-28	☐ S ☐ NS
		• Road holding position marking		• Located across the road at the holding position • Shall be in the form and color in accordance with local road traffic regulations. • If no such regulations apply, it shall be in the form and color acceptable to CAA.	☐ S ☐ NS
		Information Marking		If information sign is impractical to install, an information marking shall be displayed on the surface of the pavement. If operationally required an information sign shall be supplemented by an information marking. An information marking shall be displayed on the pavement surface at regular intervals along taxiways of great length.	☐ S ☐ NS ☐ S ☐ NS ☐ S ☐ NS

		Movement Area Guidance Signs (MAGS)/ Revised [MAS] -Signs			
		Introduction			
		mandatory instruction signs	Provided at Twy A & Twy B	- must have white lettering on a red background - for environmental or other factors to increase conspicuity of mandatory instruction signs, the outside edge of the inscription shall be supplemented by a black outline 10 mm in width for signs at runways code number 1 or 2, and 20 mm in widths for signs at other runway code numbers	☐ S ☐ NS ☐ S ☐ NS
		information signs	Signs are provided for Twy A & Twy B, however, dimensions are not in accordance with the [MAS] Actual measurement: Character Height=71cm Width=76cm No Borders provided	must have either black lettering on a yellow background, or yellow lettering on a black background	☐ S ☐ NS
			Provided, however are not in accordance with the [MAS]	must be provided at international aerodromes, and at other aerodromes	
			Taxiway intersection departures were observed, however no information signs are provided.	Aerodrome operators consulted with airlines and with Air Traffic Control, on the need for MAGS with information?	☐ S ☐ NS

				MAGS with information must be provided at aerodromes where taxiway intersection departures are permitted.	☐ S ☐ NS
		Naming of taxiway location signs	Location sign is provided	- The following convention must be used in the naming of taxiway location signs: (a) a single letter should be used, without numbers, to designate each main taxiway; (b) the same letter must be used throughout the length of taxiway, except where a turn of 90 degrees or more is made to join a runway, a different letter may be assigned to that portion of taxiway after the turn; (c) for each intersecting taxiway, a different single letter must be used; (d) to avoid confusion, letters I, O and X must not be used, letter Q should only be used where unavoidable; (e) at aerodromes where the number of taxiways are or will be large, alphanumeric designators may be used for short intersecting taxiways. Successive intersecting taxiways must use the same letter, with sequential numbers.	☐ S ☐ NS

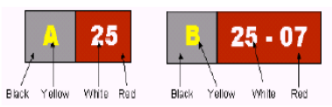
				If sequential numbers are not practicable, due to geometry of the taxiway system, all pilot-used taxiway plans (aerodrome charts) must include advice as to the missing designators; (f) the use of letters and numbers must be easily comprehensible. Should it ever be necessary to use double-digit alphanumeric designators, care must be taken to ensure the numbers used in the taxiway designation cannot in any way be confused with the runway designations. Abbreviations of geographic or relative location of taxiways, eg NP 1 (for north parallel taxiway No. 1), WC (for west crossing or west connecting taxiway) should not be used unless with prior approval of the Director General.	
		Dimensions, location and lettering			
			Actual Perpendicular distance from defined taxiway pavement edge to near side of sign = 23.3m	Signs must be located to provide adequate clearance to passing aircraft. The depth and width of the signboard is dependent on the location of the sign, the size of the characters and the length of message conveyed	☐ S ☐ NS

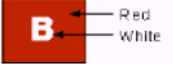
			- Perpendicular distance from defined runway pavement edge to near side of sign = 69m - Not in accordance with the [MAS]										
			orientation of information sign is provided, at 75° to the taxi guideline.	Where MAGS are provided only on one side of the taxiway, they must be located on the pilots' left side unless this is impracticable. Where MAGS are to be read from both directions, they must be oriented so as to be at right angles to the taxi guideline. Where MAGS are to be read in one direction only, they should be oriented so as to be at 75 degrees to the taxi guideline.	☐ S ☐ NS								
		Sign size and location distances, incl. runway exit signs											
			Same as 8.6.3.1	Sign size and location distances must be in accordance with Table 8.6-1.	☐ S ☐ NS								
			Actual measurement: Character Height=0.71m Width=0.76m Vertical stroke=0.20m Hor. Stroke=0.12m No Borders provided	The stroke width of letters and arrows must be: <table><tr><td>Legend height</td><td>Stroke width</td></tr><tr><td>200 mm</td><td>32 mm</td></tr><tr><td>300 mm</td><td>48 mm</td></tr><tr><td>400 mm</td><td>64 mm</td></tr></table>	Legend height	Stroke width	200 mm	32 mm	300 mm	48 mm	400 mm	64 mm	☐ S ☐ NS
Legend height	Stroke width												
200 mm	32 mm												
300 mm	48 mm												
400 mm	64 mm												

			Same as 8.6.3.1 and 8.6.4.2	The form and proportion of the letters, numbers and symbols used on movement area guidance signs must be in accordance with Figure 8.6-1 to Figure 8.6-7. The grid spacing used in the following illustrations is 0.20 m.	☐ S	☐ NS
			Not in accordance with the [MAS]	- The face width of a sign must provide on either side of the legend a minimum width equal to half the height of the legend. In the case of a single letter sign, this width must be increased to the height of the legend. In all cases, the face width of a mandatory instruction sign provided on one side of a taxiway only, must not be less than: (a) 1.94 m where the code number is 3 or 4; and (b) 1.46 m where the code number is 1 or 2.	☐ S	☐ NS
		Structural requirements				
			Signs are lightweight and frangibly mounted.	MAGS must be lightweight and frangibly mounted. They must be constructed so as to withstand a wind velocity of up to 60 m/sec without sustaining damage.	☐ S	☐ NS
				Mountings must be constructed so as to fail, for frangibility	☐ S	☐ NS

				requirements, under a static load not exceeding 8 kPa distributed over the sign face.	
		• Illumination			
			Signs are illuminated but not in accordance with [MAS].	- Signs shall be illuminated when they are intended for use: (a) in runway visual range conditions of 800m or less; (b) at night in association with instrument runways; or (c) at night in association with non-instrument runways where the code letter is 3 or higher.	☐ S ☐ NS
			Signs are retroreflective	All signs shall be retroreflective and /or illuminated when intended for use at night in association with non-instrument runways where the code letter is less than 3.	☐ S ☐ NS
		• MAGS with mandatory instructions/ Mandatory Instruction Signs (Revised [MAS])			
			Runway designation sign is provided	MAGS with mandatory instructions include runway designation signs, category I, II or III runway holding position signs, runway-holding position signs, NO ENTRY signs, vehicular STOP signs and runway/runway intersection	☐ S ☐ NS

				signs. They are installed to identify locations beyond which taxiing aircraft or ground vehicles shall not proceed unless authorized by ATC.	
		• Runway designation signs			
			Runway designation sign is provided	A runway designation sign, as illustrated in Figure 8.6-8, must be provided at runway/taxiway intersection, where a pattern 'A' runway holding position marking is provided. Only the designation for one end of the runway must be shown where the taxiway intersection is located at or near that end of the runway. Designations for both ends of the runway, properly orientated with respect to the viewing position of the sign, must be shown where the taxiway is located elsewhere.	☐ S ☐ NS
			Taxiway location sign is provided	A taxiway location sign must be provided alongside the runway designation sign, in the outboard (farthest from the taxiway) position.	
			Runway designation sign is provided	A runway designation sign must be provided on each side of a taxiway facing the direction of approach to the runway.	☐ S ☐ NS

				 Figure 8.6-8: Runway designation signs with taxiway location sign	
		Category I, II or III Runway designation signs			
			N/A	Where a pattern 'B' taxi-holding position marking is provided, in addition to a pattern A holding position marking and sign, the sign shown below must be provided on each side of the taxiway  Figure 8.6-9: Category I runway-holding position sign	☐ S ☐ NS
		Runway holding position sign			
			N/A	Runway-holding position signs must be provided at a taxiway location, other than an intersection, where air traffic control has a requirement for aircraft to stop, such as entry to an ILS sensitive area. The sign is a taxiway designation sign, but with white lettering on a red background.	☐ S ☐ NS

				 Figure 8.6-10: Mandatory runway-holding position sign	
		Aircraft NO ENTRY sign	N/A	A NO ENTRY sign, consisting of a white circle with a horizontal bar in the middle, on a red background, must be provided at the entrance of an area to which entry is prohibited. Where practicable, a NO ENTRY sign must be located on each side of the taxiway.  Figure 8.6-11: Aircraft NO ENTRY sign	☐ S ☐ NS
		Vehicle STOP signs	N/A	Where required, vehicular 'STOP' signs can be provided at road/taxiway intersections, road holding positions, or entrance to ILS sensitive areas. This sign should be the same as a local road traffic sign. In addition, the vehicular holding position should be marked in accordance with local traffic pavement marking. See also Section 6.4 for	☐ S ☐ NS

				provision and location of a road-holding position.	
		Runway/Runway intersection signs			
			N/A	Must be provided on each side of a runway used in LAHSO to identify the intersecting runway ahead. The sign must show the designation of the intersecting runway, oriented with respect to the viewing position of the sign, and separated by a dash. For example, '15-33' indicates the runway threshold '15' is to the left, and '33' is to the right. Signs are to be located at the Hold Short Line which must be at least 75 m from the centreline of the intersecting runway	☐ S ☐ NS
			N/A	The overall height of the sign above the ground, and offset from the edge of the runway pavement, must be such as to provide at least 300 mm clearance between the top of the sign and any part of the [MAS]t critical aircraft using the runway when the outer edge of the wheel of the aircraft is at the runway pavement edge.	☐ S ☐ NS
		MAGS with information / Information Signs(Revised [MAS])			
				The overall height of the sign above the ground, and offset	☐ S ☐ NS

				from the edge of the runway pavement, must be such as to provide at least 300 mm clearance between the top of the sign and any part of the [MAS]t critical aircraft using the runway when the outer edge of the wheel of the aircraft is at the runway pavement edge.	
		• Taxiway location signs			
			Not Provided	A location sign is normally provided in conjunction with a direction sign or a runway designation sign. 	☐ S ☐ NS
		• Direction signs			
			Not Provided	Each taxiway direction must be indicated by an arrow, as shown below. The sign must have black letters with yellow background. A direction sign must be complemented by a location sign, except where the taxiway designation is adequately displayed by previous location signs along the taxiway.	☐ S ☐ NS

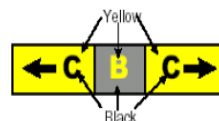


Figure 8.6-13: Direction/location/direction sign

		Destination signs	Not Provided	Destination signs must have black letters on yellow background, as shown below. They advise pilots of facilities on, or near, the movement area. This sign must not be co-located with a location or direction sign.	☐ S ☐ NS
		Take-off Run Distance Available sign	Not Provided	The take-off run available sign indicates to pilots the length of take-off run available from a particular taxiway, where intersection departures are available. This sign is provided to pilots to confirm that they are at the correct take-off location:	☐ S ☐ NS
		Runway exit signs			



Figure 8.6-14: Destination sign

			Not Provided	The sign must consist of black lettering on a yellow background, with a black arrow outboard of the taxiway designator, or to the right of the designator for exits to the right, and to the left for exits to the left.	☐ S	☐ NS
		Mandatory Instruction markings /Revised [MAS]				
			N/A	Where it is impracticable to install a mandatory instruction sign, a mandatory instruction marking is to be provided on the surface of the pavement.	☐ S	☐ NS
				A mandatory instruction marking on taxiways where the code letter is A, B, C or D shall be located across the taxiway equally placed about the taxiway centreline and on the holding side of the runway holding position marking. The distance from the nearest edge of the marking and the runway holding position marking or centreline marking shall be not less than 1 m.	☐ S	☐ NS
		a) Wind Direction Indicators		Must be located to be free from the effects of air disturbance caused by buildings or other structures.	☐ S	☐ NS

		• Requirements		At least one wind direction indicator at the aerodrome.	☐ S	☐ NS
		• Characteristics		• must consist of a tapering fabric sleeve attached to a pole 6.5 m above the ground. • sleeve must be 3.65 m long and taper uniformly from 900 millimetres in diameter to 250 millimetres in diameter.	☐ S	☐ NS
		b) Ground Signals		•	☐ S	☐ NS
		• Signal Areas		A signal area must be: (a) 9 meters in diameter; (b) black, (c) bordered by: (i) a white border 1 meter wide; or (ii) 6 equally spaced white markers, each with a base not less than 0.75 m in diameter; and (d) not more than 15 m from the wind direction indicator, or, if applicable, (e) the primary wind direction indicator. The primary wind direction indicator is located closest to the apron of the aerodrome.	☐ S	☐ NS
		• Ground Signals in Signal Area		A 'total unserviceability' signal must consist of 2 white strips not less than 0.9 m wide and 6 m long, bisecting each other at right angles.	☐ S	☐ NS
		c) Visual Aids denoting Restricted Use Areas			☐ S	☐ NS
		• Closed runways and		Closed marking shall be of the form	☐ S	☐ NS

		taxiways or parts thereof		and proportions as detailed in [MAS] Figure 8.9-1(a), when displayed on a runway, and shall be of the form and proportions as detailed in Figure 8.9-1(b), when displayed on a taxiway. The marking shall be white when displayed on a runway and shall be yellow when displayed on a taxiway.	
		Non-load-bearing surfaces		Shoulders for taxiways, runway turn pads, holding bays and aprons and other non-load-bearing surfaces which cannot readily be distinguished from load bearing surfaces and which, if used by aircraft, might result in damage to the aircraft shall have the boundary between such areas and the load-bearing surface marked by a taxi side stripe marking.	☐ S ☐ NS
		Pre-threshold area		When the surface before a threshold is paved and exceeds 60 m in length and is not suitable for normal use by aircraft, the entire length before the threshold shall be marked with a chevron marking. A chevron marking shall point in the direction of the runway and be placed as shown in Figure 8.9-2. See also [MAS] Figure 8.2-1 for Runway pre-end markings.	☐ S ☐ NS

				A chevron marking shall be of conspicuous color and contrast with the color used for the runway markings; it should preferably be yellow. It should have an overall width of at least 0.9 m.	
		• Unserviceable areas		Unserviceability markers shall be displayed wherever any portion of a taxiway, apron or holding bay is unfit for the movement of aircraft but it is still possible for aircraft to bypass the area safely. On a movement area used at night, unserviceability lights shall be used.	☐ S ☐ NS
		• Works Limit markers		Works limit markers, shown in Figure 8.2-1, where used, must be spaced at intervals marginally less than the smallest track of the plant or vehicles operating within the work area.	☐ S ☐ NS
		d) Obstacle Markings		• A structure must be marked when more than 150 m higher than the surrounding terrain. • Surrounding terrain means the area within 400 m of the structure. • Structures above 90 m may need to be marked, and inconspicuous structures 75m above ground level should also be marked. • Fixed objects on the aerodrome movement area, such as ILS buildings, must be marked as obstacles.	☐ S ☐ NS

				• Orange, white or red are normally used. • CAA may permit obstacles to remain unmarked; a) when obstacles are sufficiently conspicuous by their shape, size or colour; or b) when obstacles are shielded by other obstacles already marked; or c) when obstacles are lighted by high intensity obstacle lights by day.	
		Objects to be marked and/or lighted			☐ S ☐ NS
		Objects within the lateral boundaries of the obstacle limitation surfaces		(a) Vehicles and other mobile objects, excluding aircraft, on the movement area of an aerodrome are obstacles and shall be marked and, if the vehicles and aerodrome are used at night or in conditions of low visibility, lighted, except that aircraft servicing equipment and vehicles used only on aprons may be exempt. (b) Elevated aeronautical ground lights within the movement area shall be marked so as to be conspicuous by day. Obstacle lights shall not be installed on elevated ground lights or signs in the movement area.	☐ S ☐ NS

				(c) All obstacles within the distance specified in Table 6.4-5, Table 6.4-5(E) or Table 6.4-5(F), from the center line of a taxiway, an apron taxiway or aircraft stand taxilane shall be marked and, if the taxiway, apron taxiway or aircraft stand taxilane is used at night, lighted. (d) A fixed obstacle that extends above a take-off climb surface within 3000 m of the inner edge of the take-off climb surface shall be marked and, if the runway is used at night, lighted, except that: (i) such marking and lighting may be omitted when the obstacle is shielded by another fixed obstacle; (ii) the marking may be omitted when the obstacle is lighted by medium-intensity obstacle lights, Type A, by day and its height above the level of the surrounding ground does not exceed 150 m; (iii) the marking may be omitted when the obstacle is lighted by high intensity obstacle lights by day; and (iv) the lighting may be omitted where the obstacle is a	

				lighthouse and an aeronautical study indicates the lighthouse light to be sufficient. (e) A fixed object, other than an obstacle, adjacent to a take-off climb surface shall be marked and, if the runway is used at night, lighted if such marking and lighting is considered necessary to ensure its avoidance, except that the marking may be omitted when: (i) the object is lighted by medium-intensity obstacle lights, Type A, by day and its height above the level of the surrounding ground does not exceed 150 m; or (ii) the object is lighted by high-intensity obstacle lights by day. (f) A fixed obstacle that extends above an approach surface within 3000 m of the inner edge or above a transitional surface shall be marked and, if the runway is used at night, lighted, except that: (i) such marking and lighting may be omitted when the obstacle is shielded by another fixed obstacle; (ii) the marking may be omitted	

				when the obstacle is lighted by medium-intensity obstacle lights, Type A, by day and its height above the level of the surrounding ground does not exceed 150 m; (iii) the marking may be omitted when the obstacle is lighted by high intensity obstacle lights by day; and (iv) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient. (g) A fixed obstacle that extends above a horizontal surface shall be marked and, if the aerodrome is used at night, lighted, except that: (i) such marking and lighting may be omitted when: • the obstacle is shielded by another fixed obstacle; or • for a circuit extensively obstructed by immovable objects or terrain, procedures have been established to ensure safe vertical clearance below prescribed flight paths; or • an aeronautical study shows the obstacle not to	

				be of operational significance; (ii) the marking may be omitted when the obstacle is lighted by medium-intensity obstacle lights, Type A, by day and its height above the level of the surrounding ground does not exceed 150 m; (iii) the marking may be omitted when the obstacle is lighted by high intensity obstacle lights by day; and (iv) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient. (h) A fixed object that extends above an obstacle protection surface shall be marked and, if the runway is used at night, lighted. <i>Note: - See [MAS] 9.8.2 for information on the obstacle protection surface.</i> (i) Other objects inside the obstacle limitation surfaces shall be marked and/or lighted if an aeronautical study indicates that the object can constitute a	

				hazard to aircraft (this includes objects adjacent to visual routes e.g. waterway or highway). <i>Note: - In certain circumstances, objects that do not project above any of the surfaces enumerated in [MAS] 7.3 may constitute a hazard to aeroplanes as, for example, where there are one or more isolated objects in the vicinity of an aerodrome.</i> (j) Overhead wires, cables, etc., crossing a river, waterway, valley or highway shall be marked and their supporting towers marked and lighted if an aeronautical study indicated that the wires or cables can constitute a hazard to aircraft.	
		Objects outside the lateral boundaries of the obstacle limitation surfaces		(a) Obstacles in accordance with [MAS] 7.1.5.2 shall be marked and lighted, except that the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day. (b) Other objects outside the obstacle limitation surfaces shall be marked and/or lighted if an aeronautical study indicates that the object can constitute a	☐ S ☐ NS

				hazard to aircraft (this includes objects adjacent to visual routes e.g. waterway, highway). (c) Overhead wires, cables, etc., crossing a river, waterway, valley or highway shall be marked and their supporting towers marked and lighted if an aeronautical study indicates that the wires or cables could constitute a hazard to aircraft.	
				Obstacles other than wires and cables, must be painted in a pattern of contrasting colors which also contrast with the background. Orange and white or red and white are normally used.	☐ S ☐ NS
				Obstacles with any dimension less than 1.5 m, except for masts, poles and towers described in Paragraph 8.10.2.5, must be painted in a solid contrasting color.	☐ S ☐ NS
				Masts, poles and towers must be marked in contrasting bands with the darker color at the top, as shown in Figure 8.10-2. The bands must be perpendicular to the longest dimension and have a width approximately 1/7 of the longest dimension or 30 m, whichever is less.	☐ S ☐ NS

		e) Marking of temporary and transient obstacles		• Same as the permanent • Or unserviceability cone markers and/or flags • Orange • Or orange and white • Size not less than 0.6m square	☐ S	☐ NS
		f) Marking of Vehicles		• Painted a single conspicuous color (yellow or orange) • Using vehicle warning light and flag if not painted yellow or orange.	☐ S	☐ NS
		g) Aerodrome Beacons		• located on or adjacent to the aerodrome in an area of low ambient background lighting.	☐ S	☐ NS
		h) Precision approach path indicator (PAPI) system		• Consist of a row, also termed "wing bar" • 4 equally spaced sharp transition multi-lamp (or paired single lamp) units. • Located on the left side of the runway, unless it is impracticable.	☐ S	☐ NS
2.)		Aerodrome Facilities				
		a) Power Supply				
		• Primary Source		Must be an electrically connected installation, supplied by the local electricity supply authority.	☐ S	☐ NS
		• Secondary Power Supply		May be derived by either of the ff: • independent public power, which is a source of power supplying the aerodrome service from a	☐ S	☐ NS

				substation other than the normal substation through a transmission line following a route different from the normal power supply route and such that the possibility of a simultaneous failure of the normal and independent public power supplies is extremely remote; or generators, batteries etc. from which electric power can be obtained.	
		Switch-over time limits		Time interval bet. failure of the normal source of power to secondary power is not to exceed: - Precision Approach Cat I visual aids – 15 seconds. - Precision Approach Cat II and III visual aids; (i) essential obstacle lights - 15 seconds. (ii) essential taxiway lights - 15 seconds. (iii) all other visual aids - 1 second. - Runways meant for take-off in RVR conditions less 800 m; (i) essential obstacle lights - 15 seconds. (ii) essential taxiway lights - 15 seconds. (iii) runway edge lights, where runway center line lights are	☐ S ☐ NS

				provided - 15 seconds. (iv) runway edge lights, where runway center line lights are not provided - 1 second. (v) runway end lights - 1 second. (vi) runway center line lights - 1 second. (vii) all stop bars - 1 second.	
		Standby power supply		- may be either secondary power or standby generators which are manually activated. - Where the activation of the standby power is not automatic, procedures must be established to facilitate the introduction of standby power as soon as possible when the need arises.	☐ S ☐ NS
		b) Aerodrome Lighting			
		Portable Lighting		- may comprise liquid fuel-burning flares or lamps, or battery powered electric lights. - must be kept in a state of readiness and serviceable condition with clean glasses. - appropriate persons must be trained such that the lights can be deployed and put into operation without delay, when the need arises. - The portable lights must be placed at the same spacing as installed lights.	☐ S ☐ NS

		Light fixtures and supporting structures		- All aerodrome light fixtures and supporting structures must be of minimum weight while being fit for the function, and frangible. - Supporting structures for approach lights also need to be of minimum weight and frangible, except that, in that portion of the approach lighting system beyond 300 m from the runway threshold. - where the height of a supporting structure exceeds 12 m, the frangibility requirement need apply to the top 12 m only; and - where a supporting structure is surrounded by non-frangible objects, only that part of the structure that extends above the surrounding objects need be frangible. - approach light fixture or supporting structure is not in itself sufficiently conspicuous, it is to be suitably marked.	☐ S ☐ NS
		Elevated and inset lights			
		Elevated lights		- Elevated lights must be frangible and sufficiently low to preserve clearance for propellers and the engine pods of jet aircraft. - They should not be more than	☐ S ☐ NS

				360 mm above the ground.	
		➤ Inset lights (pavement lights)		• be constructed with sharp edges; • project more than 25 mm above the surrounding surface at locations where the lights will not normally come into contact with aircraft wheels, such as threshold lights, runway end lights and runway edge lights; • project more than 13 mm above the surrounding surface at locations which will normally come into contact with aircraft wheels, such as runway centerline lights, touch down zone lights and taxiway centerline lights.	☐ S ☐ NS
		• Light intensity and control			
		➤ Lighting Systems if Provided		• approach lighting system; • approach slope guidance system; • runway edge, threshold and end lights; • runway centerline lights; • runway touchdown zone lights; • taxiway lights.	☐ S ☐ NS
		➤ Intensity		Refer to [MAS] Table 9.1-1	
		• Maintenance performance of aerodrome lighting		• A system of preventive maintenance of visual aids shall be employed to ensure lighting and marking system reliability.	☐ S ☐ NS

				In order to provide continuity of guidance an unserviceable light shall not be permitted adjacent to another unserviceable light.	
		Obstacle Lighting		- Low Intensity - Medium intensity - High intensity, or a combination of such light	☐ S ☐ NS
		➤ Low intensity		Steady red lights and are to be used on non-extensive object whose height above the surrounding ground is less than 45 m.	☐ S ☐ NS
		➤ Medium intensity		- Flashing white light- use in environmentally sensitive locations, and near built-up areas. - Flashing red light- hazard beacon, suitable for all applications, used to mark terrain obstacles such as high ground. - Steady red light- used where there is opposition to the use of a flashing red light.	☐ S ☐ NS
		➤ High intensity obstacle lights		Flashing white lights used on obstacles that are in excess of 150m in height.	☐ S ☐ NS
		Illuminated Wind Direction Indicator		- At an aerodrome intended for night use, at least one wind direction indicator (WDI) is to be lit. - The illumination of a wind direction indicator is to be achieved by providing	☐ S ☐ NS

				floodlighting from above.	
		• Approach lighting systems		• Simple approach lighting system • Precision approach Category I lighting system • Precision Approach Category II and III Lighting System	☐ S ☐ NS
		➤ Simple approach lighting system		A simple approach lighting system is intended for a non-instrument or a nonprecision approach runway.	☐ S ☐ NS
		➤ Precision approach Category I lighting system		• To be provided to serve a Category I precision approach runway. • Consist of a row of lights on the extended centerline of the runway extending, wherever possible, over a distance of 900 m prior to the threshold, with a row of lights forming a crossbar 30 m in length and at a distance of 300 m from the threshold.	☐ S ☐ NS
		➤ Precision Approach Category II and III Lighting System		• To be provided to serve a Category II or III precision approach runway. • Consist of a row of lights on the extended centerline of the runway extending, wherever possible, over a distance of 900 m from the runway threshold. • The system is to have two side rows of lights, extending 270 m from the threshold, and 2	☐ S ☐ NS

				crossbars, at 150 m and one at 300 m from the threshold.	
		Surface Movement Guidance Control System (SMGCS)		Is the design of SMGCS takes into account the ff: • Density of air traffic; • Visibility condition; • Pilot disorientation; • Complexity of the aerodrome layout; and, • Movement of vehicles Is the SMGCS designed to prevent inadvertent incursion of aircraft and vehicles into an active runway or taxiway? Is the SMGCS designed to assist in the prevention of collision between aircraft and vehicles or objects, on any part of the movement area?	☐ S ☐ NS ☐ S ☐ NS ☐ S ☐ NS

Appendix 7B-3: RESCUE AND FIRE-FIGHTING FORM AGA-ATI-0003

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	GENERAL		
	1. Is there a rescue and firefighting service provided at certified and registered aerodromes? [] Yes [] No [] N/A		☐ S ☐ NS
	2. Is there sufficient trained and competent personnel designated to be readily available to ride the rescue and fire fighting vehicles and to operate the equipment at maximum capacity? [] Yes [] No [] N/A		☐ S ☐ NS
	LEVEL OF PROTECTION		
	3. Is the level of protection provided at an aerodrome for rescue and firefighting determined from [MAS] Table 14-1 and based on the longest aeroplane normally using the aerodrome and its maximum fuselage width? [] Yes [] No [] N/A		☐ S ☐ NS
	4. Is the changes in the level of protection normally available at an aerodrome for rescue and firefighting notified to the appropriate Air Traffic Service (ATS) unit and Aeronautical Information Service (AIS) unit to enable those units to provide the necessary information to arriving and departing aircraft? [] Yes [] No [] N/A		☐ S ☐ NS
	EXTINGUISHING AGENTS		
	5. Are both principal and complementary agents [] Yes [] No		☐ S ☐ NS

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		STATUS	REMARKS
	provided at the aerodrome?	☐ N/A	
	6. Is the principal extinguishing agent meet either of the following? (a) a foam meeting the minimum performance Level A; or (b) a foam meeting the minimum performance Level B; or (c) a foam meeting the minimum performance Level C; or (d) a combination of these agents; except that the principal extinguishing agent for aerodromes in categories 1 to 3 should preferably meet a performance Level B or C foam.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Does the RFFS using dry chemical powder as complementary extinguishing agent suitable for extinguishing hydrocarbon fires?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. Is the quantity of foam concentrates separately provided on vehicles for foam production in proportion to the quantity of water provided and the foam concentrate selected?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. Is the amount of foam concentrate provided on a vehicle sufficient to produce at least two loads of foam solution?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	10. Is the discharge rate of the foam solution and complementary agent not less than the rates shown in [MAS] Table 14-2?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. Does the complementary agents comply with the appropriate specifications of the International Organization for Standardization (ISO)? Note: - Guidance on complementary agents is given in ISO Publication 7202 (Powder)	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	RESPONSE		
	12. Are the RFF service provided with an up-to-date map of its response area, including the access roads?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	13. Does the rescue and firefighting service able to achieve a response time not exceeding three minutes to any other part of the movement area, in optimum visibility and surface conditions?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	14. Is there a system of preventive maintenance of rescue and fire fighting vehicles employed to ensure the effectiveness of the equipment and compliance with the specified response time throughout the life of the vehicle?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	EMERGENCY ACCESS ROADS		

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		STATUS	REMARKS
	15. Is there an emergency access roads provided on an aerodrome where terrain conditions permit their construction so as to facilitate achieving minimum response times?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Was the need for convenient access to outside areas taken into account where fencing is established?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	17. Are the emergency access roads capable of supporting the heaviest vehicles which will use them and be usable in all weather conditions?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	18. Are roads within 90 m of a runway designed, constructed and maintained to prevent surface erosion and to prevent transfer of debris to an aircraft pavement surface?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	19. Are there edge markers placed at intervals of about 10 m when the surface of the road is indistinguishable from the surrounding area?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	FIRE STATIONS		
	20. Are all rescue and firefighting vehicles housed in a fire station?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	21. Is the fire station located so that the access for rescue and firefighting vehicles into the runway area is direct and clear, requiring a minimum number of turns?	[] Yes [] No [] N/A	☐ S ☐ NS
	COMMUNICATIONS AND ALERTING SYSTEM		
	22. Is there a discrete communication system provided linking a fire station with the control tower, any other fire station on the aerodrome and rescue and firefighting vehicles?	[] Yes [] No [] N/A	☐ S ☐ NS
	23. Is there an alerting system for rescue and firefighting personnel provided at all fire stations on the aerodrome?	[] Yes [] No [] N/A	☐ S ☐ NS
	24. Is the alerting system capable of being operated from any fire station on the aerodrome and the aerodrome control tower?	[] Yes [] No [] N/A	☐ S ☐ NS
	RESCUE AND FIREFIGHTING VEHICLES		
	25. Are the minimum number of rescue and firefighting vehicles provided at an aerodrome in accordance with [MAS] Table 14-3?	[] Yes [] No [] N/A	☐ S ☐ NS
	PERSONNEL		
	26. Are there sufficient trained	[] Yes [] No	☐ S ☐ NS

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		STATUS	REMARKS
	and competent personnel designated readily available to ride the rescue and firefighting vehicles and to operate the equipment at maximum capacity?	[] N/A	
	27. Are all RFFS personnel trained to properly perform their duties in an efficient manner and participate in live fire drills commensurate with the type of aircraft type of rescue and firefighting equipment in use at the aerodrome, including pressure fed fuel fires?	[] Yes [] No [] N/A	☐ S ☐ NS
	28. Is there a task resource analysis completed in determining the minimum number of rescue and firefighting personnel required and the level of staffing documented in the Aerodrome Manual?	[] Yes [] No [] N/A	☐ S ☐ NS
	29. Are all responding RFFS personnel provided with protective clothing and respiratory equipment to enable them to perform their duties in an effective manner?	[] Yes [] No [] N/A	☐ S ☐ NS
	30. Is there a grid map of the aerodrome and its immediate vicinity provided for the use of the aerodrome services concerned?	[] Yes [] No [] N/A	☐ S ☐ NS
	31. Is the grid map conspicuously posted in	[] Yes [] No	☐ S ☐ NS

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		STATUS	REMARKS
	the control tower and fire station, and available on the rescue and fire fighting vehicles and such other supporting vehicles required to respond to an aircraft accident or incident?	[] N/A	
	32. Are there suitable rescue equipment and services available at an aerodrome where the area to be covered by the service includes water, swampy areas or other difficult environment that cannot be fully served by conventional wheeled vehicles?	[] Yes [] No [] N/A	☐ S ☐ NS
	33. Are the authorities responsible for the operation of vehicles on the movement area ensure that the operators are properly qualified? This includes, as appropriate to the driver's function, knowledge of: a) the geography of the aerodrome; b) aerodrome signs, markings and lights; c) radiotelephone operating procedures; d) terms and phrases used in aerodrome control including the ICAO spelling alphabet; e) rules of air traffic services as they relate to ground operations; f) airport rules and procedures; and g) specialist functions as	[] Yes [] No [] N/A	☐ S ☐ NS

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		STATUS	REMARKS
	required, for example, in rescue and firefighting.?		

Appendix 7B-4: WILDLIFE HAZARD MANAGEMENT FORM AGA-ATI-0004

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
1. 4 WILDLIFE HAZARD MANAGEMENT			
	1. Does the aerodrome operator have a problem of wildlife/bird strikes? [] Yes [] No [] N/A	☐ S	☐ NS
	2. Are there any measures taken for reducing wildlife/bird strikes? [] Yes [] No [] N/A	☐ S	☐ NS
	3. Does a serviceability inspection include: a) The condition of aerodrome fencing, particular in critical areas; [] Yes [] No [] N/A	☐ S	☐ NS
	b) Climatic or seasonal considerations, such as the presence of birds at certain times of the year, or related to the depth of water in drainage ponding areas; [] Yes [] No [] N/A	☐ S	☐ NS
	c) Possible shelter provided by aerodrome infrastructure such as buildings, equipment and gable markers; [] Yes [] No [] N/A	☐ S	☐ NS
	d) Wildlife hazard mitigating procedures incorporated in the environmental management procedures for the aerodrome; [] Yes [] No [] N/A	☐ S	☐ NS
	e) Off-airport attractors like animal sale yards, picnic areas, aeration facilities and waste disposal or landfill area, and [] Yes [] No [] N/A	☐ S	☐ NS
	f) Use of harassment procedures where appropriate? [] Yes [] No [] N/A	☐ S	☐ NS
	4. Does the serviceability inspection check damaged fences, open gates, and signs of attempted entry by either animals or humans? [] Yes [] No [] N/A	☐ S	☐ NS

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	Does the aerodrome operator has a procedure describing the actions taken for discouraging the presence of wildlife, including: • Who is in charge of those actions and what their training is;	[] Yes [] No [] N/A	☐ S ☐ NS
	• How and when these actions are carried out, including reporting and filing of these actions;	[] Yes [] No [] N/A	☐ S ☐ NS
	• What equipment is used to conduct these actions;	[] Yes [] No [] N/A	☐ S ☐ NS
	• Analyzes of the aerodrome vicinity and the preventive actions to be taken subsequently to discourage wildlife;	[] Yes [] No [] N/A	☐ S ☐ NS
	• Monitoring of these actions, including, where applicable, the conduct of appropriate wildlife assessments; and	[] Yes [] No [] N/A	☐ S ☐ NS
	• Coordination with ATS.	[] Yes [] No [] N/A	☐ S ☐ NS
	Does the aerodrome operator has a procedure to: a. Record and analyze the incidents involving animals;	[] Yes [] No [] N/A	☐ S ☐ NS
	b. Collect the animals' remains;	[] Yes [] No [] N/A	☐ S ☐ NS
	c. Monitor the corrective actions to be taken subsequently; and	[] Yes [] No [] N/A	☐ S ☐ NS

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		STATUS	REMARKS
	d. Report to CAA incidents involving wildlife	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. Does the aerodrome operator monitor and record, on a regular basis, the presence of birds or animals on or in the vicinity of the aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6. Are the monitoring personnel suitably trained for this purpose?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Where regular monitoring confirms existence of a bird or animal hazard to aircraft operations, or when CAA so directs, is the aerodrome operator produce a bird or animal hazard management plan, which would be included as part of the Aerodrome Manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. Does a comprehensive wildlife management plan including coordination among the aviation regulatory authority, airport operator, aircraft operators and the surrounding communities implemented to successfully deal with land-use issues?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. If directed by the CAA, is the WHMP prepared by a suitably qualified person such as an ornithologist or a biologist, etc.?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10. Does the WHMP address:		☐ S ☐ NS
	a) hazard assessment, including monitoring action and analysis;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	b) pilot notification;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	c) liaison and working relationships with land use planning authorities;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	d) on-airport bird and animal attractors which provide food, water or shelter; [] Yes [] No [] N/A		☐ S ☐ NS
	e) suitable harassment methods; and [] Yes [] No [] N/A		☐ S ☐ NS
	f) an ongoing strategy for bird and animal hazard reduction, including provision of appropriate fencing? [] Yes [] No [] N/A		☐ S ☐ NS
	11. Does the bird and animal hazard management plan reviewed for effectiveness, on a regular basis, at least as part of each technical inspection? [] Yes [] No [] N/A		☐ S ☐ NS
	12. Where the presence of birds or animals is assessed as constituting an ongoing hazard to aircraft, does the aerodrome operator notify the CAA in writing, and include a warning notice for publication in the AIP? [] Yes [] No [] N/A		☐ S ☐ NS
	13. Where a bird or animal hazard is assessed as acute, of short term or seasonal nature, are additional warning given to pilots by NOTAM? [] Yes [] No [] N/A		☐ S ☐ NS
	14. Do airport operators, local government units (LGUs), and other stakeholders assist in identifying and managing wildlife issues at the aerodrome? [] Yes [] No [] N/A		☐ S ☐ NS
	15. Does the wildlife strike hazard on, or in the vicinity of, an aerodrome assessed through: (a) the establishment of a national procedure for recording and reporting wildlife strikes to aircraft; [] Yes [] No [] N/A		☐ S ☐ NS
	(b) the collection of information from aircraft operators, aerodrome personnel and other sources on the presence of wildlife on or around the aerodrome constituting a potential hazard to aircraft operations; and [] Yes [] No [] N/A		☐ S ☐ NS

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		STATUS	REMARKS
	(c) an ongoing evaluation of the wildlife hazard by competent personnel?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Are wildlife strike reports collected and forwarded to ICAO for inclusion in the ICAO Bird Strike Information System (IBIS) database?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	17. Is an action taken to decrease the risk to aircraft operations by adopting measures to minimize the likelihood of collisions between wildlife and aircraft?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	18. Does a bird/wildlife strike control program describe a process for liaison with non-airport agencies and local landowners, etc., to ensure that airport operator is aware of developments that may contribute to creating additional bird hazards in the infrastructure, vegetation, land use and activities in the airport vicinity (e.g. crop harvesting, seed planting, ploughing, establishment of land or water features, hunting, etc., that might attract birds/wildlife)?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	19. Does the appropriate authority take action to eliminate or to prevent the establishment of garbage disposal dumps or any other source which may attract wildlife to the aerodrome, or its vicinity, unless an appropriate wildlife assessment indicates that they are unlikely to create conditions conducive to a wildlife hazard problem?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	20. Invite relevant external stakeholders to quarterly Runway Safety meetings to assist with wildlife management at off airport sites?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	21. Is the operator maintaining records?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	22. Is the staff aware of safety requirements related to bird and animals hazards?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	23. Are bird and animal hazard	☐ Yes	☐ S ☐ NS

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		STATUS	REMARKS
	related incidents noted, reported and followed up?	☐ No ☐ N/A	
	24. List of documents checked. If yes, what are the documents checked?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7C: On-site Verification Checklist**Appendix 7C-1: AERODROME REPORTING**

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.1 AERODROME REPORTING		
	1. Are aerodrome-related aeronautical data determined and reported in accordance with the accuracy and integrity requirements set forth in the Manual of Standards for Aerodromes?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Is there an established quality system procedure to maintain the data quality?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Is there a procedure for monitoring the conditions of the movement area and operational status of related facilities such as: (a) construction or maintenance work; (b) rough or broken surfaces on a runway, a taxiway or an apron; (c) water on a runway, a taxiway or an apron; (d) other contaminants on a runway, taxiway or apron; (e) other temporary hazards, including parked aircraft; (f) failure or irregular operation of part or all of the aerodrome visual aids; and (g) failure of the normal or secondary power supply?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	4. Is there an arrangement to provide the appropriate aeronautical information service unit information regarding condition of the movement area and the operational status of related facilities?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. Is there an arrangement to provide the appropriate air traffic service unit information regarding the condition of the movement area and the operational status of related facilities that has significance to aircraft operation?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6. Does the arrangement ensure timely provision of such information to arriving and departing aircraft?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Does the arrangement ensure that the above-mentioned information is kept up to date?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. Does the arrangement ensure any changes on the above information are reported immediately to the appropriate authority?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. Does the aerodrome operator have means or arrangement to ensure that the personnel assessing and reporting runway surface conditions are trained and competent to meet criteria set by CAA?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	10. Is the runway surface condition reported through a runway condition code (RWYCC) and described using the following terms? DRY STANDING WATER WET	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. Is there a procedure or arrangement to notify the relevant aerodrome users when the friction level of a paved runway or portion thereof is less than the minimum friction level?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	12. Does the procedure or arrangement ensure that the notification specifies the location or portion of the runway with which the friction level is below the minimum?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	13. Is there a procedure or arrangement to report to CAA infringements or potential infringements of the OLS?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	14. Does the procedure or arrangement ensure that information on new obstacles is passed on to pilots through NOTAM?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	15. Does the procedure or arrangement ensure that the following information is included when reporting new obstacle? (a) the nature of the obstacle (for instance structure or machinery); (b) distance and bearing of the obstacle from the start of the take-off end of the runway if the obstacle is within the take-off area, or else from the ARP; (c) height of the obstacle in relation to the aerodrome elevation; and if it is a temporary obstacle, the time it exists as an obstacle.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Are the particulars of the procedures for reporting any changes to aerodrome information or for requesting the issuance of a NOTAM included in the aerodrome manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	17. Is there an arrangement or means to report significant objects found during inspection, such as parts which may have fallen from aircraft, or the remains of birds which may have been struck by an aircraft, immediately to Air Traffic Control, where appropriate, and to the CAA?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	18. Does the arrangement include details of coordination with ATC during normal and outside the normal hours of operations?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	19. Is there an arrangement to report changes (temporary or permanent) in the published aerodrome information including additional changes to current permanent NOTAMs to NOTAM Office?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	20. Is there an arrangement to report changes (temporary or permanent) in the published runway information including further changes to information contained in current permanent NOTAMs to ATC or the NOTAM office?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	21. Is there an arrangement to report changes in the level of protection that is normally available at the aerodrome for rescue and firefighting to NOTAM Office?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	22. Is there an arrangement to report aerodrome works, including time-limited works that require more than 10 minutes to re-instate to serviceable order, affecting runways or the obstacle limitation surfaces to ATC or the NOTAM Office?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	23. Is there an arrangement to report to the NOTAM office information regarding unserviceable portions of the runway?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	24. Is there an arrangement to report to ATC or the NOTAM office outages or failures beyond the specified limits in aerodrome lighting?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	25. Is there an arrangement to report to ATC or the NOTAM office outages or failures beyond the specified limits in obstacle lighting?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	26. In the event of an obstacle light outage, does the arrangement ensure that the notification or reporting is done immediately if such obstacle light has been determined by CAA as being a requirement for aircraft operations?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	27. Does the arrangement ensure that a NOTAM action is initiated to advise pilots of such light outage?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	28. Does the arrangement ensure that the aerodrome operator liaise with the owner of the obstacle light to effect a speedy repair?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	29. For obstacles located outside the obstacle limitation surface area of the aerodrome, is there coordination arrangement to ensure that the owners of the lights establish a program monitor and report to CAA or ATC obstacle light failures?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	30. Is there an arrangement to report temporary obstacles to aircraft operations to NOTAM office?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	31. Is there an arrangement to report temporary obstacles to aircraft operations to ATC?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	32. Is there an arrangement to ensure that the aerodrome operator report to ATC or the NOTAM office any significant increase in, or concentration of birds or animals on or in the vicinity of the aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	33. Is there an arrangement to report changes in excess of 0.05% of the published gradient data to NOTAM office?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	34. Is there an arrangement to report to the ATC or the NOTAM office any emergence of new obstacles?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	35. Is there a procedure or arrangement to report to the ATC or the NOTAM office the unserviceability and return to service of a radio navigation aid or landing aid owned by the aerodrome operator?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	36. Is there a procedure or arrangement to report to	☐ Yes ☐ No	☐ S ☐ NS

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	NOTAM office or ATC any other significant event which affects the safety of aircraft using the aerodrome?	☐ N/A	
	37. Is there a procedure or arrangement to report to ATC changes resulting in obstruction of the OLS?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	38. Is there an arrangement to ensure reports are carried out as expeditiously as possible to ATC and subsequent NOTAM issued as appropriate?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	39. Is there a procedure for reporting time-limited NOTAM?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	40. Is there a procedure for reporting permanent NOTAM?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	41. Is there a procedure for making changes to aerodrome information published in AIP?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	42. Is there an arrangement or procedure to report in writing to CAA-AIS changes to AIP information which does not have an immediate impact on the safety of aircraft operations?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	43. Is there an arrangement to ensure information regarding certification status of the aerodrome is reported directly to CAA-AIS by the aerodrome operator?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	44. Does the arrangement ensure that reports when reporting changes for NOTAM action includes the following: (a) aerodrome name; (b) the aerodrome facility affected and details of unserviceability; (c) reason for change; (d) start time and expected end time of the unserviceability; and (e) daily duration or time schedule of the unserviceability, where applicable?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	45. Is there a process or procedure for checking the accuracy of NOTAM?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	46. Are there procedures or arrangements for keeping records of reports made for NOTAM action or for changes in the AIP information?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	47. Does the record/logbook shows details of all reports and subsequent NOTAM or changes to AIP?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	48. Are copies of reports and NOTAMS kept with the logbook?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	49. Are the names of persons making the reports and his contact details included in the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	50. Are the names of the reporting officers responsible for reporting changes and his contact details during and after working hours included in the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	51. Did the aerodrome operator appoint a suitably trained person/s as the nominated reporting officer/s?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	52. Is the nomination/s of the reporting officer notified in writing to the NOTAM office and CAA?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	53. Are persons other than employees of the aerodrome operator appointed as aerodrome reporting officers have appropriate training and experience?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	54. Does the reporting officer possess the following attributes? (a) a sound knowledge of the physical characteristics of the aerodrome movement area, the aerodrome obstacle limitation surfaces, aerodrome markings, lighting and ground signals and essential aerodrome safety equipment; (b) an understanding of the aerodrome information included in AIP; (c) the ability to carry out a serviceability inspection of (d) procedures the aerodrome;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	(e) a knowledge of the aerodrome emergency procedures; and (f) a knowledge of the NOTAM system and the ability to carry out aerodrome reporting.		

Appendix 7C-2: ACCESS TO THE AERODROME MOVEMENT AREA

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.2 ACCESS TO THE AERODROME MOVEMENT AREA		
	<i>Particulars of the procedures that have been developed and are to be followed in coordination with the agency responsible for preventing unlawful interference in civil aviation at the aerodrome and for preventing unauthorized entry of persons, vehicles, equipment, animals or other things into the movement area, including the following:</i>		
	1. the roles of the aerodrome operator, the aircraft operator, aerodrome fixed-base operators, the aerodrome security entity and other government departments, as applicable.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. the names and roles of the persons who are responsible for controlling access to the movement area and the telephone numbers for contacting them during and after working hours.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. particulars of information about preventing the unauthorized entry of persons, vehicles, equipment, plant or animals, or other things that may endanger aircraft safety, into the movement area.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Does it include details of the arrangements for controlling airside access?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. aerodromes catering for air transport operations, a fence or other suitable barrier are provided around the movement area of the aerodrome.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Facilities		☐ S ☐ NS
	6. Does the physical control measures in place in accordance with the aerodrome manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Are adequate and suitable staff and resources available?		☐ S ☐ NS
	Procedures		☐ S ☐ NS
	8. Are the arrangements for controlling airside access in accordance with the aerodrome manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9.		
	10. Is the staff aware of safety requirements related to unauthorized entry?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. Are any conditions or exemptions complied with?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Product Check		☐ S ☐ NS
	12. Was airside control observed to be effective and in accordance with the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	Feedback		☐ S ☐ NS
	13. Are unauthorized entry incidents noted, reported and followed up?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	List of documents checked. If yes, what are the documents checked?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7C-3: AERODROME EMERGENCY PLAN (AEP)

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.3 AERODROME EMERGENCY PLAN		
<i>Particulars of the aerodrome emergency plan, including the following:</i>			
	1. Is there an Aerodrome Emergency Plan (AEP) in place that commensurate to an aircraft operating in the aerodrome?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	2. Does the AEP contain procedures for periodic testing of the adequacy of the plan and for reviewing the results in order to improve its effectiveness? The currency and adequacy of the AEP must be reviewed at least once every twelve (12) months.	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	3. Is the plan tested by conducting: (a) a full-scale aerodrome emergency exercise at intervals not exceeding two years and partial emergency exercises in the intervening year to ensure that any deficiencies found during the full-scale aerodrome emergency exercise have been corrected? or (b) a series of modular tests commencing in the first year and concluding in a full-scale aerodrome emergency exercise at intervals not exceeding three (3) years? and (c) reviewed thereafter, or	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	

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	after an actual emergency, so as to correct any deficiency found during such exercises or actual emergency?		
	4. Has the aerodrome operator established and chaired an Aerodrome Emergency Committee (AEC)?	[] Yes [] No [] N/A	☐ S ☐ NS
	5. Does the AEC includes representatives of agencies on and off the aerodrome that would be likely to be asked to assist in an emergency?	[] Yes [] No [] N/A	☐ S ☐ NS
	6. Does the manual contain details of the members of the aerodrome emergency committee and contact details for each member?	[] Yes [] No [] N/A	☐ S ☐ NS
	7. Does it contain a description of the role of each emergency service organization involved in the plan?	[] Yes [] No [] N/A	☐ S ☐ NS
	8. Is the AEC responsible for the development of the AEP which includes procedures for coordinating the responses of assisting agencies?	[] Yes [] No [] N/A	☐ S ☐ NS
	9. Does the plan ensure that a full scale emergency exercise must be carried out at least once every two years, commensurate with the size and scale of operations at the airport, unless the emergency plan	[] Yes [] No [] N/A	☐ S ☐ NS

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	was activated for a major emergency within the two (2) year period?		
	10. Does the manual include that a partial exercise is to be conducted in the intervening year?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. Does the AEP include organizational and procedural arrangements for responding to at least the following situations: • aircraft emergencies; • local standby and full emergency; • sabotage including bomb threats; • unlawfully seized aircraft; • disabled aircraft; • hazardous material incident; • building fire and natural disaster; • public health emergencies; or • medical emergency.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	12. Does the manual clearly defines the activation sequence including call out arrangements for Local Standby and Full Emergency?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	13. Is a grid map of the aerodrome and its vicinity provided with detailed location of primary and secondary access gates?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	14. Are the grid maps made available to all responding agencies?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	15. Does the plan includes the responsibility of the AEC to ensure that the level and availability of emergency equipment and services are adequate for the aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Does the plan includes ready availability and coordination of appropriate specialist agencies able to respond to an emergency where an aerodrome is located close to water and/or swampy areas and where a significant portion of approach or departure operations takes place over those areas?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	17. Does the plan include the establishment, testing and assessment at regular intervals of a predetermined response for the specialist rescue services at those aerodromes located close to water and/or swampy areas, or difficult terrain?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	18. Does the plan include an assessment of the approach and departure areas within 1000 m of the runway threshold to determine the options available for intervention?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	19. Does the plan coordinate the response or participation of all existing agencies which, in the opinion of the appropriate authority, could be of assistance in responding to an emergency?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	20. Does the plan ensure that records and reviews of exercises including real emergencies are kept and retained for at least three (3) years?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	21. Does the Disabled Aircraft Removal Plan (DARP) prepared by aerodrome operators ensure continuity of airport operation as part of AEP?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	22. Is a DARP plan for the removal of an aircraft disabled on, or adjacent to, the movement area established at the aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	23. Does the DARP designate a coordinator to implement the plan, when necessary?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	24. Is the plan based on the characteristics of the aircraft	☐ Yes ☐ No	☐ S ☐ NS

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		STATUS	REMARKS
	that normally operates at the aerodrome, and include among other things: a) a list of equipment and personnel on, or in the vicinity of, the aerodrome which would be available for such purpose; and b) an arrangement for the rapid receipt of aircraft recovery equipment kits available from other aerodromes.	[] N/A	
	25. Does the plan ensure that the information concerning the capability to remove an aircraft disabled on or adjacent to the movement area is published in the AIP?	[] Yes [] No [] N/A	☐ S ☐ NS
	26. Is the aerodrome emergency plan commensurate with the scale and type of aircraft operations, the surrounding geography and other activities conducted at the aerodrome?	[] Yes [] No [] N/A	☐ S ☐ NS
	27. With the assistance of the AEC, does the aerodrome certificate holder planned for the worse type of emergency situations that might conceivably occur with respect to size, location, timing and weather?	[] Yes [] No [] N/A	☐ S ☐ NS
	28. The off-aerodrome responding agencies will have been established to deal with [MAS]t, if not all, emergency situations occurring in the community. Therefore, does the aerodrome emergency	[] Yes [] No [] N/A	☐ S ☐ NS

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	procedures have the highest degree of similarity with the procedures used in the community generally?		
	29. Does the plan observe Human Factors principles to ensure optimum response by all existing agencies participating in emergency operations?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	30. On a larger aerodrome, is there Medical Subcommittee established to delegate the preparation of the medical plan?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	31. Does the medical sub-committee plan the deployment of medical personnel called to an aircraft emergency;	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	32. Does the medical sub-committee develop procedures for triage, emergency treatment and movement of casualties; and	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	33. Does the medical sub-committee nominate a coordinator of crash site medical resources?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	34. Are the facilities used in the responses by the various agencies including communications systems tested at intervals not exceeding one year?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	35. Is there a fixed emergency operation center and a forward mobile command post available for use in an emergency?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	36. Is the fixed emergency operations center (EOC) part of the aerodrome facilities and	☐ S ☐ Yes ☐ No	☐ S ☐ NS

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		STATUS	REMARKS
	be used to co-ordinate and direct the overall response to the emergency.	[] N/A	
	37. The location and staffing of the emergency operations center clearly identified in the plan.	[] Yes [] No [] N/A	☐ S ☐ NS
	38. Is the forward mobile command post easily recognizable structure capable of being moved rapidly to the scene of an emergency?	[] Yes [] No [] N/A	☐ S ☐ NS
	39. Is the aerodrome emergency plan clearly set out the discrete roles of the emergency operations center (EOC) and the forward command post, highlighting the physical location of the emergency coordinator?	[] Yes [] No [] N/A	☐ S ☐ NS
	40. Is there a person to assume control of the emergency operations center (<i>Responsible Official</i>) and, when appropriate, another person (<i>Incident Commander</i>) the command post (<i>Incident/Mobile Command Post</i>).?	[] Yes [] No [] N/A	☐ S ☐ NS
	41. Is there an adequate communication systems linking the command post and the emergency operations center with each other and with the participating agencies in accordance with the plan and consistent with the particular requirements of the aerodrome?	[] Yes [] No [] N/A	☐ S ☐ NS

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		STATUS	REMARKS
	42. Area the details of the command, control and coordination of the emergency service organizations observed during an emergency? [] Yes [] No [] N/A		☐ S ☐ NS
	43. As soon as any police presence is established at the scene of an aerodrome emergency or exercise, is the senior police officer required to assume overall coordination of the agencies responding to the emergency? [] Yes [] No [] N/A		☐ S ☐ NS
	44. Is the person who initially assumes coordination of the situation hand over to police when they arrive? [] Yes [] No [] N/A		☐ S ☐ NS
	45. Is the police responsible for guarding any aircraft wreckage on behalf of Aircraft Accident Investigation and Inquiry Board (AAIIB)? [] Yes [] No [] N/A		☐ S ☐ NS
	46. And the arrangements to return the aerodrome to operational status after an emergency? [] Yes [] No [] N/A		☐ S ☐ NS
	47. And arrangements for reviewing actual emergencies or exercises as soon as practicable to assess the plan's adequacy and take corrective action? [] Yes [] No [] N/A		☐ S ☐ NS
	48. And keeping records of each review for at least 3 years? [] Yes [] No [] N/A		☐ S ☐ NS
	49. And arrangements to ensure that the exercise tests the coordination of the emergency [] Yes [] No [] N/A		☐ S ☐ NS

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		STATUS	REMARKS
	services and the adequacy of the procedures and facilities provided for in the plan?		
	50. Does the manual observe human factor principles?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	51. Are the current membership and contact arrangements for the Aerodrome Emergency committee updated?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	52. Is the frequency of meetings in accordance with the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	53. Are all of the necessary participating/responding agencies adequately represented?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	54. Are copies of the AEP distributed in accordance with the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	55. Is the staff aware of safety requirements for emergency planning?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	56. CAA staff may/may not attend AEP exercises. If it is considered necessary to attend, the check should be done as an observation exercise. In other cases, the following product check can be conducted from records kept by the operator.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	57. Was the exercise planned in accordance with the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	58. Date of last exercise?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	59. Did the appropriate agencies	☐ Yes	☐ S ☐ NS

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		STATUS	REMARKS
	attend?	☐ No ☐ N/A	
	60. Was an appropriate objective tested?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	61. Were appropriate amendments made to the AEP?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	62. List of documents checked. If yes, what are the documents checked?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7C-4: RESCUE AND FIRE-FIGHTING

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.4 RESCUE AND FIRE-FIGHTING		
	<i>Particulars of the facilities, equipment, personnel and procedures for meeting the rescue and fire-fighting requirements, including the names and roles of the persons responsible for dealing with the rescue and fire-fighting services at the aerodrome.</i>		
	1. Are all aerodromes provided with rescue and fire fighting service taking into account the aerodrome location and surrounding terrain?	[] Yes [] No [] N/A	☐ S ☐ NS
	2. When an aerodrome is located close to water or swampy areas, or difficult terrain, are there any special rescue services and firefighting equipment appropriate to the hazard and risk available?	[] Yes [] No [] N/A	☐ S ☐ NS
	3. During flight operations, are there sufficient trained and competent personnel designated to be readily available to ride the rescue and fire fighting vehicles and to operate the equipment at maximum capacity?	[] Yes [] No [] N/A	☐ S ☐ NS
	4. Are these personnel deployed in a way that ensures minimum response times is achieved and continuous agent application at the appropriate rate is fully maintained?	[] Yes [] No [] N/A	☐ S ☐ NS
	5. Are there considerations given for personnel to use hand lines, ladders and other rescue and firefighting equipment normally	[] Yes [] No [] N/A	☐ S ☐ NS

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	associated with aircraft rescue and firefighting operations?		
	6. Is the level of protection provided at the aerodrome for RFFS categorized appropriately based on the longest aeroplane normally using the aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. During periods of reduced activity, is there a provision that the level of protection for RFFS available at the aerodrome will be no less than that needed for the highest category of aeroplane planned to use the aerodrome during that time, irrespective of the number of movements?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. Are changes in the level of protection normally available at an aerodrome for rescue and firefighting notified to the appropriate Air Traffic Service (ATS) unit and Aeronautical Information Service (AIS) unit to enable those units to provide the necessary information to arriving and departing aircraft?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. Are the changes expressed in terms of the new category of level of protection available?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10. Are both principal and complementary agent	☐ Yes ☐ No	☐ S ☐ NS

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	provided at the aerodrome?	☐ N/A	
	11. Is the RFFS using dry chemical powders as complementary extinguishing agent suitable for extinguishing hydrocarbon fires?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	12. Are the amounts of water for foam production and complementary agents on the RFFS vehicles in accordance with the aerodrome category in table 14-2?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	13. Is the quantity of foam concentrates separately provided on vehicles for foam production in proportion to the quantity of water provided and the foam concentrate selected?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	14. Is the amount of foam concentrate provided on a vehicle sufficient to produce at least two loads of foam solution?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	15. At aerodromes where operations by aeroplanes larger than the average size in a given category are planned, are the quantities of water recalculated and the amount of water for foam production and the discharge rates for foam solution increased accordingly?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Are the complementary agents provided comply with	☐ Yes	☐ S ☐ NS

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	the appropriate specifications of the International Organization for Standardization (ISO)?	☐ No ☐ N/A	
	17. Are there provision for supplementary water supplies for the expeditious replenishment of rescue and fire fighting vehicles at the scene of an aircraft accident?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	18. Are the rescue equipment commensurate with the level of aircraft operations shall be provided on the rescue and fire fighting vehicle(s)?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	19. Was the operational objective of the rescue and firefighting service achieved a response time not exceeding three minutes to any point of each operational runway, in optimum visibility and surface conditions?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	20. Does any vehicles, other than the first responding vehicles, required to deliver the amounts of extinguishing agents ensuring continuous agent application arrives no more than four minutes from the initial call?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	21. Is there a preventive maintenance system of RFFS vehicles to ensure effectiveness and compliance with the specified response time throughout the life of the vehicle?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	22. Are there adequate emergency access roads provided on the aerodrome where terrain conditions permit their construction so as to facilitate achieving minimum response times?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	23. Is there a provision of ready access to approach areas up to 1,000 meters from the threshold, or at least within the aerodrome boundary?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	24. Where fencing is established, is the need for convenient access to outside areas were taken into account?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	25. Is the emergency access road capable of supporting the heaviest vehicles in all weather conditions?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	26. Are the emergency access roads within 90 m of a runway designed, constructed and maintained to prevent surface erosion and to prevent transfer of debris to an aircraft pavement surface?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	27. Are sufficient vertical clearance provided from overhead obstructions for the largest vehicles?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	28. Are there edge markers in place at intervals of about 10 m when the surface of the road is indistinguishable from	☐ Yes ☐ No	☐ S ☐ NS

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		STATUS	REMARKS																						
	the surrounding area?	[] N/A																							
	29. Can the fire station house all the vehicles?	[] Yes [] No [] N/A	☐ S ☐ NS																						
	30. Is the fire station located with direct and clear access into the runway area requiring minimum number of turns?	[] Yes [] No [] N/A	☐ S ☐ NS																						
	31. Is there a discrete communication system provided linking the fire station with the control tower, any other fire station on the aerodrome and rescue and firefighting vehicles?	[] Yes [] No [] N/A	☐ S ☐ NS																						
	32. Is there an alerting system for rescue and firefighting personnel provided at all fire stations on the aerodrome?	[] Yes [] No [] N/A	☐ S ☐ NS																						
	33. Is the alerting system capable of being operated from any fire station on the aerodrome and the aerodrome control tower?	[] Yes [] No [] N/A	☐ S ☐ NS																						
	34. Is the number of vehicles meets the requirements in <table border="1" data-bbox="300 1485 571 1724"> <thead> <tr> <th>Aerodrome category</th><th>Number of RFFS vehicles</th></tr> </thead> <tbody> <tr><td>1</td><td>1</td></tr> <tr><td>2</td><td>1</td></tr> <tr><td>3</td><td>1</td></tr> <tr><td>4</td><td>1</td></tr> <tr><td>5</td><td>1</td></tr> <tr><td>6</td><td>2</td></tr> <tr><td>7</td><td>2</td></tr> <tr><td>8</td><td>3</td></tr> <tr><td>9</td><td>3</td></tr> <tr><td>10</td><td>3</td></tr> </tbody> </table> Table 14-3 Number of RFFS vehicles accordance with table 14-3?	Aerodrome category	Number of RFFS vehicles	1	1	2	1	3	1	4	1	5	1	6	2	7	2	8	3	9	3	10	3	[] Yes [] No [] N/A	☐ S ☐ NS
Aerodrome category	Number of RFFS vehicles																								
1	1																								
2	1																								
3	1																								
4	1																								
5	1																								
6	2																								
7	2																								
8	3																								
9	3																								
10	3																								

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	35. Are all RFFS personnel appropriately trained and have participated in live fire drills? - Initial fire-fighter requirements? - Continuing training? - Pressure fed fuel fires?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	36. Was a Task Resource Analysis (TRA) conducted to determine the minimum number of firefighting personnel?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	37. Are the RFFS personnel training program include training in human performance, including team coordination?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	38. Are all RFFS personnel provided with proper personal protective clothing and respiratory equipment to enable them to perform their duties in an effective manner?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	39. Does the manual include the names and roles of the persons responsible for dealing with the rescue and fire-fighting services at the aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	40. Does the manual include procedures for meeting the needs of a RFFS, including the information on facilities, equipment, personnel and vehicles?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	41. Is the operator maintaining records in accordance with the aerodrome manual and/or Fire Service Manual SOPs?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	42. Are adequate and suitable staff and resources available including grid map in each vehicle?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	43. Are the current procedures specified in the manual able to be verified?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	44. Procedures for testing equipment provided?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	45. Is the communication system tested in accordance with the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	46. Do field inspections of RFFS facilities and records confirm on-going compliance with existing procedures?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	47. Are RFFS-related hazards, incidents and accidents noted, reported and followed up?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	48. List of documents checked. If yes, what are the documents checked?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7C-5: INSPECTION OF THE MOVEMENT AREA BY THE AERODROME OPERATOR

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.5 INSPECTION OF THE MOVEMENT AREA BY THE AERODROME OPERATOR		
<i>Particulars of the procedures for the inspection of the aerodrome movement area, including the following:</i>			
	1. Does the operator of a certified aerodrome require an arrangement for aerodrome serviceability inspections to be carried out at least 2 times each day including one inspection during hours of darkness, and additionally after a natural phenomena such as severe wind or rain storm, earthquake, or when requested by air traffic control or by CAA?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Is serviceability inspections which are subject to CAA agreement and the frequency of inspections may be reduced to not less than 2 per week at aerodromes with low numbers of traffic movements?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. At aerodromes restricted to VFR operations, is the serviceability inspection conducted before the first aircraft movement during daylight hours?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Does the notification of changes in the published aerodrome information or any other occurrence or emergency affecting the availability of the aerodrome and safety of	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	aircraft using the aerodrome are being reported?		
	5. When carrying out serviceability inspections, are checklists used for reporting any changes in the aerodrome information or for request of issuance of NOTAMS included in the aerodrome manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6. During an inspection, are there arrangements and means of communication with ATC regarding significant objects found in the movement areas?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Does the serviceability inspection include the following surface conditions: (a) ponding of water; (b) pavement cracking or spalling; (c) rubber build up; (d) surface irregularities; (e) damage caused by spillage of corrosive fluids; (f) pipe drain faults particularly in fine grain non cohesive sub grades, in high rainfall areas; (g) scour or erosion ditches; (h) termite mounds or other ground obstacles obscured by long grass; (i) soft ground, particularly in combination with	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	surface roughness and slipperiness; and (j) any other sign of pavement distress which has the potential to develop quickly into a hazardous situation.		
	8. Does the serviceability inspection include checking the following conditions of aerodrome markings, lightings, WDIs, and ground signals? (a) loss of visibility of markers and markings; (b) use of incorrect markers and markings; (c) any disturbance to level and alignment of lights; (d) visual light intensity consistency check (does a light stand out less bright than others in the same system?) (e) discolored or dirty lenses; (f) outage lamps, incorrect lamps fitted, or lamps fitted wrongly; (g) the condition of the frangibility of light bases; (h) exposed edges around footings and other aerodrome installations; (i) damage to wind indicator assembly or mounting; and (j) damage to wind	[] Yes [] No [] N/A	☐ S ☐ NS

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	indicator sleeve fabric, or loss of conspicuous color.		
	9. Does the serviceability inspection also include the following? (a) foreign objects, such as aircraft fastening devices and other parts; (b) mechanics tools, small items of equipment and personal items; (c) debris, such as sand, loose rocks, concrete, wood, plastic, pieces of tire and mud; and (d) with particular vigilance during and after construction activity, any debris or material which may have been generated by vehicle movement, spillage, storage other extraneous activity.	[] Yes [] No [] N/A	☐ S ☐ NS
	Wildlife on, or in the vicinity of, the movement area		☐ S ☐ NS
	10. Does a serviceability inspection checklist include wildlife on or in the vicinity of the movement area?	[] Yes [] No [] N/A	☐ S ☐ NS
	11. Does a serviceability inspection checklist for wildlife include the following? (a) the condition of aerodrome fencing, particularly in critical areas;	[] Yes [] No [] N/A	☐ S ☐ NS

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	(b) climatic or seasonal considerations, such as the presence of birds at certain times of the year, or related to the depth of water in drainage ponding areas; (c) possible shelter provided by aerodrome infrastructure such as buildings, equipment and gable markers; (d) wildlife hazard mitigating procedures incorporated in the environmental management procedures for the aerodrome; (e) off-airport attractors like animal sale yards, picnic areas, aeration facilities and waste disposal or landfill areas, and (f) use of harassment procedures where appropriate		
	Currency of NOTAMs		
	12. Does a serviceability inspection checklist include any outstanding NOTAMs which are current? ☐ Yes ☐ No ☐ N/A		☐ S ☐ NS
	Aerodrome Fencing		☐ S ☐ NS
	13. Does a serviceability inspection include checking of damaged fences, open gates and signs of attempted entry by either animals or humans? ☐ Yes ☐ No ☐ N/A		☐ S ☐ NS
	14. Is there a fence or other suitable barrier provided in the aerodrome to prevent the entrance to	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	the movement area of animals large enough to be a hazard to aircraft and to deter the inadvertent or premeditated access of an unauthorized person onto a non-public area of the aerodrome?		
	15. Are there means of protection provided to deter the inadvertent or premeditated access of unauthorized persons into ground installations and facilities essential for the safety of civil aviation located off the aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Is the fence or barrier located so as to separate the movement area and other facilities or zones on the aerodrome vital to the safe operation of aircraft from areas open to public access?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	17. When greater security is thought necessary, is there a cleared area provided on both sides of the fence or barrier to facilitate the work of patrols and to make trespassing more difficult?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	18. Is there a consideration given to the provision of a perimeter road inside the aerodrome fencing for the use of both maintenance personnel and security patrols?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Security Lighting		
	19. Where it is deemed desirable for security reasons, is a fence or	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	other barrier provided for the protection of international and domestic aerodromes and its facilities illuminated at a minimum essential level?		
	20. Is there a Consideration given by the aerodrome operator in locating the lights so that the ground area on both sides of the fence or barrier, particularly at access points, is illuminated?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	21. Does the aerodrome operator maintain aerodrome inspection records in the form of logbooks or similar for recording the date and time of each aerodrome serviceability inspection?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	22. Are records retained for at least 2 years and kept in a secured location?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	23. Are there arrangements for reporting the results of each inspection and any action taken to ensure correction of unsafe conditions? and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	24. Are the names and roles of persons responsible for carrying out inspections, and their telephone numbers during and after working hours provided?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Obstacles Infringing the take-off, approach and transitional surfaces 25. Does the aerodrome operator have procedures in place and equipment available to	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	enable inspection personnel to identify objects protruding through the OLS? Equipment should include appropriate instrumentation, such as: a) a hand held clinometer; b) 'sighting plane' installations; or c) formal survey equipment.		

Appendix 7C-6: VISUAL AIDS AND AERODROME ELECTRICAL SYSTEMS

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.6 VISUAL AIDS AND AERODROME ELECTRICAL SYSTEMS		
	Lights which may endanger the safety of aircraft		☐ S ☐ NS
	1. Are non-aeronautical ground light near an aerodrome which might endanger the safety of aircraft extinguished, screened or otherwise modified so as to eliminate the source of danger.	[] Yes [] No [] N/A	
	2. Are there Laser emissions which may endanger the safety of an aircraft ? 3. Are the following protected zones established around the aerodrome, to protect the safety of aircraft against the hazardous effects of laser emitters? — a laser-beam free flight zone (LFFZ) — a laser-beam critical flight zone (LCFZ) — a laser-beam sensitive flight zone (LSFZ).	[] Yes [] No [] N/A	
	4. Lights which may cause confusion (a) Does a non-aeronautical ground light which, by reason of its intensity, configuration or color, might prevent, or cause confusion in, the clear interpretation of aeronautical ground lights must be extinguished, screened or otherwise modified so as to eliminate such a possibility. In particular, attention must be directed to a non-aeronautical ground light visible from the air within the areas described hereunder: i.) Instrument runway — code number 4: within the areas before the threshold and beyond the end of the runway extending at least 4 500 m in length from the threshold and runway end and 750 m either side of the extended runway center line in width. ii.) Instrument runway — code	[] Yes [] No [] N/A	☐ S ☐ NS

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	number 2 or 3: as in a), except that the length should be at least 3000 m. iii) Instrument runway — code number 1; and non-instrument runway: within the approach area.		
	5. Are existing or proposed non-aeronautical ground light in the vicinity of an aerodrome, notified to the relevant CAA office for a safety assessment? [] Yes [] No [] N/A	☐ S ☐ NS	
	Light fixtures and supporting structures 1. Are all aerodrome light fixtures and supporting structures of minimum weight? 2. If yes to question no.1, are they frangible? 3. Does it follow the standards for visual aids stipulated while being fit for the function, and frangible and are made in accordance with the provisions of [MAS] 9.1.11 and the Aerodrome Design Manual, Part 6 (in preparation). [] Yes [] No [] N/A	☐ S ☐ NS	
	Elevated approach lights 4. Are elevated approach lights and the supporting structures frangible except that, in that portion of the approach lighting system beyond 300 m from the threshold: [] Yes [] No [] N/A	☐ S ☐ NS	
	5. Are the height of a supporting structure exceeds 12 m, the frangibility requirement shall apply to the top 12 m only; and [] Yes [] No [] N/A	☐ S ☐ NS	
	6. Does supporting structure surrounded by non-frangible objects, only that part of the structure that extends above the surrounding objects is frangible. [] Yes [] No [] N/A	☐ S ☐ NS	
	7. Does approach light fixture or supporting structure not in itself sufficiently conspicuous were appropriately marked. [] Yes [] No [] N/A	☐ S ☐ NS	
	Elevated lights 8. Does elevated runway, stopway and taxiway lights must be frangible and sufficiently low to preserve clearance for propellers and the engine pods of jet aircraft. In general, they shall not be more than 360 mm above the ground. [] Yes [] No [] N/A	☐ S ☐ NS	

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	9. Are elevated lights, in general, are preferable to inset lights, because they provide a larger aperture from which light signals can be seen is used in all cases except: a) where the use of inset lights is specified in this Chapter, or b) where it is not practicable to use elevated lights. Note:- Elevated lights are not practicable on pavements where aircraft or vehicles travel or in areas subject to significant jet blast.	[] Yes [] No [] N/A	☐ S ☐ NS
	Surface lights or Inset lights 10. Does inset lights, also known as in-pavement lights must not: a.) Be constructed with sharp edges; b.) project more than 25 mm above the surrounding surface at locations where the lights will not normally come into contact with aircraft wheels, such as threshold lights, runway end lights and runway edge lights; and c.) project more than 13 mm above the surrounding surface at locations which will normally come into contact with aircraft wheels, such as runway centerline lights, touch down zone lights and taxiway centerline lights.	[] Yes [] No [] N/A [] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ NS ☐ S ☐ NS ☐ S ☐ NS
	11. Are Light fixtures inset in the surface of runways, stop ways, taxiways and aprons designed and fitted as to withstand being run over by the wheels of an aircraft without damage either to the aircraft or to the lights themselves?	[] Yes [] No [] N/A	☐ S ☐ NS
	12. Does the maximum surface temperature attained by an inset lights exceeded the 160°C during a 10-minute period of exposure. Note. — Guidance on measuring the temperature of inset lights is given in the Aerodrome Design Manual, Part 4.	[] Yes [] No [] N/A	☐ S ☐ NS
	13. Does the color for elevated light units casing in accordance with the standard	[] Yes	☐ S ☐ NS

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		STATUS	REMARKS
	color.	☐ No ☐ N/A	
	Light intensity and control Note.— In dusk or poor visibility conditions by day, lighting can be more effective than marking. For lights to be effective in such conditions or in poor visibility by night, they must be of adequate intensity. To obtain the required intensity, it will usually be necessary to make the light directional, in which case the arcs over which the light shows will have to be adequate and so orientated as to meet the operational requirements. The runway lighting system will have to be considered as a whole, to ensure that the relative light intensities are suitably matched to the same end. (See Attachment A, Section 16, and the Aerodrome Design Manual (Doc 9157), Part 4).	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	1. Are the following lighting system provided and equipped with an intensity control for aerodromes with ATS: a) approach lighting system; b) approach slope guidance system; c) runway edge, threshold and end lights; d) runway centerline lights; e) runway touchdown zone lights; f) taxiway centerline lights.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Are the following systems capable of being varied for intensity 5 or 6 stages intensity: (a) approach lighting systems (b) visual approach slope indicator (c) high intensity runway edge, threshold and end lights; (d) runway centerline lights; (e) runway touchdown zone lights.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Does the intensity capable of being varied in at least 3 stages for medium intensity runway edge, threshold and end lights	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Is the runway equipped with both high and medium intensity runway edge lighting?	☐ Yes ☐ No ☐ N/A ☐ Yes	☐ S ☐ NS

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	5. Is the medium intensity system provided with 3 the lowest intensity stages?	☐ No ☐ N/A	☐ S ☐ NS
	6. Does the intensity of runway lighting adequate for the minimum conditions of visibility and ambient light in which use of the runway is intended, and compatible with that of the nearest section of the approach lighting system when provided? NOTE.— While the lights of an approach lighting system may be of higher intensity than the runway lighting, it is good practice to avoid abrupt changes in intensity as these could give a pilot a false impression that the visibility is changing during approach.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Does high-intensity lighting system provided and suitable intensity control incorporated to allow for adjustment of the light intensity to meet the prevailing conditions?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. Is there a separate intensity controls or other suitable methods provided to ensure that the following systems, when installed, can be operated at compatible intensities for? a) <i>approach lighting system;</i> b) <i>runway edge lights;</i> c) <i>runway threshold lights;</i> d) <i>runway end lights;</i> e) <i>runway centerline lights;</i> f) <i>runway touchdown zone lights; and</i> g) <i>taxiway centerline lights.</i>	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	TAXIWAY LIGHTS: 1. Are the Taxiway centerline lights provided with a main beam average intensity of the order of 50 cd or less and 3 stages of intensity control to be normally sufficient? 2. Are the Taxiway centerline lights provided with a main beam average intensity of the order of 100 cd or greater will normally require more than 3 stages of intensity control?	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS ☐ S ☐ NS

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	3. Are Taxiway edge lights provided with a separate intensity control and installed on the same electrical circuit as the low or medium intensity runway edge lights, and to be controlled by the runway light control. 4. Is the Intensity control reduced from each successive stage to an order of 25- 33% based on the fact that a change of the magnitude is required for the human eye to detect that a change has occurred? 5. Is the 6 stages of intensities have the following order of: 100%, 30%, 10%, 3%, 1% and 0.3%?	[] Yes [] No [] N/A [] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ NS ☐ S ☐ NS ☐ S ☐ NS
	6. Are lightings provided at an aerodrome with intensity setting but ATS does not provide 24 hour coverage and the operator leaves the lights turned on all night.	[] Yes [] No [] N/A	☐ S ☐ NS
	7. Does lighting systems operated by ATS monitored automatically so as to provide an immediate indication of: (a) those lighting systems that are on; (b) the intensity of each lighting system; (c) any fault in a lighting system; and (d) such information is to be automatically relayed to the operator position.	[] Yes [] No [] N/A	☐ S ☐ NS
	8. Does runway lighting intensity adequate for the minimum conditions of visibility and ambient light in which use of the runway is intended, and compatible with that of the nearest section of the approach lighting system. Maintenance performance of aerodrome lighting (Visual aids)	[] Yes [] No [] N/A	☒ S ☐ NS
	1. Is the aerodrome has a system of preventive maintenance level objective for aerodrome lightings detailed in their manual?	[] Yes [] No [] N/A	☐ S ☐ NS

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	2 Are there lights in the aerodrome where its main beam average intensity is less than 50% of value specified in the appropriate figure in [MAS] Section 9.7, which is considered to be unserviceable? 3 Are there light units where the designed main beam average intensity is above the value shown in [MAS] Section 9.7, and the 50% value is related to the design value?	[] Yes [] No [] N/A	☐ S ☐ NS
	3. Does a system of preventive maintenance of visual aids employed to ensure lighting and marking system reliability? <i>Note: Guidance on preventive maintenance of visual aids is given in the Airport Services Manual (Doc 9137), Part</i>	[] Yes [] No [] N/A	☐ S ☐ NS
	4. Does the system of preventive maintenance employed for a precision approach category II or III and must include at least the following checks? (a) visual inspection and in-field measurement of the intensity, beam spread and orientation of lights included in the approach and runway lighting systems; (b) control and measurement of the electrical characteristics of each circuitry included in the approach and runway lighting systems; and (c) control of the correct functioning of light intensity settings used by air traffic control.	[] Yes [] No [] N/A [] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ NS ☐ S ☐ NS ☐ S ☐ NS
	5. Does in-field measurement of intensity, beam spread and orientation of lights included in approach and runway lighting systems for a precision approach runway category II or III and must be undertaken by measuring all lights, as far as practicable, to ensure conformance with the applicable specification of [MAS] 9.7-1 to 9.7-2; 9.10-3 to 9.10-10 & 9.10-12; [MAS] 9.13-1 to 9.13-13, [MAS] 9.8-4 and 9.8-9A & 9.8-9B (Aeronautical Ground Light Characteristics)	[] Yes [] No [] N/A	☐ S ☐ NS
	6. Does measurement of intensity, beam spread and orientation of lights included in approach and runway lighting systems for a	[] Yes [] No	☐ S ☐ NS

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	precision approach runway category II or III be undertaken using a mobile measuring unit of sufficient accuracy to analyze the characteristics of the individual lights.	[] N/A	
	7. Is the frequency on the measurements of lights for a precision approach runway category II or III based on traffic density, the local pollution level, the reliability of the installed lighting equipment and the continuous assessment of the results of the in-field measurements? 8. Does measurements of lights intensity in accordance with [MAS] 9.1.15.7 for in-pavement lights and other lights.	[] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ NS
	9. Is the system of preventative maintenance employed for a precision approach runway category II or III and have its objective that, during any period of category II or III operations? 10. Are all approach and runway lights serviceable and in any event at least? (a) 95% of the lights are serviceable in each of the following particular significant elements: i. precision approach category II and III lighting system, the inner 450 m; ii. the runway centerline lights; iii. the runway threshold lights; iv. the runway edge lights; (b) 90% of the lights are serviceable in the touchdown zone lights; (c) 85% of the lights are serviceable in the approach lighting system beyond 450 m; (d) 75% of the lights are serviceable in the runway end lights.	 [] Yes [] No [] N/A [] Yes [] No [] N/A	☒ S ☐ NS
	11. Are unserviceable lights permitted in such a way as to alter the basic pattern of the lighting system adjacent to another unserviceable light except in a barrette or crossbar where two adjacent unserviceable lights may be permitted.	[] Yes [] No [] N/A	☐ S ☐ NS
	12. Is there a system of preventative maintenance employed for a stop bar which is provided at a runway holding	[] Yes [] No	☐ S ☐ NS

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	position used in conjunction with a runway intended for operations in runway visual range conditions less than a value of 350	[] N/A	
	, and must have the following objectives: (a) no more than two lights will remain unserviceable; and (b) two adjacent lights will not remain unserviceable unless the light spacing is significantly less than that specified	[] Yes [] No [] N/A	☐ S ☐ NS
	13. Is there a system of preventative maintenance employed for a taxiway intended for use in runway visual range conditions less than a value of 350m and have its objective that no two adjacent taxiway centerline lights are unserviceable?	[] Yes [] No [] N/A	☐ S ☐ NS
	14. Is there a system of preventative maintenance employed for a precision approach runway category I have its objective during any period of category I operations all approach and runway lights are serviceable, and that in any event at least 85% of the lights are serviceable in each of the following: (a) precision approach category I lighting system; (b) the runway threshold lights; (c) the runway edge lights; and (d) the runway end lights.	[] Yes [] No [] N/A	☐ S ☐ NS
	15. Are unserviceable lights permitted adjacent to another unserviceable light unless the light spacing is significantly less than that specified.	[] Yes [] No [] N/A	☐ S ☐ NS
	16. Is there a system of preventative maintenance employed for a takeoff in runway visual range conditions of less than a value of 550m and have its objective that during any period of operations all runway lights are serviceable and that in any event? (a) at least 95% of the lights are serviceable in the runway centerline lights (where provided) and in the runway edge lights; and (b) at least 75% of the lights are serviceable in the runway end lights.	[] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ NS ☐ S ☐ NS

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	17. Are unserviceable lights permitted adjacent to another unserviceable light.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	18. Is there a system of preventative maintenance employed for a runway meant for takeoff in runway visual range conditions value of 550m or greater and have its objective that during any period of operations all runway lights are serviceable and that in any event at least 85% of the lights are serviceable in the runway edge lights and runway end lights.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	19. Are unserviceable lights permitted adjacent to another unserviceable light	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	20. Is there an arrangement from the appropriate authority to restricts construction or maintenance activities in the proximity of aerodrome electrical systems during low visibility procedures?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Commissioning of lighting systems 1. Is there a formal process by which the performance of the lighting system is confirmed which includes series of procedures designed to determine the suitable performance and accuracy of information provided by any visual aid in conformity with specifications and CAA standards?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Does the commissioning process confirmed by a qualified person? (a) For ground check of compliance with electrical specifications and CAA standards: engineer or airfield power technician with qualifications, training and experience satisfactory to CAA. (b) For flight checking of compliance with operational specifications: a person or organization approved by CAA i.e. Flight Inspection and Calibration Group (FICG) as having the competency to conduct commissioning flight checks.	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS ☐ S ☐ NS

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	3. Are all aerodrome lighting systems commissioned before they are notified as available for normal operations?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Does the verification of vertical and horizontal angles of light signals changes included in the ground check for a visual approach slope indicator system and performed by a person having civil engineering or surveying qualification and experience?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. Does commissioning of the following lighting systems, in addition to the ground check includes flight checks of: (a) approach lighting system; (b) runway lighting system for instrument runways; (c) visual approach slope indicator system (e.g. VASI / PAPI) (i) used by jet propelled aeroplanes engaged in air transport operations; or (ii) installed on CAA direction, in accordance with 9.8.1.1(b);	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6. Is there a requirement for a flight check test that may be waived by CAA, for a visual approach slope indicator system specified in [MAS] 9.1.15.4, that is provided for temporary use only, for example due to a temporary displaced threshold, or during works in progress?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Does the aerodrome operator submitted a duly certified ground check and flight check reports to CAA? Note: If satisfied with the reports, CAA will approve the issue of a permanent NOTAM. Information for a visual approach slope indicator system to be included in the permanent NOTAM includes: a. runway designation; b. type of system, and for AT-VASIS and PAPI systems, the side of runway, as seen by approaching pilot, that the aid is installed; c. where the axis of the system is not parallel to the runway centerline, the angle of displacement and the direction of displacement, i.e. left or right;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	d. approach slope; and e. minimum eye height over threshold, for the on-slope signal.		
	8. Does the aerodrome operator utilized a duly certified ground check as sufficient evidence of compliance with standards to initiate a permanent NOTAM.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. Does ground checking and/or the flight checking of a lighting system specified in Paragraph 9.1.15.4, conducted after commissioning following substantial changes to the system or on receipt of adverse reports on the performance of the system from pilots or aircraft operators. substantial changes to the system include: a) removal and replacement of 50% or more of the light fittings, at the same time, of an approach or runway lighting system; b) removal and replacement of one or more light units of a PAPI system; and c) removal and replacement of two or more light units, at the same time, of an AT-VASIS system. <i>Note: Before a runway is opened for night use, the status of obstacles need to be assessed for obstacle lighting purposes, particularly if the obstacles are within 3 km of the aerodrome.</i>	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Emergency lighting 1. Are there sufficient emergency lights conveniently available for installation on at least the primary runway in the event of failure of the normal lighting system, at an aerodrome provided with runway lighting and without a secondary power supply. <i>Note: Emergency lighting may also be useful to mark obstacles or delineate taxiways and apron areas.</i>	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Are the emergency lights installed on a runway conform to the configuration required for a non-instrument runway?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Is the color of the emergency lights conformed to the color requirements for runway lighting, except that, where the provision of colored lights at the threshold	☐ Yes ☐ No	☐ S ☐ NS

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	and the runway end is not practicable, all lights may be variable white or as close to variable white as practicable.	☐ N/A	
	Section 9.3 Obstacle Lighting		
	1. Does lighting of obstacles intended to reduce hazards to aircraft by indicating the presence of the obstacles and necessary to reduce operating limitations which may be imposed by an obstacle.?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. For obstacles, within the limits of the obstacle limitation surfaces of an aerodrome, Does the aerodrome operator has a sole responsibility for the provision and maintenance procedure for obstacle lighting on natural terrain or vegetation, where determined necessary for aircraft operations at the aerodrome	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. For object or a proposed object in which, CAA determines that intrudes into navigable airspace requires, or will be required to be provided with obstacle lighting, Does the owner of the building or structure responsible for the provision and maintenance of obstacle lighting on a building or structure?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Are obstacle lights provided for? (a) a runway intended to be used at night: (i) if the object extends above the take-off climb surface within 3000 m of the inner edge of the take-off climb surface; (ii) if the object extends above the approach or transitional surface within 3000 m of the inner edge of the approach surface; (iii) if the object extends above the applicable inner, conical or outer horizontal surfaces; (iv) if the object extends above the obstacle protection surface of the T-VASIS or PAPI installed at the aerodrome;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	(v) a vehicle or other mobile objects, excluding aircraft, on the movement area, except aircraft service equipment and vehicles used only on aprons; (vi) obstacles in the vicinity of taxiways, apron taxiways or taxilanes, except that obstacle lights are not to be installed on elevated ground lights or signs in the movement area			
	5. Are obstacle lights provided for objects outside the obstacle limitation surfaces of an aerodrome, if the object is or will be more than 110 m above ground level?	[] Yes [] No [] N/A	☐ S	☐ NS
	6. Does the owner of a tall buildings or structures below the obstacle limitation surfaces, or less than 110 m above ground level, may, of their own volition, provide obstacle lighting to indicate the presence of such buildings or structures at night	[] Yes [] No [] N/A	☐ S	☐ NS
	7. Is obstacle lighting used during the day in lieu of obstacle marking, where provision of obstacle marking is impracticable	[] Yes [] No [] N/A	☐ S	☐ NS
	Types of obstacle lighting and usage			
	1. The types of obstacle lights are the following: 1) Low-intensity - Types A, B, C, D and E; 2) Medium-intensity -Types A, B and C; and 3) High-intensity - Type A and B. Note: - For guidance on the specifications of the types of obstacle lights is given in [MAS] Appendix 6, Table 6-3.	[] Yes [] No [] N/A	☐ S	☐ NS
	Location of obstacle lights			
	1. Is obstacle lights (for one or more low-, medium- or high-intensity) located as close as practicable to the top of the object to be lighted?	[] Yes [] No [] N/A	☐ S	☐ NS
	2. For the case of Chimney or other structure of like function: a) Are the combination of low-, medium-, and/or high-intensity obstacle lights (top lights) located below the top (nominally 1.5 m to 3 m), so as to minimize contamination by smoke, etc.	[] Yes [] No [] N/A	☐ S	☐ NS

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	3. Is tower or antenna structure provided with high intensity obstacle lights by day? 4. Is high intensity obstacle light provided on a structure that has an appurtenance such as a rod or antenna extending greater than 12 m above the structure? 5. If practicable, Is high intensity obstacle light located on the top of the appurtenance? 6. If not practicable, Is high intensity obstacle light located at the highest practicable point?	[] Yes [] No [] N/A	☐ S ☐ NS
	7. Are extensive object or a group of closely spaced objects to be lighted: a) <i>penetrating a horizontal OLS or located outside an OLS, the top lights shall be so arranged as to at least indicate the points or edges of the object highest in relation to the obstacle limitation surface or above the ground, and so as to indicate the general definition and the extent of the objects; and</i> b) <i>penetrating a sloping OLS, the top lights shall be so arranged as to at least indicate the points or edges of the object highest in relation to the obstacle limitation surface, and so as to indicate the general definition and the extent of the objects. If two or more edges are of the same height, the edge nearest the landing area shall be marked.</i>	[] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ NS ☐ S ☐ NS
	for an extensive object or a group of closely spaced objects 8. Are low-intensity obstacle lights used and spaced at longitudinal intervals not exceeding 45 m? 9. Are medium-intensity lights used and spaced at longitudinal intervals not exceeding 900 m?	[] Yes [] No	☐ S ☐ NS
	10. Are additional obstacle lights placed on the highest part of the object, When the obstacle limitation surface is sloping and the highest point above the obstacle limitation surface is not the highest point of the object?	[] Yes [] No [] N/A	☐ S ☐ NS
	When the top of the obstacle is more than 45 m above the level of the surrounding ground or the elevation of the tops of nearby buildings (when the obstacle is surrounded by buildings),		

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	11. Is the top light provided with a medium intensity lights?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	12. Are additional low intensity lights provided at lower levels to indicate the full height of the structure and additional lights are to be spaced as equally as possible, between the top lights and ground level or the level of tops of nearby buildings, as appropriate. The spacing between the lights is not to exceed 45 m?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	13. Does high-intensity obstacle lights, Type A, and medium-intensity obstacle lights, Types A and B, located on an object that will flash simultaneously.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	NATURAL OBSTACLES 1. Are there any natural obstacles at the airport?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. As assessed by CAA where obstacle lights are to be provided, Is the installation in accordance with the standards when the obstacle is located within the approach area? Or outside the approach area?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Does the airport have pictures of these obstacles or records of its location for proper assessment during the inspection?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Since terrain and vegetation are considered natural obstacles and extensive, is there any corrective action done by the airport for its resolution?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Natural Obstacles 5. Does natural obstacles such as terrain and vegetation that are normally extensive and assessed by CAA on an individual case basis provided with an obstacle lights on the ff conditions: (a) if the obstacle is located within the approach area, the portion of the obstacle which is within the approach area is to be treated in	☐ Yes ☐ No	☐ S ☐ NS

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	the same manner as man-made obstacles for the provision of obstacle lights; (b) if the obstacle is located outside the approach area, it is to be marked by sufficient number of lights on the highest and [MAS]t prominent features, so placed that the obstacle can be readily identified.	[] N/A [] Yes [] No [] N/A	☐ S ☐ NS
	TEMPORARY OBSTACLES 1. If the aerodrome has night operations or during poor visibility conditions and temporary obstacles are present in the approach area or movement area, are these obstacles marked with permanent or temporary red obstacle lights?	[] Yes [] No [] N/A	☐ S ☐ NS
	2. If installed are these lights properly arranged to clearly mark the height, limits and extent of the obstacle?	[] Yes [] No [] N/A	☐ S ☐ NS
	Characteristics of low intensity obstacle lights		
	1. Are the low intensity obstacle lights complying all the characteristics? (a) fixed lights showing red; (b) a horizontal beam spread that results in 360° coverage around obstacle; (c) a peak intensity of 100 cd minimum; (d) a vertical beam spread (to 50% of peak intensity) of 10°; (e) a vertical distribution with 100 cd minimum at +6° and +10° above the horizontal; and (f) not less than 10 cd at all elevation angles between -3° and +90° above the horizontal.	[] Yes [] No [] N/A	☐ S ☐ NS
	2. Are low intensity obstacle lights use to indicate taxiway obstacles or unserviceable area in the movement area meeting the requirements of [MAS] provision 9.3.6.2 in terms of 10 cd minimum (peak intensity)?	[] Yes [] No [] N/A	☐ S ☐ NS
	Characteristics of medium intensity obstacle lights		

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	1. Are the medium intensity obstacle lights meeting all the characteristics mentioned in [MAS] provision 9.3.7.1?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Are medium intensity obstacle lights in the correct standard frequency of flashes which is between 20 and 60 flashes per minute as stipulated in [MAS] provision 9.3.7.2?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Are medium intensity obstacle lights meeting the peak effective intensity of 2,000 $\pm$ 25% cd?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Are medium intensity obstacle lights complying with the following vertical distribution?		
	a.) vertical beam spread is to be 3° minimum (beam spread is defined as the angle between two directions in a plane for which the intensity is equal to 50% of the lower tolerance value of the peak intensity);	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	(b) at -1° elevation, the intensity is to be 50% minimum and 75% maximum of lower tolerance value of the peak intensity; and	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	(c) at 0° elevation, the intensity is to be 100% minimum of the lower tolerance value of the peak intensity.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. If this flashing white light is used in day time in lieu of obstacle marking and to indicate temporary obstacles in the vicinity of the aerodrome, does it meeting the correct peak effective intensity in accordance with 9.3.7.4 of the [MAS]?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Characteristics of high intensity obstacle lights		
	1. Are high intensity obstacle lights flashing white lights?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	2. Does the effective intensity of a high intensity obstacle lights located on an object other than a tower supporting overhead wires or cables varies dependently on the following background luminance: (a) 200,000 $\pm$25% cd effective intensity at a background luminance of above 500 cd/m² (day); (b) 20,000 $\pm$25% cd effective intensity at a background luminance of between 50-500 cd/m² (dusk or dawn); (c) 2,000 $\pm$25% cd effective intensity at a background luminance of below 50 cd/m² (night).	[] Yes [] No [] N/A	☐ S ☐ NS
	3. Does the effective intensity of a high intensity obstacle lights located on a tower supporting overhead wires or cables varies dependently on the following background luminance: (a) 100,000 $\pm$25% cd effective intensity at a background luminance of above 500 cd/m² (day); (b) 20,000 $\pm$25% cd effective intensity at a background luminance of between 50-500 cd/m² (dusk or dawn); and (c) 2,000 $\pm$25% cd effective intensity at a background luminance of below 50 cd/m² (night).	[] Yes [] No [] N/A	☐ S ☐ NS
	4. Are high intensity obstacle lights Type A, Medium-intensity obstacle lights, Types A and B, located on an object other than a tower supporting overhead wires or cables flashes simultaneously at a rate between 40-60 flashes per minute.?	[] Yes [] No [] N/A	☐ S ☐ NS
	Floodlighting of Obstacles		

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	1. Where installation of normal obstacle lights is deemed impracticable or undesirable for aesthetic or other reasons, Is the floodlighting of obstacles used at the airport? 2. Is there a document from CAA to show for the non-installation of floodlighting of obstacles? 3. Does floodlighting of obstacles used a.) in the structure that is skeletal as a substantially solid surface or cladding with satisfactory reflectance properties are required; or b.) there is high background lighting level?	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS ☐ S ☐ NS ☐ S ☐ NS
	4. Does floodlighting of obstacles in accordance with the standards set forth in 9.3.9.3 of the [MAS]?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. If floodlighting of obstacles is used, is it reflecting the minimum level of luminance as indicated in [MAS] provision 9.3.9.4?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6. Are light fittings in accordance with the standards set forth in 9.3.9.5 of the [MAS]?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	On-going availability of obstacle light		☐ S ☐ NS
	1. Does the aerodrome operator ensure that all obstacle lights provided are in working condition when they are required to be on?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Does the airport have a pro-active maintenance program for obstacle lights to minimize light outages?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Does the aerodrome operator established a monitoring program for obstacle lights located within the obstacle limitation surface area of the aerodrome that is in accordance with the standards set forth in [MAS] 9.3.10.2 (a) and (b)?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	4. Does the aerodrome operator established a procedure specified in [MAS] 9.3.10.3 (a),(b) and (c) that in the event obstacle light outage, where obstacles located within the obstacle limitation surface area of the aerodrome	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	For obstacles located outside the obstacle limitation surface area of an aerodrome 5. Does the owners of the lights need to establish a program to monitor the lights and report light failure?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6. Are obstacle light failure reported immediately to CAA or ATC and appropriate NOTAM to warn pilots of light outages in this regard properly issued?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Aerodrome Beacons		
	1. Is the airport provided with an aerodrome beacon? 2. If yes, Are the criteria in determining operational necessity for the provision of aerodrome beacon in accordance with the standards set forth in [MAS] provision 9.4.1.2?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Is the aerodrome beacon located on or adjacent to the aerodrome in an area of low ambient background lighting?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Is the aerodrome beacon is shielded by obstacles nor dazzling to a pilot making an approach to land.	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	At international aerodromes or aerodromes in built-up areas, 5. Does the Aerodrome beacon complied with the requirements stipulated in [MAS] 9.4.1.4?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	At other locations 6. Does the Aerodrome beacon show white flashes or other colors?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Does the Aerodrome beacon light frequency of total flashes comply with the requirements specified in [MAS] 9.4.1.6?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. Does the Aerodrome beacon complied with the requirements	☐ S ☐ Yes	☐ S ☐ NS

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	stipulated in [MAS] provision 9.4.1.7?	☐ No ☐ N/A	
	9. Does the Aerodrome beacon light intensity distribution in accordance with [MAS] Table 9.5-1 ?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10. Does the Aerodrome beacon light effective intensity of color flashes in accordance with [MAS] Table 9.4.1.9?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. Is the facility published in AIP?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Illuminated Wind Direction		
	1. If the aerodrome has night operation, is there a lighted wind direction indicator?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. If a WDI is provided in the vicinity of a runway threshold specifically to provide surface wind information for pilots engaged in instrument straight-in approach and landing operations, Is the Aerodrome beacon light provided appropriately lighted?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Is the floodlighting of the WDI in accordance with the standards set forth in 9.5.1.3 of the [MAS]?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Is the floodlighting of the WDI aimed and shielded in accordance with the standards set forth in 9.5.1.4 (a) and (b) of the [MAS]?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. If maintaining more than one WDI, are all lighted especially when there are night Operations? 6. Is the control of lighting for these WDIs in accordance with the standards set forth in [MAS] 9.5.1.5?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Is the WDI lighting control incorporated in the runway lighting system to automatically energize the lighting of the wind direction indicator?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. Does WDI provided with a uniform intensity setting irrespective of the intensity setting of the runway lighting,	☐ Yes ☐ No	☐ S ☐ NS

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	where the electricity supply is provided from a runway lighting circuit?	☐ N/A	
	Approach Lighting System		
	Simple approach lighting system		
	1 Does the airport provided with a simple approach lighting system?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2 If yes, is it properly coordinated with CAA?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3 Is simple approach lighting system (SALS) complied with the requirements set forth in 9.6.1.1 of the [MAS]? a) distance of not less than 420 m from the threshold; and b) row of lights forming a crossbar 18 m or 30 m in length at a distance of 300 m from the threshold.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4 Does crossbar lights forming in a horizontal straight line at right angles to, and bisected by, the line of the centerline lights?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5 Are crossbar lights properly spaced so as to produce a linear effect except that, when a crossbar of 30 m is used, gaps may be left on each side of the centerline?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6 Do crossbar gaps kept to a minimum to meet local requirements and each shall not exceed 6 m?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7 Are the lights forming the centerline placed at longitudinal intervals of 60 m, except that, when it is desired to improve the guidance, an interval of 30 m may be used.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8 Does the inner[MAS]t light located either 60 m or 30 m from the threshold, depending on the longitudinal interval selected for the centerline lights?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9 Does the aerodrome capable of providing centerline lights extending for a distance of 420 meters from the threshold? If it is not possible:	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10 Does the aerodrome complied with the		

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	requirements set forth in 9.6.1.4 of the [MAS]?		
11	Does the system (SALS) complied with the requirements set forth in 9.6.1.5 of the [MAS]?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
12	Is there an ILS Antenna protruding through the plane of the lights treated as an obstacle properly marked and lighted?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
13	Does a simple approach lighting system show fixed lights and the color of the lights is readily distinguishable from other aeronautical ground lights	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
14	Are centerline lights consists of: (a) a single source; or (b) a barrette at least 3 m in length. Note: - 1. When the barrette as in b) is composed of lights approximating to point sources, a spacing of 1.5 m between adjacent lights in the barrette has been found satisfactory. Note: - 2. It may be advisable to use barrettes 4 m in length if it is anticipated that the simple approach lighting system will be developed into a precision approach lighting system. Note: - 3. At locations where identification of the simple approach lighting system is difficult at night due to surrounding lights, sequence flashing lights installed in the outer portion of the system may resolve this problem	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
15	Does the lights show at all angles in azimuth to a pilot on base leg and final approach for a non-instrument runway?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
16	Does the intensity of the lights adequate for all conditions of visibility and ambient light for which the system was provided?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
17	Does a simple approach lighting system as specified in [MAS] 9.6.1.1 to [MAS] 9.6.1.8 provided to serve a non-instrument runway where the code number is 3 or 4 and intended for use at night, except when the runway is used only in conditions of good visibility and sufficient guidance is provided by other	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	

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	visual aids?		
18	Does a simple approach lighting system as specified in [MAS] 9.6.1.1 to [MAS] 9.6.1.8 provided to serve a non-precision approach runway where the code number is 3 or 4 and intended for use at night, except when the runway is used only in conditions of good visibility and sufficient guidance is provided by other visual aids?	☐ S ☐ Yes ☐ No ☐ N/A	☐ NS
	Precision approach Category I lighting system		
1.	Does a precision approach Category I lighting system provided to serve a Category I precision approach runway?	☐ S ☐ Yes ☐ No ☐ N/A	☐ NS
2.	If provided, does it conform to all the standards set forth in provisions 9.6.2 .2 of the [MAS]?	☐ S ☐ Yes ☐ No ☐ N/A	☐ NS
3.	Are the lights forming the centerline placed at longitudinal intervals of 30 m with the inner [MAS] light located 30 m from the threshold?	☐ S ☐ Yes ☐ No ☐ N/A	☐ NS
4.	Are the lights uniformly spaced at intervals not exceeding 1.5 meter and the Barrettes lights have at least 4 meters in length?	☐ S ☐ Yes ☐ No ☐ N/A	☐ NS
5.	Does the lights forming the crossbar in a horizontal straight line at right angles to, and bisected by, the line of the centerline lights.?	☐ S ☐ Yes ☐ No ☐ N/A	☐ NS
6.	Does the lights of the crossbar properly spaced to produce a linear effect, except that gaps may be left on each side of the centerline?	☐ S ☐ Yes ☐ No ☐ N/A	☐ NS
7.	Does These gaps kept to a minimum to meet local requirements and each shall not exceed 6 m.	☐ S ☐ Yes ☐ No ☐ N/A	☐ NS
8.	Does the system (PALS CAT I) complied with the requirements set forth in 9.6.2.6 (a) and (b) of the [MAS]?	☐ S ☐ Yes ☐ No ☐ N/A	☐ NS
9.	Are there ILS Antenna protruding through the plane of the lights (PALS CAT I) treated as an obstacle properly marked and lighted?	☐ S ☐ Yes ☐ No ☐ N/A	☐ NS
10.	Does the centerline lights for a precision approach category I approach lighting	☐ S ☐ Yes	☐ NS

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	system composed of barrettes in lieu of the point source lights ?	☐ No ☐ N/A	
	11. Does the centerline lights for a precision approach category I approach lighting system consist of barrettes as described in [MAS] 9.6.2.12 (b) and 9.6.2.13 (b) is supplemented by a flashing light, except where such lighting is considered unnecessary taking into account the characteristics of the system and the nature of the meteorological conditions?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	12. Does the flashing light characteristics and electrical circuit of these lighting system complied with the requirements set forth in 9.6.2.9 of the [MAS]?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	13. Does the centerline lights for a precision approach category I approach lighting system complied with the requirements set forth in 9.6.2.10 of the [MAS]?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	14. If additional crossbars of lights are used Is the outer ends of crossbar lights lie on two straight lines parallel to the line of the centerline lights or converge to meet the runway centerline 300 m from the threshold.	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	15. Are the centerline and crossbar lights of a precision approach Category I lighting system are installed with a fixed lights showing variable white. Is the centerline light position consist of either? (a) a single light source in the inner 300 m of the centerline, two light sources in the central 300 m of the centerline and three light sources in the outer 300 m of the centerline to provide distance information; or (b) a barrette.	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	
	16. Does the serviceability level of the approach lights specified as a maintenance objective in [MAS] 9.1.15.6 can be demonstrated?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	17. Is the centerline light position consist of either? (a) a single light source ; (b) a barrette.	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	Precision Approach Category II and III Lighting System		

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	1. Does a precision approach Category II and III lighting system provided to serve a Category II or III precision approach runway.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. If it is implicit for the provision of PALS CAT II and CAT III, Is the airport provided with a touchdown zone lights?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Does a precision approach Category II and III lighting system comply with the requirements specified in [MAS] 9.6.3.3?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Does the serviceability level for approach lights comply with the requirements specified in [MAS] 9.6.3.4?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. Are the lights forming the centerline lights for Category II and III lighting system placed at longitudinal intervals of 30 m with the inner[MAS]t light located 30 m from the threshold.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6. Does the provision for precision approach Category II and III lighting system comply with the requirements specified in [MAS] 9.6.3.6?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Are crossbar lights provided with a distance of 150 m from the threshold to fill in the gaps between the centerline and side row lights?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. Are crossbar lights provided at distance of 300 m from the threshold and primarily to extend on both sides of the centerline lights to a distance of 15 m from the centerline.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. Does the provision in [MAS] 9.6.3.9 comply with the requirements for precision approach Category II and III lighting system?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10. Does the provision in [MAS] 9.6.3.10 (a) and (b) comply with the requirements for precision approach Category II and III lighting system?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. If an ILS antenna is present and protruding through the plane of the lights, it is to be treated as an obstacle. Being such is it marked and lighted accordingly? ([MAS] provision	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	9.6.3.10)		
	12. Does the provision specified in [MAS] 9.6.3.10 (a),(b) and (c) comply with the requirements for precision approach Category II and III lighting system?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	13. Does a precision approach Category II and III center lighting system which is beyond 300 m from the threshold consist of the following? (a) a barrette as used on the inner 300 m: or (b) two light sources in the central 300 m of the centerline and three light sources in the outer 300 m of the centerline; and all of which shall show variable white.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	14. Does PALS CAT II and CAT III center light located beyond 300 m from the threshold consist of either of the following: (a) a barrette; or (b) a single light source: and all of which shall show variable white.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	15. Are the Barrettes lights uniformly spaced at intervals not exceeding 1.5 meters and have a length of 4 meters long?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Are barrette lights beyond 300 m supplemented by a flashing light If the centerline is beyond 300 m from the threshold and consists of barrettes lights as described in 9.6.3.12 (a) or 9.6.3.13 (a), except where such lighting is considered unnecessary by CAA taking into account the characteristics of the system and the nature of the meteorological conditions	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	17. Does each flashing light as described in 9.6.3.13 flash twice a second in sequence beginning with the outer[MAS]t light and progressing to the inner[MAS]t light?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	18. Does the design of these lights electrical circuitry operated independently of the other lights in the approach lighting system?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	19. Are side row barrettes lights fixed lights showing red?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	20. Does the length of a side row barrette and spacing between its lights equal to	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	those of the touchdown zone light barrettes. (See [MAS] 9.9.20.4).		
	21. Does the centerline and crossbar lights of a precision approach Category II and III lighting system are installed to be fixed lights showing variable white? 22. Are the lights forming the crossbars are to be uniformly spaced at intervals of not more than 2.7 m?	[] Yes [] No [] N/A	☐ S ☐ NS
	23. Does the intensity of the red light compatible with the intensity of the white light?	[] Yes [] No [] N/A	☐ S ☐ NS
	Visual Approach Slope Indicator Systems		
	1. Does the airport provided with a Visual Approach Indicator System (VASI)?	[] Yes [] No [] N/A	
	2. Does the provision specified in [MAS] 9.8.1.1 (a) and (b) comply with the requirements for precision approach visual approach slope indicator system? (a) The runway is used by jet-propelled airplanes engaged in air transport operations. (b) CAA directs that visual approach slope guidance be provided, because it has determined that such a visual aid is required for the safe operation of aircraft.	[] Yes [] No [] N/A	
	In making a determination of a visual approach slope guidance.	[] Yes [] No [] N/A	☐ S ☐ NS
	3. Does the airport provided with a Visual Approach Indicator System (VASI) taking into account the following CAA requirement stipulated in [MAS] 9.8.1.2 (a),(b),(c) and (d) ?	[] Yes [] No [] N/A	☐ S ☐ NS
	4. Does the airport provided with other visual or non-visual aids?	[] Yes [] No [] N/A	☐ S ☐ NS
	5. Does the airport install a visual approach slope indicator, when serious hazards exist and/or a substantial number of aeroplanes not equipped for ILS use?	[] Yes [] No [] N/A	☐ S ☐ NS

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	6. Does the airport provided with a visual approach slope indicator, for temporary use only, for example due to a temporary displaced threshold, or during works in progress?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	7. Is the aerodrome provided with a standard visual approach slope indicator that consist of the following? (a) T-VASIS and AT-VASIS conforming to the specifications contained in [MAS] 9.8.3.2 to 9.8.3.6 inclusive; and (b) PAPI and APAPI systems conforming to the specifications contained in [MAS] 9.8.3.7 to 9.8.4.9 inclusive as shown in [MAS] Figure 9.8-5.	[] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ S	☐ NS ☐ NS
	8. Is the aerodrome provided with a PAPI, T-VASIS or AT-VASIS, where the code number is 3 or 4 when one or more of the conditions specified in [MAS] 9.8.1.2 exist.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	9. Is the aerodrome provided with a PAPI or APAPI where the code number is 1 or 2 when one or more of the conditions specified in [MAS] 9.8.1.2 exist.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	10. Is the aerodrome provided with a PAPI, where the runway threshold is temporarily displaced from the normal position and one or more of the conditions specified in [MAS] 9.8.1.2 exist? 11. Is the aerodrome provided with a APAPI system, where the code number is 1 or 2 and the runway threshold is temporarily displaced from the normal position with one or more of the conditions specified in [MAS] 9.8.1.2?	[] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ S	☐ NS ☐ NS
	12. Does the standard installation for Visual Approach Indicator System (VASI) in accordance with the provisions stipulated in [MAS] 9.8.1.10 (a),(b),(c) and (d) ?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	13. Does the aerodrome provided with a double-sided PAPI, where a T-VASIS is to be replaced by a PAPI?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	14. Does the aerodrome provide with more than one visual approach slope indicator system?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	15. For the purpose, to avoid confusion,	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	Does the aerodrome provide the same type of approach slope indicator system used on all runways of similar reference code number?			
	16. Is the determination for the installation of T-VASIS or PAPI in accordance with the choice between the aerodrome operator and airline operators using the runway?	[] Yes [] No [] N/A	☐ S	☐ NS
	17. Is the use of the VASI into service of the airport appropriately commissioned and approved by CAA?	[] Yes [] No [] N/A	☐ S	☐ NS
	Obstacle protection surface			
	1. Is the aerodrome established the obstacle protection surface, when it is intended to provide a visual approach slope indicator system?	[] Yes [] No [] N/A	☐ S	☐ NS
	2. Are new objects or extensions of existing objects permitted above an obstacle protection surface except when, in the opinion of the appropriate authority, the new object or extension would be shielded by an existing immovable object?	[] Yes [] No [] N/A	☐ S	☐ NS
	3. Are there any existing objects above an obstacle protection surface?		☐ S	☐ NS
	4. If yes to Q no. 3, Does this objects properly removed except when, in the opinion of the appropriate authority, the object is shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the safety of operations of aeroplanes?	[] Yes [] No [] N/A		
	5. Does one or more following measures specified in [MAS] 9.8.2.5 (a),(b),(c),(d) and (e) properly employed, where an aeronautical study indicates that an existing object extending above an obstacle protection surface (OPS) adversely affect the safety of operations of aeroplanes?	[] Yes [] No [] N/A	☐ S	☐ NS
	T-VASIS and AT-VASIS			
	1. Does the airport provided with a T-Visual Approach Slope Indicator System (T-VASIS)?	[] Yes [] No [] N/A	☐ S	☐ NS
	2. Are they arranged in a pattern seen by the pilot varies according to his position (up or down, left or right)	[] Yes [] No	☐ S	☐ NS

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	relative to the desired approach path?	☐ N/A		
	3. Does it provides the pilot with visual cues about his or her actual descent path relative to the desired descent path, when installed in the aerodrome runway strip?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	4. Are T-VASIS consist of twenty light units symmetrically disposed about the runway centerline in the form of two wing bars of four light units each, with bisecting longitudinal lines of six lights, and laid out as shown in [MAS] Figure 9.8-2.?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	5. Does AT-VASIS consist of ten light units arranged on one side of the runway in the form of a single wing bar of four light units with a bisecting longitudinal line of six lights?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	6. Are the following conditions in [MAS] 9.8.3.4 (a), (b) and (c) present for light units when constructed and arranged in such a manner for the pilot of an aeroplane during approach ?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	7. Are there no lights units visible from the fly-up light units, when on or above the approach slope?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	8. Are there no lights units visible from the fly-down light units, when on or above the approach slope?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Siting a T-VASIS or AT-VASIS		☐ S	☐ NS
	1. Does the siting of a T-VASIS or AT-VASIS complied with the requirements stipulated in [MAS] provision 9.8.3.5 (a) and (b)?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Does the characteristics of the TVASIS light units in accordance with the [MAS] provision 9.8.3.6 (a),(b),(c),(d),(e),(f),(g),(h) and (i) ?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Does the approach slope and elevation settings of light beams of the TVASIS light units in accordance with the [MAS] provision 9.8.3.7 (a),(b),(c),(d),(e),(f) ? and must be such that:	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	4. Does the light unit sited not closer than 15 m from the edge of the runway?	☐ Yes ☐ No	☐ S	☐ NS

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		[] N/A		
	5. Does the airport have light unit sited closer than 15 m from the edge of the taxiway? 6. If yes, is it properly coordinated with CAA?	[] Yes [] No [] N/A	☐ S ☐ NS	
	7. Does the aerodrome operator ensure that the immediate surround of each unit is kept free of grass? 8. Are tall grasses in front of the light unit immediately removed which could provide conflicting light signals? 9. Does power mowing operations being conducted for grasses growing near the box on any side of light units which could result damages of lights?	[] Yes [] No [] N/A	☐ S ☐ NS	
	Precision Approach Path Indicator (PAPI) / Abbreviated PAPI (APAPI) System			
	10. Are PAPI lighting system consist of a row, also termed 'wing bar', of 4 equally spaced sharp transition multi-lamp (or paired single lamp) units?	[] Yes [] No [] N/A	☐ S ☐ NS	
	11. Is the system located on the left side of the runway, as viewed by an aircraft approaching to land, unless it is impracticable to do so?	[] Yes [] No [] N/A	☐ S ☐ NS	
	12. Is the APAPI system consist of a wing bar of two sharp transition multi-lamp (or paired single lamp) units? 13. Is the system located on the left side of the runway unless it is physically impracticable to do so?	[] Yes [] No [] N/A	☐ S ☐ NS	
	14. Does the PAPI system sited and adjusted so that a pilot making an approach complied with the requirements specified in [MAS] 9.8.4.3 (a), (b) and (c)?	[] Yes [] No [] N/A	☐ S ☐ NS	
	15. Does the wing bar of an APAPI constructed and arranged in such a manner that a pilot making an approach with the requirements specified in [MAS] 9.8.4.4 (a), (b) and (c)?	[] Yes [] No [] N/A	☐ S ☐ NS	
	16. Does the aerodrome provided a PAPI and installed on the right side, where it is impracticable to install the PAPI on the left side of the runway?	[] Yes [] No [] N/A	☐ S ☐ NS	

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	17. Is the order of the light units arranged in the reversed form and the on-slope indication is still given by the two units nearest the runway showing red?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	18. Does the aerodrome provide with a double-sided PAPI? If provided, does the indications light to be seen by the pilot symmetrical?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	19. Are the following requirements specified in [MAS] provision 9.8.4.7 (a) and (b) applicable to the siting of a PAPI?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	20. Are the following characteristics of the PAPI light units in accordance with the requirements specified in [MAS] provision 9.8.4.8 (a), (b), (c), (d), (e), (f) and (g).	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	21. Are the requirements for the approach slope and elevation setting of light units in accordance With the requirements specified in [MAS] provision 9.8.4.8 (a) (b) , (c), (d) , (e), and (f)	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	22. Does the optimum distance of a PAPI wing bar from the runway threshold is determined in accordance with the requirements specified in [MAS] provision 9.8.4.10 (a),(b) and (c).	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	23. Is the distance of the PAPI units from the threshold modified from the optimum after consideration of the following:? (a) the remaining length of runway available for stopping the aircraft; and, (b) obstacle clearance.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	24. Is the final location of the PAPI units determined by the relationship between the approach angle, the difference in levels between threshold and the units, and the minimum eye height over the threshold (MEHT)?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	25. Is the angle M used to establish the MEHT of arc less than the setting angle	☐ Yes	☐ S	☐ NS

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	of the unit which defines the lower boundary of the on-slope indication, i.e. unit B, the third unit from the runway?	☐ No ☐ N/A		
	26. Does the aerodrome has installed a PAPI on a runway not equipped with an ILS?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	27. Is distance D1 determined to ensure that the lowest height at which a pilot will see a correct approach path indication provides the wheel clearance over the threshold in accordance with the [MAS] table 9.8-5?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	28. Does the aerodrome has installed a PAPI on a runway equipped with an ILS? 29. Does the calculation of distance D1 provide the optimum compatibility between the visual and non-visual aids for the range of eye-to-antenna heights of the airplanes regularly using the runway and in accordance [MAS] 9.8.4.8(f)?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	30. Are PAPI units installed with the minimum practicable height above ground, and not normally more than 0.9 m?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	31. Are all units of a wing bar ideally lie in the same horizontal plane to allow for any transverse slope, small height differences of no more than 50 mm between light units are acceptable?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	32. A lateral gradient not greater than 1.25% can be accepted provided it is uniformly applied across the units?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	33. Does the procedure for establishing the distance of the PAPI wing bar from the runway threshold conform in [MAS] 9.8.4.18? (a) Decide on the required approach slope. The standard approach slope is 3°. (b) On runways where no ILS is installed, refer to [MAS] Table 9.8-5 to determine the aeroplane eye-to-wheel group and the wheel clearance to be provided at the threshold. The MEHT, which provides the appropriate wheel clearance over the threshold, is established by adding the approach configuration eye-to-	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
			☐ S	☐ NS

	wheel height of the [MAS]t demanding amongst the aircraft regularly using the runway to the required threshold wheel clearance. (c) The calculation of the nominal position of the PAPI is made on the assumption that the PAPI units are at the same level as the runway centerline adjacent to them, and this level, in turn, is the same as that of the runway threshold. The nominal distance of the PAPI is derived by multiplying the required MEHT by the cotangent of the angle M in [MAS] Figure 9.8-6. (d) Where there is a difference in excess of 0.3 m between the elevation of the runway threshold and the elevation of unit B at the nominal distance from the threshold, it will be necessary to displace the PAPI from its nominal position. The distance will be increased if the proposed site is lower than the threshold and will be decreased if it is higher. The required displacement is determined by multiplying the difference in level by the cotangent of the angle M. e.) Where a PAPI is installed on a runway equipped with an ILS, the distance D1 must be equal to that between the threshold and the effective origin of the ILS glide path, plus a correction factor for the variation of eye-to-antenna heights of the aeroplanes concerned. The correction factor is obtained by multiplying the average eye-to-antenna height of those aeroplanes by the cotangent of the approach angle. The PAPI is then aimed at the same angle as the ILS glide slope. Harmonization of the PAPI signal and the ILS glide path to a point closer to the threshold may be achieved by increasing the width of the PAPI on course sector from 20' to 30'. However, the distance D1 must be such that in no case will the wheel clearance over the threshold be lower than specified in column (3) of [MAS] Table 9.8-5.	[] Yes [] No [] N/A [] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ S ☐ S	☐ NS ☐ NS ☐ NS
	Runway Lightings			
	1. Is the airport runway edge lighting system of the following type complied with the requirements specified of	[] Yes [] No	☐ S	☐ NS

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	[MAS] 9.9.1.1?	[] N/A		
	2. Is the airport provided with a Runway edge lights for a runway intended for use at night or for a precision approach runway intended for use by day or night. Unless otherwise determined by CAA, edge lights shall also be installed on a runway intended to be used for take-off by day with an RVR of 800 meters or less?	[] Yes [] No [] N/A	☐ S	☐ NS
	3. Is the airport provision for Runway edge lighting meets the following operational requirements: (a) for every runway intended for use at night, omnidirectional lights meeting the characteristics requirements of [MAS] 9.9.6 shall be provided to cater for both visual circling after an instrument approach to circling minima, and circuits in VMC; (b) for a precision approach runway, in addition to (a) above, unidirectional lights meeting the characteristics requirements of [MAS] 9.9.7 and 9.9.8, if applicable, shall also be provided.	[] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ S	☐ NS ☐ NS
	4. Is the airport Runway edge lights placed along both sides of the runway, in two parallel straight rows equidistant from the centerline of the runway, commencing one-light spacing from the threshold and continuing to one-light spacing from the runway end.	[] Yes [] No [] N/A	☐ S	☐ NS

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	5. Is the airport Runway edge lights longitudinal spacing complied with the requirements stipulated in [MAS] 9.9.4.1? (a) for an instrument runway, intervals of not greater than 60 m (+0 / -5 m); (b) for a non-instrument runway, intervals not greater than 100m (+0/ - 10m) m , or 60 m +0 / -5 m if there is an intention to upgrade the runway to an instrument runway at some time in the future. (c) for non-precision instrument runways intended to be used in visibility conditions of 1.5 km or greater, where existing edge lights are spaced at 90 m $\pm$10 m, it is acceptable to retain this spacing until the next replacement or improvement of the edge lighting system. (This situation typically arises from an existing non-instrument runway being upgraded to a non-precision instrument runway, but without re-installing the runway edge lights to the 60 m +0 / -5 m standard.)	[] Yes [] No [] N/A [] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ NS ☐ S ☐ NS ☐ S ☐ NS	
	6. Does the provision of runway edge lights complied with the requirements stipulated in [MAS] 9.9.4.2? (a) within 600 m of the threshold, lights may be spaced irregularly, but not omitted, and (b) more than 600 m from the threshold, lights may be spaced irregularly or omitted, but no two consecutive lights may be omitted; provided that such irregular spacing or omission does not significantly alter the visual guidance available to a pilot using the runway.	[] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ NS ☐ S ☐ NS	
	7. Are runway edge lights omitted for precision approach runway? 8. Are inset runway edge lights provided in place of elevated lights, where a runway edge light cannot be omitted?	[] Yes [] No [] N/A [] Yes [] No [] N/A	☐ S ☐ NS ☐ S ☐ NS	

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	9. Does runway edge light aligned with a light on the opposite side of the runway?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	10. Does runway edge lights placed along the edges of the area declared for use as the runway or outside the edges of the area at a distance of not more than 3 m. <i>Note: - Existing edge lights located beyond 3 m from the edge of runway as a result of a reduction in the declared runway width do not need to be relocated until they are being replaced.</i>	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	11. Is the runway edge lights placed as if the runway is 30 m in width, If the width of a runway is less than 30 m in width, and in accordance with Paragraph 9.9.5.1?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	12. Does the row of high intensity light units place closer to the runway centerline, if a runway is provided with both low or medium intensity and high intensity runway light units? 13. Are the two rows of light unit's parallel, separated by a distance of at least 0.5 m.?	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	14. Are low intensity and medium intensity runway edge lights fixed omnidirectional lights and show variable white? 15. Are Elevated omni-directional lights have light distribution that is uniform for the full 360° horizontal coverage? 16. Does the photometric characteristics of the inset lights are to be as close as practicable to those of the elevated lights, where elevated lights are impracticable and inset lights are used?	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	17. Does the minimum light intensity for low intensity runway edge lights in accordance with [MAS] 9.10.2, Figure	☐ Yes ☐ No	☐ S	☐ NS

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	9.10-13?	☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A		
	18. Does the main beam, between 0° and 7° above the horizontal, have a minimum average intensity of not less than 100 cd, and a maximum average intensity of not more than 200 cd? 19. Are low intensity runway edge lights have a single intensity for all lights in the same runway lighting system?	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	20. Does the minimum light intensity for medium intensity runway edge lights in accordance with 9.10.2, Figure 9.10-14? 21. Does the main beam, between 0° and 7° above the horizontal, have a minimum average intensity of not less than 200 cd, and a maximum average intensity of not more than 600 cd?	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	22. Are high intensity runway edge lights fixed unidirectional lights with the main beam directed towards the threshold?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	23. Are high intensity runway edge light beam coverage toed in towards the runway as follows: (a) 3.5° in the case of a 30-45 m wide runway (b) (b) 4.5° in the case of a 60 m wide runway. 24. Are runway edge lights fixed lights showing variable white except for those located within 600 m from the runway end? 25. Do runway edge lights between the beginning of the runway and the displaced threshold show red in the approach direction?	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	26. Is the section of lights 600m or one third of the runway length, whichever is the lesser, at the remote end of the runway from which take-off is started yellow, unless otherwise directed by CAA?	☐ Yes ☐ No ☐ N/A		
	27. Does the minimum light intensity for high intensity runway edge lights show variable white and in accordance with [MAS] 9.10.2 (a) Figure 9.10-15 for 30 m to 45 m wide runways; and (b) Figure 9.10-16 for 60 m wide runways. The minimum light intensity for high intensity runway edge lights that show yellow is the standard set out in Figure 9.10-15 or Figure 9.10-16, whichever is applicable, multiplied by 0.4?	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	28. Is the minimum light intensity for high intensity runway edge lights show yellow is the standard set out in Figure 9.10-15 or Figure 9.10-16, whichever is applicable, multiplied by 0.4?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	29. Is separate high intensity runway edge light fittings provided with back-to-back, or bi-directional light fittings and must be used with the correct toe-in angle built in, on a runway where high intensity edge lights are intended to be used from either direction?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	30. Are runway threshold lights provided on a runway that is equipped with runway edge lights, except on a non-instrument or non-precision approach runway where the threshold is displaced and wing bar lights are provided. (See [MAS] Figure 9.9-1)	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	31. Are runway threshold lights located in a straight line at right angles to the centerline of the runway?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	32. Does the provision for the location of			

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	runway threshold lights include the following conditions: (a) when the threshold is at the extremity of a runway, as near to the extremity as possible and not more than 3 m outside; or (b) when the threshold is a displaced threshold, at the displaced threshold with a tolerance of ± 1 m.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	33. Are threshold lighting consist of: (a) on a non-instrument or non-precision approach runway, at least 6 lights; (b) on a precision approach runway category I, at least the number of lights that would be required if the lights were spaced at intervals of 3 m between the rows of runway edge lights; and (c) on a precision approach runway category II or III, lights uniformly spaced at intervals of 3 m between the runway edge lights.	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	34. Are the lights prescribed in [MAS] 9.9.10.2 (a) and (b) shall be either: (a) equally spaced between the rows of runway edge lights; or (b) symmetrically disposed about the runway centerline in two groups, with the lights uniformly spaced in each group and with a gap between the groups equal to the gauge of the touchdown zone marking or lighting, where such is provided, or otherwise not more than half the distance between the rows of runway edge lights.	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	35. Is the aerodrome provided with wing bar lights on a non-instrument or non-precision approach runway where the threshold is displaced and threshold lights are required, but not provided?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	36. If directed by CAA due to a need for increased conspicuity, Does the aerodrome provided a wing bar lights for a precision approach runway? (See [MAS] Figure 9.9-1)	☐ Yes ☐ No ☐ N/A		
	37. Are wing bar lights installed symmetrically disposed about the runway centerline at the threshold in two groups? and 38. Does each wing bar formed by a group of at least five lights extending at least 10m outward from, and at right angles to, the runway centerline with the inner[MAS]t light of each wing bar in the line of the runway edge lights?	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	39. Does runway threshold and wing bar lights have the following characteristics: (a) the lights must be fixed unidirectional lights showing green in the direction of approach over not less than 38° or more than 180° of azimuth; (b) the light distribution in the direction of approach must be as close as practicable to that of the runway edge lights; (c) the intensity of the green lights must be in the range of 1 to 1.5 times the intensity of the runway edge lights.	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	40. Does runway threshold lights on a precision approach runway in accordance with the specifications of [MAS] Figure 9.10-5.?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	41. Does threshold wing bar lights on a precision approach runway in accordance with the specifications of	☐ Yes ☐ No	☐ S	☐ NS

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	[MAS] Figure 9.10-6?	[] N/A		
	42. Does runway threshold lights on a precision approach runway fixed lights showing green in the direction of approach and in accordance with the specifications of [MAS] 9.10.2, Figure 9.10-17?	[] Yes [] No [] N/A	☐ S	☐ NS
	43. Does wing bar lights on a precision approach runway must be fixed lights showing green in the direction of approach and in accordance with the specifications of [MAS] 9.10.2, Figure 9.10-18?	[] Yes [] No [] N/A	☐ S	☐ NS
	44. Does the aerodrome provided with Runway Threshold Identification Lights (RTIL) ?	[] Yes [] No [] N/A	☐ S	☐ NS
	45. Is the aerodrome provided with an Runway Threshold Identification Lights (RTIL, where a runway threshold is difficult to locate from the air such as in the case of a displaced threshold or an aerodrome with complex runway/taxiway layout in the vicinity of the threshold?	[] Yes [] No [] N/A	☐ S	☐ NS
	46. Does the aerodrome provided with a runway threshold identification lights , during the day, to mark a temporarily displaced threshold of a runway serving international jet propelled aeroplanes conducting air transport operations?	[] Yes [] No [] N/A	☐ S	☐ NS
	47. If an aerodrome is provided with a Runway threshold identification lights:		☐ S	☐ NS
	48. Does one light unit positioned on each side of the runway, equidistant from the runway centerline, on a line perpendicular to the runway centerline.?	[] Yes [] No [] N/A		
	49. Does the location of the light units have a distance from 10 m to 15 m outside	[] Yes		

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	each line of runway edge lights, and in line with the threshold?	☐ No ☐ N/A		
	50. Are each light unit have a minimum of 10 m from the edge of taxiways?	☐ Yes ☐ No ☐ N/A		
	51. Does the elevation of both light units within 1 m of a horizontal plane through the runway centerline, with the maximum height above ground not exceeding 1 m?	☐ Yes ☐ No ☐ N/A		
	52. Does Runway threshold identification lights have the ff characteristics?		☐ S	☐ NS
	(a) be white flashing lights;	☐ Yes ☐ No ☐ N/A		
	(b) be synchronized, with a normal flash rate of 60-120 per minute;	☐ Yes ☐ No ☐ N/A		
	(c) have a minimum range in bright sunlight of approximately 7 km; and	☐ Yes ☐ No ☐ N/A		
	(d) the beam axis of each light unit shall be aimed 15° outward from a line parallel to the runway centerline and inclined at an angle of 10° above the horizontal.	☐ Yes ☐ No ☐ N/A		
	(e) the light shall be visible only in the direction of approach to the runway.	☐ Yes ☐ No ☐ N/A		
	53. Does Runway threshold identification lights installed on the following conditions?		☐ S	☐ NS
	(a) at the threshold of a non-precision approach runway when additional threshold conspicuity is necessary or where it is not	☐ Yes ☐ No ☐ N/A		

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	practicable to provide other approach lighting aids; and (b) where a runway threshold is permanently displaced from the runway extremity or temporarily displaced from the normal position and additional threshold conspicuity is necessary	☐ Yes ☐ No ☐ N/A		
	For temporarily displaced threshold lights for use at night: 54. Does the aerodrome provided with a temporarily displaced threshold lights for use at night to identify the new threshold location when the threshold of a runway is temporarily displaced? 55. Does the location for Temporarily displaced threshold lights provided on each side of the runway and must consider the ff. ? (a) in line with the displaced threshold: (b) at right angles to the runway centerline; and (c) with the inner[MAS]t light on each side aligned with the row of runway edge lights on that side of the threshold.	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS	
	56. Does the aerodrome contain the following characteristics for temporarily displaced threshold lights:			

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	(a) each side must consist of 5 lights except that 3 lights per side is sufficient if the runway width is 30 m or less; (b) the lights must be spaced at 2.5 m apart; (c) the inner[MAS]t light of each side must be a fixed omnidirectional light showing green in all angles of azimuth; (d) the outer 4 or 2 lights, as appropriate, of each side must be fixed unidirectional lights showing green in the direction of approach, over not less than 38° or more than 180° of azimuth; (e) the light distribution in the direction of approach must be as close as practicable to that of the runway edge lights; (f) the light intensity must be as close as practicable to 1.5 times, and not less than, that of the runway edge lights.	[] Yes [] No [] N/A	☐ S ☐ NS	
	57. Does Runway lighting with a displaced threshold take into account the following:		☐ S ☐ NS	
	(a) If the part of runway located before a displaced threshold is available for aircraft use, i.e. for take-offs toward and through the displaced threshold, and landings from the opposite direction, runway edge lights in this part of runway must: (i) show red in the direction of approach to the displaced threshold; and (ii) show white in the opposite direction, or yellow as appropriate for a precision approach runway. (b) The intensity of the red runway edge lights required under paragraph 9.9.15.8 (a) (i) must not be less than one-quarter, and not	[] Yes [] No [] N/A	☐ S ☐ NS	

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	more than one half, that of the white runway edge lights. (c) Runway edge lights may be bi-directional light fittings or separate light fittings installed back to back. (d) If the portion of runway before a displaced threshold is closed to aircraft operations, all the runway lights thereon must be extinguished.			
	58. Are the lights visible only in the direction of approach to the runway	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	59. Are Runway end lights provided on a runway equipped with runway edge lights?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	60. Is the airport provided with a Runway end lights that is located in a straight line at right angles to the runway centerline?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	61. Does the aerodrome complied with the provision of runway end lights as specified in [MAS] 9.9.16.2 (a),(b) and (c)?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	62. Are runway end lights installed in fixed unidirectional lights showing red towards the runway? 63. Are the Runway end lights consisting of six lights? Are the lights installed either: (a) spaced at equal intervals between the rows of runway edge lights; or (b) symmetrically disposed about the runway centerline in two groups with the lights uniformly spaced in each group and with a gap between the groups not more than half the distance between the rows of runway edge lights.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	For a precision approach runway category III: 64. Does the spacing between runway end lights exceed 6 m, except between the two inner[MAS]t lights if a gap is used?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	65. Are Low intensity and medium intensity runway end lights have the following characteristics: (a) the lights must be fixed unidirectional showing red in the direction of the runway over not less than 38° or more than 180° of azimuth; (b) the intensity of the red light must not be less than one-quarter, and not more than one-half, that of the runway edge lights; (c) the light distribution in the direction of the runway must be as close as practicable to that of the runway edge lights.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	66. Does the following conditions present for Low intensity and medium intensity runway end lights to be installed as inset lights: (a) the runway is also equipped with high intensity runway end lights; or (b) it is impracticable for elevated lights to be installed.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	67. Is the airport installed with a bidirectional light fittings may be used or separate light fittings installed back to back, If the runway end coincides with the runway threshold?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	68. Does Runway end lights installed on a precision approach runway category III have the following characteristics:	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	(a) the lights must be inset, fixed unidirectional showing red in the direction of the runway;	☐ Yes ☐ No	☐ S ☐ NS

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	(b) the minimum light intensity must be in accordance with [MAS] 9.10, Figure 9.10-7: and (c) the spacing between runway end lights, except between the two inner [MAS] lights if a gap is used, shall not exceed 6m.	[] N/A		
	69. Are Runway end lights on a precision approach runway in accordance with the specifications of [MAS] Figure 9.10-7.?	[] Yes [] No [] N/A	☐ S	☐ NS
	Runway turning area edge lights / turn pad light		☐ S	☐ NS
	1. Is the edge of the turning area provided with blue edge lights if the runway is provided with edge lights, Where an aircraft turning area is provided on a runway?	[] Yes [] No [] N/A	☐ S	☐ NS
	2. Are Runway turning area edge located not less than 0.6 m, and not more than 1.8 m, outside the edge of the turning area.	[] Yes [] No [] N/A	☐ S	☐ NS
	3. Is the blue edge light located where the turning area commences, If the beginning of the splay into a runway turning area is more than 10 m from the previous runway edge light	[] Yes [] No [] N/A	☐ S	☐ NS
	4. Does turning area edge lights provided to mark any change of direction along the side of the turning area.	[] Yes [] No [] N/A	☐ S	☐ NS
	5. Does an equally spaced blue edge lights provided along a side with spacing not exceeding 30 m, when a side of the turning area is longer than 30 m?	[] Yes [] No [] N/A	☐ S	☐ NS
	6. Does a Runway turning area edge lights have the same characteristics as taxiway edge lights and in accordance	[] Yes [] No	☐ S	☐ NS

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	2. Are stopway lights uniformly spaced and not more than that of the runway edge lights, with the last pair of lights located at the stopway end.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Are stopway lights placed along the full length of the stopway and in two parallel rows that are equidistant from the centerline and coincident with the rows of the runway edge lights? 4. Are stopway lights provided across the end of a stopway on a line at right angles to the stopway axis as near to the end of the stopway as possible and, in any case, not more than 3 m outside the end? 5. Does stopway lights contain the following characteristics?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	(a) the lights must be fixed and unidirectional showing red in the direction of the runway, and not visible to a pilot approaching to land over the stopway; and (b) the light distribution in the direction of the runway must be as close as possible to that of the runway edge lights;	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Runway Centerline Lights			
	1. Are Runway centerline lights provided on a precision approach runway Category II or III, and on a runway intended to be used for take-off with an operating minimum RVR lower than 400 m? Note: - Provision of runway centerline lights on a precision approach runway Category I where the width between the runway edge lights is greater than 50 m is recommended.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Are Runway centerline lights located along the centerline of the runway, except that the lights may be uniformly offset to the same side of the runway centerline by not more than 60 cm, where it is not practicable to locate them along the centerline?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	3. Are Runway centerline lights located from the threshold to the end at longitudinal spacing of approximately 15 m. Where the serviceability level of the runway centerline lights specified as maintenance objectives in [MAS] 9.1.15.3 or 9.1.15.11, as appropriate, can be demonstrated, and the runway is intended for use in RVR conditions exceeding 350 m, the longitudinal spacing may be increased to approximately 30 m.? Note: - Existing centerline lighting where lights are spaced at 7.5 m need not be replaced.	[] Yes [] No [] N/A	☐ S ☐ NS	
	For maintenance of runway marking purposes: 4. Are runway centerline lights have been offset of not more than 0.6 m from the true runway centerline?	[] Yes [] No [] N/A	☐ S ☐ NS	
	5. Does offsetting of runway center line lights in accordance with the provision stipulated in [MAS] 9.9.19.4?	[] Yes [] No [] N/A	☐ S ☐ NS	
	6. Are Runway centerline lights of inset type, fixed lights showing variable white from the threshold to a point 900 m from the runway end. From 900 m to 300 m from the runway end, the light pattern is to be alternate red and variable white lights? 7. Are lights for the last 300 m before the runway end, show red? 8. Is the color of the lights show alternate red and white lights extend from the midpoint of the runway length to 300 m from the runway end, For runways less than 1800 meters in length?	[] Yes [] No [] N/A	☐ S ☐ NS	
	9. Does the light intensity and distribution of runway centerline lights in accordance with:	[] Yes [] No [] N/A	☐ S ☐ NS	

	(a) [MAS] 9.11, Figure 9.11-8 for 30 m spacing;			
	(b) [MAS] 9.11, Figure 9.11-9 for 15 m spacing.			
	10. Does Centerline guidance for take-off from the beginning of a runway to a displaced threshold provided by: (a) an approach lighting system if its characteristics and intensity settings afford the guidance required during take-off and it does not dazzle the pilot of an aircraft taking off; or (b) runway centerline lights; or (c) barrettes of at least 3 m in length and spaced at uniform intervals of 30 m, as shown in [MAS] Figure 9.9-2, designed so that their photometric characteristics and intensity setting afford the guidance required during take-off without dazzling the pilot of an aircraft taking off.	[] Yes [] No [] N/A	☐ S ☐ NS	
	Runway touchdown zone lights			
	1. Are Runway touchdown zone lights provided in the touchdown zone of a runway intended for precision approach Category II or III operations?	[] Yes [] No [] N/A	☐ S ☐ NS	
	2. Does Runway touchdown zone lights extend from the threshold for a distance of 900 m, except that for runways less than 1800 m in length and the system shall be shortened so that it does not extend beyond the mid-point of the runway?	[] Yes [] No [] N/A	☐ S ☐ NS	
	3. Are the lightings is to consist of a series of transverse rows of lights, or barrettes			

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	symmetrically located on each side of the runway centerline?			
	4. Is each barrette of Runway touchdown zone lights consisting of three light units at 1.5 m apart? 5. Does the inner[MAS]t light of each barrette located equal to the lateral spacing of the touchdown zone marking? 6. Do the barrette lights dimensions comply with the requirement of [MAS] 9.9.20.3?	[] Yes [] No [] N/A	☐ S ☐ NS	
	7. Is the first pair of barrettes located at 60 m from the threshold and subsequent barrettes are spaced longitudinally either 30 m or 60 m apart? Note: - To allow for operations at lower visibility minima, it may be advisable to use a 30 m longitudinal spacing between barrettes.	[] Yes [] No [] N/A	☐ S ☐ NS	
	8. Are Runway touchdown zone lights installed in inset form, fixed unidirectional lights showing variable white?	[] Yes [] No [] N/A	☐ S ☐ NS	
	9. Does Runway touchdown zone lights in accordance with [MAS] 9.11, Figure 9.11-10.	[] Yes [] No [] N/A	☐ S ☐ NS	
	Simple Touchdown Zone Lights			
	1. Is a Simple Touchdown Zone Lights provided at the aerodrome, where the approach angle is greater than 3.5° and/or the Landing Distance Available combined with other factors increases the risk of an overrun, Except for [MAS] 9.9.20?	[] Yes [] No [] N/A	☐ S ☐ NS	
	2. Does Simple Touchdown Zone Lights installed with a pair of lights located on each side of the runway centerline 0.3	[] Yes [] No [] N/A	☐ S ☐ NS	

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	meters beyond the upwind edge of the final Touchdown Zone Marking/ 3. Is the lateral spacing between the inner lights of the two pairs of lights equal to the lateral spacing selected for the Touchdown Zone Marking? 4. Does the spacing between the lights of the same pair not more than 1.5 m or half the width of the touchdown zone marking, whichever is greater? (See Figure 9.9-3).			
	5. Are Simple Touchdown Zone lights installed on a runway without TDZ markings in which such position provides the equivalent TDZ information.	[] Yes [] No [] N/A	☐ S	☐ NS
	6. Does a Simple Touchdown Zone Lights installed in a fixed unidirectional lights showing variable white, aligned so as to be visible to the pilot of a landing aeroplane in the direction of approach to the runway?	[] Yes [] No [] N/A	☐ S	☐ NS
	7. Does a Simple Touchdown Zone Lights are supplied with power on a separate circuit to other runway lighting so that they may be used when other lighting is switched off?	[] Yes [] No [] N/A	☐ S	☐ NS
	Rapid exit taxiway indicator lights			
	1. Is the aerodrome provided with a Rapid exit taxiway indicator lights?	[] Yes [] No [] N/A	☐ S	☐ NS
	2. If yes, Does RETIL installed on a runway intended for use in runway visual range conditions less than 350 meters and/or where traffic density is heavy, unless directed otherwise by CAA?	[] Yes [] No [] N/A	☐ S	☐ NS
	3. Are set of rapid exit taxiway indicator lights installed on the same side of the runway as the associated rapid exit	[] Yes [] No [] N/A	☐ S	☐ NS

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	taxiway?			
	4. Does each set of lights is located 2 meters apart and the light nearest to the runway centerline is displaced 2 meters from the centerline?			
	5. Are set of rapid exit taxiway indicator lights for each exit when displayed not to overlap, where more than one rapid exit taxiway exists on a runway?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	6. Are Rapid exit taxiway indicator lights show fixed unidirectional yellow lights, aligned so as to be visible to the pilot of a landing aeroplane in the direction of approach to the runway?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	7. Does the light intensity and distribution of rapid exit taxiway indicator lights in accordance with: (a) [MAS] 9.10, Figure 9.10-8 for runways with 30 m centerline light spacing; or (b) [MAS] 9.10, Figure 9.10-9 for runways with 15 m centerline light spacing, as appropriate.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	8. Does Rapid exit taxiway indicator lights is supplied with a power on a separate circuit to other runway lighting so that they may be used when other lighting is switched off?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Installation and Aiming of Light Fittings			

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	1. Are the following points in the installation and aiming of light fittings followed; (a) the lights are aimed so that there are no deviations in the main beam pattern, to within 1/2° from the applicable standard specified in this chapter; (b) horizontal angles are measured with respect to the vertical plane through the runway centerline; (c) when measuring horizontal angles for lights other than runway centerline lights, the direction towards the runway centerline is to be taken to be positive; (d) vertical angles specified are to be measured with respect to the horizontal plane.	[] Yes [] No [] N/A	☐ S ☐ NS
	Runway lead-in lighting systems		
	1. Is the aerodrome provided with a Runway lead-in lighting system?	[] Yes [] No [] N/A	☐ S ☐ NS
	2. If yes, Does the provision of Runway lead-in lighting system is desired to provide visual guidance along a specific approach path, for reasons such as avoiding hazardous terrain or for purposes of noise abatement?	[] Yes [] No [] N/A	☐ S ☐ NS
	3. Does runway lead-in lighting system consist of groups of lights positioned so as to define the desired approach path and so that one group must be sighted from the preceding group?	[] Yes [] No [] N/A	☐ S ☐ NS
	4. Is the interval between adjacent groups not to exceed approximately 1600 m? Note: - Runway lead-in lighting systems may be curved, straight or a combination thereof.	[] Yes [] No [] N/A	☐ S ☐ NS
	5. Does a runway lead-in lighting system extend from a point as determined by the appropriate authority, up to a point	[] Yes [] No	☐ S ☐ NS

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	where the approach lighting system, if provided, or the runway or the runway lighting system is in view?	☐ N/A		
	6. Are each group of lights for a runway lead-in lighting system consist of at least three flashing lights in a linear or cluster configuration? 7. Does the system is augmented by steady burning lights where such lights would assist in identifying the system?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	8. Is the flashing lights and the steady burning lights showing a white color?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	9. Does the flashing lights in each group flash in sequence towards the runway.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Runway status lights			
	1. Is the aerodrome provided with a Runway status lights? 2. If yes, Does the provision of RELs and THLs in accordance with provision stipulated in [MAS] 9.11.2.1 and [MAS] 9.11.2.3?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Does RELs consist of at least five light units and spaced at a minimum of 3.8 m and a maximum of 15.2 m longitudinally, depending upon the taxiway length involved, except for a single light installed near the runway centerline?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	4. Does an RELs illuminate as an array at each taxiway/runway intersection where they are installed less than 2 seconds after the system determines a warning is needed.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	5. Do RELs illuminate as an array at each taxiway/runway intersection where they	☐ Yes ☐ No	☐ S	☐ NS

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	are installed less than 2 seconds after the system determines a warning is needed?	☐ N/A		
	6. Does the intensity and beam spread of RELs in accordance with the specifications of [MAS] Figure 9.13-3: and Figure 9.13-5. Note: - Consideration for reduced beam width may be required for some REL lights at acute angled runway/taxiway intersections to ensure the RELs are not visible to aircraft on the runway.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	7. Does a THLs consist of two rows of fixed in pavement lights showing red facing the aircraft taking off?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	8. Do THLs illuminate as an array on the runway less than 2 seconds after the system determines a warning is needed?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	9. Does RELs and THLs installed to be automated to the extent that the only control over each system will be to disable one or both systems?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Taxiway Lighting			
	1. Is the aerodrome provided with a taxiway centerline lights?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Does Taxiway centerline lights provided on a taxiway and apron intended for use in runway visual range conditions less than a value of 350 m (precision approach Category II or III) in such a manner to provide continuous guidance between the runway centerline and aircraft stands?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Is taxiway centerline lights used on a rapid exit taxiway?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	4. Is taxiway centerline lights provided on an exit taxiway, taxiway and apron in all visibility conditions where specified as components of an advanced surface movement guidance and control system in such a manner as to provide continuous guidance between the runway centerline and aircraft stands? [] Yes [] No [] N/A	☐ S ☐ NS
	Provision of taxiway edge lights	
	1. Are taxiway edge lights provided at the edges of runway turn pads, taxiways, aprons and holding bays intended for use at night and not provided with centerline lights? [] Yes [] No [] N/A	☐ S ☐ NS
	2. Are taxiway edge lights provided at apron edges especially during night time and are these following requirements may occur include, but are not limited to: (a) aprons where taxi guidelines and aircraft parking position marking are not provided; [] Yes [] No [] N/A (b) aprons where apron floodlighting provides inadequate illumination at the edge of the apron; and (c) where the edge of the apron is difficult to distinguish from the surrounding area at night.	☐ S ☐ NS
	Taxiway markers	
	1. Is the aerodrome used reflective taxiway edge markers instead of taxiway centerline or edge lights, or to supplement taxiway lights ,for code letter A or B taxiways? [] Yes [] No [] N/A	☐ S ☐ NS
	2. Is the aerodrome apron taxiway provided with a taxiway lights? [] Yes [] No [] N/A	☐ S ☐ NS

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	3. Are taxiway lights provided for taxiing aircraft which do not need to alternate between taxiway centerline and edge lights?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	4. Are taxiway edge lights used to supplement taxiway centerline lights and where additional guidance is required to delineate taxiway edges?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Control of lights on taxiways			
	1. Is intensity control provided for taxiway lights, at an aerodrome with Air Traffic Service and taxiway lights with an average intensity within the main beam of more than 20 candela, to allow adjustment of the lighting to suit ambient conditions?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Are taxiway lights designed to allow taxiways in use to be lit and those not in use to be unlit and If it is desired to illuminate only standard taxi routes during certain period of operations, for example during low visibility operations?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Is there an interlocked provided for runway forming part of a standard taxi-route with runway lighting and taxiway lighting, the lighting systems in order to preclude the possibility of simultaneous operation ?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Location of taxiway centerline lights			
	1. Are taxiway centerline lights located on the taxiway centerline marking, except that they may be offset by not more than 30 cm where it is not practicable to locate them on the marking?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Spacing of taxiway centerline lights			
	1. Is the longitudinal spacing of taxiway centerline lights on a straight section of taxiway complied with the requirements of the values specified in Table 9.12-1 below?			

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	Type General Last 60 m before a runway or apron Taxiways used in conjunction with a non-instrument, non-precision, or a precision approach Category I runway 60 m 15 m Taxiways used in conjunction with a precision approach Category II runway 30 m 15 m Taxiways used in conjunction with a precision approach Category III runway 15 m 7.5 m	[] Yes [] No [] N/A	☐ S ☐ NS
	2. Is the last light of taxiway center line lights more than 1 m outside the line of runway edge lights, for the case of entry taxiway?	[] Yes [] No [] N/A	☐ S ☐ NS
	3. Are the taxiway centerline lights continuing on from the preceding straight section at a uniform distance from the outside edge of the taxiway? 4. Are the lights spaced at intervals such that a clear indication of the curve i?	[] Yes [] No [] N/A	☐ S ☐ NS
	Location of taxiway centerline lights on other exit taxiway		
	1. Are taxiway centerline lights on exit taxiways, other than rapid exit taxiways have the ff;		
	(a) start at the tangent point on the runway; (b) have the first light offset 1.2 m from the runway centerline on the taxiway side; and (c) be spaced at uniform longitudinal intervals of not more than 7.5 m. Note: - See [MAS] Figure 9.12-4 for offset runway and taxiway centerline lights	[] Yes [] No [] N/A	☐ S ☐ NS

	Location of taxiway centerline lights on rapid exit taxiway			
	1. Does the location of taxiway centerline lights on a rapid exit taxiway must have the ff:			
	(a) start at least 60 m before the tangent point; (b) on that part of taxiway marking parallel to the runway centerline, be offset 1.2 m from the runway centerline on the taxiway side; and ©continue at the same spacing to a point on the centerline of the taxiway at which an aeroplane can be expected to have decelerated to normal taxiing speed. Note: - See [MAS] Figure 9.12-4 for offset runway and taxiway centerline lights.	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A		
	2. Is taxiway centerline lights for a rapid exit taxiway spaced at uniform longitudinal intervals of not more than 15 m if the runway has centerline lighting installed, otherwise the spacing may be up to a maximum of 30 m?		☐ S ☐ NS	
	Characteristics of taxiway centerline lights			
	1. Are taxiway centerline lights have an inset fixed lights showing green with beam dimensions such that the light is visible only from aeroplanes on or in the vicinity of the taxiway on: (a) a taxiway other than an exit taxiway; and (b) a runway forming part of a standard taxi-route.	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A		
	2. Does taxiway centerline lights on exit taxiways, including rapid exit taxiways inset fixed lights (See Figure 9.12-1):	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A		

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	(a) showing green and yellow alternately, from the point where they begin to the perimeter of the ILS critical area or the lower edge of the inner transitional surface, whichever is farther from the runway; and (b) showing green from that point onwards; and (c) The first light in the exit centerline shall always show green and the light nearest to the perimeter shall always show yellow.			
	3. Where it is necessary to denote the proximity to a runway	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	4. Does taxiway centerline lights have a fixed lights showing alternating green and yellow from the perimeter of the ILS critical/sensitive area or the lower edge of the inner transitional surface, whichever is farthest from the runway, to the runway and continue alternating green and yellow until? (a) their end point near the runway centerline; or (b) in the case of the taxiway centerline lights crossing the runway, to the opposite perimeter of the ILS critical/sensitive area or the lower edge of the inner transitional surface, whichever is farthest from the runway.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	5. Where the taxiway centerline lights are used for both runway exit and entry purposes: 6. Does the color of the lights viewed by a pilot of an aircraft entering the runway is to be green? 7. Does the color of the lights viewed by a pilot of an aircraft exiting the runway is	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	to be green and yellow alternately?			
	8. Where higher intensities are required, from an operational point of view:	[] Yes [] No [] N/A	☐ S	☐ NS
	9. Are the taxiway centerline lights on rapid exit taxiways intended for use in runway visual range conditions less than a value of 350 m in accordance with the specifications of [MAS] Figure 9.13-3? 10. Is the number of levels of brilliancy settings for these lights the same as that for the runway centerline lights?	[] Yes [] No [] N/A	☐ S	☐ NS
	11. Does taxiway centerline lights in accordance with the specifications of [MAS] Figures 9.13-6, 9.13-7 or 9.13-8, where taxiway centerline lights are specified as components of an advanced surface movement guidance and control system and where, from an operational point of view, higher intensities are required to maintain ground movements at a certain speed in very low visibilities or in bright daytime conditions?	[] Yes [] No [] N/A	☐ S	☐ NS
	Beam dimensions and light distribution of taxiway centerline lights			
	1. Does the beam dimensions and light distribution of taxiway centerline lights be such that the lights are visible only to pilots of aircraft on, or in the vicinity of, the taxiway?	[] Yes [] No [] N/A	☐ S	☐ NS
	2. Is care necessary to limit the light distribution of the green taxiway centerline lights on or near a runway, or in the vicinity of a threshold so as to avoid possible confusion with the runway threshold lights?	[] Yes [] No [] N/A	☐ S	☐ NS
	3. Does taxiway centerline lights comply with the specifications set out in [MAS] 9.13, Figure 9.13-1 or, whichever is applicable, On a taxiway intended for use in conjunction with a non-instrument, non-precision or a precision	[] Yes [] No [] N/A	☐ S	☐ NS

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	approach Category I or II runway?			
	4. Does taxiway centerline lights comply with the specifications set out in [MAS] 9.13, Figures 9.13-3, 9.13-4, 9.13-5 or 9.13-6, whichever is applicable, on a taxiway that is intended for use in conjunction with a precision approach Category III runway?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Location of Taxiway Edge Lights			
	1. Are taxiway edge lights provided at the edges of a runway turn pad, holding bay or apron intended for use at night and on a taxiway not provided with taxiway centerline lighting and intended for use at night.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Are Taxiway edge lights located outside the edge of the taxiway, being: (a) equidistance from the centerline except where asymmetric fillets are provided; and (b) as close as practicable to 1.2 m from the taxiway edge, but no further than 1.8 m, or nearer than 0.6 m.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Where a taxiway intersects a runway, are the last taxiway edge lights aligned with the line of runway edge lights, and must not encroach beyond the line of runway edge lights into the area outlined by the runway edge lights?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	4. Are taxiway edge lights provided on a runway forming part of a standard taxi route and intended for taxiing at night if the runway is not provided with taxiway centerline lights?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Characteristics of Taxiway Edge Lights			

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1. Are taxiway edge lights fixed omnidirectional lights showing blue and the lights must be visible: (a) up to at least 75° above the horizontal; and (b) at all angles in azimuth necessary to provide guidance to the pilot of an aircraft on the taxiway.	[] Yes [] No [] N/A	☐ S	☐ NS
2. At an intersection, exit or curve, 3. Are the lights shielded, as far as is practicable, so they cannot be seen where they may be confused with other lights?	[] Yes [] No [] N/A	☐ S	☐ NS
4. Is the intensity of blue taxiway edge lights at least 2 cd from 0° to 6° vertical and 0.2 cd at any vertical angle from 6° to 75°?	[] Yes [] No [] N/A	☐ S	☐ NS
Provision of runway guard lights			
1. Is the aerodrome provided with a runway guard lights?	[] Yes [] No [] N/A	☐ S	☐ NS
2. Does a runway guard lights Configuration A provided at each runway/taxiway intersection when the runway is intended for use in: (a) runway visual range conditions less than a value of 550m where a stop bar is not installed; and (b) runway visual range conditions of values between 550m and 1200m where the traffic density is heavy.	[] Yes [] No [] N/A	☐ S	☐ NS

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	3. If directed by CAA, are runway guard lights Configuration A used at each runway/taxiway intersection associated with a runway intended for use in : (a) runway visual range conditions between 550m and 1200m where the traffic density is medium or light.	[] Yes [] No [] N/A	☐ S ☐ NS
	Pattern and location of runway guard lights		
	1. Which are the two standard configurations of runway guard lights the aerodrome use: (a) Configuration A (or Elevated Runway Guard Lights) has lights on each side of the taxiway, and (b) Configuration B (or In-pavement Runway Guard Lights) has lights across the taxiway.	[] Yes [] No [] N/A	☐ S ☐ NS
	2. As part of runway incursion prevention measures: Are runway guard lights, Configuration A or B, provided at each taxiway/runway intersection where runway incursion hot spots have been identified, and used under all weather conditions during day and night.?	[] Yes [] No [] N/A	☐ S ☐ NS
	3. Is configuration A runway guard lights located on both sides of the taxiway, at the runway holding position closest to the runway, with the lighting on both sides: (a) equidistant from the taxiway centerline; (b) not less than 3 m, and not more than 5 m, outside the edge of the taxiway; and (c) at a distance from the runway centerline not less than that specified for a take-off runway in [MAS] Table 6.5-1.	[] Yes [] No [] N/A	☐ S ☐ NS
	4. Is configuration B runway guard lights located across the entire taxiway, including fillets, holding bays, etc. at the runway holding position closest to the	[] Yes [] No [] N/A	☐ S ☐ NS

	runway:			
	(a) with the lights spaced at uniform intervals of 3 m; and			
	(b) at a distance from the runway centerline not less than that specified for a take-off runway in [MAS] Table 6.5-1.			
	5. Is configuration B runway guard lights not colocated with a stop bar installation?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Characteristics of runway guard lights			
	1. Are configuration A runway guard lights consist of two pairs of elevated lights showing yellow, one pair on each side of the taxiway?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Does the requirements for runway guard lights characteristics contain the following:			
	(a) the centerline of lights in each pair shall be separated by a horizontal distance that is not less than 2.5 times, and not more than 4 times, the radius of the individual lantern lens; (b) each light shall be provided with a visor to minimize extraneous reflection from the optical surfaces of the lanterns; (c) the visors and the face of the light fitting surrounding the lantern lens shall be black to minimize reflection and provide enhanced contrast; (d) where additional isolation of the signal is required from the background, a black target board must be provided around the sides and top of the face of the light fitting.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	(e) Some other device or design, e.g. specially designed optics, must be used in lieu of the visor.			
	3. Are configuration B runway guard lights consist of inset lights showing yellow spaced at intervals of 3 m across the taxiway?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	4. Is the light beam has a unidirectional and aligned so as to be visible to the pilot of an aeroplane taxiing to the holding position?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	5. Does the performance of Configuration A runway guard lights complied with the following: (a) the lights in each pair are to be illuminated alternately at between 30 and 60 cycles per minute; (b) the light suppression and illumination periods of each light in a pair are to be of equal and opposite duration; (c) the light beams are to be unidirectional and aimed so that the beam centers cross the taxiway centerline at a point 60 m prior to the runway holding position; (d) the effective intensity of the yellow light and beam spread are to be in accordance with the specifications in [MAS] Figure 9.13-11. Where runway guard lights are intended for use during the day, the (e) intensity in yellow light and beam spreads of lights of Configuration A should be in accordance with the specifications in [MAS] Figure 9.13-12.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

	<i>Note: - The optimum flash rate is dependent on the rise and fall times of the lamps used. Runway guard lights, Configuration A, installed on 6.6 ampere series circuits have been found to look best when operated at 45 to 50 flashes per minute per lamp.</i>			
	6. Is the intensity in yellow light and beam spreads of lights of Configuration A in accordance with the specifications in [MAS] Figure 9.13-12, where runway guard lights are specified as components of an advanced surface movement guidance and control system where higher light intensities are required?	[] Yes [] No [] N/A	☐ S ☐ NS	
	7. Does the performance of Configuration B runway guard lights complied with the following: (a) adjacent lights are to be alternately illuminated and alternate lights are to illuminate in unison; (b) the lights are to be illuminated between 30 and 60 cycles per minute and the light suppression and illumination periods are to be equal and opposite in each light; <i>Note: - The optimum flash rate is dependent on the rise and fall times of the lamps used. Runway guard lights, Configuration A, installed on 6.6 ampere series circuits have been found to look best when operated at 45 to 50 flashes per minute per lamp. Runway guard lights, Configuration B, installed on 6.6 ampere series circuits have been found to look best when operated at 30 to 32 flashes per minute per lamp.</i> (c) the light beam is to be unidirectional and aligned so as to be visible to the pilot of an aeroplane taxiing to the holding position. (d) the effective intensity of the yellow beam and beam spread are to be in accordance with the specifications in [MAS] Figure 9.13-3.	[] Yes [] No [] N/A	☐ S ☐ NS	

	(e) Where runway guard lights are intended for use during the day, the intensity in yellow light and beam spreads of lights of Configuration B shall be in accordance with the specifications in [MAS] Figure 9.13-9. <i>Note: - The optimum flash rate is dependent on the rise and fall times of the lamps used. Runway guard lights, Configuration B, installed on 6.6 ampere series circuits have been found to look best when operated at 30 to 32 flashes per minute per lamp.</i>			
	8. Is the intensity in yellow light and beam spreads of lights of Configuration B shall be in accordance with the specifications in [MAS] Figure 9.13-9, where runway guard lights are specified as components of an advanced surface movement guidance and control system where higher light intensities are required?	[] Yes [] No [] N/A	☐ S ☐ NS	
	Control of runway guard lights			
	1. Are runway guard lights electrically connected such that all runway guard lights protecting a runway can be turned on when the runway is active, day or night?	[] Yes [] No [] N/A	☐ S ☐ NS	
	Provision of Intermediate Holding Position Lights			
	1. Is the airport provided with an Intermediate holding position lights at each intermediate holding position marking?	[] Yes [] No [] N/A	☐ S ☐ NS	
	2. Are intermediate holding position lights provided at an intermediate holding position intended for use in runway visual range conditions less than a value of 350 m, except where a stop bar has been installed.	[] Yes [] No [] N/A	☐ S ☐ NS	
	3. Are intermediate holding position lights provided at an intermediate holding position where there is no need for stop-and-go signals as provided by a stop bar?	[] Yes [] No [] N/A	☐ S ☐ NS	

	Pattern and Location of Intermediate Holding Position Lights			
	1. Are intermediate holding position lights consist of 3 inset lights, spaced 1.5 m apart, disposed symmetrically about, and at right angles to, the taxiway centerline, located not more than 0.3 m before the intermediate holding position marking or the taxiway intersection marking, on a taxiway equipped with centerline lights? [] Yes [] No [] N/A		☐ S	☐ NS
	2. Are the intermediate holding position lights consisting of 1 elevated light on each side of the taxiway, located in line with the taxiway edge lights and the intermediate holding position, with prior CAA approval, on a taxiway equipped with edge lights? [] Yes [] No [] N/A		☐ S	☐ NS
	Characteristics of Intermediate Holding Position Lights			
	1. Are Inset intermediate holding position lights have the following characteristics: (a) be fixed, unidirectional lights showing yellow; (b) be aligned so as to be visible to the pilot of an aircraft approaching the holding position; and (c) have light distribution as close as practicable to that of the taxiway centerline lights. [] Yes [] No [] N/A		☐ S	☐ NS
	2. Are elevated intermediate holding position lights have the following characteristics: (a) be fixed, unidirectional lights showing yellow; and (b) have light distribution as close as practicable to that of the taxiway edge lights [] Yes [] No [] N/A		☐ S	☐ NS
	Stop bars			
	1. Is the aerodrome provided with a stop bar? [] Yes [] No		☐ S	☐ NS

	2. Does a stop bar provided at every runway holding position serving a runway when it is intended that the runway will be used in runway visual range conditions less than a value of 350m, unless: (a) appropriate aids and procedures are available to assist in preventing inadvertent incursions of traffic onto the runway; or (b) operational procedures exists to limit, in runway visual range conditions less than a value of 550m, the number of: (i) aircraft on the maneuvering area on one at a time; and (ii) vehicles on the maneuvering area to the essential minimum.	[] N/A		
	3. Are stop bar provided at every runway holding position serving a runway when it is intended that the runway will be used in runway visual range conditions between values of 350 m and 550 m, unless: (a) appropriate aids and procedures are available to assist in preventing inadvertent incursions by aircraft and vehicles onto the runway; and (b) operational procedures exist to limit, in runway visual range conditions less than a value of 550 m, the number of: (i) aircraft on the maneuvering area to one at a time; and (ii) vehicles on the maneuvering area to the essential minimum. Where there is more than one stop bar associated with a taxiway/runway intersection, only one shall be illuminated at any given time.	[] Yes [] No [] N/A	☐ S	☐ NS

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	4. Is the control mechanism for stop bars meets the operational requirements of the Air Traffic Service at that aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. Are stop bars provided at an intermediate holding position to supplement markings with lights and to provide traffic control by visual means?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Location of stop bars		
	1. Are stop bars provided at every runway holding position serving a runway and: (a) be located across the taxiway on, or not more than 3 m before, the point at which it is intended that traffic approaching the runway stop; (b) consist of inset lights spaced at uniform intervals of no more than 3 m apart across the taxiway; (c) be disposed symmetrically about, and at right angles to, the taxiway centerline	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Does a pair of elevated lights, with the same characteristics as the stop bar lights, provided abeam the stop bar, located at a distance of at least 3 m from the taxiway edge sufficient to overcome the visibility problem and where a pilot may be required to stop the aircraft in a position so close to the lights that they are blocked from view by the structure of the aircraft?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Characteristics of Stop Bars		
	1. Are stop bar lights unidirectional and show red in the direction of approach to the intersection or runway holding position?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Where the additional lights specified in [MAS] 9.12.24.2 are provided: 3. Are these lights have the same characteristics as the lights in the stop bar, and visible to approaching aircraft up to the stop bar position?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Does the intensity and beam spread of	☐ Yes	☐ S ☐ NS

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	the stop bar lights in accordance with the applicable specifications in [MAS] 9.13, Figure 9.13-1 to Figure 9.13-5?	☐ No ☐ N/A		
	5. Does a selectively switchable stop bars installed in conjunction with at least three taxiway centerline lights (extending for a distance of at least 90 m from the stop bar) in the direction that it is intended for an aircraft to proceed from the stop bar?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	6. Does the lighting circuit for stop bars designed so that: (a) stop bars located across entrance taxiways are selectively switchable; (b) stop bars located across taxiways used as exit taxiways only are switchable selectively or in groups; (c) when a stop bar is illuminated, any taxiway centerline lights immediately beyond the stop bar are to be extinguished for a distance of at least 90 m; and (d) stop bars are interlocked with the taxiway centerline lights so that when the centerline lights beyond the stop bar are illuminated the stop bar lights are extinguished and vice versa. <i>Note: - Care is required in the design of the electrical system to ensure that all of the lights of a stop bar will not fail at the same time. Guidance on this issue is given in the Aerodrome Design Manual (Doc 9157), Part 5.</i>	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	7. Where stop bars are specified as components of an advanced surface movement guidance and control system and where, from an operational point of view:	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	8. Does a higher intensity settings for stop bars required to maintain ground movements at a certain speed in very low visibilities or in bright daytime conditions? 9. Are the intensity in red light and beam spreads of stop bar lights shall be in accordance with the specifications of [MAS] 9.13?			
	No - entry Bars			
	1. Is the aerodrome provided with a No – entry bar? [] Yes [] No [] N/A		☐ S ☐ NS	
	2. If yes, Does a No – entry bar provided across a taxiway which is intended to be used as an exit only taxiway to assist in preventing inadvertent access of traffic to that taxiway? [] Yes [] No [] N/A		☐ S ☐ NS	
	3. Are no-entry bars located across the taxiway at the end of an exit only taxiway where it is desired to prevent traffic from entering the taxiway in the wrong direction [] Yes [] No [] N/A		☐ S ☐ NS	
	4. Are no-entry bars consist of unidirectional lights spaced at uniform intervals of no more than 3 m showing red in the intended direction(s) of approach to the runway? [] Yes [] No [] N/A		☐ S ☐ NS	
	5. Does a pair of elevated lights added to each end of the no-entry bar where the in-pavement no entry bar lights might be obscured from a pilot's view, for example, by rain or any climatic conditions, or where a pilot may be required to stop the aircraft in a position so close to the lights that they are blocked from view by the structure of the aircraft? [] Yes [] No [] N/A		☐ S ☐ NS	
	6. Does the intensity in red light and beam spreads of no-entry bar lights in accordance with the specifications in [MAS] 9.13? [] Yes [] No [] N/A		☐ S ☐ NS	
	7. Where no-entry bars are specified as components of an advanced surface movement guidance and control [] Yes [] No		☐ S ☐ NS	

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	system and where, from an operational point of view: 8. Does a higher intensity settings for stop bars required to maintain ground movements at a certain speed in very low visibilities or in bright daytime conditions? 9. Are the intensity in red light and beam spreads of no-entry bar lights shall be in accordance with the specifications of [MAS] 9.13?	[] N/A		
	10. Does the lighting circuit for stop bars designed so that: (a) no-entry bars are switchable selectively or in groups; (b) when a no-entry bar is illuminated, any taxiway centerline lights installed beyond the no-entry bar, when viewed towards the runway, shall be extinguished for a distance of at least 90 m; and (c) when a no-entry bar is illuminated, any stop bar installed between the no-entry bar and the runway shall be extinguished.	[] Yes [] No [] N/A	☐ S ☐ NS	
	Taxiway edge markers			
	1. Are taxiway edge markers provided on a taxiway where the code number is 1 or 2 and taxiway centerline or edge lights or taxiway centerline markers are not provided?	[] Yes [] No [] N/A	☐ S ☐ NS	
	2. Are taxiway edge markers installed at least at the same locations as would the taxiway edge lights had they been used?	[] Yes [] No [] N/A	☐ S ☐ NS	
	3. Are taxiway edge markers show retro-reflective blue color?	[] Yes [] No [] N/A	☐ S ☐ NS	
	4. Is the surface of a taxiway edge marker as viewed by the pilot must be a rectangle with a height to width ratio of approximately 3:1 and a minimum	[] Yes [] No [] N/A	☐ S ☐ NS	

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	viewing area of 150 cm ² ?			
	5. Is taxiway edge markers of lightweight, frangible and low enough to preserve adequate clearance for propellers and for the engine pods of jet aircraft?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Taxiway centerline markers			
	1. Are taxiway centerline markers used on sections of the taxiway as a supplement to taxiway edge markers or taxiway edge lights, e.g. on curves or intersections?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. If yes, are taxiway centerline markers spaced greater than the spacing for centerline lights?			
	3. Does taxiway centerline markers provided on a taxiway where the code number is 1 or 2 and taxiway centerline or edge lights or taxiway edge markers are not provided.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	4. Does taxiway centerline markers provided on a taxiway where the code number is 3 or 4 and taxiway centerline lights are not provided if there is a need to improve the guidance provided by the taxiway centerline marking?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	5. Are taxiway centerline markers installed at least at the same location as would taxiway centerline lights had they been used?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	6. Are taxiway centerline markers located on the taxiway centerline marking except that they may be offset by not more than 30 cm where it is not practicable to locate them on the marking?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Characteristics of taxiway centerline markers			
	1. Does taxiway centerline markers show retro-reflective green?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Does the marked surface of taxiway centerline markers as viewed by the	☐ Yes ☐ No	☐ S	☐ NS

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	pilot rectangular shape and have a minimum viewing surface of 20 cm ² ?	☐ N/A		
	3. Are taxiway centerline markers able to withstand being run over by the wheels of an aircraft without damage either to the aircraft or to the markers themselves.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Photometric characteristics of taxiway lights			
	1. Does the average intensity of the main beam of a taxiway light is calculated by: (a) establishing the grid points in accordance with the method shown in [MAS] 9.13, Figure 9.13-7; (b) measuring the light intensity values at all grid points located within and on the perimeter of the rectangle representing the main beam; (c) calculating the arithmetic average of the light intensity values as measured at those grid points.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Does the maximum light intensity value measured on or within the perimeter of the main beam more than three times the minimum light intensity values so measured?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Installation and aiming of light fitting			
	1. Does the following points followed in the installation and aiming of light fittings: (a) the lights are aimed so that there are no deviations in the main beam pattern, to within ½° from the applicable standard specified in this Chapter; (b) horizontal angles are measured with respect to the vertical plane through the taxiway centerline;	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	(c) when measuring horizontal angles for lights other than taxiway centerline lights, the direction towards the taxiway centerline is to be taken to be positive.			
	(d) vertical angles specified are to be measured with respect to the horizontal plane.			
	Apron Floodlighting			
	1. Is the aerodrome provided with apron flood lighting in accordance with ICAO apron floodlighting standard??	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Is the aerodrome have an existing floodlighting system on an apron currently used by larger aeroplanes which does not meet the specifications?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Provision of apron floodlighting			
	1. Are apron floodlighting provided on an apron, or part of an apron and on a designated isolated aircraft parking position intended for use at night.?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Location of apron floodlighting			
	1. Are apron floodlighting located so as to provide adequate illumination on all the apron service areas that are intended for use at night?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Does apron flood lighting provided to an apron taxiway that is not provided with taxiway lighting?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Does the provision of apron flood lighting in accordance with either 9.15.4.3(b) or 9.15.4.4(b)?			
	5. Are apron floodlights located and shielded so that there is a minimum of direct or reflected glare to pilots of aircraft in flight and on the ground, air traffic controllers, and personnel on the apron?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	6. Does an aircraft parking position receive, as far as practicable, apron floodlighting from two or more directions	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

	to minimize shadows? <i>Note: For apron floodlighting purpose, an aircraft parking position means a rectangular area subtended by the wing span and overall length of the largest aircraft that is intended to occupy that position.</i>			
	Does apron floodlighting poles or pylons penetrate the obstacle limitation surfaces?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Characteristics of apron floodlighting			
	1. Does the apron floodlighting distributed across the phases of a three-phase power supply system to avoid a stroboscopic effect and to minimize the chance of an illuminated rotating object such as a propeller appearing stationary, at major aerodromes?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Does the spectral distribution of apron floodlights colors used for aircraft marking connected with routine servicing, and for surface and obstacle marking, can be correctly identified?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Are Monochromatic lights must use?			
	4. Does the average illuminance of an apron intended for larger aeroplanes be (a) at an aircraft parking position: (aircraft stand) (i) for horizontal illuminance – 20 lux with a uniformity ratio (average to minimum) of not more than 4 to 1; and (ii) for vertical illuminance – 20 lux at a height of 2 m above the apron in the relevant parking direction, parallel to the aeroplane centerline; (b) at other apron areas: (i) horizontal illuminance at 50 per cent of the average illuminance on the aircraft parking position with a uniformity ratio	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	(average to minimum) of not more than 4 to 1.			
	5. Does the average illuminance of an apron intended to be used only by smaller aeroplanes be at least as follows: (a) at an aircraft parking position: (aircraft stand) (i) for horizontal illuminance – 5 lux with a uniformity ratio (average to minimum) of not more than 4 to 1; and (ii) for vertical illuminance – 5 lux at a height of 2 m above the apron in the relevant parking direction, parallel to the aeroplane centerline; (b) at other apron areas: (i) horizontal illuminance graded to a minimum of 1 lux at the apron extremities or 2 lux for apron edge taxiways which do not have taxiway lights.	[] Yes [] No [] N/A	☐ S ☐ NS	
	6. Is a dimming control provided to allow the illuminance of an aircraft parking position on an active apron that is not required for aircraft use to be reduced to not less than 50 per cent of its normal values?	[] Yes [] No [] N/A	☐ S ☐ NS	
	7. Does apron floodlighting for aprons used by larger aeroplanes have the following: (a) be included in the aerodrome secondary power supply system; and (b) be capable, following a power interruption of up to 30 seconds, of being re-lit and achieving not less than 50 per cent of normal illuminance within 60 seconds.	[] Yes [] No [] N/A	☐ S ☐ NS	
	8. Does auxiliary floodlighting provided to immediately provide at least 2 lux of horizontal illuminance of aircraft parking positions. If existing floodlights cannot meet the requirement of paragraph	[] Yes [] No [] N/A	☐ S ☐ NS	

	9.15.4.6?			
	9. Does auxiliary floodlighting remain on until the main lighting has achieved 80 per cent of normal illuminance?			
	Provision of visual docking guidance systems			
	1. Is the aerodrome provided visual docking guidance system?	[] Yes [] No [] N/A	☐ S ☐ NS	
	2. Does a visual docking guidance system provided at an apron aircraft parking position equipped with a passenger loading bridge, where the characteristics of the passenger loading bridge require precise positioning of an aircraft./ and other alternative means, such as marshallers, are not practicable?	[] Yes [] No [] N/A	☐ S ☐ NS	
	3. Do the provisions of all new and/or replacement visual docking guidance system comply with this Section, when existing installations are to be replaced due to obsolescence, facility upgrade, change of apron layout, change of passenger loading bridge, change of aircraft category, change of operational requirements, or similar reasons?	[] Yes [] No [] N/A	☐ S ☐ NS	
	Characteristics of visual docking guidance systems			
	1. Is the system provide both azimuth and stopping guidance?	[] Yes [] No [] N/A	☐ S ☐ NS	
	2. Does the azimuth guidance unit and the stopping position indicator adequate for use in all weather, visibility, background lighting, and pavement conditions for which the system is intended, both by day and night, and must not dazzle the pilot.	[] Yes [] No [] N/A	☐ S ☐ NS	
	3. Does the azimuth guidance unit and the stopping position indicator be design such that?	[] Yes [] No [] N/A	☐ S ☐ NS	

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	(a) a clear indication of malfunction of either or both is available to the pilot; and			
	(b) they can be turned off.			
	4. Does the azimuth guidance unit and the stopping position indicator located in such a way that there is continuity of guidance between the aircraft parking position markings, the aircraft stand Maneuvering guidance lights, if present, and the visual docking guidance system?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	5. Does the accuracy of the system adequate for the type of loading bridge and fixed aircraft servicing installations with which it is to be used?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	6. Is the system usable by all types of aircraft for which the aircraft parking position is intended, preferably without selective operation?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	7. Does the system provide an identification of the selected aircraft type to both the pilot and the system operator as a means of ensuring that the system has been set properly, If selective operation is required to prepare the system for use by a particular type of aircraft?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Azimuth Guidance Unit - location			
	1. Does the azimuth guidance located on or close to the extension of the parking position centerline ahead of the aircraft so that its signals are visible from the cockpit of an aircraft throughout the docking maneuver and aligned for use at least by the pilot occupying the left seat?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Is the systems acceptable with azimuth guidance aligned for use by the pilots occupying both the left and right seats?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Azimuth Guidance Unit - characteristics			

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	1. Is the azimuth guidance provide unambiguous left/right guidance which enables the pilot to acquire and maintain the lead-in line without over controlling?	[] Yes [] No [] N/A	☐ S	☐ NS
	2. When azimuth guidance is indicated by color change:	[] Yes [] No [] N/A	☐ S	☐ NS
	3. Is the color green used to identify the centerline and red for deviations from the centerline?	[] Yes [] No [] N/A	☐ S	☐ NS
	Stopping Position Indicator - location			
	1. Is the stopping position indicator located in conjunction with, or sufficiently close to, the azimuth guidance unit so that a pilot can observe both the azimuth and stop signals without turning the head?	[] Yes [] No [] N/A	☐ S	☐ NS
	2. Does the stopping position indicator usable at least by the pilot occupying the left seat.	[] Yes [] No [] N/A	☐ S	☐ NS
	3. Is the systems with stopping position indicator usable by the pilots occupying both the left and right seats acceptable?	[] Yes [] No [] N/A	☐ S	☐ NS
	Stopping Position Indicator - characteristics			
	1. Is the stopping position information provided by the indicator for a particular aircraft type for the anticipated range of variations in pilot eye height and/or viewing angle?	[] Yes [] No [] N/A	☐ S	☐ NS
	2. Is the stopping position indicator show the stopping position of the aircraft for which the guidance is being provided?	[] Yes [] No [] N/A	☐ S	☐ NS
	3. Does it provide closing rate information to enable the pilot to gradually decelerate the aircraft to a full stop at the intended stopping position?	[] Yes [] No [] N/A	☐ S	☐ NS
	4. Does the stopping position indicator provide closing rate information over a distance of at least 10 m?	[] Yes [] No [] N/A	☐ S	☐ NS

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	When stopping guidance is indicated by color change: 5. Is color green used to show that the aircraft can proceed and red to show that the stop point has been reached except that for a short distance prior to the stopping point a third color may be used to warn that the stopping point is close.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Parking position identification sign			
	1. Is parking position identification sign provided at an aircraft parking position equipped with a visual docking guidance system?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Is parking position identification located to be clearly visible from the cockpit of an aircraft prior to entering the parking position	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Is parking position identification sign consisting of a numeric or alphanumeric inscription, in black on a yellow background? 4. Is the identification sign illuminated by a continuous line of green light outlining the inscription, when a parking position is to be used at night.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Notification of type of aircraft docking guidance systems			
	1. Does the information on particular types of installed visual docking guidance systems to be found in operation at aerodromes published in the AIP for use by pilots?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. Does the aerodrome operator notify CAA of the details of their aircraft docking guidance system intended for use for International operations?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Does the visual docking guidance system information recorded in the Aerodrome Manual. The information to be provided is to include:	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	(a) type of visual docking guidance system;	☐ Yes ☐ No	☐ S	☐ NS

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	(b) descriptive information, including illustrations where appropriate, for any type of installed system; and (c) parking positions at which the system is installed	[] N/A		
	4. Does notification about the details of visual docking systems made to AIS in accordance with Chapter 5, Aerodrome Information for AIP and Chapter 10, Operating Standards for Certified Aerodromes.	[] Yes [] No [] N/A	☐ S	☐ NS
	Closed runway or taxiway			
	1. Does all aerodrome lighting extinguished, when a runway or taxiway, or portion thereof is closed and lightings is to be electrically isolated or disabled, to prevent inadvertent activation of the lights? 2. Does it contain the following criteria for lighting associated with closed and unserviceable areas? (a) the cover is firmly attached to the ground, so that it cannot be unintentionally dislodged; and (b) the cover, and its means of attachment to the ground, do not pose a hazard to aircraft, and do not constitute an object that is not lightweight and frangible.	[] Yes [] No [] N/A	☐ S	☐ NS
	3. Are unserviceability lights placed across the entrance to the closed area at intervals not exceeding 3 m, where a closed runway, taxiway, or portion thereof, is intercepted by a useable runway or taxiway which is used at night?	[] Yes [] No [] N/A	☐ S	☐ NS
	4. Are the lights placed at intervals	[] Yes	☐ S	☐ NS

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	sufficiently close so as to delineate the unserviceable area and, in any case, must not be more than 7.5 m apart?	☐ No ☐ N/A		
	Characteristics of unserviceability lights			
	5. Unserviceability lights are to be steady red lights	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	6. The lights are to have an intensity sufficient to ensure conspicuity considering the intensity of the adjacent lights and the general level of illumination against which they would normally be viewed. In no case is the intensity to be less than 10 cd of red light.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Vehicle warning lights			
	1. Is the aerodrome provided with a vehicle warning lights?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. If yes, Are vehicle warning lights, as required by [MAS] 10.9.2, provided at an aerodrome to indicate to pilots and others the presence of moving vehicles or equipment on the movement area?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Are vehicle warning light or lights mounted on the top of the vehicle to provide 360° visibility?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	4. Are the lights show a color amber/yellow/orange, and be flashing or rotating of a type acceptable to CAA?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	For emergency or security vehicles not dedicated to aerodrome use:	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	5. Are vehicle warning lights comply with the local traffic code acceptable for on aerodrome operation?	☐ Yes ☐ No ☐ N/A		
	Works limit lights			

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	1. Is the aerodrome provided with a works limit lights ?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. If yes, are works limit lights provided to indicate to persons associated with the works organization the limit of the works area?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Are works limit lights portable, amber/yellow/orange lights of a standard type commercially available as works warning lights?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	Road holding position lights / Road and Car Park Lighting			
	1. Is the aerodrome provided with a road holding position lights / road and car park lighting?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	2. If yes, are road holding position lights provided at each road-holding position serving a runway when it is intended that the runway will be used in runway visual range conditions less than a value of 350 m?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	3. Are road-holding position light provided at each road-holding position serving a runway when it is intended that the runway will be used in runway visual range conditions of values between 350 m and 550 m?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	4. Are road-holding position light located adjacent to the holding position marking 1.5 m (±0.5 m) from one edge of the road, i.e. left or right as appropriate to the local traffic regulations?	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS
	5. Does road-holding position light comprises: (a) a controllable red (stop)/green (go) traffic light; or (b) a flashing-red light.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

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	6. Are road-holding position unidirectional and aligned so as to be visible to the driver of a vehicle approaching the holding position?	[] Yes [] No [] N/A	☐ S	☐ NS
	7. Is the intensity of the light beam adequate for the conditions of visibility and ambient light in which the use of the holding position is intended, but shall not dazzle the driver?	[] Yes [] No [] N/A	☐ S	☐ NS
	8. Is the flash frequency of the flashing-red light between 30 and 60 flashes per minute?	[] Yes [] No [] N/A	☐ S	☐ NS
	9. CAA regulate the lighting of roads and car parks, other than ensuring compliance with [MAS] 9.20?	[] Yes [] No [] N/A	☐ S	☐ NS
	10. Where road and car park lighting is required on an aerodrome; 11. Does aerodrome operator consult with the relevant local road authority.	[] Yes [] No [] N/A	☐ S	☐ NS
	Monitoring, Maintenance and Serviceability of Aerodrome Lighting			
	1. Does the aerodrome operator monitor and maintain all lights and lighting systems associated with the aerodrome visual ground aids, both day and night, on a continuing basis for correctness and so that they are easily seen?	[] Yes [] No [] N/A	☐ S	☐ NS
	2. Is monitoring of lighting systems such as T-VASIS, PAPI and approach lighting carried out in accordance with the frequencies and procedures set out in the Aerodrome Manual?	[] Yes [] No [] N/A	☐ S	☐ NS
	3. Are other aerodrome lights monitored during the daily serviceability inspections and they must be switched on for this purpose?	[] Yes [] No [] N/A	☐ S	☐ NS
	4. Are grass areas around lights maintained such that the lights are not in any way obscured? 5. Are lights kept free from dirt so as not to	[] Yes [] No [] N/A	☐ S	☐ NS

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	degrade their color and conspicuousness and damage to lights, including loss or degradation of light be made good?			
	Reporting of aerodrome lighting outage			
	1. Does the aerodrome operator immediately fix any aerodrome light outages detected?	[] Yes [] No [] N/A	☐ S ☐ NS	
	2. Does the aerodrome operator notify the NOTAM office, when lighting system is out of service?	[] Yes [] No [] N/A	☐ S ☐ NS	
	3. Is appropriate NOTAM to warn pilots of light outages in this regard properly issued?	[] Yes [] No [] N/A	☐ S ☐ NS	
	4. Does the operator of an aerodrome have a process of assessing aerodrome lighting outages? 5. If yes, does it conform with the provisions stipulated in [MAS] 9.19.2.3?	[] Yes [] No [] N/A	☐ S ☐ NS	
	6. Are the following conditions for flashing or occulting light is deemed to be on outage when?	[] Yes [] No [] N/A	☐ S ☐ NS	
	(a) the light ceases to flash or occult; or (b) the frequency and/or duration of flash is outside the specified range by a factor of 2 to 1 or greater; or (c) within a 10 minute period, more than 20% of flashes fail to occur.	[] Yes [] No [] N/A	☐ S ☐ NS	
	7. Are the following conditions for lighting system considered to be on outage when?	[] Yes [] No [] N/A	☐ S ☐ NS	
	(a) in the case of a lighting system comprising less than 4 lights (e.g. intermediate holding	[] Yes	☐ S ☐ NS	

	position lights or runway threshold identification lights), any of the lights are on outage; (b) in the case of a lighting system comprising 4 or 5 lights (e.g. wind direction indicator lights or runway guard lights), more than 1 light is on outage; (c) in the case of a lighting system comprising 6 to 13 lights (e.g. threshold lights), more than 2 lights are on outage, or 2 adjacent lights are on outage; (d) in the case of a lighting system comprising more than 13 lights, more than 15% of the lights are on outage, or two adjacent lights are on outage.	☐ No ☐ N/A		
	8. For a T-VASIS: Do the outage standards take into account both the number of outage lamps within a light unit, and also the number of light units within the T-VASIS system. The standards are:			
	(a) A T-VASIS light unit is deemed on outage when 3 or more lamps in the electrical (day) circuit are on outage, or when any of the lamps in the electrical (night) circuit is on outage. (b) A T-VASIS system is deemed on outage when: (i) bar units — more than 2 light units or two adjacent light units are on outage; (iii) fly-up units — more than 1 light unit are on outage; (iii) fly-down units — more than 1 light unit are on outage. (c) An AT-VASIS system is deemed on outage when: (i) bar units — more than 1 light unit is on outage, or (ii) fly-up units — any light unit is on outage, or (iii) fly-down units — any light unit is on outage.	☐ Yes ☐ No ☐ N/A	☐ S	☐ NS

	(d) Whenever a red filter has deteriorated such that it does not produce the correct color light beam, is missing or is damaged, all the lamps within the affected light unit must be extinguished until the red filter is rectified. The affected light unit is included as an outage light unit when applying (b) or (c) above.			
	9. For a PAPI: Do the outage standards take into account both the number of lamps on outage within a light unit, and also the number of light units within the PAPI system? The standards are: (a) A PAPI light unit is deemed on outage when more than 1 lamp in a 3-or more lamp light unit is on outage, or any lamp in a less-than-3-lamp light unit is on outage. (b) Whenever a red filter has deteriorated such that the correct color is not showing, is missing or is damaged; all the lamps associated with that filter must be extinguished until the red filter is rectified. The affected lamps are included in outage when determining (a) above.	[] Yes [] No [] N/A	☐ S ☐ NS	

Appendix 7C-7: MAINTENANCE OF THE MOVEMENT AREA

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.7 MAINTENANCE OF THE MOVEMENT AREA		
<i>Particulars of the facilities and procedures for the maintenance of the movement area, including:</i>			
	1. Does the aerodrome manual contain particulars of the procedures for the routine maintenance of movement area surfaces and drainage systems to ensure that their performance will not be degraded?	[] Yes [] No [] N/A	☐ S ☐ NS
	2. Is there a maintenance programme, including preventive maintenance where appropriate established by the aerodrome operator to maintain facilities in a condition which does not impair the safety, regularity or efficiency of air navigation?	[] Yes [] No [] N/A	☐ S ☐ NS
	3. If yes, do the facilities include such items as pavements, visual aids, fencing, drainage systems, electrical systems and buildings?	[] Yes [] No [] N/A	☐ S ☐ NS
	4. Does the maintenance programme include the arrangements for the maintenance of paved and/or unpaved runways and associated, shoulders and safety areas?		☐ S ☐ NS
	5. Does it include the arrangements for the maintenance of paved and or unpaved taxiways and associated shoulders?		☐ S ☐ NS
	6. Does it include the arrangements for the maintenance of associated runway and taxiway strips?		☐ S ☐ NS

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	7. Is the operator maintaining record in accordance with their aerodrome manual?		☐ S ☐ NS
	8. Does the design and application of the maintenance programme observe Human Factors principles?	[] Yes [] No [] N/A	☐ S ☐ NS
	9. Are adequate and suitable staff and resources available? • no. of personnel • qualification standards/ experience/competency • list of trainings	[] Yes [] No [] N/A	☐ S ☐ NS
	Pavements 10. Are paved runway, taxiway and apron surfaces kept clear of objects or debris that may cause damage to aircraft structures or engines, or impair the operation of aircraft systems?	[] Yes [] No [] N/A	☐ S ☐ NS
	11. Is the surface of a runway maintained in a condition such as to prevent formation of harmful irregularities?	[] Yes [] No [] N/A	☐ S ☐ NS
	12. Is the paved runway maintained in a condition so as to provide surface friction characteristics at or above the minimum friction level specified by CAA?	[] Yes [] No [] N/A	☐ S ☐ NS
	13. Is the runway surface friction characteristics for maintenance purposes periodically measured with a continuous friction measuring device using self-wetting features and documented? 14. Is the frequency of these	[] Yes [] No [] N/A	☐ S ☐ NS

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	measurements sufficient to determine the trend of the surface friction characteristics of the runway?		
	15. When runway surface friction measurements are made for maintenance purposes using a self-wetting continuous friction measuring device, does the performance of the device meet the standard set or agreed by CAA?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Are personnel measuring runway surface friction required in 10.15.2.5 trained to fulfil their duties?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	17. Is corrective maintenance action taken to prevent the runway surface friction characteristics for either the entire runway or a portion thereof from falling below a minimum friction level specified by CAA?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	18. If the runway surface is visually assessed, as necessary, under natural or simulated rain conditions for ponding or poor drainage and where required, are corrective maintenance action taken?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	19. When a taxiway is used by turbine-engined aeroplanes, is the surface of the taxiway shoulders maintained so as to be free of any loose stones or other objects that could be ingested by the aeroplane engines?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Removal of contaminants 20. Are standing water, mud, dust, sand, oil, rubber deposits and other contaminants removed from the surface of runways in use as rapidly and completely	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	as possible to minimize accumulation?		
	21. Does the aerodrome operator ensure that chemicals are not use that may have harmful effects on aircraft or pavements, or chemicals which may have toxic effects on the aerodrome environment?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	Visual aids (Marking)		☐ S ☐ NS
	22. Is there a system of preventive maintenance of visual aids employed to ensure lighting and marking system reliability?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Runway Surface Friction		☐ S ☐ NS
	23. Does the operator carry out runway friction measurement/assessment?		
	24. What is the equipment used for the measurement/assessment		
	25. Is the equipment compatible with approved CFME?		
	26. Is the purpose of measurement/assessment well defined?		
	27. Is the CFME checked/calibrated in accordance with the manufactures' operating instructions before use?		
	28. What is the periodicity of assessment and is it in line with the recommended interval?		
	29. What is the assessment speed? (65km/hr, 96km/hr recommended)		
	30. What friction values are obtained during the last measurement		

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	31. If values in 8 above are below the maintenance planning level, have appropriate measures been taken?(corrective maintenance action)		
	32. If values in 8 above are below the minimum friction level, have appropriate measures been taken? (NOTAM action indicating runway slipperiness)		
	33. Is runway friction assessment conducted following any significant maintenance activity, such as runway resurfacing?		
	34. Is the friction value for the resurfaced runway in agreement with the recommended design objective level?		
	35. Are personnel operating the CFME properly trained in its operation and maintenance?		
	36. Does the run pattern for a runway with TDZ markings planned so as to include one run either side of the centerline to pass through the center of the painted TDZ markings?		
	37. Are records of all runway surface friction assessment kept?		
	38. Does the runway friction assessment results/records format conform to recommended format?		
	39. Does the aerodrome operator maintain runways with sealed, asphalt or concrete surfaces, in accordance with the surface texture standards specified in Chapter 6?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	40. Does the Aerodrome Technical Inspection of runway surfaces confirm that the texture standard is being met?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	41. Under dry conditions, is the condition of a runway pavement generally assessed using a self-wetting continuous friction measuring device? Are the evaluation tests of runway surface friction characteristics made on clean surfaces of the runway when first constructed or after resurfacing?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	42. Are friction measurements taken at intervals that will ensure identification of runways in need of maintenance or special surface treatment before the surface conditions deteriorate further? Is the time interval between measurements depend on factors such as aircraft type and frequency of usage, climatic conditions, pavement type, and maintenance requirements?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	43. When conducting friction tests using a self-wetting continuous friction measuring device, there is a drop in friction with an increase in speed. However, as the speed increases, the rate at which the friction is reduced becomes less. The macrotexture of the surface affects the relationship between friction and speed. Therefore, a speed high enough to reveal these friction/speed variations shall be used. It is desirable, but not mandatory; to test the friction	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	characteristics of a paved runway at more than one speed.		
	44. If the measured friction level falls below the relevant Maintenance planning level values in [MAS] Table 10.15-1, does the aerodrome operator initiate appropriate corrective maintenance action to improve the friction?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	45. If the measured friction level falls below the relevant minimum friction level values in [MAS] Table 10.15-1, does the aerodrome operator promulgate by NOTAM, that the runway pavement falls below minimum friction level when wet? Additionally, is corrective maintenance action taken without delay? This requirement applies when friction characteristics for either the entire runway or a portion thereof are below the minimum friction level.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Deterioration of Runway Grooves 46. When a runway pavement surface has been grooved, does the aerodrome operator periodically check the condition of the runway grooves in accordance with the US Federal Aviation Administration (FAA) advice set out in the FAA Advisory Circular AC 150/5320-12D? "The Advisory Circular states that when 40 per cent of the grooves in the runway are equal to or less than 3 mm in depth and/or width for a distance of 457 m, the effectiveness of the grooves for preventing hydroplaning will have been considerably	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	reduced. The aerodrome operator shall take immediate corrective action to reinstate the 6 mm groove depth and/or width".		
	Surface Irregularities 47. Does the aerodrome operator maintain the surface of paved runways in a condition such as to preclude excessive bouncing, pitching, vibration or other difficulties with control of aircraft?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	48. Does the aerodrome operator ensure that paved runway surfaces are maintained so that standing water is neither formed nor retained? Are "Birdbath" depressions repaired at the earliest opportunity?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Drainage characteristics of the movement area and adjacent areas 49. Does the aerodrome operator ensure that accumulation of rubber deposits will not reduce the drainage capacity which can result in impaired safety? 50. When grooving are used, is the condition of the grooves regularly inspected to ensure that no deterioration has occurred and that the grooves are in good condition?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Standards for Natural and Gravel Surface Runways 51. Are the surfaces of natural and gravel surface runways and runway strips maintained to the physical standards outlined in [MAS] Chapter 13?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	52. Has the operator provided sufficient and adequate equipment?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	list of equipment		
	53. List of documents checked. If yes, what are the documents checked?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7C-8: AERODROME WORKS SAFETY

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.8 AERODROME WORKS SAFETY		
	<i>Particulars of the procedures for planning and carrying out construction and maintenance work safely (including work that may have to be carried out at short notice) on or in the vicinity of the movement area which may extend above an obstacle limitation surface, including the following:</i>		
	1. Does the operator of a certified aerodrome arrange aerodrome works so as not to create any hazard to aircraft or confusion to pilots?	[] Yes [] No [] N/A	☐ S ☐ NS
	2. Does the aerodrome manual include particulars of the procedures for planning and safely carrying out aerodrome works?	[] Yes [] No [] N/A	☐ S ☐ NS
	3. Are provisions of safety precautions adhered to when aerodrome works are carried out, without aerodrome closure?	[] Yes [] No [] N/A	☐ S ☐ NS
	4. Are aerodrome works carried out in the following manner: • method of working plan; and • short term maintenance/time-limited works.	[] Yes [] No [] N/A	☐ S ☐ NS
	5. When a temporary displaced threshold is required for more than 300 m, is the matter referred to the CAA for assessment?	[] Yes [] No [] N/A	☐ S ☐ NS
	Method of Working Plans 6. For aerodrome used by aircraft of more than 5,700 kg maximum take-off weight, is there a Method of Working Plan (MOWP) prepared for aerodrome works?	[] Yes [] No [] N/A	☐ S ☐ NS
	7. Are arrangements for carrying out those works set out in the MOWP?	[] Yes [] No [] N/A	☐ S ☐ NS
	8. Is the MOWP prepared in accordance with [MAS] 10.11?	[] Yes [] No [] N/A	☐ S ☐ NS

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	9. In the preparation of the MOWP, does the aerodrome operator consult the following? - commercial air transport operators using the aerodrome; - Air Traffic Control; and - Aerodrome Rescue and Fire Fighting Service.	[] Yes [] No [] N/A	☐ S ☐ NS
	10. Does the aerodrome operator give a copy of the MOWP, and for any alteration thereof, to CAA as soon as possible after the MOWP is prepared or altered?	[] Yes [] No [] N/A	☐ S ☐ NS
	11. Are aerodrome works, for which a MOWP is required, carried out in accordance with the arrangements set out in the authorized MOWP?	[] Yes [] No [] N/A	☐ S ☐ NS
	12. When the aerodrome is closed to aircraft operations while aerodrome works are being carried out, does the aerodrome operator give reasonable notice of intention to close the aerodrome to the following entities? - CAA; - Commercial Air Transport Operators; and - All organizations and persons likely to be affected.	[] Yes [] No [] N/A	☐ S ☐ NS
	13. Does the operator give notice of closure at least 14 days before it takes place?	[] Yes [] No [] N/A	☐ S ☐ NS
	14. For emergency aerodrome works carried out to repair unforeseen damage to part of the maneuvering area, or to remove an obstacle, or if the works do not require any restrictions to aircraft operations, where practicable, are NOTAMS issued, indicating the time and date of the	[] Yes [] No [] N/A	☐ S ☐ NS

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	commencement of the works, as early as possible, but preferably not less than 48 hours before commencement of the works?		
	Time-Limited Works 15. Are aerodrome works carried out as time-limited works, if normal aircraft operations are not disrupted, the movement area can be restored to normal safety standards in no more than 30 minutes, including the removal of any obstacle created by those works?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Does the time-limited works include the following? • maintenance of markings and lights; • grass mowing; • rolling surfaces; • sweeping pavements; • minor repairs to pavements; and • surveys and inspections.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	17. Does a person commence time-limited works that require more than 10 minutes to restore normal safety standards to the movement area and remove obstacles, unless a NOTAM has been issued not less than 24 hours before the commencement, giving the date and time of commencement and the time required to restore normal safety standards?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	Restrictions on Time-Limited Works 18. does time-limited works are carried out at night or if visibility is less than 5 kilometers? if yes are they authorized by Air Traffic Control at a controlled aerodrome or can normal safety standards can be promptly restored so as to allow an aircraft operation to take place without delay?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Restoration of Normal Safety Standards 19. Are Time-limited works stopped and normal safety standards restored when required to allow an aircraft operation to take place?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	20. Are reasonable measures taken to complete the restoration of normal safety standards not less than 5 minutes before the scheduled or notified time of an aircraft operation?	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Resumption of Aerodrome Works 21. Are Works that have been stopped to allow the restoration of normal safety standards are resumed under the following conditions? : • if stopped for an aircraft arrival, immediately after the arrival, if the safety of the aircraft is not endangered by the resumption; or • if stopped for an aircraft departure, 15 minutes after the departure has taken place; or • if stopped for an aircraft arrival that does not take place; 30 minutes after the time scheduled or notified for the arrival (when a new ETA is established).	☐ S ☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	Management and control of aerodrome works 22. Does the aerodrome operator ensure that aerodrome works are carried out in accordance with the standards of aerodrome work safety?	☐ S ☐ NS [] Yes [] No [] N/A	
	23. Is there a person appointed by the aerodrome operator in writing as a works safety officer for the purpose of ensuring the safe conduct of aerodrome works? • appointment	☐ S ☐ NS [] Yes [] No [] N/A	
	24. Does the aerodrome operator has qualification or attribute requirements for a works safety officer, in accordance with [MAS] Section 10.12. • duties of works safety officer	☐ S ☐ NS [] Yes [] No [] N/A	
	25. Is the works safety officer required to be present at all times if aerodrome works are being carried out and the aerodrome is open to aircraft operations? For time limited work, a dedicated safety officer is not required if one of the persons conducting the work activity is competent to be a work safety officer	☐ S ☐ NS [] Yes [] No [] N/A	
	26. Does the aerodrome operator takes all reasonable measures to ensure that the works organization carries out aerodrome works in a manner that will ensure the safety of aircraft operations? • MOWP • safety arrangements/requirements with works organization	☐ S ☐ NS [] Yes [] No [] N/A	
	27. Are Persons, vehicles, plant and equipment required for carrying out aerodrome works issued	☐ S ☐ NS [] Yes [] No	

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	relevant permits to enter the movement area or remain on it for the purpose of carrying out those works?	[] N/A	
	28. Are access to works areas only along routes shown in the MOWP?	[] Yes [] No [] N/A	☐ S ☐ NS
	29. Are Procedures for entering works areas stated in the MOWP?	[] Yes [] No [] N/A	☐ S ☐ NS
	Markers, Markings and Lights 30. Are Aerodrome markers, markings and lights required for, or affected by, aerodrome works installed, altered or removed in accordance with the appropriate standards?	[] Yes [] No [] N/A	☐ S ☐ NS
	31. Are parts of the movement area that are unserviceable as a result of aerodrome works being carried out marked and lit in accordance with the appropriate standards?	[] Yes [] No [] N/A	☐ S ☐ NS
	32. Are all obstacles created as a result of aerodrome works being carried out marked and lit in accordance the appropriate standards in [MAS] Chapter 8?	[] Yes [] No [] N/A	☐ S ☐ NS
	33. Are vehicles and plant used in carrying out aerodrome works marked in accordance with [MAS] 8.10.4 (Marking of vehicles)?	[] Yes [] No [] N/A	☐ S ☐ NS
	34. In addition to paragraph 10.10.8.4 requirements, are vehicles and plant used in carrying out aerodrome works at night lit in accordance with [MAS] 9.19.1 (Monitoring, maintenance and serviceability of aerodrome lighting)?	[] Yes [] No [] N/A	☐ S ☐ NS

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	Communication Equipment 35. At a controlled aerodrome, is the vehicle used by a works safety officer while supervising aerodrome works equipped with a radio for two-way communication with Air Traffic Control?	☐ S ☐ NS [] Yes [] No [] N/A	
	36. For the purpose of communication with Air Traffic Control, is the vehicle used by a works safety officer given a call sign?	☐ S ☐ NS [] Yes [] No [] N/A	
	37. Any vehicle or plant that is not marked or lit; or equipped with a two-way radio, is there a direct supervision from the works safety officer, or is it used only within the limits of appropriately marked and lit work areas?	☐ S ☐ NS [] Yes [] No [] N/A	
	Completion 38. On the completion of aerodrome works and the restoration of normal safety standards to the movement area, does aerodrome operator initiate cancellation any NOTAM to advise of those works?	☐ S ☐ NS [] Yes [] No [] N/A	
	Runway Pavement Overlays 39. Is there a provision for a temporary ramp between the new and the old runway surfaces at the end of an overlay work session, when the runway is to be returned to an operational status, left with an abrupt vertical surface of more than 25 mm?	☐ S ☐ NS [] Yes [] No [] N/A	
	40. Is there a provision where the longitudinal slope of the temporary ramp described in paragraph 10.10.11.1, measured with reference to the existing runway surface or previous overlay course: a) 0.5 to 1.0 per cent for	☐ S ☐ NS [] Yes [] No [] N/A	

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	overlays up to and including 5 cm in thickness? and b) not more than 0.5 per cent for overlays more than 5 cm in thickness?		
	41. Where practicable, is the direction of pavement overlay proceeding from one end of the runway toward the other end so that based on runway utilization [MAS]t aircraft operations will experience a down ramp?	☐ S ☐ NS [] Yes [] No [] N/A	
	42. Where practicable, is the entire width of the runway overlaid during each work session? Where the entire width of the runway cannot be overlaid during a work session, is the central two-third width of the runway overlaid? In this case, is a temporary transverse ramp of between 0.8 and 1.0 per cent provided between the edge of the new overlay surface and the existing runway surface or previous overlay course when the difference in level exceeds 25 mm?	☐ S ☐ NS [] Yes [] No [] N/A	
	43. Before a runway being overlaid is returned to a temporary operational status, is a runway centerline marking conforming to the specifications in [MAS] 8.3.3 provided? 44. Additionally, is the location of any temporary threshold identified by a 3.6 m wide transverse stripe?	☐ S ☐ NS [] Yes [] No [] N/A	
	45. Is the overlay constructed and maintained above the minimum friction level specified in [MAS] Table 10.15-1?	☐ S ☐ NS [] Yes [] No [] N/A	

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	Works on Runway Strips 54. Are works on runway strips carried out in the shortest possible time? 55. Where undertaken within 23 m of the edge of the runway or runway shoulder: (a) are works undertaken only on one side of the runway at any one time?; (b) is the works area at any one time must not exceed 9 square meters, except for machine cut trenches, not exceeding a width of 100 mm and length of 280 m?; (c) are materials such as gravel, signs and lights, etc. left within this part of the runway strip, must not exceed one half meter in height above ground. Any material likely to be affected by propeller wash or jet blast, must be removed?; and (d) Do plant and vehicles vacate this area when the runway is in use?.	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	56. Where works are undertaken on a runway strip between 23 m from the edge of the runway or runway shoulder and the edge of the graded runway strip, do similar restriction applied within this area of the runway strip, as for paragraph 10.10.12.1 above?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	57. Where works are to be undertaken in the vicinity of navigational or landing aids located within the runway strips, does the aerodrome operator ensure that care must be taken to in order that neither the works nor vehicles or plant associated with the works, may affect the performance of the aids?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	Method of Working Plans 58. Does the MOWP presented in	☐ S ☐ NS ☐ Yes ☐ No	

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	sections in the following sequence? (a) title page (b) works information (c) restrictions to aircraft operations (d) restrictions to works organization (e) administration (f) authority (g) drawings (h) distribution list.	[] N/A	
	Title Page 59. Is the MOWP given a reference number, consisting of the code used to identify the aerodrome in the AIP, the last two digits of the year and the number given to the MOWP by the aerodrome operator?	[] Yes [] No [] N/A	☐ S ☐ NS
	60. Is the MOWPs issued in relation to the same aerodrome numbered consecutively in the order of their issue?	[] Yes [] No [] N/A	☐ S ☐ NS
	61. Is the MOWP number, the date of issue, and the date and number of any amendment set out in the top right hand corner of the title page?	[] Yes [] No [] N/A	☐ S ☐ NS
	62. Does the title indicate the location of the work and does it give a short description of the project, for instance "[name Aerodrome]: Runway 07/25 repairs"?	[] Yes [] No [] N/A	☐ S ☐ NS
	63. Does the date of approval of the MOWP, the date of commencement and the date of expiry of the MOWP, and the date of completion of the set out on the title page?	[] Yes [] No [] N/A	☐ S ☐ NS
	64. Does the title page include a list of	[] Yes	☐ S ☐ NS

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	the sections of the MOWP?	[] No [] N/A	
	Works Information 65. Does the works information of MOWP contain the following: (a) an outline of the full scope of the works and state which aerodrome facilities are affected? (b) planned date and time of commencement, the duration of each stage and the time of completion; (c) the following sentence: "The actual date and time of commencement will be advised by a NOTAM, to be issued not less than 48 hours before work commences"?	[] Yes [] No [] N/A	☐ S ☐ NS
	Restrictions to aircraft operations and issue of NOTAMS 66. Does this section of the MOWP in a form that allows its separate issue to aircraft operators and permits those operators to have easy reference to the information as it affects them?	[] Yes [] No [] N/A	☐ S ☐ NS
	67. Does this section of the MOWP state each restriction and each aircraft type affected by that restriction?	[] Yes [] No [] N/A	☐ S ☐ NS
	Work Stages 68. Are any restrictions to aircraft operations on the maneuvering area, or in the approach and take-off areas listed and shown on drawings of each stage of the works?	[] Yes [] No [] N/A	☐ S ☐ NS
	69. When complex works are being undertaken, is a table showing the restrictions applicable to each stage of the works and for each type of aircraft operation included?	[] Yes [] No [] N/A	☐ S ☐ NS

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	70. Does the table outline the various work stages with start and completion dates and have a remarks column to list details of special restrictions and the issue of NOTAMs for the information of a pilot before a flight?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	Emergencies and Adverse Weather 71. Does the MOWP outline details, if any, of special arrangements to be made during works if emergencies or adverse weather conditions occur?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	NOTAMs 72. Does the full text of all planned NOTAMs associated with the aerodrome works included?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	Restrictions to Works Organizations 73. Does the MOWP provide any restrictions on the organization carrying out of aerodrome works and requirements for the restoration of normal safety standards?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	Personnel and Equipment 74. When personnel and equipment are required to vacate the movement area for certain operations, does the MOWP specifically mention of this fact be made, for example: "All personnel and equipment will clear runway strip 11/29 for all operations by aircraft larger than B737"?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	Access 75. Does the MOWP identify the routes to and from the works area and the procedures for entering the works areas within the movement area?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	

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	76. Are the particulars of routes to and from the works area shown in drawings attached to the MOWP?	[] Yes [] No [] N/A	☐ S ☐ NS
	Aerodrome Markers, Markings and Lights 77. Are details of arrangements for the installation, alteration and removal of aerodrome markers, markings and lights in the work areas and other areas affected by the aerodrome works shown in drawings attached to the MOWP?	[] Yes [] No [] N/A	☐ S ☐ NS
	Protection of Electrical Services 78. Does the MOWP set out procedures for ensuring that electrical services and control cables are not damaged?	[] Yes [] No [] N/A	☐ S ☐ NS
	Special Requirements 79. Does the MOWP provide details of any special requirements arising during or on completion of aerodrome works, for example, arrangements for leaving pavement surfaces swept and clean before evacuation of the works area?	[] Yes [] No [] N/A	☐ S ☐ NS
	Administration 80. Does the MOWP provide the name of the Project Manager appointed by the aerodrome operator and the means of contact, including the means outside normal working hours?	[] Yes [] No [] N/A	☐ S ☐ NS
	81. Does the MOWP provide the names of the works safety officer or officers appointed by the aerodrome operator and the means of contact, including the means outside normal working hours?	[] Yes [] No [] N/A	☐ S ☐ NS
	82. Does the MOWP provide the name of the works organizer (where appropriate) and the means of	[] Yes [] No	☐ S ☐ NS

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	contact, including the means outside working hours?	[] N/A	
	Authority 83. Do each MOWP contain the following statement: "All works will be carried out in accordance with the MOWP"?	[] Yes [] No [] N/A	☐ S ☐ NS
	84. Do each MOWP set out its expiry date, and any alteration of that date?	[] Yes [] No [] N/A	☐ S ☐ NS
	85. Do each MOWP signed, immediately after paragraph 10.11.15 (this paragraph), by the aerodrome operator or the project manager?	[] Yes [] No [] N/A	☐ S ☐ NS
	Drawings 86. Are drawings, which provide a visual reference for each stage of the works attached in the MOWP? Does the drawings contain specific details such as works area, restrictions to aircraft, location of radio navigational aids, exact location of visual ground aids and markings, details of the height and location of critical obstacles, location of temporary taxiways, access routes, storage areas for material and equipment, and the location of electrical services and control cables which may be disturbed during the works?	[] Yes [] No [] N/A	☐ S ☐ NS
	Distribution List 87. Does the distribution list of the MOWP include at least the following persons and organizations? (a) the project manager; (b) the works safety officer; (c) the aerodrome security manager, if any; (d) the works organizer;	[] Yes [] No [] N/A	☐ S ☐ NS

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	(e) the CAA aerodrome inspector; (f) ATC and the Rescue and Firefighting Service Unit for the aerodrome; (g) the air transport aircraft operators using the aerodrome at which the aerodrome works are to be carried out; and (h) fixed-base operators using the aerodrome at which the aerodrome works are to be carried out.		
			☐ S ☐ NS
	Works Safety Officer 88. Are the responsibilities of the Works Safety Officer provided in the aerodrome manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Reportable occurrences and reporting procedures 89. Are works related incidents noted and reported?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	90. Are follow-up action being taken after the incident has occurred?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Aerodrome occurrence records 91. Does the aerodrome operator establish and maintain Aerodrome Occurrence Reports for any accident, serious incident, incident, serious injury or any occurrence or event that has a bearing on the safety of aerodrome operations?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Aerodrome accident/incident investigations 92. In the event of an accident or serious incident, does the aerodrome operator carry out its own investigations?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	93. List of documents checked.	☐ Yes ☐ No	☐ S ☐ NS

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	If yes, what are the documents checked?	[] N/A	

Appendix 7C-9: APRON MANAGEMENT

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.9 APRON MANAGEMENT		
	<i>Particulars of the apron management procedures, including the following:</i>		
	1. Is there an appropriate apron management service in the aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Does the apron management unit regulate movement with the objective of preventing collisions between aircraft, and between aircraft and obstacles?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Does the aerodrome operator regulate entry of aircraft into, and coordinate exit of aircraft from, the apron with the aerodrome control tower?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Does the aerodrome operator ensure safe and expeditious movement of vehicles and appropriate regulation of other activities?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. When the aerodrome control tower does not participate in the apron management service, are there procedures established to facilitate the orderly transition of aircraft between the apron management unit and the aerodrome control tower?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6. Is the apron management unit provided with radiotelephony communications facilities?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. Are persons and vehicles operating on an apron restricted to the essential minimum when low visibility procedures are in effect?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. Is priority given to an emergency vehicle responding to an emergency over all other surface movement traffic?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. Does a vehicle operating on an apron give way to an emergency vehicle; an aircraft taxiing, about to taxi, or being pushed or towed; and to other vehicles in accordance with local regulations?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10. Does the apron management unit visually monitor the aircraft stand to ensure that the recommended clearance distances are provided to an aircraft using the stand?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. Are traffic management control procedures in place when a single unit takes over the responsibility for aircraft and vehicles at a pre-determined	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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	handover point between the apron and the maneuvering area?		
	12. Is the handover point clearly indicated on the ground and on aeronautical charts, for the benefit of aircraft vehicle operators?	[] Yes [] No [] N/A	☐ S ☐ NS
	13. Does the apron management unit assume responsibility for managing and coordinating all aircraft traffic on the apron, issuing verbal instructions on an agreed radio frequency?	[] Yes [] No [] N/A	☐ S ☐ NS
	14. Does the apron management unit manage all apron vehicle traffic and other apron activities in order to advise aircraft of potential hazards within the apron area?	[] Yes [] No [] N/A	☐ S ☐ NS
	15. Is there an arrangement between the apron management unit and the aerodrome control unit with regard to start-up and taxi clearance of departing aircraft to the handover point?	[] Yes [] No [] N/A	☐ S ☐ NS
	16. Does the apron management service maintain close communication with the aerodrome control service?	[] Yes [] No [] N/A	☐ S ☐ NS
	18. Does the apron management service take responsibility for aircraft stand allocation, dissemination of movement information to aircraft operators by monitoring ATC frequencies?	[] Yes [] No [] N/A	☐ S ☐ NS
	19. Does the apron management service update basic information continuously on aircraft arrival times, landings and take-offs?	[] Yes [] No [] N/A	☐ S ☐ NS
	20. Does the apron management unit ensure that the apron area is kept clean by airport maintenance?	[] Yes [] No [] N/A	☐ S ☐ NS
	21. Does the apron management service ensure that established aircraft clearance distances are available at the aircraft stand?	[] Yes [] No [] N/A	☐ S ☐ NS
	22. Is there a marshalling service?	[] Yes [] No [] N/A	☐ S ☐ NS
	23. Is there a leader van service?	[] Yes [] No [] N/A	☐ S ☐ NS

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Appendix 7C-10: APRON SAFETY MANAGEMENT

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.10 APRON SAFETY MANAGEMENT		
	<i>Particulars of the apron management procedures, including the following:</i>		
	1. Where apron congestion is a problem, does the aerodrome operator include in the aerodrome manual particulars of the procedures for aircraft parking control to ensure the safety of aircraft during ground maneuvering?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	2. Has the aerodrome operator developed appropriate apron safety procedures that are useful components of congestion mitigation measures?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	3. Does the aerodrome operator have written arrangements with relevant organizations such as the airlines, ground handlers and caterers in regard to the apron safety procedures?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	4. Are there arrangements for monitoring on a regular basis the safety compliance of all personnel working on the apron?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	5. Are there procedures for aircraft docking, ground servicing, engine start and push back operations in place?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	6. Are the procedures for aircraft docking, ground servicing, engine start and push back operations in accordance with the manual?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	7. Are the aircraft and tug operator guidance markings in accordance with the manual?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	8. Are there means and procedures for protection from jet blast?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	9. Are there provisions of blast protection structures?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	10. Are the provisions for blast protection in accordance with the manual?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	11. Is the staff aware of safety requirements relating to clearances and blast?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	

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		STATUS	REMARKS
	12. Are suitable staffs available to control monitor and/or supervise apron safety activities?	[] Yes [] No [] N/A	☐ S ☐ NS
	13. Are there procedures to protect aircraft from FOD?	[] Yes [] No [] N/A	☐ S ☐ NS
	14. Do the apron safety management procedures ensure that people engaged in apron activities are provided with appropriate equipment such as communications and high visibility garments?	[] Yes [] No [] N/A	☐ S ☐ NS
	15. Do the apron safety management procedures ensure that people involved are appropriately trained and experience?	[] Yes [] No [] N/A	☐ S ☐ NS
	16. Does the aerodrome operator ensure that other organizations operating in the apron follow apron safety management procedures?	[] Yes [] No [] N/A	☐ S ☐ NS
	17. Are there arrangements for safety precautions during aeroplane refueling operations?	[] Yes [] No [] N/A	☐ S ☐ NS
	18. Is there a fire extinguishing equipment suitable for at least initial intervention in the event of a fuel fire and a means for quickly summoning the rescue and firefighting service in the event of a fire or major fuel spill?	[] Yes [] No [] N/A	☐ S ☐ NS
	19. Is there an available and sufficient number of personnel trained to use the fire extinguishing equipment available for use in the event of fuel fire or major fuel spill during ground servicing of aircraft?	[] Yes [] No [] N/A	☐ S ☐ NS
	20. When aircraft refueling operations take place while passengers are embarking or disembarking, are the ground equipment positioned so as to allow the use of a sufficient number of exits for expeditious evacuation?	[] Yes [] No [] N/A	☐ S ☐ NS
	21. When aircraft refueling operations take place while passengers are embarking or disembarking, are the ground equipment positioned so as to allow a ready escape route from each of the exits to be used in an emergency?	[] Yes [] No [] N/A	☐ S ☐ NS

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		STATUS	REMARKS
	22. Does the aerodrome operator ensure the apron is swept to remove debris?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	23. Does the aerodrome operator ensure the apron is clean of hazardous contamination?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7C-11: AIRSIDE VEHICLE CONTROL

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.11 AIRSIDE VEHICLE OPERATION		
<i>Particulars of the procedure for the control of surface vehicles operating on or in the vicinity of the movement area, including the following:</i>			
	1. details of the arrangements for controlling airside access for vehicle and personnel: - maneuvering areas authorized by ATC - apron as authorized by relevant designated authority	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. maintain a permit system for approval of airside vehicle operations.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Is there a procedure for the issuance of airside permit? Is it implemented?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Have the drivers complied with issuance requirements before been issued with permits?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. vehicles and ground equipment operating airside must be maintained in a sound mechanical and roadworthy condition, so as to prevent avoidable breakdowns and spillage of fuels, lubricants and hydraulic fluids.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6. established speed limits for vehicles on the movement area and a regime to enforce them.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. vehicles must not be driven under an aircraft or within 3 m of any part of an aircraft except when required for the servicing of aircraft.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. vehicles operating on the movement area by day must be marked in accordance with [MAS] 8.10.4.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. vehicles operating on the movement area at night, or in conditions of poor visibility, must display dipped headlights and must be lit with vehicle warning lights.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10. Are vehicles marked/ lit and approvals attached in accordance with the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. drivers operating vehicle on the airside must be trained and competent to do so and comply with instructions issued by the aerodrome controller when on the maneuvering area and the appropriate authority when operating on the apron.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	12. any person operating vehicles and ground equipment, must:	☐ Yes ☐ No	☐ S ☐ NS

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	- hold an appropriate license to operate; - comply with instructions conveyed by markings and signs; and	☐ N/A	
	13. comply with all mandatory instructions conveyed by light signals.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	drivers operating vehicles and ground equipment holding an appropriate license.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	14. driver of a radio equipped vehicle shall establish satisfactory two-way communications with the aerodrome controller before entering the maneuvering area, and/or apron if required, and maintain a continuous listening watch on the assigned frequency while on the maneuvering area (and/or apron).	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	15. does the operator have a training programme (initial and recurrent) for drivers?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Is the curriculum for drivers training adequate as per CAA regulations and guidance materials on ground vehicle operation?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	17. Do drivers display their driver's permit before being allowed into the airside?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	18. Are drivers with expired permits prevented from entering the airside?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	19. Are vehicles operating on the maneuvering areas fitted with R/T or closely escorted by an R/T equipped vehicle?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	20. Are the drivers informed about runway incursion, airfield safety and security?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	21. Are drivers knowledgeable of the terms used on the Aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	22. Are the drivers conversant with the ground vehicle rules and regulations?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	23. Are drivers periodically tested to ensure currency in fitness and competence?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	24. Are drivers authorized to drive on the movement area familiar with runway configuration/safety area, taxiway configuration, runway lightings, airfield signage, airfield markings and aerodrome NAVAIDS?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	25. Are drivers capable of sending or receiving a radio messages	☐ Yes ☐ No	☐ S ☐ NS

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		STATUS	REMARKS
	correctly?	☐ N/A	
	26. Do drivers operating on the movement areas understand and use the terms and phrases used in the air traffic control?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	27. Are drivers operating on the movement areas familiar with speed limits, authorized routes, roles relating to rights of way of aircraft and vehicles, and authorized parking areas, traffic lights and warning signs?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	28. Are there an enforcement procedure in the event of violation of airside driving rules?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	29. If yes, is it implemented?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	30. Are enforcement records maintained?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	31. Are accident/incident records maintained?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	32. Are unauthorized entry incidents noted, reported and followed up?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	33. Are adequate and suitable staff and resources available to test drivers, issue permits and monitor driving?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	34. Is the staff aware of safety requirements related to airside vehicles?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	35. Are copies of driving rules available and in accordance with the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	36. And the names, telephone numbers and roles of the persons who are responsible for airside vehicle control provided in the Manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	37. List of documents checked. If yes, what are the documents checked?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7C-12: WILDLIFE HAZARD MANAGEMENT

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S		
		STAT US	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)	
4.12 WILDLIFE HAZARD MANAGEMENT				
<i>Particulars of the procedures to deal with the danger posed to aircraft operations by the presence of birds or mammals on or in the vicinity of the aerodrome or movement area, including the following:</i>				
	1. Does the aerodrome operator monitor and record, on a regular basis, the presence of birds or animals on or in the vicinity of the aerodrome?	[] Yes [] No [] N/A	☐ S ☐ NS	
	2. Are the monitoring personnel suitably trained for this purpose?	[] Yes [] No [] N/A	☐ S ☐ NS	
	3. Where regular monitoring confirms existence of a bird or animal hazard to aircraft operations, or when CAA so directs, has the aerodrome operator developed a Wildlife Hazard Management Plan (WHMP), which would be included as part of the Aerodrome Manual?	[] Yes [] No [] N/A	☐ S ☐ NS	
	4. Does a comprehensive wildlife management plan including coordination among the aviation regulatory authority, airport operator, aircraft operators and the surrounding communities implemented to successfully deal with land-use issues?	[] Yes [] No [] N/A	☐ S ☐ NS	
	5. If directed by the CAA, is the WHMP prepared by a suitably qualified person such as an ornithologist or a biologist, etc.?	[] Yes [] No [] N/A	☐ S ☐ NS	
	6. Does the WHMP address: • hazard assessment, including monitoring action and analysis; • pilot notification; • liaison and working relationships with land use planning authorities; • on-airport bird and animal attractors which provide food, water or shelter; • suitable harassment methods; and • an ongoing strategy for bird and animal hazard reduction, including provision of appropriate fencing?	[] Yes [] No [] N/A	☐ S ☐ NS	
	7. Is the wildlife hazard management plan reviewed for effectiveness, on a regular	[] Yes [] No [] N/A	☐ S ☐ NS	

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	basis, at least as part of each technical inspection?		
	8. Where the presence of birds or animals is assessed as constituting an ongoing hazard to aircraft, does the aerodrome operator notify the CAA in writing, and include a warning notice for publication in the AIP?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. Where a bird or animal hazard is assessed as acute, of short term or seasonal nature, are additional warnings given to pilots by means of NOTAM?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10. Do airport operators, local government units (LGUs), and other stakeholders assist in identifying and managing wildlife issues at the aerodrome?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. Invite relevant external stakeholders to quarterly Runway Safety meetings to assist with wildlife management at off airport sites?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	12. Does the wildlife strike hazard on, or in the vicinity of, an aerodrome assessed through: (a) the establishment of a national procedure for recording and reporting wildlife strikes to aircraft; (b) the collection of information from aircraft operators, aerodrome personnel and other sources on the presence of wildlife on or around the aerodrome constituting a potential hazard to aircraft operations; and (c) an ongoing evaluation of the wildlife hazard by competent personnel?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	13. Are wildlife strike reports collected and forwarded to ICAO for inclusion in the ICAO Bird Strike Information System (IBIS) database?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	14. Is an action taken to decrease the risk to aircraft operations by adopting measures to minimize the likelihood of collisions between wildlife and aircraft?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	15. Does a bird/wildlife strike control program describe a	☐ Yes ☐ No	☐ S ☐ NS

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		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	process for liaison with non-airport agencies and local landowners, etc., to ensure that airport operator is aware of developments that may contribute to creating additional bird hazards in the infrastructure, vegetation, land use and activities in the airport vicinity (e.g. crop harvesting, seed planting, ploughing, establishment of land or water features, hunting, etc., that might attract birds/wildlife)?	[] N/A	
	16. Does the appropriate authority take action to eliminate or to prevent the establishment of garbage disposal dumps or any other source which may attract wildlife to the aerodrome, or its vicinity, unless an appropriate wildlife assessment indicates that they are unlikely to create conditions conducive to a wildlife hazard problem?	[] Yes [] No [] N/A	☐ S ☐ NS
	17. Are there local ordinances issued banning pigeon raising, establishment of animal sanctuaries, etc. near the airport?	[] Yes [] No [] N/A	☐ S ☐ NS
	18. Are there MOU, MOA, LOU, LOA?	[] Yes [] No [] N/A	☐ S ☐ NS
	19. Where the elimination of existing sites is not possible, Does the appropriate authority ensure that any risk to aircraft posed by these sites is assessed and reduced to as low as reasonably practicable?	[] Yes [] No [] N/A	☐ S ☐ NS
	20. Are the names and roles of the persons responsible for dealing with wildlife hazards and their telephone numbers available?	[] Yes [] No [] N/A	☐ S ☐ NS
	21. Does the WHMP contain particulars of the procedures to deal with the danger to aircraft operations caused by the presence of birds or animals on or near the aerodrome?	[] Yes [] No [] N/A	☐ S ☐ NS
	22. And the arrangements for the removal of any bird or animal hazard?	[] Yes [] No [] N/A	☐ S ☐ NS

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		STAT US	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	23. Is the operator maintaining records?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	24. Are bird strikes reported?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	25. Are adequate and suitable staff and resources available?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	26. Are the equipment available in accordance with the WHMP?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	27. Is harassment carried out in accordance with the WHMP?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	28. Is environmental management undertaken in accordance with the WHMP?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	29. Are the airport wildlife control personnel formally trained, competent and equipped for detection and dispersal tasks?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	30. Are bird and animal hazard related incidents noted, reported and followed up?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	31. List of documents presented during the audit:		

Appendix 7C-13: OBSTACLE CONTROL

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	4.13 OBSTACLE CONTROL		
<i>Particulars setting out the procedures for:</i>			
	1. Is there an obstacle as a fixed or mobile object on the following: (a) stands on, or stands above, the specified surface of an obstacle restriction area which comprises the runway strips, runway end safety areas, clearways and taxiway strips; or (b) any object that penetrates the obstacle limitation surfaces (OLS), a series of surfaces that set the height limits of objects, around an aerodrome; or (c) stands outside an OLS and has been assessed as being a hazard to air navigation.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. Is the Obstacle data requirements for the design of instrument procedures is determined in liaison with flight procedure designers	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. Is there an objects, except for approved visual and navigational aids, located within the obstacle restriction area of the aerodrome without the specific approval of CAA	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Is the equipment and installations required for air navigation purposes are to be of minimum practicable mass and height, frangibly designed and mounted, and sited in such a manner as to reduce the hazard to aircraft to a minimum.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. Is the Obstacles on the obstacle restriction area taken into account when determining the obstacle clear approach or take-off surfaces	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	6. Is the following OLS established for a non-instrument runway and a non-precision approach runway and a precision approach runway category I: (a) conical surface; (b) inner horizontal surface; (c) approach surface; (d) transitional surface; and (e) take-off climb surface if the runway is meant for take-off.	 [] Yes [] No [] N/A	 ☐ S ☐ NS
	7. In addition to 7.1.4.2, is the following obstacle limitation surfaces established for a precision approach runway category I: (a) inner approach surface; (b) inner transitional surfaces; and (c) balked landing surface.	 [] Yes [] No [] N/A	 ☐ S ☐ NS
	8. Is the heights and slopes of the surfaces (For non-instrument runways) shall not be greater than, and their other dimensions not less than, those specified in [MAS] Table 7.1-1 .	 [] Yes [] No [] N/A	 ☐ S ☐ NS
	9. Is the heights and slopes of the surfaces (For non-precision runways) shall not be greater than, and their other dimensions not less than, those specified in [MAS] Table 7.1-1, except in the case of the horizontal section of the approach surface (see 7.1.4.6).	 [] Yes [] No [] N/A	 ☐ S ☐ NS
	10. Is the approach surface shall be horizontal beyond the point at which the 2.5 % slope intersects: (a) a horizontal plane 150 m above the threshold elevation; or (b) the horizontal plane passing through the top of any object that governs the obstacle clearance altitude/height (OCA/H); whichever is the higher	 [] Yes [] No [] N/A	 ☐ S ☐ NS
	11. Is the heights and slopes of the surfaces (For precision runways) shall not be greater than, and their other dimensions not less than, those specified in Table 7.1-1,	 [] Yes [] No [] N/A	 ☐ S ☐ NS

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		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	except in the case of the horizontal section of the approach surface (see 7.1.4.8).		
	12. Is the approach surface shall be horizontal beyond the point at which the 2.5 % slope intersects: (a) a horizontal plane 150 m above the threshold elevation; or (b) the horizontal plane passing through the top of any object that governs the obstacle clearance limit; whichever is the higher.	[] Yes [] No [] N/A	☐ S ☐ NS
	13. Is the following OLS must be established for a precision approach runway category II or III: (a) outer horizontal surface, if so directed by CAA; (b) conical surface; (c) inner horizontal surface; (d) approach surface; (e) inner approach surface; (f) transitional surface; (g) inner transitional surface; (h) balked landing surface; and (i) take-off climb surface if the runway is meant for take-off.	[] Yes [] No [] N/A	☐ S ☐ NS
	14. Is the physical dimensions and slopes of the OLS surfaces, for approach runways, determined using Table 7.1-1.	[] Yes [] No [] N/A	☐ S ☐ NS
	15. Is the following obstacle limitation surface shall be established for a runway meant for take-off: (a) take-off climb surface.	[] Yes [] No [] N/A	☐ S ☐ NS
	16. Is the dimensions of the surface shall be not less than the dimensions specified in [MAS] Table 7.1-2, except that a lesser length may be adopted for the takeoff climb surface where such lesser length would be consistent with procedural measures adopted to govern the outward flight of aeroplanes.	[] Yes [] No [] N/A	☐ S ☐ NS
	17. Is the physical dimensions of the take-off climb OLS surfaces for	[] Yes [] No	☐ S ☐ NS

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		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	take-off runways is determined using [MAS] Table 7.1-2.	[] N/A	
	18. Is the operational characteristics of aeroplanes for which the runway is intended to examined to see if it is desirable to reduce the slope specified in [MAS] Table 7.1-2 when critical operating conditions are to be catered to. If the specified slope is reduced, corresponding adjustment in the length of the take-off climb surface shall be made so as to provide protection to a height of 300 m.	[] Yes [] No [] N/A	☐ S ☐ NS
	19. If no object reaches the 2 % (1:50) take-off climb surface, new objects shall be limited to preserve the existing obstacle free surface or a surface down to a slope of 1.6 % (1:62.5).	[] Yes [] No [] N/A	☐ S ☐ NS
	20. Where two OLS surfaces overlap, is the lower surface used as the controlling OLS.	[] Yes [] No [] N/A	☐ S ☐ NS
	21. Is the aerodrome operator monitor the OLS applicable to the aerodrome and report to CAA any infringement or potential infringement of the OLS.	[] Yes [] No [] N/A	☐ S ☐ NS
	When a new obstacle is detected, is the aerodrome operator ensure that the information is passed on to pilots, through NOTAM, in accordance with the standards for aerodrome reporting procedures set out in Chapter 10.	[] Yes [] No [] N/A	☐ S ☐ NS
	22. Are the information on any new obstacle include the following: (a) the nature of the obstacle (for instance structure or machinery); (b) distance and bearing of the obstacle from the start of the take-off end of the runway if the obstacle is within the take-off area, or else from the ARP; (c) height of the obstacle in relation to the aerodrome elevation; and if it is a temporary	[] Yes [] No [] N/A	☐ S ☐ NS

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		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	obstacle, the time it exists as an obstacle.		
	23. Under [CAA ACT], are any object which extends to a height of 110 m or more above local ground level are notified to CAA.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	24. If a proposed object or structure is determined to be an obstacle, is the details of the proposal is referred to CAA to determine whether it will be a hazard to aircraft operations.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	25. In Shielded Obstacle. Is the new obstacle is shielded by an existing obstacle is assessed as not imposing additional restrictions to aircraft operations.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	26. Is there a marking and lighting of obstacles? (a) Aerodrome Operator may direct that obstacles be marked and or lit and may impose operational restrictions on the aerodrome as a result of an obstacle. (b) If directed by CAA, lighting and/or marking of obstacles, including terrain, must be carried out in accordance with the standards set out in [MAS] Chapter 8 and Chapter 9.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	27. For Temporary and transient obstacles. Is the Temporary obstacles and transient (mobile) obstacles, such as road vehicles, rail carriages or ships, in close proximity to the aerodrome and which penetrate the OLS for a short duration are referred to CAA whether they will be a hazard to aircraft operations.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	28. For Fences or levee banks. Is the fence or levee bank that penetrates the OLS be treated as an obstacle.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	29. Is there a hazardous objects below the OLS where CAA has	☐ Yes	☐ S ☐ NS

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		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	identified an object which does not penetrate the OLS to be a hazard to aircraft operations. Is the Aerodrome Operator require the object to be either: (a) removed, if appropriate; or (b) marked and/or lit.	☐ No ☐ N/A	
	30. Is there objects which do not project through the approach surface but which will nevertheless adversely affect the optimum siting or performance of visual or non-visual aids shall, as far as practicable, be removed.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	31. Is there an aeronautical study prepared that, endanger aeroplanes on the movement area or in the air within the limits of the inner horizontal and conical surfaces regarded as an obstacle and shall be removed in so far as practicable.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	32. Is Aerodrome operators establish procedures to monitor the OLS and the critical obstacles associated with any additional requirements and have them included in the Aerodrome Manual if provided.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	33. Is there a Type A chart that identifies information on all significant obstacles within the take-off area of an aerodrome up to 10 km from the end of the runway.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	34. Is there a Type A chart prepared for each runway that is used for international operations.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	35. Is the obstacle data collected and the manner of presentation of the Type A chart are in accordance with the standards and procedures set out in CAR-ANS Part 4.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	36. Where no significant obstacle exists within the take-off flight path area, as specified by CAR-ANS Part 4, a Type A chart is not required but is there a statement	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	included in the Aerodrome Manual.		
	37. At aerodromes with no international operations but used by aircraft above 5,700 kg engaged in air transport operations, Is the decision to prepare Type A charts, or discrete obstacle information instead of a Type A chart, is a matter for the aerodrome operator to be made in conjunction with the relevant airline.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	38. Where a Type A chart has been prepared, or updated, is a copy of the chart is given to CAA.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	39. Where a Type A chart has been prepared and issued, is the take-off area monitored and any changes to the Type A chart information must immediately be communicated to all users of the Type A chart.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	40. Is a distribution list of current Type A chart holders maintained in the Aerodrome Manual.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	41. Is a Type A chart updated when the number of changes to the chart and notified through NOTAM or separate advice, reaches a level which CAA considers excessive.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	42. Is a Type B chart provides obstacle data around the aerodrome.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	43. Is the Type B chart prepared in accordance with the standards and procedures set out in CAR-ANS Part 4, may be provided.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	44. Is the decision to prepare a Type B chart be made in consultation with CAA.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	45. Where required, the obstacle data to be collected and the manner of presentation of the Type B chart is in accordance with the standards	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	and procedures set out in CAR-ANS Part 4.		
	46. Is the Obstacle Limitation Surfaces (OLS) identify the lower limits of the aerodrome airspace above which objects become obstacles to aircraft operations, and reported to CAA.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	47. Is the OLS comprises following: (a) outer horizontal surface; (b) conical surface; (c) inner horizontal surface; (d) approach surface; (e) inner approach surface; (f) transitional surface; (g) inner transitional surface; (h) balked landing surface; and (i) take-off climb surface.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	48. Is there a new obstacle located in the vicinity of an existing obstacle assessed and deemed be shielded may be considered as not being a hazard to aircraft.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	49. When assessing existing obstacle shields by an obstacle, Is the aerodrome operator guided by the principles of shielding detailed in [MAS] Figure 7.4-1.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	50. Is the new obstacle assessed as not imposing additional restrictions to the following: (a) when located between the inner edge end and the critical obstacle, the new obstacle is below a plane sloping downwards at 10% from the top of the critical obstacle toward the inner edge; or (b) when located beyond the critical obstacle from the inner edge end, the new obstacle is not higher than the height of the permanent obstacle; and (c) where there is more than one critical obstacle within the approach and take-off climb area, and the new obstacle is located between two critical obstacles, the height of the new obstacle is not	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	above a plane sloping downwards at 10% from the top of the next critical obstacle.		
	51. Is the new objects or extensions of existing objects shall not be permitted above an approach surface within 3 000 m of the inner edge or above a transitional surface except when, the new object or extension would be shielded by an existing immovable object.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	Is the new objects or extensions of existing objects shall not be permitted above a take-off climb surface except when, the new object or extension would be shielded by an existing immovable object.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7C-14: REMOVAL OF DISABLED AIRCRAFT

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.14 REMOVAL OF DISABLED AIRCRAFT		
<i>Particulars of the procedures for removing a disabled aircraft on or adjacent to the movement area, including the following:</i>			
	1. Is there a plan for the removal of an aircraft disabled on, or adjacent to, the movement area established for an aerodrome, and a coordinator designated to implement the plan, when necessary?	[] Yes [] No [] N/A	☐ S ☐ NS
	2. Is the disabled aircraft removal plan based on the characteristics of the aircraft that may normally be expected to operate at the aerodrome?	[] Yes [] No [] N/A	☐ S ☐ NS
	3. Is there a list of equipment and personnel on, or in the vicinity of, the aerodrome which would be available for such purpose?	[] Yes [] No [] N/A	☐ S ☐ NS
	4. Are there arrangements for the rapid receipt of aircraft recovery equipment kits available from other aerodromes?	[] Yes [] No [] N/A	☐ S ☐ NS
	5. Is there an information concerning the capability to remove an aircraft disabled on or adjacent to the movement area published in the AIP?	[] Yes [] No [] N/A	☐ S ☐ NS
	6. the names, role and telephone numbers of persons responsible for arranging for the	[] Yes [] No [] N/A	☐ S ☐ NS

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	removal of disabled aircraft		
	7. Does the manual contain particulars of the procedures for removing an aircraft that is disabled on or near the movement area?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. Does it include details of the roles of the aerodrome operator and the holder of the aircraft's certificate of registration?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. And the arrangements for telling the holder of the certificate of registration?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10. And the arrangements for liaising with air traffic control and the DCA?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. And the arrangements for obtaining equipment and persons to remove the aircraft?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	12. And the names and roles of the persons who are responsible for arranging for the removal of an aircraft which is disabled, and the telephone numbers for contacting them during and after working hours?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	13. List of documents checked. If yes, what are the documents checked?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	14. Is the operator maintaining records in accordance with the aerodrome manual?	[] Yes [] No [] N/A	☐ S ☐ NS
	15. Are adequate and suitable staff and resources available?	[] Yes [] No [] N/A	☐ S ☐ NS
	16. Are the arrangements for contacting the certificate of registration in accordance with the manual?	[] Yes [] No [] N/A	☐ S ☐ NS
	17. Are the arrangements for liaising with ATC and DCA in accordance with the manual?	[] Yes [] No [] N/A	☐ S ☐ NS
	18. Are the arrangements for obtaining equipment and persons to remove the aircraft in accordance with the manual?	[] Yes [] No [] N/A	☐ S ☐ NS
	19. Is the staff aware of safety requirements during aircraft removal?	[] Yes [] No [] N/A	☐ S ☐ NS
	20. Are any conditions or exemptions complied with?	[] Yes [] No [] N/A	☐ S ☐ NS
	21. If observed, was the removal in accordance with the manual?	[] Yes [] No [] N/A	☐ S ☐ NS
	22. Are disabled aircraft removal incidents noted, reported and followed up?	[] Yes [] No [] N/A	☐ S ☐ NS

Appendix 7C-15: HANDLING OF HAZARDOUS MATERIALS

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.15 HANDLING OF HAZARDOUS MATERIALS		
<i>Particulars of the procedures for the safe handling and storage of hazardous materials on the aerodrome, including the following:</i>			
	1. arrangements for special areas on the aerodrome to be set up for the storage of inflammable liquids (including aviation fuels) and any other hazardous materials; and	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	2. the method to be followed for the delivery, storage, dispensing and handling of hazardous materials.	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	3. Does the manual contain particulars of the procedures for the safe handling of hazardous materials on the aerodrome?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	4. Does it include the names, telephone numbers and roles of the persons who are to receive and handle hazardous materials?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	5. And the arrangements for special areas on the aerodrome to be set up for the storage of flammable liquids (including aviation fuels) and other hazardous materials?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	6. And the methods to be followed for the delivery, storage, dispensing and handling of these materials?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	7. List of documents checked. If yes, what are the documents checked?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	8. Is the operator maintaining records in accordance with the aerodrome manual?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	9. Are adequate and suitable staff and resources available?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	10. Are the persons who receive and handle hazardous materials the same as identified in the manual?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	11. Are the procedures for delivery, storage, dispensing and handling of these materials in accordance with the manual?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	12. Is the staff aware of safety requirements related to hazardous materials?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	13. Are any conditions or exemptions complied with?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	
	14. Are the arrangements for special areas for storage of hazardous materials in accordance with the manual?	☐ S ☐ NS ☐ Yes ☐ No ☐ N/A	

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	15. Are the materials stored correctly?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Are hazardous material related incidents noted, reported and followed up?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7C-16: LOW-VISIBILITY OPERATIONS

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.16 LOW-VISIBILITY OPERATIONS		
	<i>Particulars of procedures to be introduced for low-visibility operations, including the measurement and reporting of runway visual range as and when required, and the names and telephone numbers, during and after working hours, of the persons responsible for measuring the runway visual range.</i>		
	1. Does the manual contain the measurement and reporting of runway visual range as and when required?	[] Yes [] No [] N/A	☐ S ☐ NS
	2. Does the manual contain the names and telephone numbers, during and after working hours, of the persons responsible for measuring the runway visual range?	[] Yes [] No [] N/A	☐ S ☐ NS
	3. Does the manual contain particulars of the procedures for aerodrome operators staff involved in ground activities for low visibility operations?	[] Yes [] No [] N/A	☐ S ☐ NS
	4. Does it include the arrangements for: the alerting procedures, airside access restrictions and checks of lighting installations and signs?	[] Yes [] No [] N/A	☐ S ☐ NS
	5. Where RVR is determined manually, does the manual contain information about: - Measurement methods, reporting procedures, observation positions and personnel requirements including training to be undertaken?	[] Yes [] No [] N/A	☐ S ☐ NS
	6. And the names and contact details for the persons responsible?	[] Yes [] No [] N/A	☐ S ☐ NS
	7. List of documents checked. If yes, what are the documents checked?	[] Yes [] No [] N/A	☐ S ☐ NS
	8. Is the operator maintaining record in accordance with the aerodrome manual?	[] Yes [] No [] N/A	☐ S ☐ NS
	9. Are adequate and suitable staff and equipment	[] Yes	☐ S ☐ NS

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	available?	[] No [] N/A	
	10. Are visibility measurement arrangements along the runways in accordance with the manual?	[] Yes [] No [] N/A	☐ S ☐ NS
	11. Are procedures for minimizing vehicular traffic carried out in accordance with the manual?	[] Yes [] No [] N/A	☐ S ☐ NS
	12. Are arrangements for runway inspections during 'low vis' periods in accordance with the manual?	[] Yes [] No [] N/A	☐ S ☐ NS
	13. Is the staff aware of safety requirements related to low visibility operations?	[] Yes [] No [] N/A	☐ S ☐ NS
	14. Are appropriate signs, gates and warning signs in place for low vis ops in accordance with the manual?	[] Yes [] No [] N/A	☐ S ☐ NS
	15. Are low visibility operationally related incidents noted, reported and followed up?	[] Yes [] No [] N/A	☐ S ☐ NS

Appendix 7C-17: PROTECTION OF SITES FOR RADAR AND NAVIGATIONAL AIDS

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.17 PROTECTION OF SITES FOR RADAR AND NAVIGATIONAL AIDS		
	<i>Particulars of the procedures for the protection of sites for radar and radio navigational aids located on the aerodrome to ensure that their performance will not be degraded, including the following:</i>		
	1. arrangements for the control of activities in the vicinity of radar and nav aids installations;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	2. arrangements for ground maintenance in the vicinity of these installations;	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	3. arrangements for the supply and installation of signs warning of hazardous microwave radiation.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	4. Does the manual contain particulars of the procedures for the protection of radar and nav-aids located on the aerodrome to ensure that their performance will not be degraded?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	5. Does it include the arrangements for the control of activities near radar and navigational aid installations?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	6. And the arrangements, made in consultation with the provider of the navigational aid installation, for the supply and installation of signs warning of hazardous microwave radiation?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	7. And the arrangements for ground maintenance near these installations?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	8. List of documents checked. If yes, what are the documents checked?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	9. Is the operator maintaining records in accordance with the aerodrome manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	10. Are adequate and suitable staff and resources available?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	11. Are activities near radar and nav aids controlled in accordance with the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	12. Is ground maintenance near these facilities carried out in accordance with the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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		STATUS	REMARKS
	13. Is the staff aware of safety requirements related to radar and navaids?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	14. Are all conditions or exemptions complied with?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	15. Are appropriate signs warning of microwave radiation hazards supplied and installed in accordance with the manual?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
	16. Are radar and navaid related incidents noted, reported and followed up?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7C-18: HAZARDOUS METEOROLOGICAL CONDITIONS

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS
	4.18 HAZARDOUS METEOROLOGICAL CONDITIONS		
PANS-AERODROMES	1. Does the aerodrome operator have procedures for other hazardous meteorological situations that may occur at the aerodrome (such as thunderstorms, strong surface winds and gusts), describing the actions that have to be taken and defining the responsibilities and criteria for suspension of operations on the runway?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
PANS-AERODROMES	2. Does the aerodrome operator have a formal coordination with the [STATES] At [MAS]pherical, Geophysical and Satellite Administration (PAGASA) in order to be advised of any significant meteorological conditions?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

Appendix 7D: CRITERIA ON COMPETENCE OF AERODROME PERSONNEL

POSITION	ASSESSMENT CRITERIA
AIRPORT MANAGER / GENERAL MANAGER	Performance Criteria
	a) Full control of the human resources required for the operations authorized to be conducted under the operations approval certificate (e.g. Aerodrome Certificate)
	b) Full control of the financial resources required for the operations authorized to be conducted under the operations approval certificate (e.g. Aerodrome Certificate)
	c) Final authority over operations authorized to be conducted under the operations approval certificate (e.g. Aerodrome Certificate)
	d) Direct responsibility for the conduct of the organization's affairs
	e) Final responsibility for all safety issues
	Knowledge Criteria
	a) Knowledge and understanding of the documents that prescribe relevant aerodrome safety standards
	b) Understanding of the requirements for competence of aerodrome management personnel, so as to ensure that competent persons are in place
	c) Knowledge and understanding of safety, quality, and security management systems related principles and practices, and how these are applied within the organization
	d) Knowledge and understanding of the key issues of risk management within the aerodrome operational aspects
	e) CAA regulatory framework
	f) State Safety Programme and Aerodrome SMS
	g) Aerodrome Certification Process
	h) CAA Regulatory Oversight Process
	i) CAA Enforcement Procedure
HEAD OF SAFETY AND COMPLIANCE	Performance Criteria
	a) Responsible individual and focal point for the development and maintenance of an effective safety management system;
	b) Ensure that processes needed for the SMS are established, implemented and maintained
	c) Reportable directly to the Accountable Manager on the performance of the SMS and on any need for improvement
	d) Ensure safety promotion throughout the organization
	e) The role of the safety manager should be to: i. facilitate hazard identification, risk analysis, and management;

POSITION	ASSESSMENT CRITERIA
	ii. monitor the implementation and functioning of the safety management system, including the necessary safety actions; iii. manage the safety reporting system of the aerodrome; iv. provide periodic reports on safety performance; v. ensure maintenance of safety management documentation; vi. ensure that there is safety management training available, and that it meets acceptable standards; vii. provide advice/mitigation measures on safety matters; and viii. initiate and participate in internal occurrence/accident investigations.
	Knowledge Criteria a) Practical experience and expertise in aerodrome operations, maintenance or similar area b) Knowledge of the Aerodrome Manual c) Comprehensive knowledge of the applicable requirements in the area of aerodromes d) CAA Regulatory framework e) Aerodrome SMS and State Safety Programme (SSP) f) CAA Aerodrome Certification Process g) Knowledge of CAA Technical Guidance Material h) Knowledge of [ANNEX 14]([MAS]) and related ICAO Documents (Aerodromes) i) Managing Findings and Recommendations (F&R), preparation and implementation of corrective action plan (CAP) from the certification/continuing surveillance of j) aerodrome k) Implementation of Aerodrome emergency plan l) Implementation of Wildlife Hazard Management m) Aerodrome Projects Management n) Aerodrome Engineering o) CAA Regulatory Oversight Process
HEAD AERODROME OPERATIONS	Performance Criteria a) Ensure that aerodrome certifying requirements are met, and that the aerodrome operates in accordance with certificate conditions and regulatory requirements b) Accountable for day-to-day aerodrome operations c) Ensure an understanding by the aerodrome management of the certification requirement for and status of the Aerodrome Manual d) Responsible for the management of the operational services and maintenance of the aerodrome e) Analyze auditing findings and inspections to the CAA, and initiate actions

POSITION	ASSESSMENT CRITERIA
	f) Use feedback from auditing and inspections to recommend appropriate changes to movement areas g) Safety management procedures and ensure implementation h) Monitor airside planning and development for compliance i) Develop proactive working relationships with aerodrome users/third parties j) Ensure that aerodrome certification requirements are met, and that the aerodrome operates in accordance with certificate conditions and statutory requirements.
	Knowledge Criteria a) Practical experience and expertise in aerodrome operations or maintenance (or similar area) respectively b) Comprehensive knowledge of the applicable requirements in the area of aerodromes c) Appropriate level of knowledge of safety and quality management d) Knowledge of the Aerodrome Manual e) CAA Regulatory Framework f) Safety Management System/State Safety Programme g) CAA Aerodrome Certification Process h) Aerodrome Projects i) CAA Regulatory Oversight Process j) CAA Enforcement Procedure
HEAD AERODROME MAINTENANCE	Performance Criteria a) Ensure that aerodrome certification requirements are met, and that the conditions of the aerodrome facilities are accurately reported (Aerodrome Manual/AIP) in accordance with the regulatory requirements b) Ensure aerodrome facilities are commensurate with the types and frequency of aircraft in accordance with legislative requirements c) Ensure that maintenance policies, procedures and training are compatible with the aerodrome operational requirements d) Ensure understanding of regulatory requirements related to electrical systems e) Ensure understanding of regulatory requirements related to aeronautical ground lighting and other visual aids such as markings and signage f) Ensure understanding of regulatory requirements related to aerodrome pavements g) Ensure understanding of role as related to aerodrome reporting systems to include hazard identification, defect identification and reporting of safety critical information to the aerodrome Air Traffic Service Unit

POSITION	ASSESSMENT CRITERIA
	h) Ensure basic understanding of aerodrome wildlife hazard management i) Ensure understanding of requirement for corrective and preventive maintenance programme of the aerodrome facilities, equipment and installations j) Ensure understanding of competency standards and evaluation programme for maintenance staff maintaining safety critical assets or working in safety critical areas (including both technical and operational competencies as necessary)
	k) Ensure understanding of [MAS] 10.15: Aerodrome Maintenance
	Knowledge Criteria
	a) Qualified in the role with appropriate education, experience and/or certification b) Practical experience and expertise in aerodrome maintenance c) Comprehensive knowledge of the applicable requirements in the areas of electrical systems, aeronautical ground lighting and pavements d) Knowledge of the Aerodrome Manual operational requirements e) Knowledge of applicable ICAO guidance materials such as the Aerodrome Design Manual f) CAA Regulatory Framework (Act CAP 80 and Regulations) g) Safety Management System/State Safety Programme h) CAA Aerodrome Certification Process (Part IV of the Regulations) i) Aerodrome Projects j) CAA Regulatory Oversight Process k) CAA Enforcement Procedure l) Process for the reporting and follow-up of accidents, incidents and emergencies on the aerodrome
HEAD AERODROME EMERGENCY SERVICES	Performance Criteria
	a) Ensure that aerodrome certificating requirements are met, and that the aerodrome operates in accordance with the regulatory requirements in the provision of Aerodrome Emergency Services b) Ensure emergency fire and rescue facilities are compatible with sizes, types and frequency of aircraft in accordance with regulatory requirements c) Ensure that rescue and firefighting policies, procedures and training meet regulatory requirements and are commensurate with aerodrome operations d) Ensure that procedures for auditing driver training programmes are to established standards

POSITION	ASSESSMENT CRITERIA
	e) Ensure the use of communication protocols and procedures is in accordance with regulations
	f) Assess the feasibility of continuing aerodrome operations in an emergency situation
	g) Ensure appliances and equipment meet all regulatory requirements
	h) Establish an effective Command & Control System
	Knowledge Criteria
	a) Qualified in the role with appropriate education, experience and/or certification
	b) Practical experience and expertise in aerodrome AES
	c) Comprehensive knowledge of the applicable regulatory requirements in the areas of Aerodrome Emergence Services and aerodromes
	d) Knowledge of [MAS] and ICAO document
	e) Knowledge of the Aerodrome Manual
	f) CAA Regulatory Framework
	g) Safety Management System/State Safety Programme
	h) CAA Aerodrome Certification Process
	i) CAA Regulatory Oversight Process
	j) CAA Enforcement Procedure
	k) Process and procedure for the reporting and follow-up of accidents, incidents and emergencies on the aerodrome

**Appendix 7E: ASSESSMENT OF OPERATIONS AND MAINTENANCE
PERSONNEL CHECKLIST**

QUESTIONNAIRE	Review by Aerodrome Inspectors	
	Status	Remarks
1. Does the officer possess basic qualifications to carry out assigned responsibilities?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
2. Does the officer have the required knowledge and experience on the job (OJT) to perform the responsibility at the expected level of competence?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
3. Does the officer have the required tools and equipment to carry out the operation in line with job specification?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
4. Does the officer have a job description?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
5. Is there a personnel roster that indicates satisfactory workload for each officer?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
6. Are the officers adequately and regularly trained to discharge the responsibility optimally?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
7. In demonstrating operations and maintenance competence, is the knowledge, skills and experience required to inspect aerodrome movement area, obstacle limitation surface, marking, signs and lights, for conducting or supervising aerodrome works, for using the portable radio and completing the NOTAM forms displayed?.	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
8. Are the officers' refresher trainings at such duration/interval to guarantee currency on the job?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS

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QUESTIONNAIRE	Review by Aerodrome Inspectors	
	Status	Remarks
9. Does the officer have adequate knowledge of the working documents available for the performance of his duties?	☐ Yes ☐ No ☐ N/A	☐ S ☐ NS
Inspectors Remarks:		

Name of Inspector: _____ Signature: _____ Date: _____

Appendix 7F: COMPETENCY CHECKLIST FOR AERODROME TECHNICAL PERSONNEL

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	1. Reporting Officer Has the reporting officer possesses the following attributes? a) sound knowledge of the physical characteristics of the aerodrome movement area, the aerodrome obstacle limitation surfaces, aerodrome markings, lighting and ground signals and essential aerodrome safety equipment; b) an understanding of the aerodrome information included in AIP; c) the ability to carry out a serviceability inspection of the aerodrome; d) a knowledge of the aerodrome emergency procedures; and e) a knowledge of the NOTAM system and the ability to carry out aerodrome reporting procedures.	☐ Yes ☐ No ☐ N/A	
	2. Airside Drivers Does the airside drivers operating vehicles and ground equipment, hold an appropriate license to operate in entering the movement area?	☐ Yes ☐ No ☐ N/A	
	3. Airside Drivers Is the driver of a vehicle on the movement area appropriately trained for the tasks to be performed and comply with instructions issued by: a) the aerodrome controller when on the maneuvering area; and b) the appropriate authority when operating on the apron?	☐ Yes ☐ No ☐ N/A	
	4. Aerodrome Technical Inspectors Is operator of a certified aerodrome ensure that a person or persons with appropriate technical qualifications and experience conducts an aerodrome technical inspection? In particular: a) the movement area, other pavements and drainage is inspected by a person who has a recognized degree,	☐ Yes ☐ No ☐ N/A	

REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	diploma or certificate in civil engineering or appropriate technical experience; and b) the lighting and electrical facilities is inspected by a person who has a recognized degree, diploma or certificate in electrical engineering or a licensed electrician; and c) the obstacle limitation surfaces is inspected by a person who: d) is technically qualified or experienced in surveying; and e) has a sound knowledge and understanding of the standards and survey procedures for obstacle limitation surfaces.		
	5. Aerodrome Safety Inspectors Does a person apply to CAA for approval to conduct aerodrome safety inspections as Aerodrome Safety Inspectors? CAA approve a person if the person has: a) a recognized degree, diploma or certificate in civil engineering, surveying or a related field and a sound knowledge of the parts of these Regulations and the standards, practices and procedures that are applicable to the operation and maintenance of aerodromes; or b) other qualifications, knowledge and experience that CAA considers suitable for conducting an aerodrome safety inspection; and c) the capability, if the approval is given, to perform properly the aerodrome safety inspection function.	☐ Yes ☐ No ☐ N/A	
	6. Wildlife Personnel Is the wildlife personnel responsible for preparing a WHMP a suitably qualified person such as an ornithologist or a biologist?	☐ Yes ☐ No ☐ N/A	
	7. Persons Involved with Aerodrome Safety Functions Are persons involved with aerodrome safety functions possess essential competencies which include:	☐ Yes ☐ No ☐ N/A	

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REFERENCE NO.	QUESTIONS	REVIEW BY AERODROME INSPECTOR/S	
		STATUS	REMARKS (Include reference to documentation or reason for non-compliance/non-applicability)
	a) inspect and report on the physical characteristics and conditions of the aerodrome; b) inspect and report on aerodrome lighting systems; c) inspect and report on the OLS; d) initiating a NOTAM; e) use of radio, and f) supervise the safety of aerodrome works?		
	8. Work Safety Officer Is works safety officer for the aerodrome works has not been trained, in accordance with aerodrome standards, to perform the works safety officer's functions?	☐ Yes ☐ No ☐ N/A	

Appendix 7G: Trigger List - Aerodrome Facilities

1. RUNWAY(S)

Markers and markings
Pavement condition
Profile Surface texture (e.g. grooving) Roughness
Cleanliness
Vegetation height (if grassed)
Other (cracks, holes, oversized stones, etc.)
Stopways
Shoulders
RESA

2. RUNWAY STRIP(S)

RWS obstacles
Surface condition (graded and overall) Clearway
Markers
Vegetation height

3. TAXIWAYS

Pavement condition Roughness
Cleanliness
Vegetation height (if grassed) Shoulders
Taxiway strips
Markers, markings and MAGS Other faults

4. APRONS

Pavement condition Roughness
Cleanliness
Vegetation height (if grassed)
Markings, markers and MAGS
Aircraft tie-down areas
Aircraft parking and clearances
Other (earthing points, vehicle access, etc.) Other faults

5. LIGHTING

Note: Lighting inspection carried out Day or Night?
Runway(s)
Runway intermediate holding point or guard lights
Portable Emergency Supplies
Apron edge
Apron flood
Stand-by power

Wind indicator(s).
PAPI/VASIS
MAGS
Portable lights
Obstacle
Other (beacon, etc.)

6. GENERAL

Wind indicators
Signal area
Are unserviceability markings and markers available?
Boundary fence/access control
Crash roads

APPENDIX - 8: Suggested Agenda Items for an Exit Meeting

- ☐ Welcome
- ☐ Thanks for the co-operation of the auditee staff and assistance to the audit team
- ☐ Re-state the purpose scope and reason for the audit
- ☐ Presentation of the audit context
- ☐ If appropriate, mention the previous audit
- ☐ Review of objectives of the audit
- ☐ Brief review of the audit methodology while emphasizing its standardized nature
- ☐ Presentation of the audit findings:
 - Positive aspects to be highlighted
- ☐ Listing of the findings but without discussion of the evidence
- ☐ Stress that the exit meeting is not the place for discussion, just presentation to alert the auditee.
- ☐ Next steps:
 - Audit draft report to be finalized (when) and copied to auditee
 - Auditee then has the opportunity to review and discuss any contentions issues with Team Leader
- ☐ Final report to follow within (time/date/event)
- ☐ After final report, CAP is expected which will address short term remedial action as well as long term preventative action
- ☐ Record of attendees
- ☐ Conclusion

APPENDIX - 9: Standard Audit Report Format**AUDIT REPORT FOR
XXX ORGANIZATION**

[Insert Table of contents]

1. INTRODUCTION**1.1. Airport/Organization Information**

Airport Visited: _____ International Airport
 Dates of Audit: 15th August to 21st August 20__
 Team Members: Mr. H. O. Exceptional, Audit Leader
 Mr. A.N. Other, Team Member
 Mr. A.N. Other, Team Member
 Mr. A.N. Other, Team Member

1.2. Audit Scope & Objectives

1.2.1. The audit was designed to assess compliance with the (*insert procedures, regulations, manual etc.*) of _____ International Airport/Organization.

1.3. Identity & Administrative Information of Audited Organization

1.3.1. The management of XXX International Airport, representing the aerodrome operator, was:

- ☐ Mr A. O. Boss, General Manager
- ☐ Mr T Isee, Aerodrome Operations Office
- ☐ M B Karful, Safety Manager

1.4. Documents Reviewed

1.4.1. The following documents were reviewed prior to, and during, the audit:

- ☐ *List the documents*
- ☐ *List the documents*
- ☐ *List the documents*

1.5. Person Contacted & Interviewed

1.5.1. The following persons were interviewed and questioned during the audit;

- ☐ Mr. A. M. Manager XXX Airport Director, FAAN
- ☐ Ms. A. N Other Chief, RFFS, XXX Airport

1.6. Opening Meeting

1.6.1. An opening meeting was carried out on __Date__ at Location. This briefing was conducted by the CAA Audit Team Leader, Mr. XXXXX and attended by:

List the persons in attendance.

1.7. Closing Meeting

1.7.1. A closing meeting was carried out on _Date_ at Location. This was conducted by the NCAA Audit Leader, Mr. XXXXX and attended by:

List the persons in attendance.

1.8. Distribution of Report

1.8.1. This final report will be sent to _____ Manager, Airport Director for XXX International Airport. It is the responsibility of Mr. Manager to ensure that distribution of the report conclusions and findings are disseminated amongst appropriate personnel from the audited Organization.

1.9. Confidential Nature of the Report

1.9.1. This report and all the information contained therein should be regarded as confidential and not for general dissemination.

2. EXECUTIVE SUMMARY

A short explanation of the main activities of the audit and the principal findings.

3. SUMMARY OF FINDINGS

A summary of all the findings in order of priority.

4. BACKGROUND

4.1. The audit was undertaken in accordance with the requirements of the [DASS] of CAA which establishes the various processes and procedures required to be undertaken by the different Organizations and persons to whom this programme applies, in order to satisfy the needs of ensuring that aviation practices within the Republic of the [STATE] are maintained in accordance with the requirements of the CAA.

4.2. This airport/ Organization has been the subject of previous audits on XXXX (date(s)).

5. OBSERVATIONS & FINDINGS

5.1. Describe each finding as a result of an observed condition.

5.1.1. **Finding:** Describe the deficiency and the corrective action required by the audited Organization together with reference to mandatory requirement and associated evidence of non-conformity.

5.1.2. Status: Assign category of finding

5.1.3. Timing: Agreed deadline for rectification

5.2. **Observation:** Record comments

When drafting findings following an audit or inspection, the following guidelines should be used:

- ☐ Do not wait until the last moment to draft the documents; the draft findings must be filled in as the observations are made to maintain a satisfactory level

of objectivity.

- ☐ The final report of the audit must be drafted as quickly as possible after the audit is completed.
- ☐ Every formulation must be clear, concise and comprehensive.
- ☐ Sentences should be short.
- ☐ The classification of recommendations must be carried out with objectivity and candour.

5.3. Findings Form

Regulatory Requirement/Reference:			Finding Number:
Finding/s:			
Type of Finding:	☐ Non-compliance Category A *	☒ Non-compliance Category B**	
Evidences:			
Auditor/s:			
Corrective Action Plan:			
Target Date:		Auditee/Person Responsible:	

* **Non-compliance Category A** finding is defined as a finding that is critical, in that it has the potential to result in loss of life, serious injury or damage to facilities and which requires corrective action to be completed immediately. Such action may involve closure of a facility

** **Non-compliance Category B** finding is defined as an occurrence, situation or deficiency involving an item of equipment, an aerodrome facility or a procedure within a system that caused, or has the potential to cause, significant safety problems within the system, and which requires corrective action to be completed within an agreed time frame.

6. CORRECTIVE ACTION PLAN

6.1. List all the corrective action required by the audited Organization in the Corrective Action Plan form in order of priority as classified by Section 6.2 of the Handbook. (See Table 1).

Table 1: AUDIT/INSPECTION CORRECTIVE ACTION PLAN

DOCUMENT REFERENCE	FINDINGS	FINDINGS CATEGORY	CORRECTIVE ACTION (BY THE AERODROME OPERATOR)	PERSON RESPONSIBLE	AGREED TARGET DATE

APPENDIX - 10: Post audit feedback form

Item	Activity	Comments/Remarks
1.	Post audit opening	
2.	Conduct of auditors	
3.	Documentation	
4.	Comment on findings	
5.	Quality of the audit report	
6.	General	

Notes:

APPENDIX - 11: Aerodrome Surveillance Checklist

AREA OF INSPECTION		REFERENCES	OBSERVATIONS	CAT.
I. PHYSICAL CHARACTERISTICS:				
A	RUNWAY :			
i	ORIENTATION OF ALL RUNWAY(S)			
ii	SURFACE CONDITION (DEPRESSION, POT HOLE, RUTTING):			
iii	SURFACE FRICTION/RUBBER DEPOSIT/ DATE OF LAST FRICTION TEST WITH COEFFICIENT VALUE:			
iv	SLOPES:			
v	VISUAL MARKINGS (TDZ, AIMING POINT, THR,C/L,SIDE STRIP , DESIGNATION, RET/ TWY LINKS ETC) :			
vi	BASIC STRIP (FLUSHING , GRADING , OBSTACLE):			
vii	LIGHTINGS (THR, END, TDZ,C/L , RETIL):			
viii	SIGNAGES (INFORMATIVE / MANDATORY) :			
ix	APPROACH LIGHTS (SIMPLE/ CAT- I/II/III)			
x	PAPI (DATE OF LAST SURVEY):			
xi	RESA :			
xii	ANY OTHER OBSERVATION :			
B	APRON :			
i	SURFACE CONDITION (DEPRESSION, POT HOLE, RUTTING):			
ii	VISUAL MARKINGS (BREAK AWAY POINT,EDGE ,VEHICULAR LANE , TAXI LANE ,SAFETY LINE , EQPT PARKING AREA ETC) :			
iii	LIGHTS : EDGE , FLOOD LIGTS ETC.:			
iv	ILLUMINATION LEVEL ON APRON (IN LUX):			
v	SIGNAGES (INFORMATIVE / MANDATORY) :			
vi	PARKING STAND IDENTIFICATION / VISUAL DOCKING GUIDANCE SYSTEM (VDGS) / AEROBRIDGE ETC. :			
vii	EQUIPMENT PARKING AREA :			

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AREA OF INSPECTION		REFERENCES	OBSERVATIONS	CAT.
viii	FOD COLLECTION SYSTEM :			
ix	ANY OTHER OBSERVATION :			
C	OPERATIONAL AREA :			
i	AERODROME PERIMETER FENCING:			
ii	NORMAL AND EMERGENCY ACCESS ROUTES:			
iii	SIGNAL AREA .WIND DIRECTION INDICATOR (WDI):			
iv	ISOLATION PARKING STAND:			
v	OBS. LIGHTS OF OBSTRUCTIONS / OBSTACLES:			
vii	AERODROME RREFERENCE POINT (ARP) & ITS MAINTENANCE:			
vii	DRAINAGE:			
ix	HOLDING POSITION MARKING (TWY , ROAD ETC):			
x	DEMARCATON OF LOCALIZER & GLIDE PATH SENSITIVE / CRITICAL AREAS :			
xi	ANY OTHER OBSERVATION :			
D	TAXIWAYS :			
i	MARKINGS (C/L, EDGE):			
ii	LIGHTS: EDGE, CENTER LINE (IF AVBL.) ETC :			
iii	SURFACE CONDITION:			
iv	STRIP:			
v	SIGNAGES (INFORMATION / MANDATORY)			
vi	ANY OTHER OBSERVATION :			
II. ARFF :				
i	CATEGORY :			
ii	EQUIPMENTS OF RESCUE & FIRE FIGHTING :			
iii	EXTINGUISHING AGENTS :			
iv	STANDARD OPERATING PROCEDURES (SOPs) :			
v	TRAININGS/ DRILL (FULL SCALE & TABLE TOP EMERGENCY EXERCISE) :			

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AREA OF INSPECTION		REFERENCES	OBSERVATIONS	CAT.
vi	COMMUNICATION SYSTEMS :			
vii	RESCUE RESOURCES , EXTINGUISHING AGENTS, WATER STORAGE :			
viii	HYDRANT SYSTEM :			
ix	MAINTENANCE OF RECORDS(LOG BOOKS, VEHICLE, DRILL ETC) :			
x	ANY OTHER OBSERVATION :			
AERODROME INFORMATION:				
i	DATE OF PUBLICATION :			
ii	ADEQUACY OF INFORMATION :			
iii	CURRENT NOTAMs :			
iv	OPERATIONAL RESTRICTIONS, IF ANY :			
v	ANY OTHER OBSERVATION :			
III. AERODROME OPERATIONS :				
i	AERODROME MANUAL : (CHANGE IN PERSONNEL, CONTACT NUMBERS, PROCEDURES, NAVAIDS, ETC.)			
ii	SOPS FOR OPERATIONS AND MAINTENANCE :			
iii	AIRPORT EMERGENCY PLAN :			
iv	ANTIHIJACKING PLAN :			
v	BOMB THREAT CONTINGENCY PLAN :			
vi	OBSTACLE REGULATION & CONTROL PROCEDURES :			
vii	COORDINATION BETWEEN ATM & AERODROME OPERATIONS :			
viii	WILD LIFE CONTROL MECHANISM :			
ix	AEMC MEETING & ACTION ITEMS :			
x	CONSTRUCTION/ DEVELOPMENT ACTIVITIES :			
xi	OBSTACLE CONTROL PROCEDURE :			
xii	CONTROL & COMPLIANCE OF OBSTRUCTIONS, DATE OF LAST SURVEY CARRIED :			
xiii	AERODROME CHARTS : GRID MAP , ZONING MAP, TYPE A & B, DATE OF PUBLICATION,;			

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AREA OF INSPECTION		REFERENCES	OBSERVATIONS	CAT.
xiv	LICENCING COMPLIANCE SYSTEM & AVAILABILITY OF EQUIPMENTS FOR STANDARDISATION :			
xv	STAND BY POWER SUPPLY FOR ESSENTIAL SERVICES :			
xvi	FOLLOW ME / OPS. JEEP :			
xvii	ANY OTHER OBSERVATION :			
IV. SAFETY MANAGEMENT SYSTEM :				
i	SAFETY MANAGEMENT MANUAL :			
ii	SAFETY MANAGER AND SYSTEMS FOR IMPLEMENTATION :			
iii	STATUS OF IMPLEMENTATION :			
iv	COMPLIANCE OF SMS :			
v	ANY OTHER OBSERVATION :			
V. AVAILABILITY & ADEQUACY OF TRAINED MANPOWER FOR AERODROME OPERATIONS :				
i	AERODROME OPERATIONS :			
ii	ARFF :			
iii	MAINTENANCE :			
iv	ANY OTHER OBSERVATION :			
VI. ATC :				
i	SERVICES PROVIDED / UNIT :			
ii	COMMUNICATION FACILITIES : VHF, TELEPHONE, DSC , FIRE ALARM , AERODROME BEACON, LIGHT GUN, ETC. :			
iii	AVAILABILITY OF RELEVANT ICAO DOCS, ATS CIRCULARS, AICS, NOTAMS, DGCA- CARS :			
iv	DISPLAY OF LANDING, INSTRUMENT APPROACH , AERODROME CHARTS, GRID MAP ETC. :			
v	AVAILABILITY OF UPDATED DOCS REGARDING : AEP , BOMB THREAT, SEARCH & RESCUE, AIR SAFETY CIRCULARS TO DEAL WITH THE SITUATION IN THE EVENT OF AIRCRAFT INCIDENT / ACCIDENT ETC. :			
vi	DISPLAY OF THE LIST OF MEDICAL PRECTIONERS, WHO SHOULD BE AVAILABLE IN CASE OF AN EMERGENCY, TOGETHER WITH THEIR			

AREA OF INSPECTION		REFERENCES	OBSERVATIONS	CAT.
	ADDRESSES & TELEPHONE NUMBERS IN THE CONTROL TOWER :			
vii	RWY LIGHTING AND REMOTE STATUS INDICATOR OF NAV. AIDS :			
viii	ANY OTHER OBSERVATION :			
VII. COMMUNICATION/NAVIGATION FACILITIES :				
i	NAV FACILITIES (NDB/DVOR/MSSR/ILS)			
ii	SERVICEABILITY / RELIABILITY STATUS OF NAVIGATIONAL AIDS:			
iii	SERVICEABILITY / RELIABILITY STATUS OF AIR GROUND COMMUNICATION FACILITIES (VHF,HF ETC), INTER UNIT COMMUNICATION :			
iv	GROUND / AIR CALIBRATION STATUS OF NAVIGATION AID DVOR , ILS, SMR , ASMGCS :			
v	CHECK QUALITY OF RECORDING :			
vi	ANY OTHER OBSERVATION :			
VIII. METEOROLOGY :				
i	FACILITIES – CLASS I/ II/III :			
ii	SERVICES PROVIDED AND THEIR ADEQUACY :			
iii	MET REPORTS :			
iv	TIMELY DISSEMINATION :			
v	ANY OTHER OBSERVATION :			
REMARKS :				
LIST OF OBSERVATION :				

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AREA OF INSPECTION	REFERENCES	OBSERVATIONS	CAT.
	SIGNATURE OF INSPECTING OFFICER :		

GENERIC PROCEDURES FOR ACCEPTING NON-COMPLIANCES IN AERODROMES

Version 1.0, November 2020

Introductory Notes

This generic document was developed by the ICAO Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG) for reference by States in the APAC Regions. When referring to this generic document, States are expected to customize the content in accordance to the States' legislations, regulations and situations.

ICAO Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services and Guidance Material shall take prevalence in the event of any conflict between the aforementioned provisions and this generic document.

Enquiries and feedbacks regarding this generic document can be made to ICAO APAC Office at apac@icao.int.

1. INTRODUCTION

- 1.1 An Aerodrome certificate holder is expected to comply with the national rules and standards, as well as the Standards and Recommended Practices of ICAO Annex 14, Volume I, the procedures in ICAO PANS-Aerodrome (Doc 9981) and guidance materials in relevant ICAO documents. The generic procedures in this document do not substitute or circumvent the provisions contained in the aforementioned publications.
- 1.2 There may be some circumstances where requirements have not been practically possible to follow at an existing aerodrome due to physical constraints, infrastructure development, changes to requirements, temporary accommodation of aircraft larger than the aerodrome design aircraft, etc. Similarly, in some cases, compliance is not possible even for a new aerodrome due to physical constraints, technical or economic difficulties.
- 1.3 At existing aerodromes where full compliance with standards cannot be achieved, alternative measures will be required to achieve an equivalent level of safety performance. The aerodrome regulators and operators need to follow the specified procedures to be applied to both initial aerodrome certification and continuous aerodrome safety oversight, as well as aerodrome compatibility studies where full compliance with the SARPs in Annex 14, Volume I, cannot be achieved.

Non-Compliances

- 1.4 Non-compliances are usually found in infrastructural elements and in operational elements. The infrastructural elements concerned include aeronautical data, obstacle limitation surfaces, visual and non-visual aids, electrical power supply systems for air navigation services, and physical characteristics (such as runway / taxiway / apron design, runway end safety area [RESA], runway strip, fencing, etc.). Similarly, operational elements concerned include aerodrome emergency planning, aerodrome maintenance, rescue and firefighting, low visibility operations etc. A number of non-compliances exist because of the lack of standardized procedures for the systematic recording of deviations from the design and operating requirements.
- 1.5 Some common non-compliant elements to the ICAO SARPs at medium and large aerodromes are runway strips, RESA, separation between runway and parallel taxiways, approach surface, and mandatory instruction signs. There may be further non-compliances in relation to aerodrome maintenance, aerodrome emergency planning, electrical power supply system, aeronautical data specifications and obstacle limitation surfaces. Aerodrome operators sometimes are not aware of possible infringements of the obstacle limitation surfaces as per ICAO SARPs. The main reasons are the lack of well-defined responsibility for the assessment of obstacles and the relative complexity of the task.
- 1.6 The tools most frequently used to evaluate non-compliance to international or any relevant national regulations are either audits by the regulatory authorities (e.g. Civil Aviation Authority) during the certification process or internal SMS audits by the aerodrome operators.

Purpose

- 1.7 The purpose of the procedure is to harmonize the acceptance of non-compliance for aerodromes which do not conform to all SARPs contained in the Annex 14, Volume I / national requirements during the aerodrome certification process.
- 1.8 When non-compliances are present, the effect on safety needs to be analyzed, and measures and/or limitations on its use to mitigate any non-compliance have to be established. The harmonization of this aspect of the certification process is therefore important for ensuring

safety. Safety risk assessment should be conducted before the regulatory authorities grant exemptions for non-compliances.

- 1.9 The abovementioned situations require procedures for accepting non-compliance in respect of a certified or to-be certified aerodrome.

2. PROCEDURE FOR ACCEPTING NON-COMPLIANCES

- 2.1 One of the aims of a certification of aerodrome process is to ensure compliance with all relevant and applicable legal requirements, technical requirements and procedures. Ensuring compliance with the requirements for aerodrome design, organizational factors, operations, and approved procedures, programmes and plans, is a key element of maintaining acceptable level of safety at an aerodrome. The goal is to require the non-compliances to be corrected and to deal with the situations where correction is not possible, either due to physical constraints such as terrain etc.

- 2.2 The managing of non-compliances/deviations, generally jointly by the CAA and the aerodrome operator, has the following major considerations:

- Affected parameters (Standards or Recommended Practices);
- Differences between ICAO and national requirements;
- Extent and duration of deviation;
- Traffic density of the aerodrome;
- Whether an effective SMS is in place in the aerodromes;
- Safety culture at aerodromes and within the CAA; and
- Capability for evaluating the impact of deviations e.g. safety risk assessments.

- 2.3 When non-compliances are present, the effects on safety need to be analyzed, and measures and/or limitations on its use to mitigate any non-compliance have to be established. The harmonization of this aspect of the certification process is therefore important for ensuring safety. Safety risk assessment should be conducted before granting exemptions for non-compliances, which is specified in ICAO Annex 14 Volume I, ICAO Safety Management Manual (Doc 9859) and PANS-Aerodromes (Doc 9981). Non-compliances are only accepted after mitigation measures have been established and implemented to the satisfaction of CAA, so that an equivalent level of safety performance could be achieved.

- 2.4 The aerodrome certificate holder shall submit separate application for each non-compliance in the prescribed format for seeking exemption. (Refer to Appendix I). The application for exemption shall be made through the submission of a comprehensive safety risk assessment report, supported with the reasons for non-compliance, means of mitigation and indication as to when compliance can be achieved. Furthermore, the following points should be considered while requesting the exemption for non-compliances:

- Ensure that the exemption application is given proper consideration;
- Ensure that an exemption is absolutely necessary rather than a convenient method of circumventing the requirements;
- The reasons why the applicant needs the exemption. The reasons provided should be detailed and fulsome;
- If the application is for a renewal of an existing exemption, the application need not contain information which has been previously supplied. However, the application must include reasons why a renewed exemption is required; and

- Considerable research and investigation is often required.
- 2.5 In considering an application for exemption from an ICAO Standard or Recommended Practices / Procedures which have been incorporated into the national legislation / regulations, CAA needs to consider aviation safety as the paramount consideration. Keeping this in mind, CAA may ask the applicant to provide further information, a copy of specific documents and undertake a test or tests of competence.
- 2.6 Operational restrictions are the most often mitigation measures for non-compliances. Safety risk assessments are mostly conducted to analyze the impact on safety. In aerodromes with less traffic throughput, non-compliances may be accepted with a simplified procedure. The same simplified procedure may be applied for very minor non-compliances at busier aerodromes which may only have minimal effect on aviation safety.
- 2.7 When CAA is satisfied with the application, CAA will issue an exemption to the aerodrome operator. Examples of exemption is available in **Appendix IV**.

Note – Refer to paragraph 3 for the approval / acceptance of safety risk assessment.

- 2.8 In the meantime, the aerodrome operator shall be required to conduct annual review to ascertain that the mitigation measures are in place and effective. The review should also consider whether the non-compliance could be removed from CAA findings. The outcomes of the review are required to be documented in the report to be submitted to CAA for consideration.
- 2.9 Furthermore, the accepted non-compliances shall be published in the AIP if it is related to ICAO Standards, Recommended Practices or Procedures, in accordance with Annex 15 Chapter 5. An example is available in **Appendix V**.

3. APPROVAL OR ACCEPTANCE OF A SAFETY RISK ASSESSMENT

- 3.1 The safety risk assessment conducted by the aerodrome operator is a core SMS function. Management approval and implementation of the safety risk assessment, including future updates and maintenance, are the responsibility of the aerodrome operator. The CAA may, depending on the need and complexity of the application, require the submission of the specific safety risk assessment for approval/acceptance.
- 3.2 The safety risk assessment process is as per **Appendix II**.
- 3.3 The CAA establishes the type of safety risk assessments that are subject to approval or acceptance and determines the process used for that approval/acceptance.
- 3.4 In connection with paragraph 3.1, where required, a safety risk assessment shall be submitted by the aerodrome operator to CAA for approval/acceptance prior to the acceptance of non-compliances.
- 3.5 The CAA analyses the safety risk assessment and verifies that:
 - appropriate coordination has been satisfactorily performed among the concerned stakeholders;
 - the risks have been properly identified and assessed, based on documented arguments (e.g. physical or Human Factors studies, analysis of previous accidents and incidents);
 - the proposed mitigation measures adequately address the risk and bring the risk to an acceptable level; and
 - the time frames for planned fully compliance are acceptable.

Note. — It is preferable to work with a team of the CAA operational experts in the areas considered in the safety risk assessment.

- 3.6 On completion of the analysis of the safety risk assessment, the CAA:
- either gives formal approval or acceptance of the safety risk assessment to the aerodrome operator as specified in paragraph 3.1; or
 - if some risks have been underestimated or have not been identified, coordinates with the aerodrome operator to reach an agreement on safety acceptance; or
 - if no agreement can be reached, rejects the proposal for possible resubmission by the aerodrome operator.
- 3.7 The CAA may also opt to impose additional conditions to ensure safety.
- 3.8 The CAA should ensure that the mitigation and/or additional conditions imposed as per paragraph 3.7 are properly implemented and that they fulfil their purposes.

APPENDIX I

**APPLICATION FOR SEEKING
EXEMPTION**

(In duplicate)

1. DETAILS OF APPLICANT

- 1.1 Name of Aerodrome:
- 1.3 Airport Certificate Number:
- 1.4 Full name of applicant (in capital letters):

2. DETAILS OF EXEMPTION SOUGHT

- 2.1 Relevant provisions of [national requirement / ICAO Annex 14 Volume I SARPs] for which exemption is sought:
- 2.2 The category under which exemption sought (TEMPORARY/ PERMANENT):
- 2.3 Reasons why the exemption is needed (*The reasons provided should be detailed and self-explanatory*):
- 2.4 Period for which exemption is required:
- 2.5 If the exemption will affect a particular kind of operation, the details thereof:
- 2.6 For temporary exemption, the action plan for rectification and review of non-compliance, including the mitigation measures adopted for ensuring the safety during the exemption period:
- 2.7 For permanent exemption, the mitigation measures adopted to ensure safety of aircraft operation. Complete safety assessment report shall be enclosed:

I hereby certify that the forgoing information is correct in every respect and no relevant information has been withheld. I also undertake the responsibility for annually reviewing the conditions or mitigation measures and any other resultant non-compliance in particular when any significant changes in the aerodrome activity and development are proposed.

SIGNATURE OF APPLICANT

DATE.....

NAME.....

(in capital letters)

POSITION HELD.....

(with official seal)

Note:

- i) It is an offence to make any false representation with the intent to deceive, for the purpose of procuring exemption.
- ii) CAA may request the applicant to submit a safety assessment in association with the application for approval / acceptance. If so requested, the applicant shall submit the safety assessment within [5] working days from the date of request.
- iii) Application not completed in all respect and not accompanied with relevant enclosures will be rejected.

SAFETY RISK ASSESSMENT PROCESS

1. Introduction

- 1.1 The primary objective of a safety risk assessment is to assess the impact of a safety concern, such as a design change or deviation in operational procedures at an existing aerodrome.
- 1.2 Such a safety concern can often impact multiple stakeholders; therefore, safety assessments often need to be carried out in a cross-organizational manner, involving experts from all the involved stakeholders. Prior to the assessment, a preliminary identification of the required tasks and the organizations to be involved in the process is conducted.
- 1.3 A safety assessment is initially composed of four basic steps:
 - definition of a safety concern and identification of the regulatory compliance;
 - hazard identification and analysis;
 - risk assessment and development of mitigation measures; and
 - development of an implementation plan for the mitigation measures and conclusion of the assessment.

2. Definition of a safety concern and identification of the regulatory compliance

- 2.1 Any perceived safety concerns are to be described in detail, including timescales, projected phases, location, stakeholders involved or affected as well as their potential influence on specific processes, procedures, systems and operations.
- 2.2 The perceived safety concern is first analysed to determine whether it is retained or rejected. If rejected, the justification for rejecting the safety concern is to be provided and documented.
- 2.3 An initial evaluation of compliance with the appropriate provisions in the regulations applicable to the aerodrome is conducted and documented.
- 2.4 The corresponding areas of concern are identified before proceeding with the remaining steps of the safety risk assessment, with all relevant stakeholders.
- 2.5 If a safety risk assessment was conducted previously for similar cases in the same context at an aerodrome where similar characteristics and procedures exist, the aerodrome operator may use some elements from that assessment as a basis for the assessment to be conducted. Nevertheless, as each assessment is specific to a particular safety concern at a given aerodrome the suitability for reusing specific elements of an existing assessment is to be carefully evaluated.

3. Hazard identification

- 3.1 Hazards related to infrastructure, systems or operational procedures are initially identified using methods such as brain-storming sessions, expert opinions, industry knowledge, experience and operational judgement. The identification of hazards is conducted by considering:
 - accident causal factors and critical events based on a simple causal analysis of available accident and incident databases;

- events that may have occurred in similar circumstances or that are subsequent to the resolution of a similar safety concern; and
 - potential new hazards that may emerge during or after implementation of the planned changes.
- 3.2 Following the previous steps, all potential outcomes or consequences for each identified hazard are identified.
- 3.3 The appropriate safety objective for each type of hazard should be defined and detailed. This can be done through:
- reference to recognized standards and/or codes of practices;
 - reference to the safety performance of the existing system;
 - reference to the acceptance of a similar system elsewhere; and
 - application of explicit safety risk levels.
- 3.4 Safety objectives are specified in either quantitative terms (e.g. identification of a numerical probability) or qualitative terms (e.g. comparison with an existing situation). The selection of the safety objective is made according to the aerodrome operator's policy with respect to safety improvement and is justified for the specific hazard.

4. Risk assessment and development of mitigation measures

- 4.1 The level of risk of each identified potential consequence is estimated by conducting a risk assessment. This risk assessment will determine the severity of a consequence (effect on the safety of the considered operations) and the probability of the consequence occurring and will be based on experience as well as on any available data (e.g. accident database, occurrence reports).
- 4.2 Understanding the risks is the basis for the development of mitigation measures, operational procedures and operating restrictions that might be needed to ensure safe aerodrome operations.
- 4.3 The method for risk evaluation is strongly dependent on the nature of the hazards. The risk itself is evaluated by combining the two values for severity of its consequences and probability of occurrence.

Note. — An example of risk categorization tool in the form of a safety risk matrix is available in Appendix III.

- 4.4 Once each hazard has been identified and analysed in terms of causes, and assessed for severity and probability of its occurrence, it must be ascertained that all associated risks are appropriately managed. An initial identification of existing mitigation measures must be conducted prior to the development of any additional measures.
- 4.5 All risk mitigation measures, whether currently being applied or still under development, are evaluated for the effectiveness of their risk management capabilities.

Note. — The exposure to a given risk (e.g. duration of a change, time before implementation of corrective actions, traffic density) is taken into account in order to decide on its acceptability.

- 4.6 In some cases, a quantitative approach may be possible, and numerical safety objectives can be used. In other instances such as changes to the operational environment or procedures, a qualitative analysis may be more relevant.

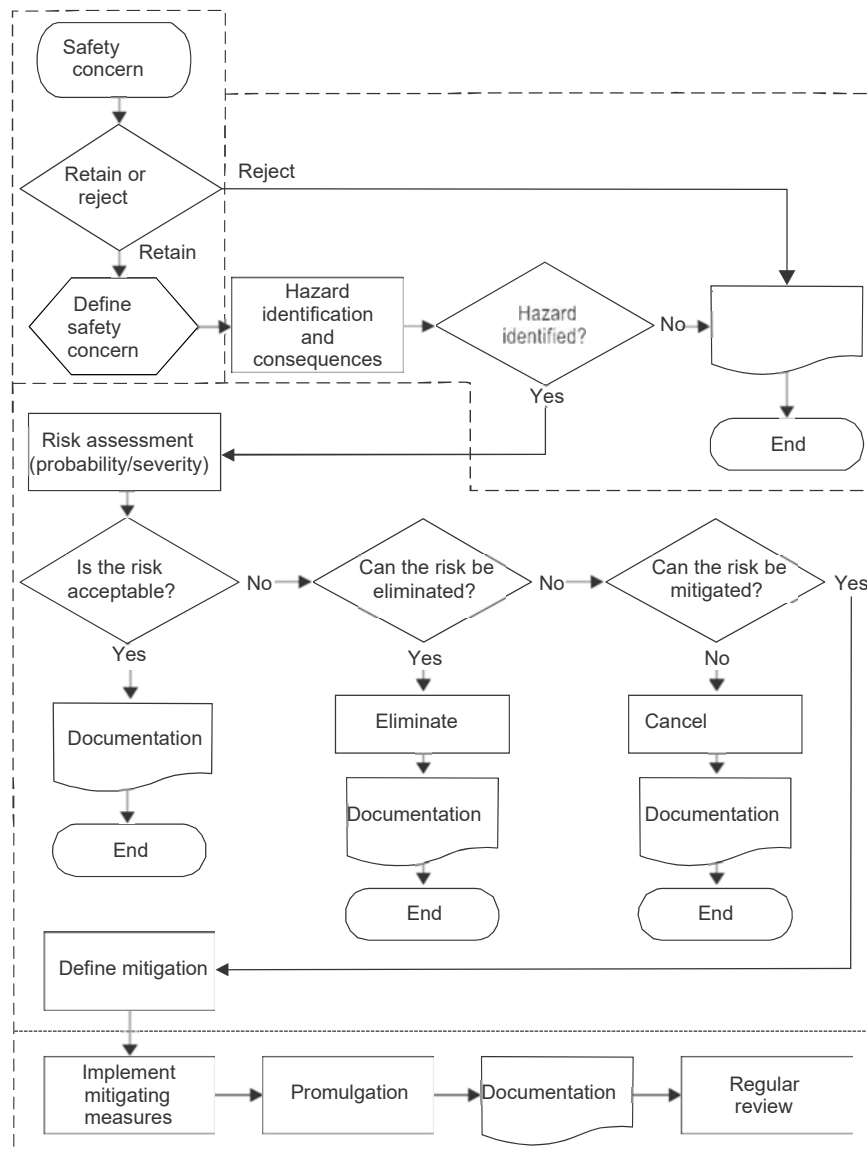
- 4.7 States should provide suitable guidance on risk assessment models for aerodrome operators.
- 4.8 In some cases, the result of the risk assessment may be that the safety objectives will be met without any additional specific mitigation measures. This is likely to take place for cases where the level of risk falls into the green zone of the risk matrix.

Note – See Appendix III for an example of risk matrix.

5. Development of an implementation plan and conclusion of the assessment

- 5.1 The last phase of the safety assessment process is the development of a plan for the implementation of the identified mitigation measures.
- 5.2 The implementation plan includes time frames, responsibilities for mitigation measures as well as control measures that may be defined and implemented to monitor the effectiveness of the mitigation measures.

SAFETY RISK ASSESSMENT FLOWCHART



Attachment to Appendix II**Template of Safety Risk Assessment Report**

Note – This template is meant for providing an example of safety risk assessment report for States / aerodromes. The content of this example is only for illustration, and should not be copied to an aerodrome safety risk assessment even if the subject is the same.

Project / Subject: Aircraft parking stand operations for a new Code E aircraft type (at a parking stand certified for Code E)

	Generic Component of Hazard	Specific components of Hazard (Safety Events)	Ultimate Consequences	Existing Mitigation Measures	Risk Index	Proposed Mitigation Measures	Residual Risk Index	Last Review Date	Next Review Date
1.	<u>Docking of new Code E aircraft type at aircraft parking stand certified for Code E aircraft</u> [Organizational]	Visual docking guidance system (VDGS) could not recognize the new Code E aircraft type	Aircraft overshooting or undershooting the correct parking position Delay in arrival operations	Marshaller on scene to monitor the docking and provide hand signal if needed VDGS shows STOP signal to pilot if unable to recognize type Parking stand under remote surveillance by Apron Control Centre	2D	Nil (as the risk level is acceptable)	2D	1 Aug 2020	1 Oct 2020
2.		Operator of passenger loading bridge (PLB) unfamiliar with the docking position of new Code E aircraft type	Minor aircraft damage Minor damage to PLB Delay in aircraft turn around operations	PLB operator received briefing on precautions for the new Code E aircrafts before duty Proximity and pressure sensors on PLB Enhanced lighting from PLB control position for night operations	3D	PLB operations supervisor assigned on scene to provide additional guidance for operators during their first 5 docking	2D	1 Aug 2020	1 Oct 2020

3.		Servicing equipment unable to serve aircraft due to new location / design of doors and servicing pods	Minor aircraft damage Minor equipment damage Delay in turn around operations	Equipment operator received briefing on precautions for the new type before duty Proximity and pressure sensors on equipment	4D	Apron service contractors will assign supervisors / trainers to provide additional guidance Airport operator will conduct random inspections on equipment operations for this new type for 1 month	2D	1 Aug 2020	1 Oct 2020
	[other items]								

Prepared and Assessed by:	(Signature)	Recommended by:	(Signature)
	Name and Post (Appropriate Officer / Manager of Airport Operator) (Could be a group of personnel relevant to the project / subject)		Name and Post (Safety Manager of Airport Operator)
Date:		Date:	
		Approved by:	(signature)
			Name and Post (Accountable Executive of Airport Operator)
		Date:	

Appendix III

Note – The content of this Appendix is extracted / adapted from ICAO Safety Management Manual (Doc 9859) as an example. CAAs are expected to customize the risk matrix to suit their needs.

Example Safety Risk Matrix

		Risk Severity				
		Catastrophic	Hazardous	Major	Minor	Negligible
Risk probability		A	B	C	D	E
Frequent	5	5A	5B	5C	5D	5E
Occasional	4	4A	4B	4C	4D	4E
Remote	3	3A	3B	3C	3D	3E
Improbable	2	2A	2B	2C	2D	2E
Extremely Improbable	1	1A	1B	1C	1D	1E

Example of Safety Risk Tolerability

Safety Risk Index Range	Safety Risk Description	Recommended Action
5A, 5B, 5C, 4A, 4B, 3A	Intolerable	Take immediate action to mitigate the risk or stop the activity. Perform priority safety risk mitigation to ensure additional or enhanced preventative controls are in place to bring down the safety risk index to tolerable.
5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C, 1A	Tolerable	Can be tolerated based on the safety risk mitigation. It may require management decision to accept the risk.
3E, 2D, 2E, 1B, 1C, 1D, 1E	Acceptable	Acceptable as is. No further safety risk mitigation required.

Severity Classification Scheme with Examples

<i>Severity</i>	<i>Meaning</i>	<i>Value</i>	<i>Example</i>
Catastrophic	– Equipment destroyed – Multiple deaths	A	– collision between aircraft and/or other object during take-off or landing
Hazardous	– A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely – Serious injury – Major equipment damage	B	– runway incursion, significant potential for an accident, extreme action to avoid collision – attempted take-off or landing on a closed or engaged runway – take-off/landing incidents, such as undershooting or overrunning
Major	– A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of an increase in workload or as a result of conditions impairing their efficiency – Serious incident – Injury to persons	C	– runway incursion, ample time and distance (no potential for a collision) – collision with obstacle on apron/ parking position (hard collision) – person falling down from height – missed approach with ground contact of the wing ends during the touchdown – large fuel puddle near the aircraft while passengers are on-board
Minor	– Nuisance – Operating limitations – Use of emergency procedures – Minor incident	D	– hard braking during landing or taxiing – damage due to jet blast (objects) – expendables are laying around the stands – collision between maintenance vehicles on service road – breakage of drawbar during pushback (damage to the aircraft) – slight excess of maximum take-off weight without safety consequences – aircraft rolling into passenger bridge with no damage to the aircraft needing immediate repair – Forklift that is tilting – Complex taxiing instructions/ procedures
Negligible	– Few consequences	E	– slight increase in braking distance – temporary fencing collapsing because of strong winds – cart losing baggage

Probability Classification Scheme

Probability Class	Meaning
5 Frequent	Likely to occur many times (has occurred frequently)
4 Reasonably probable	Likely to occur sometimes (has occurred infrequently)
3 Remote	Unlikely to occur (has occurred rarely)
2 Extremely remote	Very unlikely to occur (not known to have occurred)
1 Extremely improbable	Almost inconceivable that the event will occur

Appendix IV

Sample Exemption issued by CAA

CASA

Website hosting exemptions:

<https://www.casa.gov.au/rules-and-regulations/current-rules/legislative-and-non-legislative-instruments/non-legislative-instruments>

Some examples from CASA relevant to aerodrome are summarized in the following table. It should be noted that this table and the relevant attachments are prepared for easy reference and should not be seen as endorsing, implying or in any way recommending that certain aspects of aerodromes warrant or do not warrant exemption.

	Topic	URL	Reference
1.	Slopes on Aprons	https://www.casa.gov.au/files/casa-ex4718	Attachment 1 to Appendix IV
2.	Taxiway Centreline Lights Spacing	https://www.casa.gov.au/sites/default/files/casa-ex102-20-taxiway-centreline-lights-spacing-sydney-airport.pdf	Attachment 2 to Appendix IV
3.	High Intensity Approach Light System	https://www.casa.gov.au/sites/default/files/casa-instrument-exemption-25-2019-high-intensity-approach-lighting-system-gold-coast-airport.pdf	Attachment 3 to Appendix IV

New Zealand CAA

Website hosting exemptions: <https://www.aviation.govt.nz/rules/exemptions/>



Australian Government
Civil Aviation Safety Authority

Instrument number CASA EX47/18

I, ANDREW MELVIN SPARROW, Acting Branch Manager, Air Navigation, Airspace & Aerodromes, National Operations & Standards Division, Aviation Group, a delegate of CASA, make this instrument under regulations 11.160 and 11.205 of the *Civil Aviation Safety Regulations 1998*.

[Signed A. Sparrow]

Andrew Sparrow
Acting Branch Manager, Air Navigation, Airspace & Aerodromes
National Operations & Standards Division
Aviation Group

11 April 2018

**CASA EX47/18 – Slopes on Aprons (Canberra Airport – Parking Bay 5)
Exemption 2018**

1 Name

This instrument is *CASA EX47/18 – Slopes on Aprons (Canberra Airport – Parking Bay 5) Exemption 2018*.

2 Repeal

Instrument *CASA EX13/18 – Canberra Airport (Slopes on Aprons – Parking Bay 5) Exemption 2018* is repealed.

3 Definitions

aerodrome operator has the same meaning as in paragraph (a) of the definition of that term in CASR.

Canberra Airport means Canberra Airport Pty Limited, ARN 557150, in its capacity as the aerodrome operator of Canberra aerodrome, certificate number CASA.ADCERT.0015.

Canberra Airport Safety Management System means the *Canberra Airport Safety Management System*, Version 4, dated October 2015.

event has the same meaning as in Annex C of the Canberra Airport Safety Management System.

Manual of Standards has the same meaning as in regulation 139.010 of CASR.

parking bay 5 means parking bay 5 at Canberra aerodrome.

primary aircraft parking position markings has the same meaning as in paragraph 8.5.15.1 of the Manual of Standards.

relevant aircraft means an aircraft in one of the following series of aircraft:

- (a) A340;
- (b) A350;
- (c) B777;
- (d) B787.

Safety Case Report means the *Safety Case Report Bays 4 & 5 Code E Aircraft Parking Positions*, reference number 3002611, dated 5 October 2017.

4 Exemption

- (1) Canberra Airport is exempt from compliance with regulation 139.165 of CASR, to the extent that the regulation requires Canberra Airport to ensure that an apron vehicle ramp and associated safety barrier in parking bay 5 comply with the requirements mentioned in paragraphs 6.5.3.1 and 6.5.3.2 of the Manual of Standards.
- (2) The exemption is subject to the conditions in section 5.

5 Conditions

- (1) Canberra Airport must not, without the prior written approval of CASA, make any changes to the primary aircraft parking position markings, in parking bay 5.
- (2) Canberra Airport must, before an operator of a relevant aircraft commences an operation to or from Canberra aerodrome:
 - (a) notify the operator of the relevant aircraft, in writing, that the relevant aircraft may be required to use parking bay 5 for the operation; and
 - (b) provide the operator of the relevant aircraft with diagrams showing the layout of parking bay 5, including the structure of the apron vehicle ramp and associated safety barrier; and
 - (c) obtain from the operator of the relevant aircraft written acknowledgement of, and agreement to, the use of parking bay 5 for the operation.
- (3) Canberra Airport must:
 - (a) assess any event that is related to the safe use of parking bay 5 by a relevant aircraft in accordance with the Canberra Airport Safety Management System; and
 - (b) within 30 days of the event, provide a written assessment report to CASA.
- (4) Canberra Airport must, within 30 days after making any revision of the Canberra Airport Safety Management System, tell CASA in writing about the revision.

Note A change to the Canberra Airport Safety Management System will result in a reissue of this instrument of exemption.

- (5) Canberra Airport must:
 - (a) comply with the Safety Case Report including, for parking bay 5, the implementation of the markings changes in figure 3 of the Safety Case Report; and
 - (b) notify CASA within 7 days of identifying either of the following:
 - (i) any risk, other than those mentioned in the Safety Case Report, that may affect the ability of a relevant aircraft to safely use parking bay 5;

- (ii) any change to a level of risk mentioned in the Safety Case Report that is related to the use of parking bay 5 by a relevant aircraft.
- (6) Canberra Airport must not, without the prior written approval of CASA, revise any part of the Safety Case Report.

Note A change to the Safety Case Report will result in a reissue of this instrument of exemption.

6 Repeal of this instrument

This instrument is repealed at the end of 31 March 2021.



Australian Government
Civil Aviation Safety Authority

Instrument number CASA EX102/20

I, ANDREW MELVIN SPARROW, Branch Manager, Air Navigation, Airspace & Aerodromes, National Operations & Standards Division, a delegate of CASA, make this instrument under regulations 11.160 and 11.205 of the *Civil Aviation Safety Regulations 1998*.

[Signed A. Sparrow]

Andrew Sparrow
Branch Manager, Air Navigation, Airspace & Aerodromes
National Operations & Standards Division

3 July 2020

**CASA EX102/20 — Taxiway Centreline Lights Spacing (Sydney Airport)
Exemption 2020**

1 Name

This instrument is *CASA EX102/20 — Taxiway Centreline Lights Spacing (Sydney Airport) Exemption 2020*.

2 Definitions

Note In this instrument, certain terms and expressions have the same meaning as they have in the *Civil Aviation Act 1988* and the regulations. These include: *aerodrome manual*, *AIP* and *AIP-ERSA*.

In this instrument:

AIP-DAP means the Departure and Approach Procedures of the AIP.

Manual of Standards means *Manual of Standards (MOS) — Part 139 Aerodromes*.

runway 16R/34L means runway 16R/34L at Sydney Airport.

Sydney Airport means Sydney (Kingsford Smith) INTL aerodrome, certificate number CASA.ADCERT.0146.

Sydney Airport Corporation means Sydney Airport Corporation Limited, ARN 557249.

3 Application

This instrument applies to Sydney Airport Corporation as the operator of Sydney Airport.

4 Exemption

- (1) Sydney Airport Corporation is exempt from compliance with paragraph 139.195 (3) (a) of CASR to the extent that the paragraph requires

taxiway centreline lighting spacing on taxiways intended for use in RVR conditions of less than 350 metres not to exceed the specified standards:

- (a) set out in Table 9.13-1, in paragraph 9.13.8.1 of the Manual of Standards — for straight sections of taxiway; and
 - (b) set out in Table 9.13-2, in paragraph 9.13.8.5 of the Manual of Standards — for curved sections of taxiway.
- (2) The exemption in subsection (1) applies to taxiways intended for use with runway 16R/34L in RVR conditions of less than 350 metres, but not less than 300 metres (*reduced RVR conditions*).
 - (3) The exemption in subsection (1) is subject to the conditions in section 5.

5 Conditions

- (1) Sydney Airport Corporation must ensure that the spacing between the taxiway centreline lights on taxiways to which section 4 applies does not exceed the standards specified in the Manual of Standards for taxiways intended for use in RVR conditions of less than 550 metres but not less than 350 metres.
- (2) Sydney Airport Corporation must ensure that the details of the spacing of the centreline lighting on taxiways to which section 4 applies are:
 - (a) set out in the Sydney Airport aerodrome manual; and
 - (b) included in AIP-ERSA, with a low-visibility chart showing the taxiways referred to in subsection 4 (2); and
 - (c) included in AIP-DAP.
- (3) Sydney Airport Corporation must ensure that any alteration of the taxiway centreline light spacing complies with paragraphs 9.13.8.1 and 9.13.8.5 of the Manual of Standards.
- (4) Sydney Airport Corporation must review the safety of operations under this exemption at least once every year and report to CASA any changes to operations under the exemption.
- (5) Sydney Airport Corporation must publish, in accordance with subsection (2), a requirement that an aircraft operator must, before using taxiways under this exemption, have conducted its own assessment of their use in reduced RVR conditions, and decided that it was safe to do so.

6 Repeal

This instrument is repealed at the end of 31 May 2023.



Australian Government
Civil Aviation Safety Authority

Instrument number CASA EX25/19

I, CHRISTOPHER PAUL MONAHAN, Executive Manager, National Operations & Standards, a delegate of CASA, make this instrument under regulations 11.160 and 11.205 of the *Civil Aviation Safety Regulations 1998*.

[Signed Christopher P. Monahan]

Christopher P. Monahan
Executive Manager, National Operations & Standards

26 February 2019

CASA EX25/19 — High Intensity Approach Lighting System (Gold Coast Airport Pty Limited) Exemption 2019

1 Name

This instrument is *CASA EX25/19 — High Intensity Approach Lighting System (Gold Coast Airport Pty Limited) Exemption 2019*.

2 Definitions

Note In this instrument, certain terms and expressions have the same meaning as they have in the Act and the Regulations. These include: *aerodrome manual*.

In this instrument:

Gold Coast aerodrome means Gold Coast aerodrome, certificate number CASA.ADCERT.0024.

Gold Coast Airport means Gold Coast Airport Pty Limited, ARN 556625, in its capacity as the operator of Gold Coast aerodrome.

runway 14 means runway 14 at Gold Coast aerodrome.

risk assessment means the document entitled *GCA Risk Assessment 483: Absence of HIAL on RWY 14 ILS*, submitted by Gold Coast Airport as Attachment B to the safety case.

safety case means the undated document entitled *RE: Request for Exemption Against Standard: Gold Coast Airport RWY 14 ILS HIAL*, submitted by Gold Coast Airport as its application for the exemption granted in section 3, signed by Matthew Bender and received by CASA on 16 January 2019.

3 Exemption

- (1) In relation to the provision of a precision approach Category I lighting system for runway 14, Gold Coast Airport is exempt from compliance with the following provisions of CASR:
 - (a) paragraph 139.195 (2) (d), to the extent that the paragraph requires runway 14 to have an approach lighting system;

- (b) paragraph 139.195 (3) (a), to the extent that the paragraph requires an approach lighting system for runway 14 to comply with the standards in the Manual of Standards (MOS) – Part 139 Aerodromes;
 - (c) subregulation 139.195 (1), to the extent that the subregulation requires Gold Coast Airport to comply with the requirements mentioned in paragraphs (a) and (b) in relation to runway 14.
- (2) The exemptions are subject to the conditions mentioned in section 4.

4 Conditions

- (1) Gold Coast Airport must:
- (a) complete a review of the risk assessment and safety case at least once in each calendar year to assess any new risks, and changes to previously identified risks, associated with the use of runway 14 without a high intensity approach lighting system, including as a result of changes to runway 14 operations; and
 - (b) assess any risks identified at a Gold Coast Airport safety management system safety committee meeting (*committee meeting*); and
 - (c) provide a report to CASA on:
 - (i) each review completed for paragraph (a), within 30 days of completing the review; and
 - (ii) each risk assessment conducted for paragraph (b), within 30 days of the committee meeting at which the risk was identified.
- (2) Gold Coast Airport must include in the aerodrome manual for Gold Coast aerodrome:
- (a) a copy of this instrument; and
 - (b) an entry in Section 1 of Part 5 of the manual that:
 - (i) identifies this instrument; and
 - (ii) provides a summary of this instrument; and
 - (iii) states the reasons for the granting of the exemption in section 3; and
 - (iv) identifies where the safety case and risk assessment can be found in Gold Coast Airport's records.

5 Repeal

This instrument is repealed at the end of 31 January 2022.

Appendix V

EXAMPLE:

AIP
(State Name)

GEN 1.7-1
27 Feb 2020

GEN 1.7 DIFFERENCES FROM ICAO STANDARDS, RECOMMENDED PRACTICES AND PROCEDURES

A list of significant non-compliances/differences between national regulations and practices of the State and related ICAO Standards, Recommended Practices and Procedures should be published, including:

- 1) Provision affected (Annex/PANS and edition number, paragraph); and
- 2) Non-compliances/difference in full text.

Guidance Note:

Each non-compliance/difference should be notified in the following form:

- a) Reference: Cite the paragraph or subparagraph of the Annex or PANS in respect of which the non-compliance/difference exists.*
- b) Description of the non-compliance/difference: Describe the non-compliance/difference precisely and include any additional information necessary to make its effect clear.*
- c) Remarks: Indicate the reason for the non-compliance/difference or, if the non-compliance/difference is likely to be eliminated in the future, indicate the date by which conformity with the ICAO provision may be expected.*

The following non-compliance (s) has been introduced: (Example only)

1. ANNEX 14, Vol I – Aerodrome Design and Operations: 8th edition, 2018

Description of non-compliance	Reason for non-compliance	AIP section	Notes/remarks

Note:

- 1. The primary purpose of notifying non-compliances/differences is to promote safety, efficiency and regularity in air navigation by ensuring that all stakeholders concerned with international civil aviation are aware of all national rules and practices insofar as they differ from those prescribed in SARPs. Therefore, lack of information on non-compliances/differences creates uncertainty and poses a potential hazard to the safety, regularity and efficiency of air navigation.*
- 2. Dissemination of non-compliances/differences enhances transparency of safety information, and, consequently, facilitates States' decisions specifically within the context of the management of safety. Incorrect notification of non-compliances/differences may also potentially lead to misunderstandings and could result in undesirable operational situations, or in other potential negative consequences in terms of recognition of certificates and licences, ramp inspections, and ultimately traffic rights.*
- 3. The notification of non-compliances/differences is, therefore, an important and useful action that contributes to ensuring the safe and orderly growth of international civil aviation.*

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GENERIC AERODROME MANUAL

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DRAFT Version 0.1, November 2020
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Introductory Notes

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This is a draft generic document developed by the ICAO Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG) for advance information of States in the APAC Regions. When referring to this draft generic document, States are expected to customize the content in accordance to the States' legislations, regulations and situations.

ICAO Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services and Guidance Material shall take prevalence in the event of any conflict between the aforementioned provisions and this generic document.

Enquiries and feedbacks regarding this draft generic document can be made to ICAO APAC Office at apac@icao.int.

During the first Joint Meeting of the Asia/Pacific Aerodrome Design and Operations Task Force (AP-ADO/TF/1) and Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG/1) Bangkok, Thailand, 25 To 27 September 2019, main objective of the establishment of AP-AA-WG was 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.

It was decided that, to assist States with low EI, (less than 75%) a set of generic documents should be developed. India, Laos and Thailand volunteered to develop template of the generic aerodrome manual.

In order to develop the Generic Aerodrome Manual, the basic framework is taken from ICAO Doc 9774 and ICAO Doc 9981. States may customize the content of this document to

Appendix F to Report of AOP/SG/4

~~suit their individual requirements, the sections, especially in Part 4, if not applicable to the aerodrome concerned, should annotate "not applicable to (name) airport".~~

In this document colour coded texts are used with following significance:

- Black: Standard text with no changes usually needed
- Blue: Guidelines related to the relevant section. ~~Not to be included in the actual aerodrome manual.~~
- Green: Text specific to an individual aerodrome, should be modified.
- Figures: Only for illustration purpose, ~~States~~ may insert applicable figures.

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(Insert Airport Name)

Aerodrome Manual

[Enter Date and Current Version no.]

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- 4.5 Inspection of Movement Area
- 4.6 Movement Area Maintenance
- 4.7 Hazardous Meteorological Condition
- 4.8 Visual Aids and Aerodrome Electrical System

Commented [WU1]: Add procedure for Runway Safety in line with PANS-Aerodromes

- 4.9 Aerodrome Works Safety
- 4.10 Apron Management
- 4.11 Apron Safety
- 4.12 Airside Vehicle Control
- 4.13 Wildlife Hazard Management
- 4.14 Obstacles Control
- 4.15 Removal of Disabled Aircraft
- 4.16 Low-Visibility Operations
- 4.17 Handling of Hazardous Materials
- 4.18 Protection of Site for Radar and Navigation Aids
- 4.19 Status of implementation of SMS.

PART 5: AERODROME ADMINISTRATION AND SAFETY MANAGEMENT SYSTEM

- 5.1 Aerodrome Administration
 - 5.1.1 Organization Structure
 - 5.1.2 Roles and Responsibility
 - 5.1.3 Aerodrome Committees
 - 5.1.4 Aerodrome Personnel Qualifications & Procedures
- 5.2 Safety Management System
 - 5.2.1 Safety Policy and Objectives
 - 5.2.2 Safety Hazard Identification and Risk Management
 - 5.2.3 Safety Assurance
 - 5.2.4 Safety Promotion

Exemptions and Deviations

ANNEX

EXHIBIT

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FOREWORD

This manual has been prepared in part to satisfy obligations imposed on an aerodrome operator under ~~The Requirements of Civil Aviation Authority of (State) Regulation (xyz)~~ [Legislation and/or Regulation], and is to be regarded as the Aerodrome Manual for (Name) Airport.

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It also contains details of essential operating procedures that may not be entirely safety related, but nevertheless are required to satisfy other legal, operational requirements, and common legal obligations.

The manual has been structured to allow ~~existing other~~ documents such as the Airside Vehicle Control Handbook and Airport Emergency Plan etc. to be directly incorporated. These will continue to be amended and published separately but should be regarded as annexes to, but components of, the Aerodrome Manual and should be read in conjunction with it.

The Civil Aviation Authority of (State) requires the Aerodrome Operator to operate and maintain (Name) Airport in accordance with the procedures set out in the Aerodrome Manual.

~~Therefore, staff acting in accordance with the approved procedures are largely indemnified against personal liability claims, should their actions for some reason endanger the safety of aircraft operations.~~

It is essential that the procedures documented in this manual are an accurate reflection of current practices. If staff become aware of a divergence from these procedures, or if compliance with these procedures is impossible or impracticable for any reason, they must advise their supervisor or the airport safety manager immediately. Additionally, staff are encouraged to query these procedures if the intended results can be achieved in a safer, more cost effective, efficient or reliable manner.

To avoid unnecessary duplication, most procedures make reference to other technical manuals and publications. Supervisors should ensure they have a copy of each relevant publication available for reference by staff who are responsible for implementing a procedure.

(Signature)

(Name) Airport Manager/CEO/Director

DD/MM/YY

SEAL

CAAT Approval :

Date:

I

CHECKLIST OF CURRENT PAGES

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NOTIFICATION OF AMENDMENT TO THE AERODROME MANUAL:

The (Responsible Person) of the aerodrome shall:

1. Alter or amend the aerodrome manual, whenever necessary, in order to maintain the accuracy of the information in the manual.
2. If no amendment, review the contents of Aerodrome manual at least once a year to ~~keep it relevant~~ ensure that it is up-to-date.
3. Ensure that each copy of the manual is numbered and a list of Manual holders is maintained by person responsible for the issue of amendments.
4. An amendment page is made available for recording the amendments numbers, date of incorporation, signature of persons amending and affecting the changes, in the front of each volume along with reason for changes.
5. Make ~~changes or addition~~ amendments by additional or replacement pages on which the amended material is clearly identified.
6. Submit the proposed amendments in the Aerodrome Manual to CAA for its acceptance/ approval at least (xxx) days prior to the effective date.
7. After acceptance/ approval from CAA, distribute the final copies of Aerodrome Manual as per the distribution list.
8. The replaced or pages no more required should be destroyed.

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III

RECORD OF REVISION

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MASTER CONTACT LIST

This list must include at least all people involved with operational aspects of the aerodrome such as

CHIEF EXECUTIVE OFFICER

[Name] Work Hour: xxx xxx xxxx email
After Hour: xxx xxx xxxx

AIRPORT MANAGER

[Name] Work Hour: xxx xxx xxxx email
After Hour: xxx xxx xxxx

MANUAL CONTROLLER

[Name] Work Hour: xxx xxx xxxx email
After Hour: xxx xxx xxxx

REPORTING OFFICER

[Name] Work Hour: xxx xxx xxxx email
After Hour: xxx xxx xxxx

NOTAM OFFICE [NOF]

[Name] Work Hour: xxx xxx xxxx email
After Hour: xxx xxx xxxx

ELECTRICAL CONTRACTOR

[Name] Work Hour: xxx xxx xxxx email
After Hour: xxx xxx xxxx

SEARCH AND RESCUE (SAR)

Bangkok Search and Rescue Co-ordination Center
TEL: (+66) 2 285 5450 and (+66) 2 285 5451
FAX: (+66) 2 286 2925
email

AIRCRAFT ACCIDENT INVESTIGATION COMMITTEE OF THAILAND (AAIC)

AAIC TEL: (+66) 2 286 0594 and (+66) 2 285 5451
FAX: (+66) 2 287 3186 / EMAIL

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V

DISTRIBUTION LIST

Control Number	Holder of Copy	Remarks

SUPPORTING OPERATIONAL DOCUMENTS

The Aerodrome Manual may consist of more than one document. If this applies, then list these documents in this section.

Example:

Supporting Documents

1. Airport Emergency Plan
2. Airport Safety Management Manual
3. Airport Security Programme
4. Airport Safety Self-Inspection
5. Airside Vehicle Handbook
6. Disabled Aircraft Removal Plan

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ABBREVIATIONS AND SYMBOLS

Example:

AAE Above aerodrome elevation

AAS Airport Advisory Service

CANACN Aircraft classification number

AIS Aeronautical Information Services

ALR Aircraft loading rating

APAPI Abbreviated precision approach path indicator

Aprx. Approximately

ARP Aerodrome reference point

ASDA Accelerate stop distance available

ATS Air traffic services

C Degrees Celsius

cd Candela

DME Distance measuring equipment

EWB Eye to wheel height

FOD Foreign object damage

ft Foot

GNSS Global Navigation Satellite System

GPS Global Positioning System

GS Glide slope

HIAL High intensity approach lighting

ICAO International Civil Aviation Organization

IFR Instrument flight rules

ILS Instrument landing system

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AERODROME CERTIFICATE COPY

Insert the current aerodrome certificate

SAMPLE AERODROME CERTIFICATE*

CIVIL AVIATION AIRPORT CERTIFICATE	
_____ CERTIFICATE NO.	
_____ NAME OF AIRPORT	
_____ LATITUDE/LONGITUDE	
This airport certificate is issued by the Minister pursuant to Part III of the <i>Canadian Aviation Regulations</i> under authority of the <i>Aeronautics Act</i> and authorizes the operator named in the approved Airport Operations Manual to operate this airport. The Minister may suspend or cancel this airport certificate at any time where the airport operator fails to comply with the provisions set forth in the Act, the Regulations or for other grounds as set out in the Act. This certificate is subject to any conditions established by the Minister pursuant to Section 302.03(3) of the Regulations and set out in the approved Airport Operations Manual. This airport certificate is not transferable and shall remain in effect until transferred, suspended or cancelled.	
_____ MINISTER OF TRANSPORT	
_____ CERTIFICATE DATE OF ISSUE	

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CAA Approval :

Date:

IX

Aerodrome Manual Approval Letter

{File reference}

Date:

{Applicant's name}

{Aerodrome name}

{Aerodrome address}

Dear {Sir/ Madam},

Approval/ Acceptance of Aerodrome manual (Name of aerodrome)

This has reference to your letter {number} dated {dd/mm/yyyy} submitting application for aerodrome certificate to operate {name of aerodrome} along with Aerodrome Manual [Version / Edition number].

The submitted Aerodrome Manual is accepted / approved [use the word in local legislation / regulation] on the following conditions:

Body of the text along with conditions, if any.

Example of Conditions:

- All proposed amendments shall be submitted to CAA at least [XX] days prior to the intended effective date
- CAA may issue direction requiring an amendment to be made to the aerodrome manual as CAA sees fit. In such case, [Aerodrome] shall submit the amendment to CAA within [XX] days of the issue date of CAA's direction.

If you have any queries regarding this certificate or any other aerodrome-related matters please contact this Authority.

Yours faithfully,

{Signature}

CAA Approval :

Date:

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{Name}
Director General
(The CAA Name)

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Part 1 – General Information

1.1 Purpose and Scope

The purpose of the Aerodrome Manual is to provide

- 1.1.1 Confirmation of an aerodrome operator's ability to comply with the aviation legislation applicable to aerodrome operations. It contains detailed information regarding the aerodrome site, facilities, services, equipment, operating procedures, organization and management for {Name} Airport.
- 1.1.2 A reference document for:
 - a. Use by staff and contractors of an aerodrome operator in their activities to operate and manage the tasks and business of the airport.
 - b. Use by officers of CAA (State) in audit and inspection activities related to {Name} Airport.

1.2 Legal Requirement

- 1.2.1 As the operator of an aerodrome servicing air transport operations, {Name} Airport is required by ~~The Air Navigation Act~~ (Regulation reference) to hold an Aerodrome License or Aerodrome Certificate.
- 1.2.2 The requirement for an Aerodrome Manual is prescribed in The Requirements of Civil Aviation Authority of (State) (Requirement reference). A copy of this manual ~~has been~~ shall be provided to the CAA (State).

1.3 Conditions of Use

{Name} Airport operates (Specify Operating Hours and conditions e.g. visibility) for take-off and landing of aircraft and when it is so available it shall be available under equal terms and conditions to all persons and operators (Requirement reference). The airport reference code is (Specify).

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1.4 Aeronautical Information

All data relating to the aeronautical aspect of this aerodrome are published in the Aeronautical Information Publication (State Name). The (Position Holder) is responsible for complete and correct promulgation of data to Aeronautical Information Services Department (AIS) of the CAA in accordance with procedures described in this manual.

1.5 Recording Aircraft Movements

All data relating to the recording of aircraft movement is collected and recorded by (Name & Designation of Responsible Person). The (Airport Unit) is responsible for complete and correct collection recording and reporting to the (Airport Responsible Person) in accordance with procedures described in this Manual.

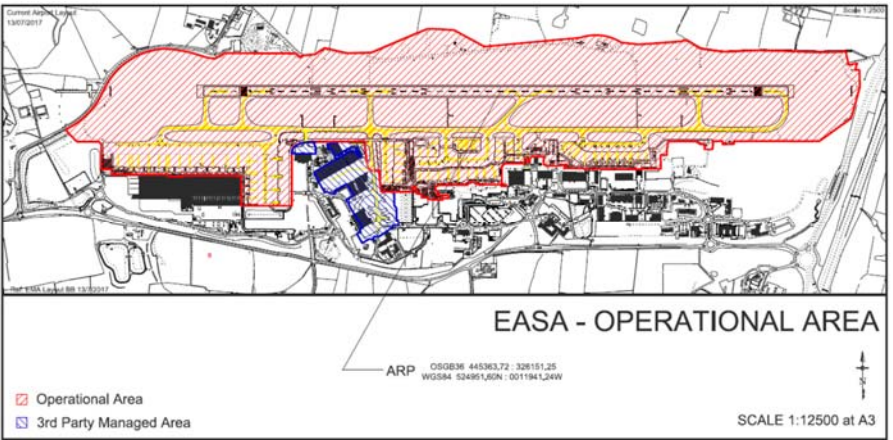
1.6 Obligation of the Aerodrome Operator

The operator of a certified/ licensed aerodrome is to comply with the Aerodrome Manual approved by the CAA (State). The area certified under the Public Aerodrome Operating Certificate is shown as (Figure X) below.

The owner or operator of an aerodrome shall ensure that all users of the aerodrome, including ground-handling agencies, fixed-base operators, and other organizations that perform activities independently at the aerodrome in relation to flight or aircraft handling, comply with the safety requirements of the aerodrome. The owner or operator of the aerodrome will monitor such compliance through the (Name) Airport Safety Management System.

Figure X: (Name) Airport Operational Area and 3rd Party Managed Area

Remarks: All figures may be organized together at the end of the Aerodrome Manual for easy reference and amendment



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1.6.1 Compliance with standards and practices

The (xyz) aerodrome shall comply with the standards, and practices specified in regulation (Reference from state regulation) and with any conditions endorsed in the aerodrome certificate pursuant to regulations (Reference to applicable State requirement).

1.6.2 Competence of operational and maintenance personnel

The (xyz) aerodrome shall employ an adequate number of qualified, where required, certified and skilled personnel to perform all critical activities for aerodrome operation and maintenance. The competency of these personnel shall be kept relevant at all times and enhanced by implementing an appropriate programme

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1.6.3 Aerodrome operation and maintenance

The (xyz) airport shall operate and maintain the aerodrome in accordance with the procedures set out in the accepted/ approved aerodrome manual. (xyz) airport shall ensure proper and efficient maintenance of the aerodrome facilities and ensure the coordination to cover areas of aeronautical information service, air traffic services, designated meteorological authorities, and aviation security.

1.6.4 Aerodrome operator's safety management system

The (XYZ) aerodrome shall establish a safety management system for the aerodrome describing the structure of the organization and the duties, powers and responsibilities of the officials in the organizational structure.

1.6.5 Aerodrome operator's internal safety audits and safety reporting

The (XYZ) aerodrome shall arrange for an internal as well as external audit of the safety management system, including an inspection of the aerodrome facilities and equipment and all its functions. These audits shall be carried out every (.....)[xx] months/ year or as agreed with the CAA and records/ reports shall be retained for a period of [xx](=) years.

1.6.6 Access to the aerodrome

In accordance with (=) [regulation], some personnel may be authorized by the CAA to inspect and carry out tests on the aerodrome facilities, services and equipment, inspect the aerodrome operator's documents and records and verify the aerodrome operator's safety management system before the aerodrome certificate is granted or renewed and, subsequently, at any other time, for the purpose of ensuring safety at the aerodrome. (XYZ) aerodrome shall cooperate with the personnel so authorized by the CAA.

1.6.7 Notifying and reporting

An (XYZ) aerodrome shall adhere to the requirement to notify and report to the CAA, air traffic control and pilots within the specified time limits required by the regulations.

- a) Notification of inaccuracies in aeronautical information service (AIS) publications.
- b) Notification of changes to the aerodrome facilities, equipment and level of service planned in advance.
- c) Issues requiring immediate notification on obstacles, obstructions and hazards, level of service, closure of any part of the movement area of the aerodrome.

1.6.8 Removal of obstructions from the aerodrome surface

An (XYZ) aerodrome operator shall remove from the aerodrome surface any vehicle or other obstruction that is likely to be hazardous.

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1.6.9 Warning notices

The (XYZ) aerodrome shall post hazard warning on any public area that is adjacent to the manoeuvring area for low flying aircraft, at or near an aerodrome, or taxiing aircraft are likely to be hazardous to such people or vehicular traffic.

INSERT OTHER OBLIGATIONS FROM DOC 9774

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Part 2 – Aerodrome Site Details

2.1 Aerodrome Site Details

2.1.1 Aerodrome Plan

The Aerodrome Plan indicates

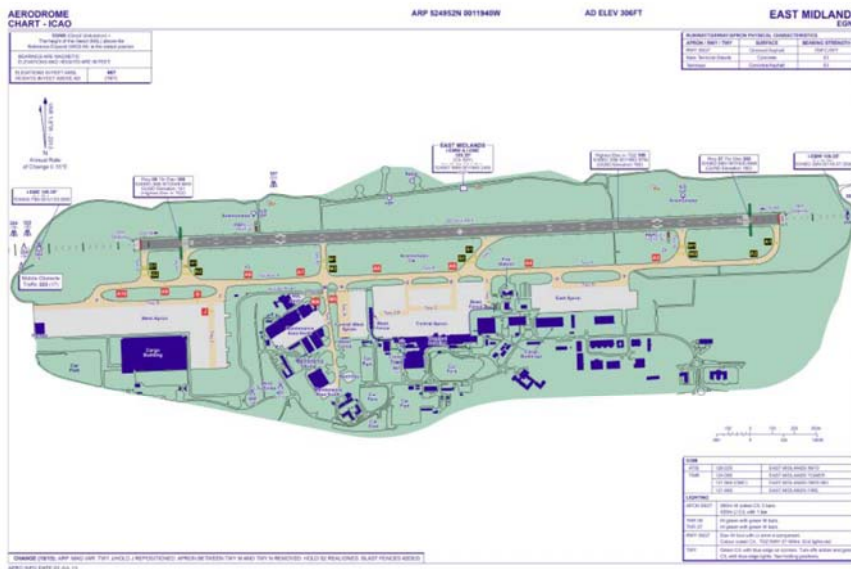
- The main aerodrome operational facilities and location of wind direction indicators; (Picture 1, 2 & 3)
- The distance of the aerodrome to the nearest city, town, and the location of off-airport facilities (Picture 5)
- The airport boundaries (Picture 4)

The following pictures are examples. Your airport plans may be more or less than the examples. It depends on the actual physical characteristics of your airport.

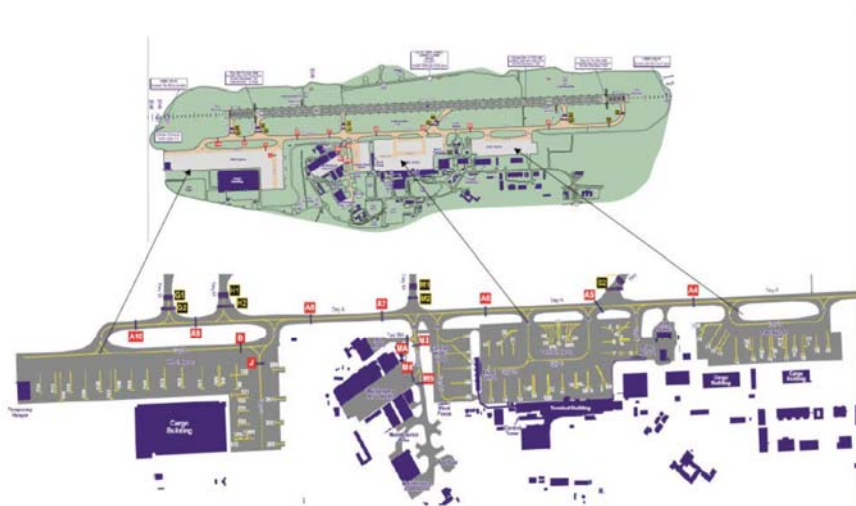
Picture 1: Facilities, Visual & Non-Visual Aids, and Wind Direction Indicators

Remarks: All pictures may be organized together at the end of the Aerodrome Manual for easy reference and amendment

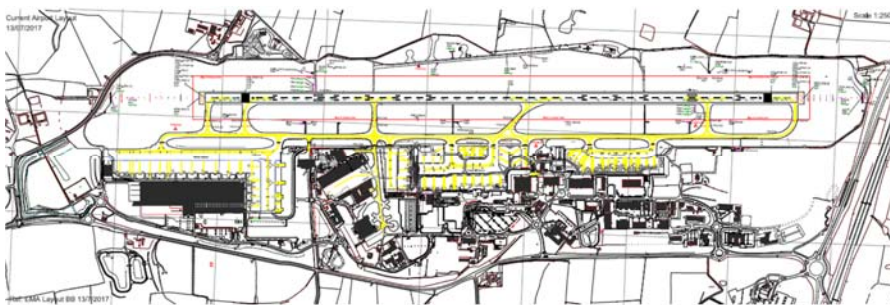
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Picture 2: Layout of Runways, Taxiways, and Aprons



Picture 3: Details of the Physical Characteristics of the Runway Environment



Picture 4: Plan Showing the Distance from Nearest Town/Populous Area



Picture 5: Plan Showing the Location of EMA Aerodrome Facilities and Equipment outside the Boundaries of the Aerodrome

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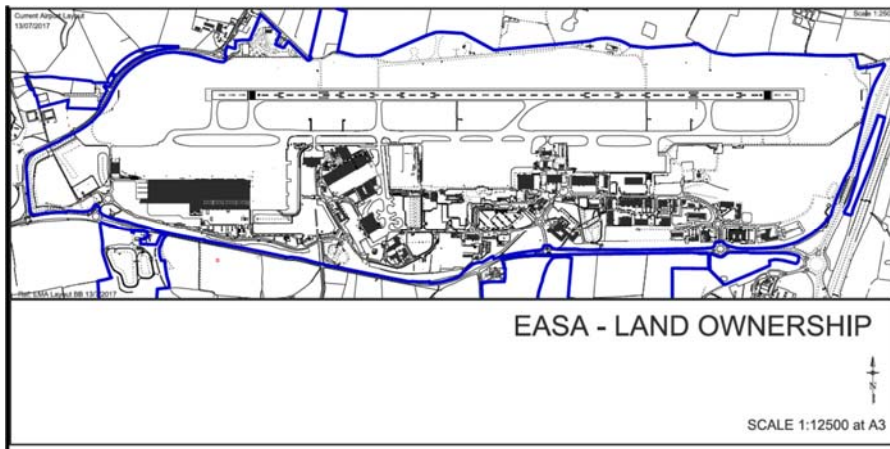
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Figure X: Boundary and Land Ownership



Part 3 – Aerodrome Dimensions & AIS Information

The accuracy of the information in this part is critical to aircraft safety. Therefore, the information published in this section requires engineering survey and assessment. The information should be gathered or verified by qualified technical persons.

3.1 General Information

1	Name of Aerodrome	(Insert Name: ICAO Code)
2	Aerodrome Location	
3	Geographical Coordinates of the Aerodrome Reference Point (WGS-84)	
4	Aerodrome Elevation and Geoid Undulation	
5	Elevation of Each Threshold and Geoid Undulation	
6	Elevation of the Runway End and Significant High and Low Points along the Runway	
7	Highest Elevation of the Touchdown Zone of a Precision Approach Runway	
8	Aerodrome Reference Temperature	
9	Details of the Aerodrome Beacon	
10	Name of Aerodrome Operator, the Address, and the Telephone Number of the Airport that may be Contacted at All Time	

3.2 Aerodrome Dimensions and Related Information

Runway							
Designation No.	True Bearing	Dimension (Length x Width)	Displaced Threshold Location	Slope	Surface Type	Type of RWY	OFZ

Runway				
	Designation	Length	Width	Strength (PCN)
Strip				
RESA				
Stopways	Stopway			

Taxiway			
Designation	Dimension	Surface Type	Strength (PCN)

Apron					
Names	Width	Length	Surface Type	No. of Aircraft Stands	
				With Aerobridge	Without Aerobridge

Clearway			
RWY Designation	Length (m)	Width (m)	Ground Profile
Stopway			
RWY Designation	Length (m)	Width (m)	Ground Profile

Approach and Runway Lighting									
RWY Designation	APCH LGT Type LEN INTST	THR LGT Color WBAR	VASIS (MEHT) PAPI	TDZ LGT LEN	RWY Center Line LGT Length, Spacing, Color, INTST	RWY Edge LGT LEN, Spacing Color INTST	RWY End LGT Color WBAR	SWY LGT Length Colour	Remarks

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Other Lighting, Secondary Power Supply		
1	Use of Aircraft Stand ID Signs, TWY Guide Lines and Visual Docking/ Parking Guidance System of Aircraft Stand	
2	ABN/IBN Location, Characteristics, and Hours of Operation	ABN: (Aerodrome Beacon) IBN: (Identification Beacon)
3	LDI Location and LGT Anemometer Location and LGT	Wind Cone:
4	TWY Edge and Center Line Lighting	Edge: Center Line:
5	Secondary Power/Switch-Over Time	
6	Remarks	

VOR Aerodrome Checkpoints	
Location	Radio Frequency

Location and Designation of Standard Taxi Routes
Please depict the airport taxiway system, locations, and taxiway number. The airfield layout may be included in this part or other part of the manual. Example: The airfield layout, depicting the (Name) Airport Taxiway System (location and designation) is contained in (Please Specify location) of this manual.

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Geographical Coordinates			
Runway Threshold	LAT.	LONG.	ELEV.
Taxiway Centerline Points	LAT.	LONG.	
Aircraft Stands	LAT.	LONG.	

Obstacles					
In Approach/Take-off Areas			In Circling Areas and at AD		Remarks
RWY/Area Affected	Obstacle Type Elevation Marking/LGT	Coordinates	Obstacle Type Elevation Marking/LGT	Coordinates	

Obstacles are best depicted by chart.

Pre-Flight Altimeter Check	
Locations	Elevation
Please specify apron and coordinates of the apron in WGS-84.	Please specify the elevation of Pre-Flight Altimeter Check in WGS-84.

At least one point in the airport.

Declared Distances				
RWY Designation No.	TORA	TODA	ASDA	LDA

Please make a note that NOTAM and ATIS will be promulgated in case of temporary reduction in available declared distances. The reduction in available declared distances should be assessed by a competent and qualified personnel such as an airport engineer or an airport operations personnel. The qualified personnel shall be trained or educated in the area related to declared distances such as airport design or other courses.

Example:

Any temporary reduction in available declared distances will be assessed by (Competent Qualified Personnel) and promulgated via NOTAM and ATIS.

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Disabled Aircraft Removal Plan		
Name of Coordinator	Telephone/Telex/Facsimile Numbers and E-mail Address	Capability for Removal of Disabled Aircraft
		Specify types of aircraft

Procedures relating to disabled aircraft removal are contained within (Please Specify).

Rescue and Fire Fighting
Category of Rescue and Fire-Fighting Services
(Specify ARFF Category)
The level of staffing requirement post TRA carried out on (date) is (Insert No.)
Other details Details of Rescue and Fire-Fighting are contained within document (Please Specify).

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Part 4 – Aerodrome Operating Procedures

4.1 Aerodrome Reporting

Particulars of the procedures for reporting any changes to the aerodrome information set out in AIP and procedures for requesting the issue of NOTAMs according to CAA (State) (Requirements) and reporting of accident or incidents to (Authority name) as per (Requirement).

4.1.1 Purpose

Explain the purpose of aerodrome data and reporting. The main purpose of this section is to ensure that the aerodrome data are reported in time and accurately.

Example:

The aim of these procedures is to ensure that CAA (State) and AIS are notified of any changes in the physical condition of the airport and of new obstacles that may affect the safety of aircraft operations. ~~Therefore~~ With the timely notification, the information can be disseminated to airmen in a timely manner.

4.1.2 Responsibility

Specify responsibility of personnel related to aerodrome reporting. These persons may be included but not limited to the airport manager and aerodrome reporting officer or any other post delegated with this responsibility.

Example:

- a. (Airport Manager) has overall responsibility for ensuring that procedures are established and resources provided to report changes to aerodrome physical characteristics, the OLS, or any other change that may affect the safety of aircraft operations are adequate.
- b. (Airside Operations Supervisor) is responsible for documenting reporting procedures and for advising AIS of permanent changes to airport information. He is also responsible for advising CAA of any significant changes to aerodrome information that may occur and for reporting the day-to-day serviceability of the airport and notifying temporary changes to published aeronautical information to ATC and the NOF.
- c. (Airside Operations Officer) is responsible for implementing the reporting procedures documented in this manual.

4.1.3 Reporting Procedures

Specify aerodrome reporting procedures. The procedures should start when a hazard is identified and include the consideration of the types of promulgation. The NOTAM issuance, AIP supplement and AIP amendment procedures shall follow the current CAA requirements. The established procedures must show that the airport can promulgate the information accurately in a timely manner.

Example:

- a. Any situation that may have an immediate effect on the safety of aircraft operations will be reported in the first instance to ATC by radio or telephone. The designated ATC responsible for verbal reports is:

(Insert the responsible contact person and details of communication methods)

Such situation then will be reported to (Designated Person) to consider whether it needs to be issued as NOTAM or AIP.

(Insert the designated person responsible for issuing NOTAM of the airport and his/her contact details e.g. radio or telephone number)

- b. The (Designated Person) considers the given information using the procedures specified in (Specify SOPs). If it is required to issue NOTAM or AIP Supplement, the designated person will do so.

4.1.4 NOTAM, ~~add and SNOWTAM and connection to GREF~~

Specify NOTAM procedures. The procedures shall clearly specify the responsible persons of the aerodrome and others. The aerodrome operator shall include the address and telephone numbers of people responsible for NOTAM. The name and contact list can either be referred to *Master Contact List* or specified in this section.

[Applicable with effect from 4 November 2021]

Specify SNOWTAM procedures for issuing runway condition report when the runway is wholly or partly contaminated by standing water, snow, slush, ice or frost, or is wet associated with the clearing or treatment of snow, slush, ice or frost.

Example:

- a. The information about matters of an urgent nature affecting the safety of aircraft operations according to (NOTAM Regulations reference) will be issued as a NOTAM.

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a-b. The criteria for issuing SNOWTAM to disseminate a runway condition report

b-c. The (Designated Person) will fill a NOTAM/SNOWTAM Requisition Form attached in Annex (N). The form is submitted to:

(Insert Responsible Person, Address, and Contact Details)

e-d. The (Designated Person) checks the NOTAM/SNOWTAM once it is issued.

e. If the information in the NOTAM/SNOWTAM is correct, make a record in NOTAM Logbook. If the information in the NOTAM/SNOWTAM is incorrect, contact (Responsible Person) to make a correction.

d.

4.1.5 AIP

Specify AIP Supplement and procedures. The procedures shall clearly specify the responsible persons of the aerodrome and other. The aerodrome shall include the address and telephone number whose AIP Supplement and AIP Amendment are submitted to. The contact information can either be referred to *Master Contact List* or specified in this section.

Example:

AIP constitutes the basic information source for permanent information and long duration temporary changes. The (Designated Person) is responsible for AIP Supplement and Amendment. If there ~~are~~ ^{is} a temporary change for a duration of at least 90 days but not exceeding one year, the (Designated Person) requests for AIP Supplement. The AIP Supplement also can be used to promulgate the temporary change for a duration less than 90 days but requires supplement texts or pictures. AIP Amendment Requisition and AIP Supplement Requisition are contained as Annex (N) and Annex (N) in this Aerodrome Manual. The requisition form will be submitted to:

(Insert Responsible Person, Address, and Contact Details)

4.1.6 Incident Reporting

Specify accident/incident reporting procedures to pilots and air traffic service providers as well as Search and Rescue Coordination Center and Accident/Serious incidents investigating authority (XYZ) in case of accident/serious incident. The reporting procedures shall be inconsistent with the reporting procedures in the aerodrome safety management system.

Example:

- a. Any significant object found on the movement area will be immediately reported to:

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(Insert Designated Person and Contact Information)

- b. (Designated Person or the Founder of the Object) will immediately advise (ATC), and then attempt to identify the object through various operators in airspace. (ATC) may choose to alert the pilot of the aircraft or the station manager that may have involved.
- c. All incidents are to be recorded in the (Name of Record). Where necessary an additional written Incident Report will be raised. (Airport Responsible Person) gathers accident and incident information. The information shall be reported to the (Airport Manager).
- d. The (Airport Manager) will determine if an (Accident/Incident Report) needs to be submitted to (CAA and/or AAIC) in accordance with [legislation / regulations / mandatory occurrence reporting scheme]. The (Airport Manager) will initiate and coordinate internal investigations into aviation incidents of interest relevant to the Airport.

4.1.7 Records of Aerodrome Reporting

Specify the method the aerodrome operator checks and records the changes to the aerodrome data.

Example:

All actions regarding the issuance of NOTAM and changes in AIP will be recorded in NOTAM and AIP Logbook. The log books are available with (Responsible person) in AIS section and is maintained by his staff.

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4.2 Control of Airside Access

Particulars of the procedures that have been developed and are to be followed to prevent unauthorized entry into the airside.

4.2.1 Purpose

Explain the purpose of this section. The main purpose of this section is to prevent unauthorized entry into the airside.

Example:

The aim of these procedures is to assist the safety of aircraft operations by only permitting access onto the airside to authorized and certified person, vehicles, and equipment.

4.2.2 Responsibility

Explain responsibility of personnel related to the control of airside access including airport manager, aerodrome security entity, air traffic service provider, airport operations, airport tenants, aerodrome fixed-based operator, and government agencies.

Example:

- a. (Airport Manager) has overall responsibility for ensuring that procedures are established and resources are provided for aviation security and for the control of airside access to the airport.
- b. (Airport Security Supervisor) is responsible for developing an Airport Security Program. He is also responsible for obtaining approval prior to any physical change of the airside/landside barrier.
- c. (Airport Operations Officers) are responsible for carrying out day-to-day security surveillance of airside areas.
- d. (Air Traffic Service Provider) has responsibility for control of vehicles on the manoeuvring area by giving clearances. No person or vehicle may enter this area without ATC approval.
- e. (Security Service) are contracted by (Name) Airport. They are responsible for guarding the airside access gate and patrol the airside perimeter. They are also responsible to satisfy security regulations required by the Aerodrome.
- f. (Aircraft Operators and Airport Tenants) are responsible for controlling access to restricted areas via any part of their building or leased areas. They are required to establish and enforce procedures to prevent unauthorized airside access via these areas.

4.2.3 Security Restricted Area and Access Points

Describe the aerodrome security restricted area and access points. The security restricted area and access points shall be depicted in pictures. The access gates for pedestrians and vehicles, as well as any emergency access gates, shall be identified.

Example:

(Describe the aerodrome security restricted area and access points)

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4.2.4 Preventing Unauthorized Entry of Persons, Vehicles, Equipment, Animals, and Other Things into the Movement Area

Describe methods used by the aerodrome to prevent unauthorized entry of persons, vehicles, equipment, animals, and other things into the movement area in normal and emergency situations. The methods used can be physical deterrents or measurement. Physical deterrents may include fence and padlock. Measurement may include security pass. Information in this section can be referred to the Airport Security Program.

Example:

- The aerodrome is fenced with (chain link security fencing/ security wall-). The airport security will inspect for unauthorized entry into the movement area.
- All gates are to be manned, kept closed and locked at all times except for authorized entry. In case the security guard is not present, the gate shall be locked. The key to the gate will be kept with by (Responsible person).
- Floodlighting is and security cameras are installed on the fence to prevent allow detection of unauthorized access during night time or low visibility condition.
- A joint force of airport personnel and local police will be patrol aerodrome surroundings personnel.

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Note: Airport Security Programme (Name, Version, date) contains all the details regarding the Control of Airside Access.

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4.2.5 Method of Monitoring and Recording Unauthorized Entry

Describe the method of monitoring and recording of unauthorized entry. The designated entity at aerodrome shall keep record of all unauthorized entry, root causes and recommended mitigation.

Example:

e. The aerodrome will ensure that only trained, qualified and authorized persons, vehicles and equipment are allowed to acquire airport security pass. The procedures to acquire a security pass are specified in the (Specify document such as Airport Security Programme or SOPs for Airport Security Pass Issuance) which comprised a part of this manual.

f. (Name) Airport has a "Challenge Program" test programme to ensure that all security ID holders will aware of unauthorized persons in the security restricted area. In case unauthorized person, vehicle or equipment is detected, the security ID holder shall inform an airport security officer without delay.

g. Security guards are assigned to every security access points. All accesses to the airport movement area are recorded. If an unauthorized person, vehicle or equipment remains in the movement area, an airport security guard will find and lead them out of the airport movement area. The incident will be reported to (Responsible Person / Police) for investigation.

4.2.6 Coordination with the Agency Responsible for Preventing Unlawful Interference in Civil Aviation at the Aerodrome

Please specify the coordination with the agency responsible for preventing unlawful interference in civil aviation at the aerodrome when an act of unlawful interference is detected.

Example:

a. The aerodrome has established the Airport Security Committee. The members are included:

(Specify Committee Members)

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The responsibility of the committee is defined in the Airport Security Committee ~~which comprise a part of this manual.~~

- b. In case an airport security guard detects an unlawful act, the security guard will inform a local police, an immigration officer or a custom officer via (Specify Communication Method) for law enforcement.

4.3 Aerodrome Emergency Plan

Specify particulars of Aerodrome Emergency Plan (AEP) both on and off airport to ensure that the airport is well prepared to response to an emergency involving aircraft, not involving aircraft, and compound emergency.

Remarks: The AEP could be a part of the Aerodrome Manual, or it could form a separate document. If designed to be a separate document, it is still subject to acceptance/approval by CAA and any other control as CAA would exercise on an Aerodrome Manual.

4.3.1 Purpose

Explain the objectives of aerodrome emergency plan. The main purpose of the emergency plan is to minimize the effects of an emergency, particularly in respect of saving lives and maintaining aircraft operations. ~~prepare materials, equipment, personnel, training, and coordination between airport and related responding parties to ensure a quick, safe response and recovery~~ The aerodrome emergency plan sets forth the procedures for coordinating the response of different aerodrome agencies (or services) and of those agencies in the surrounding community that could be of assistance in responding to the emergency.

Example:

The aim of an AEP is minimize the effects of an emergency, particularly in respect of saving lives and maintaining aircraft operations ~~to by provide~~ providing a timely and coordinated response for rescue and operation recovery from an airport emergency ~~on airport~~. The primary purpose of this section is to document the airport responsibilities of all responding parties and background information in relation to the AEP.

4.3.2 Responsibility

Explain responsibility of personnel responsible to plan, maintain, revise, and implement the Aerodrome Emergency Plan.

Example:

- a. The Airport Manager has overall responsibility for establishing a plan to coordinate the response if an emergency occurs at the airport. He is responsible to chair AEP Committee.
- b. The AEP Committee is responsible for developing and maintaining the AEP.
- c. The Aerodrome Safety Manager is responsible for coordinating the activities in AEP.

4.3.3 Plans for Dealing with Emergencies Occurring at the Aerodrome

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Define emergency plans for each emergency that may occur in the airport. The emergency plan shall consider physical characteristics and environment in vicinity of the airport. The plans shall include actions to be taken by all responding parties, e.g. airport, RFFS, off-airport fire services, civil defence agency, ATC, airlines, aircraft maintenance organisations, police, accident investigator, etc.

Example:

The (Name) Aerodrome Emergency Plan involves the emergencies that may occur at the airport. It includes accidents involving aircraft, accident not involving aircraft and other accidents/incidents. The plan contains these following scenarios:

- a. Aircraft Accident on the Airport
- b. Aircraft Accident off the Airport
- c. Incident - Aircraft in Flight
- d. Incident – Aircraft on Ground
- e. Structural Fires
- f. Sabotage
 - i) Aircraft
 - ii) Structure
- g. Unlawful Seizure of Aircraft
- h. Natural Disaster
- i. Dangerous Goods
- j. Medical Emergencies
- ~~j~~.k. Other scenarios as required e.g. aircraft accident at difficult environment (water, swampy areas, etc.) in the immediate vicinity of the airport, land transport disruption, etc.

The details of each scenario are contained within the AEP.

4.3.4 Tests for Aerodrome Facilities and Equipment to be Used in Emergencies

Explain how the aerodrome conduct tests for facilities and equipment to be used in emergencies. This section ~~e-tests~~ also cover the handling ~~centers~~ centres established during an emergency and frequencies of the tests. The airport may use checklists for tests for facilities and equipment. The tests need to be done using proper techniques. The result of the tests shall be recorded. The checklists can either be a part of ~~this manual~~ AEP or in a separate document.

Example:

- a. Procedures and checklists for testing of aerodrome facilities and equipment are contained within “(Name of a manual or procedures)”
- a.b. Frequencies of tests

c. Testing of physical areas of the emergency plan are included within the Airport's exercise regime, detailed within the AEP.

b.

4.3.5 A List of Organizations, Agencies and Persons of Authority, both on- and off-airport, and Their Contact Information

Lists all organizations and authorities involved in an emergency response both on and off airport and details of contacts. The lists can be referred to the Airport Emergency Plan. The details of contacts must be up to date.

Example:

The AEP contains a list of organizations, agencies and persons of authority, both on- and off-airport, and their contact information. The contact information will be checked and updated once every (Frequency).

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4.3.6 Aerodrome Emergency Committee

An ~~public~~ airport shall establish an Aerodrome Emergency Committee. The committee should have both internal and external stakeholders. Each airport should consider the members of this committee based on a local management.

Example:

The Aerodrome Emergency Committee is the main forum to develop, distribute, review and amend the Airport Emergency Plan (AEP) for (Name) Airport. This committee will endorse any amendments to the AEP.

The Committee meets ~~as often as is necessary~~ every [X] months and as soon as possible after the activation of AEP or a full scale / partial emergency exercise to carry out its functions and will be comprised of a group of core member such as;

- a. ~~Airport Staff~~ aerodrome operator
- b. Airlines representatives
- c. ATC Senior Staff
- d. Chief of ~~RFFs~~ RFFS
- e. Department of Health Senior Officer
- f. Senior representatives from major hospitals
- g. State Emergency Service Representatives
- h. Ambulance Service senior representatives
- i. Chief of Metropolitan Fire Brigade or Services
- j. Police Service senior staff
- k. Representatives of other responding parties, as required

j.

4.3.7 Appointment of an On-Scene Commander

The airport shall appoint an on-scene commander when an emergency occurs. Each type of emergency may have a different on-scene commander. For example, an airport rescue and ~~fire fighting~~ firefighting commander may be appointed to be an on-scene commander in the event of fire. An airport security may be appointed to be an on-scene commander in the event of unlawful interference, or an airport medical services may be appointed to be an on-scene commander in medical emergency.

Example:

Safety-Related Emergency

Once an accident has occurred, the initial direction and control of rescue and ~~fire fighting~~ firefighting operations are the responsibility of the airport rescue and fire fighting firefighting service officer in charge. Rescue and Fire Fighting personnel will be the first to arrive at the accident site; therefore, for a certain period of time

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this officer will be in command. Once the on-scene commander arrives, the on-scene commander will assume command as outlined in the airport emergency plan. The transition of authority and command responsibility needs to be established previously in the emergency plan and exercised accordingly.

Security-Related Emergency

In case the incident/accident is security-related, the initial direction and control of the situation is the responsible of the airport security service officer in charge. The airport security service officer will be the first to respond and in command until the on-scene commander assume command as outlined in the airport emergency plan. The transition of authority and command responsibility needs to be established previously in the emergency plan and exercised accordingly.

4.3.8 Airport Emergency Exercises

Details types and frequencies of airport emergency exercises. The exercises may include but not limited to daily exercise, tabletop exercise, partial emergency exercise, and full-emergency exercise.

Example:

To ensure that the plan is functional and that all agencies are familiar with their roles and responsibilities, and exercise program will be developed by the Airport Emergency Planning Committee. The airport emergency exercise comprises of:

- a. Initial Training on the AEP for New Employees
- b. Recurrent Training on the AEP for Current Employees
- c. Full Scale Emergency Exercise – At least once every two years
- d. Partial Emergency Exercise – At least once every year that a full-scale exercise is not held
- e. Tabletop Exercise – At least every six months, except during that six-month period when a full-scale exercise is held

e-

4.3.9 Airport Emergency Plan Review

The airport should review and update the emergency plan regularly. The period for review and update should be defined in an aerodrome manual or airport emergency plan

Example:

After a major activation of the plan or following an exercise, the Airport Emergency Committee or a sub-group of this committee will meet to identify areas where the plan might be improved.

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~~4.3.10~~4.3.9 Standard Operating Procedures

An airport should set up Standard Operating Procedures (SOPs) for an emergency. The SOPs can be referred to an Aerodrome Emergency Plan.

Example:

Procedures defining the aerodrome operator's response to an emergency on the airport has been issued as Standard Operating Procedures (SOP). These are published separately to the Aerodrome Manual / AEP as Annex (N) and comprise a part of this manual.

Commented [PSKHP5]: Responses by aerodrome operator is covered in 4.3.3. Please check if this paragraph is necessary.

4.4 Rescue and Fire Fighting

4.4.1 Purpose

This section should cover particulars of aerodrome rescue and ~~fire fighting~~firefighting including facilities, personnel, and procedures of the airport operator. The facilities, personnel, and procedures should be prepared based on the aerodrome category specified in ~~RCAAT No. 14~~ (State Regulation Reference). This aerodrome manual should define a responsible person for rescue and ~~fire fighting~~firefighting of the airport. The airport can also refer to the *Master Contact List*.

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Example:

The rescue and ~~fire fighting~~firefighting services is provided with the objective ~~of a rescue and fire fighting service to save lives in the event of accident or incident occurring at, or in the immediate vicinity of, the aerodrome.~~ The facilities of the rescue and ~~fire fighting~~firefighting are to be directed at all times ~~to for~~ attending at and dealing with an aircraft incident occurring on, or in the immediate vicinity of, the aerodrome.

4.4.2 Responsibility

Explain responsibility of persons who are responsible for ensuring all equipment is available and the appropriate level of protection is available, including the requisite amount of extinguishing agents, to achieve the rated category of the RFF.

Example:

- a. Airport Manager is responsible for providing resources for rescue and ~~fire fighting~~firefighting to meet the CAA standard.
- b. The Chief Fire Officer, ~~or in his absence his delegate, of RFFS~~ is solely responsible for ensuring all equipment is available and the appropriate level of protection is available, including the requisite amount of extinguishing agents, to achieve the rated category of the RFF.

b:

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4.4.3 ICAO Aircraft Rescue and Fire Fighting Category

Explain the aircraft rescue and ~~fire fighting~~firefighting category of the aerodrome. The criteria for determining the ARFF Category is in (State Regulation Reference)

~~RCAAT No. 14.~~

Example:

The Rescue and Fire Fighting Service assessed category for the aerodrome shall be Category (N#) as determined from Requirements of Civil Aviation Authority of (Country) ~~Thailand No. 14~~ specification.

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4.4.4 Reduction of Category

Explain the airport procedures for the reduction of category if the airport cannot maintain the level of protection.

Example:

In case that the facilities and inventory of the rescue and fire fighting fell below Category (N#), the Aerodrome will take the following measures:

ARFF Vehicles: The Aerodrome has a mutual aid agreement with (Name). (Name) will lend an ARFF vehicle to (Name) Airport. The specification of the ARFF vehicle shall meet ~~CAAT No. 14~~ national requirements on aerodrome certification / ICAO Annex 14).

Consumables: The Aerodrome has an agreement with (Name) to supply the fire extinguisher agent when the airport runs out of the ~~agent~~ required stock level. According to the agreement, the (Name) will supply the agent within (D#) days.

In the event that category cannot be maintained, the matter is to be referred immediately to the Airport Manager and a NOTAM raised to indicate the varied level of coverage available.

4.4.5 Facilities and Inventory

Explain the facilities that the airport prepares for aircraft rescue and fire fighting. The airport should prepare these facilities based on the ARFF Category specified in (State Regulation Reference) ~~RCAAT No. 14~~. The facilities include at least a fire fighting station, ARFF vehicles, tools, equipment, and fire ~~extinguisher~~ extinguishing agents. These facilities can either be listed in this section or in an aerodrome emergency plan.

Example:

An inventory of all equipment and ~~extinguisher~~ extinguishing agents held by the Rescue and Fire Fighting Service are included:

a. Response Time

~~The response time of RFFS is not exceeding [two / three] minutes to any point of each operational runway, and [three] minutes to any other part of the movement area, in optimum visibility and surface conditions. The response time meets the requirement specified in [CAA Requirements].~~

a.b. Fire Fighting Station

(Name) Airport has (No. of Stations) stations located at (Specify) to ensure the rescue and fire fighting vehicles ~~can~~ meets the response time as

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specified in Requirements of Civil Aviation Authority of (Country name & regulation) paragraph 4.4.5 a. Thailand No. 14.

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(Describe the Fire Station including the characteristic of fire station, number of parking space for RFF vehicles, space around parked aircraft rescue and fire fighting vehicles, storerooms for RFF equipment and stock amount of supplementary water and extinguishing agents)

b.c. Aircraft Rescue and Fire Fighting Vehicles

(Name) Airport has (No. of ARFF Vehicles) ARFF vehicles. The ARFF vehicles stationed in the airport is to Requirement of Civil Aviation Authority of (Country name & regulation) Thailand No. 14. The specifications of each vehicle are in (Specify) which forms a part of this manual.

e.d. Tools and Equipment

(Name) Airport provides aircraft rescue and fire fighting tools and equipment for (ARFF category) as the following;

The table below shows ARFF tools and equipment for each ARFF category.

Remarks: Similar to plans, long tables may be organized in the Appendices for easy document control.

Equipment scope	Equipment item	Airport category			
		1-2	3-5	6-7	8-10
Forcible entry tools	Prying tool (hooligan, biel type)	1	1	1	2
	Crowbar 95 cm	1	1	1	2
	Crowbar 1.65 m	1	1	1	2
	Axe, rescue large non wedge type	1	1	1	2
	Axe, rescue small non wedge or aircraft type	1	2	2	4
	Cutter bolt 61 cm	1	1	2	2
	Hammer 1.8 kg – lump or club type	1	1	2	2
	Chisel cold 2.5 cm	1	1	2	2
A suitable range of rescue/cut-in equipment including powered rescue tools	Hydraulic/electrical (or combination) portable rescue equipment	1	1	1	2
	Powered rescue saw complete with minimum 406 mm diameter spare blades	1	1	1	2
	Reciprocating/oscillating saw	1	1	1	2
A range of equipment for the delivery of firefighting agent	Delivery hoses 30 m lengths x 50 and 64 mm diameters	6	10	16	22
	Foam branches (nozzles)	1	1	2	3
	Water branches (nozzles)	1	2	4	6
	Coupling adaptors	1	1	2	3
	Portable fire extinguishers				
	CO ²	1	1	2	3
	DCP	1	1	2	3
Self-contained breathing apparatus – sufficient to maintain prolonged internal operations <i>Note: Ideally one BA set per crew member.</i>	Breathing apparatus (BA) set complete with facemask and air cylinder				
	BA spare air cylinder				
	BA spare facemask				
Respirators	Full faced respirators complete with filters	One per responding firefighter			

Equipment scope	Equipment item	Airport category			
		1-2	3-5	6-7	8-10
A range of ladders	Extension ladder, rescue and suitable for critical aircraft	-	1	2	3
	Ladder general purpose – rescue capable	1	1	1	2
Protective clothing	Firefighting helmet, coats, over trousers (complete with braces), boots and gloves as a minimum	One set per operational firefighter plus a percentage of reserve stock			
Additional items for personal protection	Protective goggles	1	1	2	3
	Flash hoods	One per operational firefighter			
	Surgical gloves	1 box	1 box	1 box	1 box
	Blanket fire resisting	1	1	2	2
Rope lines	Rope line rescue 45 m	1	1	2	2
	Rope line general use 30 m	1	1	2	2
	Rope line pocket 6 m	One per operational firefighter			
Communication equipment	Portable transceivers (hand held and intrinsically safe)	1	2	2	3
	Mobile transceivers (vehicle)	One for each fire vehicle			
A range of hand-held/portable lighting equipment	Hand-held flashlight (intrinsically safe)	1	2	4	4
	Portable lighting – spot or flood (intrinsically safe)	1	1	2	3
A range of general hand tools	Shovel overhaul	1	1	2	2
Rescue tool box and contents		1	1	2	3
	Hammer, claw 0.6 kg				
	Cutters, cable 1.6 cm				
	Socket set				
	Hacksaw, heavy duty complete with spare blades				
	Wrecking bar 30 cm				
	Screwdriver set – slotted and Phillips heads				
	Pliers, insulated				
	Combination 20 cm				
	Side cutting 20 cm				
	Slip joint – multi-grip 25 cm				
	Seat belt/harness cutting tool				
	Wrench, adjustable 30 cm				
Equipment scope	Equipment item	Airport category			
		1-2	3-5	6-7	8-10
	Spanners, combination 10 mm – 21 mm				
First aid equipment	Medical first-aid kit	1	1	2	3
	Automated External Defibrillator (AED)	1	1	2	3
	Oxygen Resuscitation Equipment (ORE)	1	1	2	3
Miscellaneous equipment	Chocks and wedges – various sizes				
	Tarpaulin – lightweight	1	1	2	3
	Thermal imaging camera	-	-	1	2

d.e. Fire Extinguishing Agent

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(Name) Airport prepares the following fire extinguishing agent.

Fire Extinguishing Agent	Quantity

4.4.6 Personnel

Details about ARFF personnel including administration and minimum training requirements.

Example:

ARFF response is available for all scheduled air carrier operations only during (Specify Operating Hours). There are (No. of Shifts) shifts including (Specify Shifts) each shift has (No. of ARFF Personnel) people. ARFF personnel have completed a training and keep currency in the topics required by Requirement of Civil Aviation Authority of (Country name & regulation) ~~Thailand No. 14~~.

4.4.7 Procedures for Meeting the Rescue and Fire-Fighting Requirements

Specify procedures related to rescue and fire fighting. The details of this section can be referred to ~~an~~ the Airport Emergency Plan or related SOPs.

Example:

Procedures defining the RFF response to an emergency on the airport have been issued as Standard Operating Procedures (SOP). These are published separately to the Aerodrome Manual as Annex (N) and comprise a part of this Manual.

4.5 Inspection of Movement Area

Particulars for Inspection of Movement Area by an aerodrome operator or aerodrome owner.

4.5.1 Purpose

Define the objectives of aerodrome inspection of movement area. The objective should focus on ensuring the aerodrome standards are met. Therefore, the airport can operate safely.

Example:

The aim of these procedures is to ensure that the movement area, related facilities, and the obstacle limitation surfaces (OLS) are regularly inspected to ensure CAA safety standards are maintained.

4.5.2 Responsibility

Explain responsibility of persons who have roles and responsibilities in aerodrome inspection. These persons may include, but not limited to, an airport manager, an airport operations services, an airport maintenance services, and etc.

Example:

- a. (The Airport Manager) has overall responsibility for ensuring that procedures are established and resources provided for the airport inspections in order to ensure that CAA standards are met.
- b. (The Airport Operations Supervisor) has responsibility for ensuring that daily serviceability inspections are satisfactorily carried out and that appropriate actions/reporting takes place as a result of those inspections.
- c. (The Operations Officers) are responsible for carrying out daily serviceability inspections of the movement area and the OLS.
- d. (The Maintenance Supervisor) has the responsibility for ensuring that signs and lighting inspections are carried out in accordance with the inspection and maintenance schedules as well as supervise the maintenance works for corrections.
- e. (The Airport Maintenance Officer) is responsible for carrying out and recording the inspection and maintenance of all airport lighting systems.

4.5.3 Inspection of Movement Area

Specify types and period of movement area inspection. The inspections should include Regularly Scheduled Inspection, ~~Continuous Condition Inspection~~, Periodic Condition Inspection, and Special Inspection.

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Example:

(Name Airport) has ~~four~~ three types of inspection including Regularly Scheduled Inspection, ~~Continuous Condition Inspection~~, Periodic Condition Inspection, and Special Inspection.

a. Regularly Scheduled Inspection

The airport conducts daily visual inspection. The inspector observes the general conditions of facilities in movement area and their functionality.

~~b. Continuous Condition Inspection~~

~~Continuous condition inspection is a voluntary inspection by every personnel in the movement area. Everyone who finds a hazard will immediately report following SMS reporting procedures.~~

~~c.~~ b. Periodic Condition Inspection

Periodic condition inspection has similar topics as regularly scheduled inspection but in a more detail. The inspection may require tools or equipment. The inspection ~~period is less than daily~~ is conducted every [X] days/weeks.

~~d.~~ c. Special Inspection

Special inspection will be conducted after receipt of the complaint or when unusual condition or unusual event occurs.

4.5.4 Inspection Procedures and Communicating with Air Traffic Control during Aerodrome Inspection

Define the communication procedures between an inspector and the air traffic controller to ensure the quick communication and safe operations. The airport should show the inspection procedures to ensure the safety of a movement area inspection as well.

Example:

For safety of the inspector and aircraft operations, (Name Airport) establishes communication and inspection procedures. The communication procedures between the inspector and air traffic control include:

- a. Before inspection, the inspector will contact ATC for clearance. The inspector will only conduct an inspection ~~when the~~ in compliance with ATC clearance is granted and when it is safe to conduct the inspection.

- b. When driving a vehicle or on foot on the movement area all inspecting personnel shall keep a ~~strict~~ continuous lookout and radio listening watch for aircraft. While operating on the maneuvering area, all persons must maintain continuous two-way communication with ATC.
- c. Driving vehicle in the airside requires training. The driver must pass the test before the airside driving license is grated. Keep caution ~~of~~ and give way to the aircraft at all time.
- d. When the ATC informs the driver to clear the runway, the driver will leave the runway without delay and stay outside a runway strip.
- e. The inspector will immediately inform the ATC once the inspection is finished and the inspection left the runway.

~~The~~ For inspection of other area beside the runway, ~~can use~~ refer to procedures ~~(b) a to (e) c~~ above.

4.5.5 Particulars, Frequencies, and Time of Aerodrome Inspection

Specify details and criteria for inspection of movement area including Regularly Scheduled Inspection, ~~Continuous Condition Inspection~~, Periodic Condition Inspection, and Special Inspection.

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a. Regularly Scheduled Inspection

Regularly Scheduled Inspection should cover pavement, runway strip, RESA, marking, signs, airfield lights, navigational aids, obstacles, fueling station, construction, public protection, and wildlife hazards.

Example:

The Aerodrome Operations Service inspects the airport at least (Times) a day when aircraft activity is minimal in order to minimize the impact on airport operations. At least one inspection will be done during the hours of darkness.

(Please specify inspection schedule)

i) Pavement Areas

The pavement areas shall be smooth. There shall be no cracks, scaling, bumps, low spots, ~~and~~ debris and any other abnormality. No holes or pavement lips that exceed 3 inches in depth. No vegetation growth that may impede drainage.

Commented [WU6]: Do you mean curb?

ii) Runway Strip and Runway End Safety Areas

(Explain runway strip and RESA dimensions). Runway strip and RESA must be smooth, no ruts, no humps and no object except ~~the~~ objects that must be there by function equipment or installation for

air navigation or for aircraft safety purposes which must be at that location. The objects in runway strip and RESA must be frangible.

Commented [WU7]: Extracted from A14V1 STD 9.9.2

iii) Markings

Marking in airside shall be correct and clearly visible. The airport will check marking for peeling, blistering, chipping, fading, and obscured. Obsolete marking shall be properly removed although masking by black paint may be accepted as a temporary measure.

iv) Signs

Signs provide important information to pilots while taxiing. Signs shall not cause a confusion to pilots. Signs should not be blocked by objects or vegetation.

v) Lighting

The airport conducts a visual inspection to ensure that the airfield lighting is operable and vegetation or deposits of foreign material do not obscure the light fixture. The lights shall be the proper color and are oriented correctly.

vi) Navigational Aids

(Name) Airport navigational aids include aerodrome beacon, wind direction indicator and PAPIs [include those aids in your airport]. The airport safety inspector will check the ~~airport rotating~~ aerodrome beacon is visible and working properly, wind direction indicator swings freely, the cone is not faded, properly lighted at night and PAPIs ~~is~~ are operable.

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vii) Obstructions

(Name) Airport concentrates on a visual check of manmade and natural obstacles. The airport also determines if obstructions are properly marked and lighted. If the airport finds an obstacle, the airport ~~will~~ shall inform CAA and AIS ~~immediately~~.

viii) Fueling Operations

The daily inspection on aircraft fueling operations should concentrate on a quick inspection for the most common problems concerning compliance with local fire safety codes. In (Name) Airport, this responsibility lies with the aircraft fueling operator. The airport will randomly inspect the fueling operator from time to time.

ix) Construction

During a construction, the airport safety inspector will check the construction safety area that

- Stockpiled materials and construction materials are properly stored
- Construction areas are marked and lighted but without causing glare or confusion to pilots and air traffic controllers
- Barricades are installed

- No FODs
 - No dangerous condition created by construction activity
 - No attraction to wildlife is caused
- x) Public Protection (Remarks: It could be the responsibility of security officers instead depending on the aerodrome.)

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During the public protection inspection, check gates, fencing, locks, and other safeguards are in place and functioning properly to prevent inadvertent entry to movement areas by unauthorized persons and vehicles.

xi) Wildlife Hazard Management

(Name) Airport inspects the areas on airport and the areas in its vicinity to minimize and manage the attractions to wildlife. The airport will check for evidence of birds and animals that may have developed. All dead wildlife found and all wildlife aircraft strikes should be investigated and reported to CAA. The airport records the area that birds and animals present, routes, and other information specified in wildlife reporting form.

b. Continuous Condition Inspection

Continuous Condition Inspection should cover ground vehicles, fueling operations, construction, public protection, wildlife hazard management, and foreign object debris.

Example:

The airport users in the movement area can inspect the movement area any time. Hazardous conditions can be reported to (Position) for immediate actions. The continuous condition inspection includes;

i) Ground Vehicles

Vehicle drivers shall follow the airport's procedures and arrangements for the orderly operations of ground vehicles. Vehicles in movement area shall be properly painted. The drivers of vehicles shall be trained properly.

ii) Fueling Operations

Fueling operations shall be observed to ensure that the service provider follows the procedures approved by the airport.

iii) Construction

Unauthorized access to airside and FOD shall be inspected to ensure safety of aircraft.

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iv) Public Protection

Gates and fences shall be inspected to prevent unauthorized entry.

v) Wildlife Hazard Management

People in the airside shall monitor wildlife activity. Wildlife activity shall be reported wildlife activity to the airport operations immediately.

vi) Foreign Object Debris

FOD shall be clear of the movement area as soon as it is found. A person who finds aircraft parts will immediately inform (Responsible Person).

c. Periodic Condition Inspection

Periodic Condition Inspection should cover pavement areas, markings, signs, quarterly fuel storage area and loading/unloading stations, mobile fuelers, navigation aids, lightings, and obstructions.

Example:

The Aerodrome Operations conducts a Periodic Condition Inspection of activities and facilities on a regularly scheduled basis but less than daily. The time interval can be weekly, monthly, or quarterly, depending on the activity or facility.

i) Pavement Areas

(Name) Airport measures runway friction by self-wetting continuous friction measuring equipment. The CAA's runway friction standard will be used for referenced.

อุปกรณ์ทดสอบ (test equipment)	ล้อยางทดสอบ (test tire)		ความเร็ว ทดสอบ (test speed) (km/h)	ระดับน้ำ (test water depth) (mm)	ความลึกของ ผิวทางใหม่ (design objective for new surface)	ความลึกที่ควร วางแผนซ่อม บำรุง (maintenance planning level)	ความลึกขั้นต่ำ ที่ต้องการ ดำเนินการ ในทันที (minimum friction)
	ประเภท (type*)	ความดัน (pressure) (kPa)					
mu-meter	A	๓๐	๖๕	๑.๐	๐.๓๒	๐.๕๒	๐.๔๒
	A	๓๐	๕๕	๑.๐	๐.๖๖	๐.๓๘	๐.๒๖
skiddometer trailer	B	๒๑๐	๖๕	๑.๐	๐.๕๒	๐.๖๐	๐.๕๐
	B	๒๑๐	๕๕	๑.๐	๐.๓๔	๐.๔๗	๐.๓๔
surface friction tester vehicle	B	๒๑๐	๖๕	๑.๐	๐.๕๒	๐.๖๐	๐.๕๐
	B	๒๑๐	๕๕	๑.๐	๐.๓๔	๐.๔๗	๐.๓๔
runway friction tester vehicle	B	๒๑๐	๖๕	๑.๐	๐.๕๒	๐.๖๐	๐.๕๐
	B	๒๑๐	๕๕	๑.๐	๐.๓๔	๐.๕๔	๐.๔๑
TATRA friction tester vehicle	B	๒๑๐	๖๕	๑.๐	๐.๓๖	๐.๕๗	๐.๔๘
	B	๒๑๐	๕๕	๑.๐	๐.๖๗	๐.๕๒	๐.๔๒
GRIPTESTER trailer	C	๑๔๐	๖๕	๑.๐	๐.๓๔	๐.๕๓	๐.๔๓
	C	๑๔๐	๕๕	๑.๐	๐.๖๔	๐.๓๖	๐.๒๔

*type A : ยางล้อที่ใช้ทดสอบความเสียดทานที่ติดตั้งกับอุปกรณ์ทดสอบ mu-meter เป็นชนิดผิวเรียบ (smooth tread) และลักษณะการติดตั้งแบบพิเศษ
type B : ชุดล้ออุปกรณ์ทดสอบทำมุมขนาดสิบห้าองศาทำกับแนวแกนตามยาว (longitudinal axis) ของทางรถ (trailer) ลักษณะยางล้อที่ใช้ทดสอบติดตั้งกับอุปกรณ์ทดสอบแบบ skiddometer, surface friction tester, runway friction tester และ TATRA เป็นชนิดผิวเรียบ และมีลักษณะการติดตั้งเหมือนกัน
type C : เป็นล้อยางทดสอบที่มีผิวเรียบ ลักษณะคล้ายกับล้อทดสอบของ type B แต่มีขนาดเล็กกว่า

(Airport Operations) will report (Airport Operations Supervisor) when rubber buildup at the touchdown zone makes the friction ~~fell~~ fall below the maintenance planning level. The (Airport Operations Supervisor) will initiate runway cleaning. In case the friction fall below the minimum friction level, (Airport Operations Supervisor) shall immediately report to

(Airport Manager), who shall then report the issue to CAA and AIS without delay.

ii) Markings

(Airport Operations) Check pavement markings to ensure they are correct and clearly visible. Markings on concrete and faded asphalt should be outlined with a black border. The marking shall remain visible at night.

iii) Signs

(Airport Operations) should check signs faces for peeling and for fading or faded colors. Contacts and electrical circuit shall be inspected to ensure that the signs are still functional.

iv) Quarterly Fuel Storage Areas and Loading/Unloading Stations

(Airport Operations) will inspect fuel storage area and loading/unloading stations for fire safety. Tools and equipment shall be in good and safe conditions. Signs and placards shall be installed as required by hazardous material standards.

v) Mobile Fuelers

(Airport Operations) will inspect conditions of the fuelers, warning signs and placards and parking area as well as signs and placards on the vehicles.

vi) Navigational Aids

(Responsible Person) will ~~conduct~~ arrange a flight check every [X] months for PAPIs, NDB and DME ~~will be inspect to ensure that they are still functional~~ their serviceability.

vii) Lighting

(Name) Airport conducts power generator and circuit resistance tests every [X] weeks / months. The airfield lights are checked for proper functions every [X] days / weeks.

viii) Obstructions

(Name) Airport will ~~conducts~~ an obstacle survey on airport and in vicinity of airport. The airport will take immediate actions when an obstacle is found.

ix) Aircraft Rescue and Fire Fighting

(Name) Airport ~~periodically~~ determines every [X] weeks/months if the aircraft rescue and fire fighting equipment is capable of meeting response times and live-fire drills are being conducted every [X] months. Fire fighting and rescue tools are available and in good conditions.

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d. Special Inspection

An airport should conduct a special inspection after ~~receipt~~ receiving a complaint or unusual event such as a heavy rain or an aircraft accident occurs.

Example:

The Aerodrome Operator will conduct a special inspection after receipt of a complaint or when an unusual condition or ~~unusual~~ event occurs on the airport, such as a significant meteorological event, incident, or accident. Special inspections will also be conducted at the end of construction activity. Each special inspection will be documented in (Log). The checklists will be different based on each special inspection. (Airport Operations Supervisors) will determine the items in the checklist.

4.5.6 Inspection Checklist

(Develop inspection checklists as appropriate for your airport)

4.5.7 Reporting the Results of Inspections

Specify an airport procedure for reporting the results of inspections to related parties such as ATC, airport operations supervisor, airport manager, etc. The reporting procedures should consider the urgency of the results. The airport should track the corrective actions.

Example:

- a. In case there is a non-compliance that has a serious effect on safety of aircraft and it cannot be fixed, the (position) will immediately report to (ATC) and his/her supervisor. (Airport Operations) will ~~request~~ issue ~~issuing~~ NOTAM if needed. Some parts of the airport may be closed when necessary.
- b. If there is a hazard that does not have an effect on safety of aircraft, the (position) will report to (position) for corrections.
- c. Hazards and noncompliance items shall be recorded and marked ~~on~~ on airport grid map. If the hazards or noncompliance items cannot be removed immediately, the (Airport Operations) shall properly mark the hazard for follow up actions by (Airport Maintenance).
- d. ~~Results of the~~ Inspection findings shall be reported to (Airport Operations Supervisors) for corrections.
- e. (Airport Operations Supervisor) shall record the results in Airport Inspection Results and Monitoring Form contained in Annex ~~(Specify)~~ X.

- f. (Airport Operations Supervisor) monitors and tracks correctives actions until the hazards or noncompliance items are removed.

4.5.8 Keeping an Inspection Logbook, and the Location of the Logbook

Details how the airport keep records of the inspection, duration of the record keeping, and storage place.

Example:

The results of the airport inspection will be maintained at (Specify Place) for XX e.g. 12 months from the date of inspection. (Responsible Person) is responsible for maintaining the record.

4.6 Movement Area Maintenance

Particulars for the maintenance of pavement area, unpaved runway and taxiway (if any), ~~unpaved runway~~, runway and taxiway strips, RESA, and drainage.

4.6.1 Purpose

Explain the purpose of movement area maintenance. The main objective is to ensure that airport facilities are well maintained for safe operations of aircraft. If the airport is not well maintained, it may ~~harm an~~ cause hazard to aircraft.

Example:

The aim of movement area maintenance is to maintain paved area, unpaved area and drainage system in a good condition to ensure safety of aircraft operations.

4.6.2 Responsibility

Define responsibility of each person related to movement area maintenance including airport manager, airport maintenance, and airport operations.

Example:

- a. The Airport Manager is responsible for overseeing movement area maintenance to ensure the safe conditions of airport facilities and the safety of aircraft operations. The Airport Manager also has a responsibility to provide an adequate number of personnel, tools and equipment.
- b. (Airport Maintenance) is responsible for supervising maintenance staffs to ensure that preventive maintenance and corrective maintenance are completed and in the conditions required by the [Requirement of Civil Aviation Authority of (Country name)] ~~Thailand~~.
- c. (Airport Operations) is responsible for movement area and OLS inspection and coordination with (Airport Maintenance).

4.6.3 Maintenance of Paved Area

Explain the characteristics of airport paved area, pavement standards, and maintenance procedures. The area can be depicted by pictures or lists.

Example:

(Name) Airport (Specify Paved Area) are paved by [asphaltic asphalt / concrete]. Aprons are paved by [Portland Concrete]. The airport will maintain paved areas to ~~in meet~~ the following conditions:

- Pavement lips shall not exceed three inches

Commented [WU8]: Curb?

- No holes that cannot be covered by a 5-inch circle, and the side slope at any point in the hole that exceeds 3 inches in depth and is 45 degrees or greater
- No cracks wide enough to cause directional control problems for an aircraft
- No contaminations or FOD
- No vegetation growth in cracks or along the runway

Non-standard conditions and hazardous conditions shall be recorded and reported to ATS. NOTAM may be issued if needed. Pavement maintenance methods and procedures are contained in (Specify) which comprised a part of this manual.

4.6.4 Maintenance of Unpaved Runway or Taxiway

An airport with unpaved runway or unpaved taxiway is required to specify a method to maintain unpaved runway or unpaved taxiway. In case there is no unpaved runway or taxiway, the airport shall define "The airport does not have unpaved runway and taxiway".

Example:

(Name) Airport does not have unpaved runway and taxiway.

4.6.5 Maintenance of Runway and Taxiway Strip

Specify the methods used to maintain the runway strip, taxiway strip, ~~green landscape~~ area, and cut grass in the airport.

Example:

a. Runway and Taxiway Strips Maintenance

Grasses in runway and taxiway strips shall not exceed [10] centimeters in height. The airport will mow grasses in the strip ~~only when aircraft operations is minimum~~ according to landscape maintenance programme.

b. Unpaved Areas outside Runway and Taxiway Strips

Grasses outside runway and taxiway strips shall be maintained at [10-20] centimeters in height to make it less attractive to wildlife. Trees in the vicinity of the airport shall not become obstacles.

c. Cut Grass

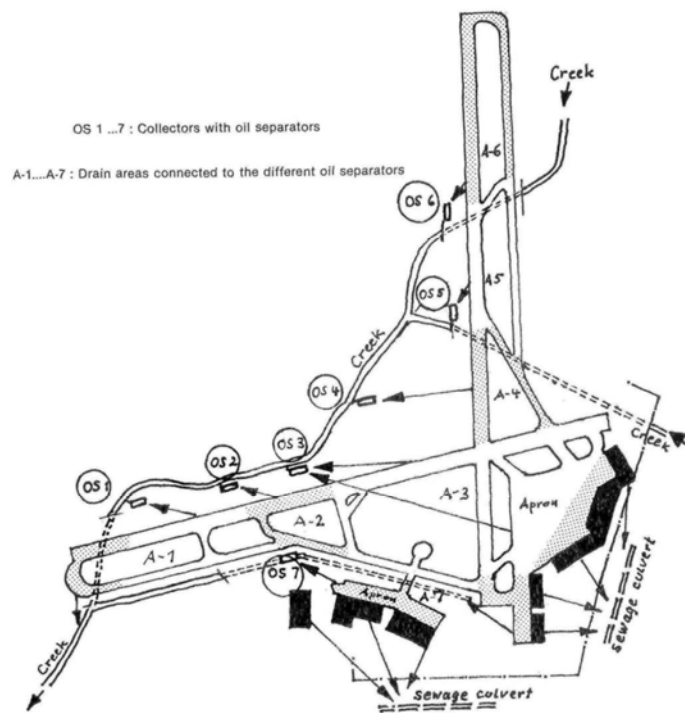
Cut grasses shall be collected and move away from runway strip and composted.

4.6.6 Maintenance of Aerodrome Drainage

Describe an aerodrome drainage system either in texts or by pictures. Explain procedures for maintenance of aerodrome drainage system. The maintenance procedures should cover cleaning, inspecting, and clearing of drainage, fuel separation, and tap water if applicable.

Example:

(Name) Airport has a drainage system and water flow as shown in the picture.



Drainage System Maintenance

- The airport regularly patrols drainage systems in the airport especially before rainy season and in rainy season. Vegetation and object impeding water flow will be clear immediately.
- The airport will mow grasses in the drainage system to facilitate flow of water.

- c. The airport dredges the drainage ever two years.
- d. The airport tests water pumps in the airport to ensure they are functional all the times.

4.7 Hazardous Meteorological Conditions

Airport operations can be disrupted by adverse weather. Therefore, an airport need to prepare to prevent and mitigate harmful consequences of adverse weather conditions. Adverse weather conditions are categorized into seven groups including ice, frost, freezing rain, strong winds, rain, snow, and fog or low visibility. An airport shall set up procedures in this part according to its local geography and atmosphere.

4.7.1 Purpose

Define ~~A~~the purpose the airport establishes procedures for hazardous meteorological conditions. The purpose of the procedures should focus on safeguarding an airport and aircraft operations.

Example:

The aim of these procedures is to ensure that the aircraft using the (Name) Airport can be operated safely during adverse weather conditions.

4.7.2 Responsibility

Define responsibility of each person related to adverse weather operations. Responsible persons may include but not limited to an airport manager, an airport operation, a meteorological service provider, an air traffic service provider, a fixed-base operator and a ground handling agent.

Example:

- a. The Airport Manager has overall responsibility to provides procedures related to hazardous meteorological conditions for the airport and ensures that the procedures are implemented.
- b. (Airport Operations) is responsible for inspecting other tenants in airside to ensure the compliance to the rules. The airport operations also conduct runway friction measurement, runway condition report, runway safety inspection and aircraft tie-down and GSE tie-down inspection.
- c. (Meteorological Service Provider) is responsible to report hazardous meteorological conditions including the start and the end of the conditions to ATS unit as stated in the agreement between the ATS unit and meteorological service provider.
- d. (Air Traffic Service Provider) is responsible to warn all operators in airside about hazardous meteorological conditions. The ATS unit also is responsible to initiate hazardous meteorological procedures.
- e. A Fixed-Base Operator and a Ground Handling Agent are responsible for carrying out hazardous meteorological procedures required by the airport and tying down aircraft and GSE in its responsibility.

4.7.3 Procedures and Criteria for Suspension of Operations on the Runway

a. Disseminating Hazardous Meteorological Warning

- i) Meteorological Service Provider informs ATS unit, both in verbal and writing, when forecasting or detecting hazardous meteorological conditions. The hazardous meteorological conditions are in an agreement between (Name) Airport and the meteorological service provider.
- ii) ATS unit informs pilots via (Communication Channel) and the operators in airside via (Communication Channel).
- iii) All operators received hazardous meteorological warning shall started follow hazardous meteorological condition procedures.

b. Strong Winds

- i) When there is a strong wind warning, the airport maintenance and contractors will cover material stack and tie down GSE to ensure that there are no loose objects.
- ii) (Aircraft Owners) shall tie down their aircraft and position aircraft heading to a safe direction.
- iii) (GSE Owners) ties their GSE to ensure that GSEs are safe.
- iv) (Airport Responsible Person) is responsible for patrolling the airside especially the areas with high risk to have FODs. In case an FOD is found, a corrective action shall be done immediately. If a corrective action is not possible, the (Responsible Person) will inform ATS unit immediately. GSE accidents and incidents shall be reported to the owners of the GSEs and to an airport safety officer.

c. Thunder Storms

- i) When there is a thunder storm warning on or in vicinity of the airport, (Airport Responsible Person) assesses the risk to airport operations. If the result of risk assessment is high, ceases all airport operations and finds shelters.
- ii) ATS unit reports the latest runway condition report and friction to pilots. ATS unit may request (Airport Responsible Person) to measure the depth of standing water center. The results will be reported to the ATS unit.

4.7.4 Coordination with the Meteorological Service Provider in order to be Advised of Any Significant Meteorological Conditions

(Name Airport) has an agreement with (Meteorological Service Provider). The agreement comprises a part of this manual (Annex).

4.8 Visual Aids and Aerodrome Electrical System

Particulars for aerodrome visual aids and electrical system. The details in this section should include visual inspection and maintenance of aviation lights, obstacle lights, signs, markings, and aerodrome electrical system.

Commented [WU9]: Para. 4.5.5 should have included inspection of visual aids. Please review this para 4.8 to avoid duplication.

4.8.1 Purpose

Define the purpose of this section. The main purpose of visual aids and aerodrome electrical system should be to ensure an availability of the system. The details in this section should show the capability of an airport to maintain visual aids and electrical system.

Example:

The aim of these procedures is to detail the arrangements for the inspection and maintenance of airport lighting, signs, markers and electrical systems.

4.8.2 Responsibility

Explain responsibility of persons who have roles and responsibilities in the maintenance of visual aids and aerodrome electrical system. These persons may include, but not limited to, an airport manager, an airport maintenance services, and etc.

Example:

- a. The Airport Manager has overall responsibility for the provision of airport lighting facilities and electrical equipment.
- b. (The Airport Lighting Team Leader) is responsible for ensuring that appropriate maintenance and technical inspections of airport lighting facilities are carried out and recorded in accordance with the standards and the requirements of this manual.
- c. (Airport Maintenance Officer) is responsible for preventive and corrective maintenance of visual aids and aerodrome electrical system.

4.8.3 Visual Aids and Aerodrome Inspections

Visual Aids Operating Manual contains information in this section. An aerodrome operator may refer to the manual.

Example:

Visual aids and aerodrome inspections in business hours and outside business hours are detailed in approved Visual Aids Operating Manual as specify in (Annex).

The checklists for visual aids and aerodrome inspections has been set up according to the manufacturer's manual and modified to suit with the airport circumstances. The checklists for visual aids and aerodrome inspections are contained in (Annex).

4.8.4 Standby Generation

Visual Aids Operating Manual contains information in this section. An aerodrome operator may refer to the manual.

Example:

Standby generation inspections and maintenance methods are contained in Visual Aids Operating Manual as specify in (Annex).

The checklists for standby generation inspections and maintenance methods have been set up according to the manufacturer's manual and modified to suit with the airport circumstances. The checklists for visual aids and aerodrome inspections are contained in (Annex).

4.8.5 Maintenance Procedures

Visual Aids Operating Manual contains information in this section. An aerodrome operator may refer to the manual.

Example:

The maintenance of visual aids and electrical system procedures comprises of preventive and corrective maintenance. The details of the maintenance procedures are in compliance with approved Visual Aids Operating Manual as contained in (Annex).

4.8.6 Fault Reporting System and Record Keeping

Visual Aids Operating Manual contains information in this section. An aerodrome operator may refer to the manual.

Example:

Fault Reporting System and Record Keeping are detailed in approved Visual Aids Operating Manual as contained in (Annex).

4.9 Aerodrome Works Safety

Particulars for aerodrome work safety including working plan, method of working plan, conduct of aerodrome work, and commence of work. This should also cover an urgent work on maneuvering area and area in adjacent.

4.9.1 Purpose

~~A~~ The purpose of Aerodrome Work Safety is to demonstrate that an aerodrome can safely ~~control~~ manage a work in progress in airside. Works in ~~an~~ the airside should have a minimum impact on aircraft operations and functions of navigation aids.

Example:

The aim of these procedures is to describe the arrangements for the planning and safe conduct of works that affect the movement area or OLS.

4.9.2 Responsibility

Explain responsibility of persons who have roles and responsibilities in aerodrome work safety. These persons may include, but not limited to, an airport manager, an airport maintenance services, and etc.

- a. (The Airport Manager) has overall responsibility to ensure operational safety aspects of aerodrome works meet the Requirement of Civil Aviation Authority of (Country name & regulation) ~~Thailand No. 14.~~
- b. (Airport Maintenance) has a responsibility to ensure that Method of Working Plan (MOWP) is provided and executed.
- c. (Airport Operations) has responsibility to supervise safety of airside especially during construction. The (Airport Operations) also checks Method of Working Plan and ensure the safety of aircraft operations.
- d. (The Project Manager) is responsible for detailed works planning and coordination and ensuring that works are carried out in accordance with the MOWP.

4.9.3 Works Planning

Aerodrome Works can be divided into works that requires a working plan and works that do not require a working plan. A working plan should include movement area closure, markings, issuance of airport circular (to advise the airport community) and issuance of NOTAM (if needed).

Example:

(Name) Airport divides works into two categories.

- a. Airport works that do not require a MOWP.

CAAT Approval :

Date:

4 - 9 - 1

Commented [WU10]: MOWP stands for?

- i) Works that can be completed within 10 minutes and will not disrupt normal aircraft operations are permitted without a NOTAM. Time limited works in this category include grass mowing outside runway / taxiway strip, pavement rolling and sweeping, minor repairs to pavements, maintenance of markings, markers and lights, surveys and inspections.

With ATC agreement, only personnel with hand tools are allowed to work inside the runway strip during aircraft operations under any of the following conditions;

- 1) At all times except during air transport jet operations.
- 2) At all times for gable marker maintenance including grass mowing (operations must be within 2 meters of the markers when inside the runway strip).
- 3) Ground surveys associated with Navaid flight calibration flights (Navaid calibration).

Commented [WU11]: What does it mean?

- ii) Time limited works requiring more than 10 minutes but no more than 30 minutes, are advised by NOTAM which states the nature of the unserviceability, and the length of time required to terminate work and restore the works area to normal safety standards. The NOTAM is issued at least 24 hours prior to the proposed work to minimize disruption to aircraft flight planning. Unserviceability markings/ markers will be displayed if required.
- iii) Works that require more than 30 minutes to restore to normal safety standards will be subject of a MOWP except for emergency repairs.

b. **Airport works that require a MOWP.**

All scheduled airport works, other than time limited or emergency works, will require a MOWP, and an appropriate NOTAM. In general, these are works that require partial or complete runway or taxiway closures, or will cause significant disruption to aircraft parking arrangements on aprons.

4.9.4 Method of Working Plan

Explain method of working plan, NOTAM issuance, coordination meeting, and distribution of working plan.

Explain construction management including ground vehicles, access route, and stock piles to avoid hazardous condition.

Explain site security and security control of a contractor.

Example:

- a. The MOWP document provides formal advice to the aviation industry and other involved parties of the planned arrangements for the conduct of airport works. In particular, it advises of restrictions placed on aircraft operations and the works organizer as a consequence of the works.

A MOWP will be prepared for works that will have a major operational impact, or cause disturbance to operations over an extended period.

In planning the works, the Project Officer/Manager must consult with organizations that may be affected. The extent and formality of the consultation process will depend on factors such as the complexity and physical scope of the work and likely extent of disruption to normal aircraft operations.

The Project Officer/Manager will consult with CAA when necessary to identify operational impacts and the measures necessary to ensure an acceptable level of aviation safety.

After consultation the Project Officer/Manager will determine the restrictions to works and to aircraft operations. The draft MOWP is referred to the Operations Section for final comment.

Each MOWP is to be signed as approved by the Airport Manager (or in his absence by the Airside Safety Manager).

The MOWP format will be as specified in the CAA Directions Relating to Aerodrome Works. The topics in MOWP are included;

1. Works Information
2. Restrictions to Aircraft Operations
3. Restrictions to Works Organization
4. Administration
5. Drawing
6. Distribution Lists
7. Signature of Approval Person

The MOWP is to be issued at least two weeks prior to the scheduled commencement of work, using the standard distribution list included at the end of this Section.

- b. **Conduct of Aerodrome Work**
i) Airport works that do not require a MOWP.

- 1) Maintenance staffs or contractors accessing to the movement area shall be granted a permit to work in a movement area. The work permit will show times of works, precise areas in which work may be done, the routes to be followed, the R/T procedures, and the reporting procedure to be followed on completion of work.
- 2) Personnel and vehicles associated with the works in the airside shall have a permit from the airport. The airport rules shall be followed while working and driving in the airside.
- 3) Personnel and vehicles shall receive a clearance from ATC before accessing into the movement area.
- 4) The airport does not allow construction or maintenance during low visibility operations. During low visibility operations, maintenance staffs and contractors shall stop works and exit from the airside.

ii) Airport works that require a MOWP.

The airport will ensure that people associated with works requiring a MOWP follow the 4.9.4 (b) i) and also implement these followings;

- 1) Contractors shall submit MOWP and execute the approved MOWP.
- 2) Personnel and vehicles in the airside shall have permits from the airport.
- 3) **(Airport Responsible Person)** has a responsibility to supervise aerodrome work safety. (Airport Responsible Person) shall:
 - Ensure the safety of aircraft operations and the day-to-day safe conduct of works in accordance with provisions of the MOWP.
 - Ensure that the Works are notified by NOTAM and that the text of each NOTAM is exactly as set out in the MOWP.
 - Supply ATC, on a daily basis, with all information necessary to ensure the safe conduct of Works.
 - Discuss with the Works Organizer, Project Manager on a daily basis (and if required with the Airport Operations Supervisor/ Airside Safety Manager also), any matters necessary to ensure the safe conduct of Works in relation to operational safety.
 - Ensure that unserviceable portions of the movement area, temporary obstructions, and the limits of the Works area are correctly marked and lit in accordance with the MOWP.
 - Ensure that vehicles and plant engaged on aerodrome works comply with the obstacle marking and lighting standards or alternatively are directly under escort.

- Ensure that vehicles, plant equipment and materials not directly in use on the Works, are parked or stored outside the movement area, and do not obstruct the approach, takeoff or transition OLS, or interfere with radio navigational and landing aids.
 - Ensure that access routes are in accordance with the MOWP.
 - Direct the immediate removal of vehicles, plant and personnel from the movement area where necessary to ensure the safety of aircraft operations.
 - Ensure that the movement area is safe for normal aircraft operations following removal of markers, vehicles, plant equipment and personnel from the Works area.
 - Ensure that floodlighting or any other lighting required for works is shielded so as not to ~~represent a hazard to aircraft operations~~ cause glare or confusion to pilots and air traffic controllers.
 - Immediately on completion of the works, the Works Safety Officer is to ensure that the Reporting Centre is advised formally of the date of completion and time of cancellation of any associated NOTAM.
- 4) The contractor shall nominate a work safety officer for each project to coordinate with the airport and ensure that MOWP is executed.
 - 5) The work safety officer shall report any hot work and abnormality to the (Airport Responsible Person).
 - 6) The (Airport Responsible Person) will record a daily log of the construction work.

4.9.5 Permit to Commence Work

Specify an airport permission to commence works that may have significant effects on airport serviceability such as airport electrical system or navigation aids.

Example:

In addition to a MOWP, some airport works may also cause disruption (or potential disruption) to the supply of essential engineering services. The Project Officer/Manager shall issue a PERCOW that specifies conditions that must be observed to ensure the maintenance of essential services.

Commented [WU12]: PERCOW stands for?

4.9.6 Communication with Air Traffic Service Unit

Workers in an airside shall be equipped with two-way radio communication. They shall be able to communicate with an ATC or airport operations at all time.

Example:

- a. The contractors shall have two-way radio communication ready to communicate with ATC at all time.
- b. The contractors shall establish a communication network to ensure that ~~a~~ safety information from the ATC can be transmitted to ~~everyone~~ all concerned contractor staff in a timely manner.
- c. The contractors shall strictly follow ATC instructions at all times.

4.9.7 Working Plan Distribution

Aerodrome owner or aerodrome operator shall distribute a working plan to stakeholders in the airside. The stakeholders may include air carriers, ground handlers, air traffic service provider, airport rescue and fire-fighting ~~firefighting~~, CAA, airport operations, or other related parties.

Example:

Organization	Telephone Number		Fax
	Operating Hours	Outside Operating Hours	

4.10 Apron Management

4.10.1 Purpose

Define ~~a~~the purpose of apron management focusing on efficiency of apron management operations and safety of aircraft. Parked aircraft should have an adequate space as specified in ~~RCATT No. 14~~[CAA regulation].

Example:

The aim of these procedures is to provide for the orderly and safe allocation of aircraft parking bays at (Name) Airport. Parking bays have been designed and marked to ensure that appropriate separation distances are maintained and that aircraft refueling and servicing activities can be undertaken without interference to adjacent parked aircraft.

4.10.2 Responsibility

Explain responsibility of persons who have roles and responsibilities in apron management. These persons may include, but not limited to, an airport manager, airport operations, and etc.

Example:

- a. The Airport Manager has overall responsibility for implementing procedures for aircraft parking control and ensure that the airport standard meets the Requirement of Civil Aviation Authority of (Country name & regulation)~~Thailand No. 14~~.
- b. (Airport Operations Supervisor) is responsible for creating a manual and SOPs associated with apron management.
- c. (Airport Operations) is responsible for the day-to-day allocation of aircraft parking bays, slot allocation, record aircraft parking information, coordination with other agencies, and supervision of parking procedures.
- d. (Ground Handling Agent or Fixed-Base Operator) is responsible for apron services.
- e. (Air Traffic Service Unit) is responsible for giving instruction to pilots and coordinating between pilots and airport staffs when airport services are requested.

4.10.3 Aircraft Parking Areas

Describe aircraft parking areas by texts or pictures. Define capability of each parking areas according to the largest aircraft that the parking areas can accommodate. Characteristics of each stand should be determined whether it is remote or contact parking.

Example:

(Name) Airport has parking areas with aerobridge and without aerobridge. The layout of apron has shown below.

รูปแผนผังแสดงตำแหน่งจอดอากาศยาน (Insert apron layout)

Each stand can accommodate:

Apron No.	Size/Type of Aircraft	(Contact/Remote)	International/ Domestic	MARS Stand	Remarks

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4.10.4 Communication between Air Traffic Control and the Apron Management Unit

Explain communication procedures between air traffic service provider and apron control.

Explain:

- When an aircraft operator request to land or take off at (Name) Airport, the airport will check slot-apron availability and inform the aircraft operator via (ATS Unit).
- When an aircraft arrives, (Airport Responsible Person) assigns parking position via (Communication Method) and record in (Specify).
- (ATS Unit) gives parking instruction to the pilot via (Specify). The Airport – Air Traffic Services Provider Agreement is contained in (Specify) which comprise a part of this manual.

4.10.5 Allocating Aircraft Parking Positions

Describe aircraft stand allocation and aerobridge services (if applicable). Describe procedures when there is a change in stand allocation.

Explain:

- a. (Airport Responsible Person) prepares a daily allocation plan according to the Standard Times of Arrival and Departure, Flight No., and the intended aircraft type.
- a-b. (Airport Responsible Person) requests for the following real-time information from airline and/or ATC to finetune the daily allocation plan:
 - i) Estimated Time of Arrival and Estimated Time of Departure
 - ii) Flight No.
 - iii) Aircraft Type
- b-c. (Airport Responsible Person) considers;
 - i) If the aircraft is smaller than the design aircraft parking bay can accommodate the aircraft, the aircraft can be parked in the stand.
 - ii) If the aircraft is bigger than the design aircraft the parking bay cannot accommodate the aircraft, the airport operator will (Specify the Airport Procedures).
- e-d. If there is an aerobridge, the airport will ensure that:
 - i) A driver of an aerobridge shall be trained. The training program will be in accordance with the manufacturer manual.
 - ii) The driver will be on position [15] minutes prior to aircraft parked at the stand ETA/Estimated In-bound Time (EIBT).
 - iii) The marshaller gives signal to the aircraft for docking. When the aircraft is parked appropriately, give "All Clear" signal.
 - iv) When the aircraft parked in position, aircraft technician will ensure the aircraft is properly chocked, then the aerobridge / passenger steps will be contacted to the aircraft.

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4.10.6 Initiating Engine Start and Aircraft Push-back

Explain procedures for initiating engine start and aircraft push-back. It may include aircraft self-maneuvering in an aircraft stand.

Example:

- a. When ground services are finished and aircraft is ready for pushback, the pilot shall contact a ATC ground control for a clearance to initiate engine start and pushback. Before engine start or pushback, the pilot shall turn on anti-collision lights.
- b. If the aircraft need to move-be towed to another stand or other area, the mechanics will be responsible for coordinating with ATC a-ground control for the clearance. The anti-collision lights shall be turned on from start of push-back / towing until chock in.

4.10.7 Marshalling Procedures

Define a marshalling method such as VDGS or marshaller. The procedures employed by an airport shall comply with (State Regulation Reference) RCAAT No.14.

Example:

- a. (Name) Airport has ~~marshalling~~marshaling services. The airport ~~(has/ does not have)~~ VDGS.
- b. A marshaller shall be trained, checked and qualified to ensure that the signal given to pilots is correct. A qualified marshaller shall have a valid license for operating an aerobridge ready to be inspected at all time.
- c. A marshaller shall equipped with:
 - i) Proper personal protective equipment (PPE) including ear protection, reflective vest and safety shoes.
 - ii) Marshalling wands or marshalling paddles
- d. A marshaller shall inspect the safety of the aircraft stand before aircraft parking.
- e. A marshaller shall ~~stand in a position that is visible to the~~maintain eye contact with the pilot-in-command during docking.

4.10.8 Follow-me Procedures

Explain criteria and procedures of follow-me to ensure that the follow-me can operate safely.

Example:

- a. (Name) Airport provides follow me services for low visibility operations, lost communication, pilots who are not familiar with the airport or other safety related matters.
- b. The drivers shall be suitably trained and have a valid airside driving license. The vehicle used for follow me service shall be equipped with a two-way radio.
- c. Procedures;
 - i) When a follow-me vehicle is requested, the driver will drive the car to the aircraft.
 - ii) The [pilot or mechanic / follow-me driver] requests a clearance to ATC.
 - iii) After ~~the pilot or mechanic receives the~~ATC provides the clearance, the follow-me vehicle will lead the aircraft to its stand. [Pilot or mechanic / follow-me driver] Report-report ATC when the aircraft parking — finishes follow-me service is completed.

4.11 Apron Safety

Particulars for apron safety including protection from jet blasts, aircraft refueling operations, apron sweeping, apron cleaning, incident and accident reports, and safety compliance monitoring.

4.11.1 Purpose

The aim of apron safety is to ensure the safety of ground handling operations and minimize risks and hazards of ground operations accident and incident.

Explain:

(Name) Airport manages apron safety to minimize ground operations risks, injuries, and loss of life and property and disruption to airport operations.

4.11.2 Responsibility

Define responsibility of persons involving in apron safety such as an airport manager, airport operations, ground handling operators, fixed-base operators, and etc.

Example:

- a. The Airport Manager has overall responsibility to ensure safety in apron as required by CAA.
- b. (Airport Operations) has responsibility to set up procedures relating to apron safety and supervise operations in apron to ensure the compliance of ground operations.
- c. (Ground Handling Agents and Fixed-Base Operators) is responsible for establishment of company's operating manuals in compliance with the minimum standards specified by the airport.

4.11.3 Protection from Jet Blasts

Specify airport's procedures for protection from jet blasts.

Example:

To prevent jet blasts and propeller wash during take-off and landing of the aircraft, the airport set up (Procedures) as contained in (Specify).

Ground handling or fixed-base operator personnel shall be trained in apron safety and attain recurrent training every year.

4.11.4 Aircraft Refueling Operations

Specify airport's procedures aircraft refueling operations.

Example:

Air carriers, ground handling operators, fixed-base operator, and fuel handling agent have responsibility to comply with the airport refueling standards set forth by the airport, contained in [airport document / circular / notice].

4.11.5 Apron Sweeping

Specify airport's procedures for apron sweeping.

Example:

Prior to take-off and landing of aircraft, (Airport Responsible Person) will inspect FOD. (Ground Handling or Fixed-Base Operator Responsible Person) shall inspect apron area prior to aircraft parking. In case there are FOD in large quantities, upon receiving the report, (Airport Responsible Person) will sweep the apron area. (Airport Responsible Person) and (Air Carrier Responsible Person) will joint inspect apron area once sweeping is finished.

Commented [WU13]: Covered in 4.5.5 a. Is it necessary to repeat here?

4.11.6 Apron Cleaning

Specify airport's procedures for apron cleaning.

Example:

(Name) Airport will clean the apron when requested by users in airside or when a daily airport inspection results in the need of cleaning. The airport will use a proper cleaning agent suitable for types of contaminations.

An aircraft fueling agent is responsible for prevention of spillage and cleaning of such spillage. Spillage shall be contained in a limited area and not contaminate water drainage or water body. Cleaning shall be done immediately. If the fueling agent cannot clean the spillage, the airport will take over the action. The expenses caused by such spillage shall be charged to the fueling agent.

Ground handling agents, fixed-base operator, and air carriers using the airport shall make sure that the apron is clean from FODs or contaminations after the aircraft leave the apron.

4.11.7 Incident and Accident Reports

Specify airport's procedures for incident and accident reports.

Example:

Any accident and incident shall be reported through the airport safety management system. The person causing the incident and accident or the witness shall also report their supervisors immediately.

The Accident and Incident Reporting Form in Annex (A#) shall be used. The person causing the incident and accident or the witness shall give detailed information to (Airport Responsible Person) without hesitation.

~~For quick responses, the report can be in verbal and follow by a writing report.~~ For immediate hazards or accident / incident requiring immediate follow-up actions, airport staff shall call [airport operation centre] at [phone number] without delay.

4.11.8 Safety Compliance Monitoring

Specify airport's procedures for safety compliance monitoring to ensure ground operations' safety and compliance to standard. An airport shall establish safety compliance monitoring period based on air traffic volume.

Example:

For safety operations in the apron, the airport will set up a minimum standard for ground handling operations. The airport randomly inspects the ground handling procedures to ensure the compliance to the safety standards.

Non-compliances shall be reported to (Airport Operations Officer) and via the airport safety report system. The airport may cease a non-compliance operation that may be harmful.

4.12 Airside Vehicle Control

Particulars for airside vehicle control including applicable traffic rules, driving permits, and enforcement.

4.12.1 Purpose

The aim of airside vehicle control is to prevent accident/incident ~~between aircraft and ground handling equipment or pedestrian~~ involving vehicles / equipment, to ensure the safety of ground handling operations and minimize risks and hazards of ground operations ~~accident and incident~~.

Example:

The purpose of the Airside Vehicle Control Handbook (the Handbook) is to ensure the safe airside operation of vehicles on (Name) Airport. The Handbook is compiled as Annex (N#) to this Manual and forms part of it. However, it is issued as a separate document to this manual.

4.12.2 Responsibility

Define responsibility for persons involving in airside vehicle control. This may include an airport manager, airside operations, airport security, airport safety and other related people.

Example:

- a. The Airport Manager has overall responsibility for the development and implementation of procedures and provision of resources for the control of persons and vehicles entering and operating on the airside of (Name) Airport.
- b. The Airport Operations Supervisor is responsible for ensuring that the provisions of the Handbook are implemented, for conducting audits of Approved Issuing Authorities, and authorizing in writing the appointment of Approved Issuing Officers. The Airport Operations Supervisor also is responsible for carrying out instruction, testing and maintaining records of persons approved for an Authority to Drive in Airside (ADA).
- c. The Airport Security Officer is responsible for screening personnel entering and exiting airside.
- d. Companies wishing to operate a vehicle airside on (Name) Airport are responsible for complying with the Handbook while driving in the airside.

4.12.3 Applicable Traffic Rules

Explain how an airport enforce driving rules. The enforcement may also include privilege to drive in airside, airside driving traffic rules, types of airside driving permits, and training topics.

Example:

Companies and persons requiring access to airside for aviation business purposes must obtain sufficient copies of the Airside Vehicle Control Handbook to provide one for each airside driver. This is the regulatory document for drivers and provides the basis for testing applicants for an Authority to Drive Airside.

The airside operation of each vehicle must be approved by the issue of an Authority for Use in Airside (AUA), which must be displayed on the vehicle. For this purpose, the term vehicle includes any motorized equipment used in aircraft servicing or maintenance.

Each driver must be approved to operate a vehicle airside on (Name) Airport by the issue of an Authority to Drive in Airside (ADA). The Authority to Drive Airside ADA will specify the areas where a driver is authorized to operate:

(Specify Categories of Permits)

Approved Issuing Authorities are required to nominate Approved Training Officers for endorsement by the Airport Operations Supervisor. Applicants for an Authority to Drive Airside are to be trained and tested by Approved Training Officers for their knowledge of:

(Specify topics included in Airside Driving Training)

The Airport Operations Supervisor will audit each Approved Issuing Authority in relation to the above items to ensure that an adequate training course is provided and that records are maintained to demonstrate a uniform standard of training and testing is being provided.

In addition to the above, Approved Issuing Authorities are expected to undertake provide company and equipment/plant specific training and other items such as aircraft towing and pushback procedures to the concerned drivers.

4.12.4 Enforcement

Explain how an airport inspect and enforce its traffic rules. Penalties for violations should be identified in this section.

Example:

- (Airport Responsible Person) will randomly inspect vehicles and driving activities for noncompliance.
- Operations Officers will log any breaches of the airside driving rules, and report them to the owner of vehicles so that appropriate action may be initiated against offending drivers. The (Airport Responsible Person) will report the breaches of the airside driving rules to the Airport Manager.
- Breaches that constitute an incident require submission of an Incident Report form provided in the Airport Safety Management Manual.
- A demerit point system is in place for breaches of the Airside Vehicle Control Handbook driver rules. Demerit points are held for a period of [two] years. An Authority to Drive in Airside will be withdrawn for a period of [one] month if a driver accumulates more than [12] demerit points. Subsequent accumulation of an additional [12] demerit points may result in permanent withdrawal of an Authority to Drive in Airside.
- Demerit points scale

Violations	Points
Exceeding Speed Limit	
▲ 4 - 9 Km/h	2
▲ 10 - 14 Km/h	3
▲ 15 - 19 Km/h	4
▲ More than 20 Km/h	6
Failing to give way to an aircraft	4
Driving contrary to any other rules in the Airside Vehicle Control Handbook	3
Minor Accident ¹	หักใบอนุญาตนาน 3 เดือน 3
Major Accident ¹	หักใบอนุญาตนาน 3 เดือน Immediate Suspension

¹ Regardless of driving history, the airport will consider the severity of an accident.

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4.13 Wildlife Hazard Management

Particulars for wildlife hazard management including wildlife hazard mitigation, reporting wildlife hazard, wildlife hazard assessment, and wildlife control measurement.

4.13.1 Purpose

Define a purpose of wildlife hazard management. The purpose normally focuses on prevention and mitigation of wildlife hazards. However, the humanity environment should be in mind when manage wildlife hazards.

Example:

The aim of these procedure is to minimize the hazard to aircraft operations created by the presence of birds and/or animals on or in the vicinity of the airport with humanity the environment in mind.

4.13.2 Responsibility

Define responsibility for persons involving in wildlife hazard management. This may include an airport manager, airside operations, airport maintenance, and etc.

Example:

- a. The Airport Manager has overall responsibility for the bird and animal hazard management program for (Name) Airport to minimize accident and incident rates.
- b. (Airport Operations) is responsible for the implementation of the bird and animal hazard management program.
- c. (Airport Maintenance) is responsible for wildlife habitat modification.

4.13.3 Reporting Wildlife Hazard

Define events requiring wildlife hazard report using CAA's wildlife hazard reporting form.

Example:

The airport will report wildlife hazard to the Civil Aviation Authority of Thailand when these events occur.

- a. A strike between wildlife and aircraft has been witnessed.
- b. Evidence or damage from a strike has been identified on an aircraft.
- c. Bird or other wildlife remains, whether in whole or in part, are found:
 - i) Within 75 meters of a runway centerline or within 150 meters of a runway end unless another reason for the animal's death is identified or suspected.

- ii) On a taxiway or anywhere else on or off the airport that ~~you have~~ there is reason to believe that it was the result of a strike with an aircraft.

- d. The presence of birds or other wildlife on or off the airport had a significant negative effect on a flight

~~d.~~

4.13.4 Wildlife Hazard Assessment

Explain wildlife hazard assessment methods. In case an airport has EIA or EIA Monitoring, an airport may use wildlife hazard management in the study. In addition, an airport shall collect statistics of wildlife control measurements for improvements. The expert advice from an ornithologist will be useful.

Example:

- a. The airport collects wildlife data and wildlife attractants in vicinity of the airport. The data includes types, number, food sources, wildlife habitats, bodies of open water and reproduction sites.
- b. A daily survey of wildlife is conducted during daily movement area inspection. The airport surveys the area in airport and its vicinity three times a year. The daily survey and seasonal survey results will be recorded and reported.
- c. A yearly wildlife hazard assessment will be contained in EIA Monitoring. The details in the report will cover the followings:
 - i) Analysis of the event or circumstances that prompted the study.
 - ii) Identification of the wildlife species observed and their numbers, locations, local movements, and daily and seasonal occurrences.
 - iii) Identification and location of features on and near the airport that attract wildlife.
 - iv) Description of the wildlife hazards to air carrier operations.
 - v) Recommended actions for reducing identified wildlife hazards to air carrier operations.
- d. The results of the assessment will be passed to the airport ornithologist for analysis and presented in term of Risk Matrix.
- e. The airport assesses the effectiveness of wildlife hazard management plan to improve the techniques used in wildlife hazard management plan.

4.13.5 Wildlife Hazard Management Program (WHMP)

An airport should establish Wildlife Hazard Management Program based on wildlife hazard management assessment. Wildlife Hazard Management Plan should include habitat modification, harassment, lethal method, and other measurements as necessary. The Plan shall take into account the expert advice from an ornithologist.

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Example:

The airport establishes a wildlife hazard management plan based on wildlife hazard assessment derived from EIA Monitoring Report.

The airport has four wildlife hazard mitigation measurements which are habitat modification, harassment techniques, wildlife removal and aircraft flight schedule modification. The details of these techniques are contained in (Name) Airport Wildlife Hazard Management Plan.

4.14 Obstacles Control

Particulars for aerodrome obstacles control, obstacle monitoring, and obstacle reporting. Obstacles are both natural and manmade.

4.14.1 Purpose

Specify the purpose of obstacle control on airport and in vicinity. The control of obstacles protects an aircraft using an aerodrome.

Example:

The aim of these procedures is to ensure that suitable provision is made to monitor and control the erection of temporary and permanent structures that may adversely impact aircraft ~~upon~~ operations.

4.14.2 Responsibility

Define responsibilities of persons involving in obstacles control such as an airport manager and airport operations.

Example:

- a. The Airport Manager has overall responsibility for establishing procedures to monitor and notify the presence of obstacles to CAA, and to control the erection of temporary and permanent structures in the vicinity of the airport.
- b. (Airport Responsible Person) are responsible for day-to-day monitoring of the OLS and PANS-OPS to detect unapproved obstacles, report to the Airport Manager and to take measures to have them removed or lowered to a safe operational height.

4.14.3 Administration of Obstacle Control

Explain how an airport monitor and control obstacles on and in vicinity of airport, control of construction works, and report to CAAT.

Example:

- a. Visual inspections of obstacles will be conducted during daily airport inspection by (Responsible Person)
- b. If a temporary obstacle is found, (Responsible Person) will:
 - i) Immediately inform an air traffic service unit.
 - ii) If the obstacle is in airport perimeter, the airport will immediately remove it. If not, (Responsible Person) will negotiate with the owner of the obstacle to lower or remove the obstacle.
 - iii) If the negotiation fail, the airport will:
 - 1) Report to a local authority to help with negotiation

- 2) Inform and consult with air traffic service unit to find a mitigation method if the obstacle is in Take Off or Approach Surface, or the Obstacle Free Zone (for airports with precision CAT II or III approaches). The airport may reduce a declare distance if necessary.
- 3) If the obstacle is ~~not in~~ outside of Take Off or Approach Surface, or the Obstacle Free Zone (for airports with precision CAT II or III approaches), (Airport Responsible Person) issues NOTAM and liaise with ATC to limit certain types of operations.
- iv) The airport will cancel the NOTAM and inform ATS when the obstacle is removed.
- c. (Airport Responsible Person) will assess and inspect an object in OLS as soon as it is reported. If the object is an obstacle, the (Responsible Person) will issue NOTAM and report CAA+ immediately.

4.15 Removal of Disabled Aircraft

Details removal of disabled aircraft. Normally, an aircraft owner or air carrier has a responsibility to remove disabled aircraft. However, an airport may intervene when the aircraft owner cannot remove the disabled aircraft in a timely manner. Therefore, an airport should prepare tools, equipment, and materials necessary for removal of disabled aircraft. An airport may own or make a contract with another airport or suppliers in order to have a quick support. A disabled aircraft removal plan can be incorporated in an Aerodrome Emergency Plan ~~which comprise a part of this manual~~.

An airport may also have the removal plan in this manual. The contents of the plan shall comprise of:

- Purpose
- Responsibility
- The roles of the aerodrome operator and the holder of the aircraft certificate or registration
- Arrangements for notifying the holder of the certificate of registration
- Arrangements for liaising with the air traffic control unit
- Arrangements for obtaining equipment and personnel to remove the disabled aircraft
- The names, role and telephone numbers of persons responsible for the removal of disabled aircraft

4.15.1 Purpose

Example:

The aim of the Disabled Aircraft Removal Plan is to provide for an efficient, coordinated response to quickly and safely remove ~~an~~ a disabled aircraft that has caused temporary closure of a runway, taxiway, or affected the OLS.

The details of disabled aircraft removal are contained in the (Name) Airport Aircraft Disabled Removal Plan which comprise a part of the (Name) Airport Emergency Plan. The plan covers:

- The roles of the aerodrome operator and the holder of the aircraft certificate or registration
- Arrangements for notifying the holder of the certificate of registration
- Arrangements for liaising with the air traffic control unit
- Arrangements for obtaining equipment and personnel to remove the disabled aircraft
- The names, role and telephone numbers of persons responsible for the removal of disabled aircraft

4.16 Handling of Hazardous Materials

4.16.1 Purpose

Define the purpose of the procedures related to handling of hazardous materials to ensure safe delivering, handling, storing, and disposing of hazardous materials.

Example:

The aim of these procedures is to ensure the safe handling of hazardous materials or dangerous goods on airport, including:

- Explosives
- Gases
- Flammable Liquids
- Flammable Solids
- Oxidizing Substances and Organic Peroxides
- Toxic Substances and Infectious Substances
- Radio-Active Materials
- Corrosive Substances
- Miscellaneous Dangerous Substances and Articles

The procedures are intended to ensure both public safety and the continued safety of aircraft operations.

4.16.2 Responsibility

Define responsibilities of persons involving in Handling of Hazardous Materials such as an airport manager, airport operations, air carriers, fueling operators, etc.

Example:

- a. The Airport Manager has overall responsibility for establishing procedures to ensure the safe handling of hazardous materials at the Airport by providing appropriate storage area, qualified personnel, and resources for handling of hazardous materials.
- a.b. The Chief of RFFS has the responsibility to provide immediate response to handle accidents and incidents involving hazardous materials that take place in the movement area.
- b.c. The Senior Operations Officer is responsible for supervising overall procedures including storing, transporting, and disposing of hazardous materials.
- c. Ground handling operators and fixed-base operators involving in fueling operations is responsible for safety inspection of their fueling facilities and equipment and establishment of their safety procedures for storing and dispensing of fuel.

4.16.3 Hazardous Materials Storage Area

An airport should designate a specific area to store flammable liquids, aviation fuel, and other hazardous materials. [Department of Industrial Works] has set up requirements for hazardous materials storage.

Example:

a. Flammable Liquids

Flammable Liquids shall be stored only in designated and approved storage units. No one shall store flammable liquids within the airport property without a permission from the airport.

b. Any Other Hazardous Materials

Other hazardous materials shall be stored in the area approved by the airport. The storage area shall meet the requirements of the [Department of Industrial Works].

4.16.4 Methods to be Followed for the Delivery, Storage, Dispensing and Handling of Hazardous Materials

Explain methods to be followed for the delivery, storage, dispensing and handling of hazardous materials according to the requirements of the Department of Industrial Works. The methods should also include emergency procedures when there is a leakage.

Example:

a. Delivery of Hazardous Materials

- i) Drivers shall ensure that hazardous materials are properly secured and covers or tarps are securely lashed before moving off. Hazardous materials shall be delivered by a vehicle designed to safely deliver the specific types of hazardous materials.
- ii) Packages with orientation markings (i.e. arrows) must be secured in a manner that will keep the package in the correct position (arrows up) throughout the transportation process.
- iii) Sources of ignition, such as smoking and open flames, are prohibited where hazardous material is delivered.
- iv) The vehicle's ~~emergency~~ parking brake must be engaged during the loading/unloading process.

b. Storage

- i) Hazardous materials shall be stored in the area approved by the airport.

- ii) Hazardous materials shall be segregated as required by the [Department of Industrial Works].

c. Handling of Hazardous Materials

i) Hazardous Material Incident

- 1) Contact (Airport Rescue and Fire Fighting)
- 2) Do not come in contact with the substance
- 3) Identify the chemical/s and hazards involved – check Material Safety Data Sheet (MSDS). Use the information on the physical and chemical properties of the material to ~~judge~~ derive response and/or evacuation procedures.
- 4) Raise the alarm – evacuate non-contaminated persons ~~not involved in contamination~~ from the area. Isolate contaminated individuals and treat as per MSDS. Isolate affected persons and keep on site.
- 5) Assist the emergency response personnel and ~~supply~~ provide the ~~Material Safety Data Sheet~~ MSDS if the chemical is known.
- 6) Ensure that hazardous materials will not spill into ~~the water~~ or drainage.
- 7) Clean up the area and refill the emergency kit.

ii) Disposal of Hazardous Materials

- 1) Hazardous chemical waste, absorbent materials, waste water, expired chemicals, contaminated containers, contaminated pallets, and other contaminated objects shall be disposed of properly. The disposal methods are specified in MSDS. The airport may contract a certified company for disposal of hazardous materials.
- 2) Contaminated containers can be disposed or reused if treated properly.

4.17 Low Visibility Operations

Particulars for low visibility operations, runway visual range measurement, runway visual range report, and low visibility procedures. Low visibility procedures only applicable for an airport with Cat II and III Approach and/or Low Visibility Take-off. An airport may state that this is not applicable in case an airport does not have Cat II and Cat III Approach and/or Low Visibility Take-off.

4.17.1 Purpose

Specify a purpose of low visibility operation procedures at an airport. The purpose should mainly focus on safeguarding of aircraft operations and people in ~~an~~ the airside.

Example:

The aim of these procedures is to provide pilots with information relevant to aircraft departures / arrivals in conditions of low visibility at the Airport.

4.17.2 Responsibility

Define responsibilities of persons involving in low visibility operations such as an airport manager, airport operations, airport security, and etc.

Example:

- a. The Airport Manager has overall responsibility for ensuring that low visibility procedures are developed and sufficient resources are available.
- b. (Airport Operations) is responsible for carrying out Runway Visibility Range measurement when requested by ATS.
- c. (Airport Security) is responsible for controlling the access to airside when low visibility procedure is activated. Unauthorized person shall not allow to access the airside under low visibility operations.

4.17.3 Measurement and Reporting of Runway Visual Range

Explain runway visual range measurement and reporting procedures.

Example:

- a. Runway Visual Range Measurement
 - i) (Airport Responsible Person) measures Runway Visual Range by counting the runway edge lights. (Airport Responsible Person) will park a truck at a designated point and stand on the truck.
 - ii) (Airport Responsible Person) counts the runway edge lights and convert the number of runway edge lights to the Runway Visual Range.

- iii) The airport will have two (Airport Responsible Persons) counting the runway edge light. The number used for conversion shall be the arithmetic mean of the results from the (Airport Responsible Persons).
- iv) The airport may use a pilot report for the runway visual range conversion. The following table will be used to converse visibility to the runway visual range.

Lighting Elements in Operations	RVR/CMV = Reported Meteorological Visibility multiplied by:	
	Day	Night
High intensity approach and runway lighting	1.5	2.0
Any type of lighting installation other than above	1.0	1.5
No lighting	1.0	N/A

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A conversed runway visual range shall not be used if it is below 800 meters or if there is a more precise measurement method available at the airport at that time.

- v) (Name) Airport will multiply meteorological visibility by 1.0 during the day and 1.5 during the night.

b. Runway Visual Range Report

- i) The (Airport Responsible Person) will report runway visual range below (Specify) meters to ATS via telephone ~~or~~ radio ~~or~~ ATN.
- ii) (Airport Responsible Person) will report the following conditions to ATS:
- 1) Low Visibility Condition Warning is a warning visibility before activating low visibility operations. RVR for Low Visibility Condition Warning is (Specify) meters but not below (Specify) meters.
 - 2) Low Visibility Condition Phase A is a visibility that Low Visibility Procedure is activated. RVR for Low Visibility Condition Phase A is (Specify) meters but not below (Specify) meters.
 - 3) Low Visibility Condition Phase B is a visibility below (Specify) meters.
- iii) ATS will inform all operators in the airside the low visibility conditions via (Specify). The report includes the measured runway visual range.

- iv) All operators in the airside shall activate their low visibility procedures when informed by the ATS.

4.17.4 Low Visibility Procedures

Explain low visibility procedures including low visibility warning, information distribution, Low Visibility Phase A, Low Visibility Phase B, and cancellation of low visibility procedures.

Example:

a. Low Visibility Warning

- i) ATS informs all operators in the airside.
- ii) (Airport Security) limits airside access to authorized person only.
- iii) (Airport Operations) coordinates with contractors or airport maintenance staffs in maneuvering area for evacuation to safe area and secure the area.
- iv) (Airport Rescue and Fire Fighting) prepares for emergency response.
- v) (Airport Operations) inspects runway and runway lights. Any unserviceable lights or hazards shall be reported to (Airport Maintenance) or (Responsible Person) for corrective maintenance. The hazards shall be reported to ATS.
- vi) (Airport Maintenance) shall fix the hazard conditions as soon as possible.
- vii) Air carriers, ground operators and personnel associated with airside operations inform their subordinates about low visibility condition warning. They may continue their duties. Vehicles with siren lights may stay in the airside, but vehicles without siren lights shall not be in the airside. The drivers shall drive carefully, turn on low beam and siren at all times.

b. Low Visibility Phase A

- i) ATS activates low visibility procedures and informs all operators in the maneuvering area to cease operations and evacuate from the maneuvering area until the low visibility operation ends. Runway lights shall be turned on. Runway and taxiway crossing shall be limited.
- ii) (Airport Security) limits the number of personnel accessing to the airside. Only personnel who has a duty in the airside during the low visibility operation is allowed to access.
- iii) (Airport Operations) informs passengers in the terminal about low visibility operations and possibility of a delay. Follow-me vehicles shall be ready to operate when requested. (Airport Operations) shall inspect ground vehicles to ensure that the drivers turn on low beam and siren.

- iv) (Airport Rescue and Fire Fighting) prepares for emergency response.
 - v) Air carriers, ground operators and personnel associated with airside operations inform their subordinates about low visibility condition warning. They may continue their duties. Vehicles with siren lights may stay in the airside, but vehicles without siren lights shall not be in the airside. The drivers shall drive carefully, turn on low beam and siren at all times. Runway and taxiway crossing shall be kept to a minimum, done with cautions and only when receive ATC clearance. Workers shall not remain in maneuvering area.
- c. Low Visibility Phase B
- i) ATS activates Low Visibility Procedures Phase B and informs all operators to evacuate from the maneuvering area. ATS may use the same procedures as Low Visibility Phase B.
 - ii) (Airport Security) limits the number of personnel accessing to the airside. The (Airport Security) will not allow anyone except people associated with aircraft operations to access the airside.
 - iii) (Airport Operations) informs passengers in the terminal about low visibility operations and possibility of a delay. Follow-me vehicles shall be ready to operate when requested. (Airport Operations) shall inspect ground vehicles to ensure that the drivers turn on low beam and siren. The (Airport Operations) will coordinate evacuation of all vehicles with no siren.
 - iv) (Airport Rescue and Fire Fighting) prepares for emergency response.
 - v) Air carriers, ground operators and personnel associated with airside operations inform their subordinates to **ceases all operations**. Only allow vehicles with siren in the airside. Airside drivers shall turn on low beam and siren at all times. All operators shall limit their operations to minimum. All people in the maneuvering area shall be evacuate. Do not tow an aircraft except ATC clearance is granted and a follow me vehicle is available.
- d. Cancellation of Low Visibility Operations
- i) When meteorological service provider or (Airport Responsible Person) observe that RVR become normal or improve from Phase B to Phase A, inform the ATS.
 - ii) ATS announce cancellation or changes the level of Low Visibility Procedures to all operators.

4.18 Protection of Site for Navigation Aids

Particulars of the procedures should be provided for the protection of sites for radar and radio navigational aids located on aerodrome to ensure that their performance will not be degraded. The procedures should also include control of activities in the vicinity of radar and navigation aids installations, ground maintenance in the vicinity of these installations, and supply and installation of signs warning of hazardous microwave radiation.

4.18.1 Purpose

Define objectives of the procedures for the protection of sites for radar and radio navigational aids. The purpose should focus on controlling works in vicinity of navigation aids and protecting people and equipment from radiation.

Example:

The aim of these procedures is to ensure there will be no interference to the operation of navigation aids at the Airport caused by the erection of structures, or work activities within the vicinity of a navigation aid or associated cabling.

4.18.2 Responsibility

Define responsibilities of persons involving in protection of sites for navigation aids including an airport manager, airport maintenance, airport operations, and etc.

Example:

- a. The Airport Manager has overall responsibility for establishing procedures to ensure that activities under his direct or indirect control do not have an adverse impact on the safe operation of radar and nav aids.
- b. The Works Project Manager, or any other staff member controlling any work activity on the airport, is responsible for informing airport operations about effects on cables associated with the facilities.
- c. Airport Operations is responsible for advising ATC of any works proposals that may affect the operation of radar or nav aids on the airport

4.18.3 Arrangements for the Control of Activities in the Vicinity of Radar and Nav aids Installations

Explain arrangements for the control of activities in vicinity of radar and navigation aids including communicating with ATC and work safety in the area to ensure safety and performance of navigation aids.

Example:

- a. The Airport Manager's nominees with responsibility for airport works are required to give prior notification to ATC of:
 - i) Work activities in the vicinity of radar and navaids on the Airport which might affect the signals to and from those facilities; and
 - ii) Proposed excavation work within 3m of cables associated with the facilities.
- b. This advice may be either verbal or provided formally during the planning stage of a MOWP or PERCOW.
- c. The Airport Manager will prepare a Permit to Commence Work (PERCOW) or a Method of Works Plan MOWP) for any activity that may affect aircraft operations by causing interference with a radar or navaid, or its signal to aircraft. Planning for such work will include input from ATC.
- d. ATC is to establish any restrictions necessary. A copy of any MOWP or PERCOW issued for such works is to be forwarded to ATC for advicecomment.
- e. The Works Project Manager and WSO will ensure that all persons involved in works on the airport understand and comply with the restrictions imposed to protect the radar, navaids, and their associated cables. This applies to staff, sub-contractors, and any other organization required to carry out work at the airport.
- f. (Name) Airport installed fence and lock at VOR/DME and NDB stations to prevent unauthorized pedestrians interfering radio signal.

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4.18.4 Arrangement for Ground Maintenance in the Vicinity of these Installations

Explain arrangement for ground maintenance in vicinity of radar and radio navigation aids to prevent hazards and degraded performance of navigation aids.

Example:

- a. (Name) Airport maintains the area around navigational aids to ensure there is no obstacles to radio signal. The airport conducts the area inspection at the same time with daily inspection and periodic maintenance program.
- b. (Airport Staffs) accessing the maintenance area shall follow airside access procedures.
- c. (Airport Maintenance) is a—responsible for preventive and corrective maintenance of navigational aids and the surrounding areas.

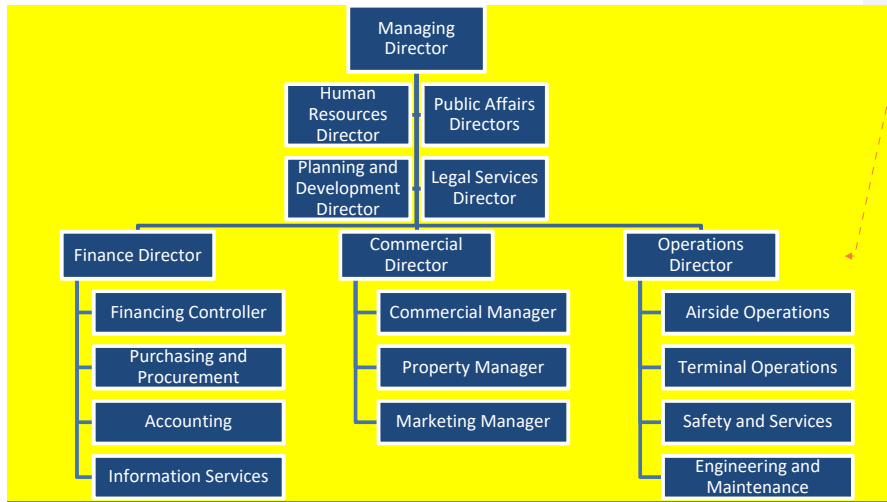
4.18.5 Arrangements for Supply and Installation of Signs Warning of Hazardous Microwave Radiation

(Name) Airport inspects warning signs on the fences surrounding the navigational aids. The signs shall be visible and shall not be blocked by vegetation. (Name) Airport also installs markers for ILS critical area. The markers are made of a material that do not interfere with radio navigational aids.

Part 5 – Aerodrome Administration and Safety Management System

5.1 Organization Structure

Please Insert Aerodrome Organizational Chart here



Ref: ICAO Doc 9562 Airport Economics Manual

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5.2 Roles and Responsibility

Please specify roles and responsibility of each key positions in the aerodrome organizational chart. The positions may include an airport director, airport operations manager, building manager, aircraft rescue and fire fighting manager, etc.

Example:

5.2.1 Airport Director

- Supervise and coordinates with airlines, general aviation, and military tenants use of airport facilities
- Review airport tenant activities for compliance with terms of leases or other agreements
- Supervises enforcement of aircraft air and ground traffic and other applicable regulations
- Confer with airlines, tenants, the Myanmar DCA, and others regarding airport regulations, facilities, and related matters

Commented [WU14]: Check the position of Safety Manager – should be separated from Ops Director. Check Doc 9859.

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- e. Participates in planning for increased aircraft and passenger volume and facilities expansion
 - f. Determines and recommends airport staffing requirements
 - g. Coordinates airport activities with construction, maintenance, and other work done by departmental staff, tenants, public utilities and contractors
 - h. Manage safety and security of the airport to ensure the compliance with CAA standards
 - i. Promotes acceptance of airport oriented activities in surrounding communities
 - j. Promotes air traffic and other businesses to the airport
- 5.2.2 Airport Operations Manager
- a. Enforcing operating and security rules, regulations, and procedures concerning aircraft operations and landside operations
 - b. Inspecting conditions of airfield lighting, runway, taxiway, and ramp area
 - c. Inspecting the airport for daily operations readiness
 - d. Correcting hazardous conditions
 - e. Coordinating airside and landside activities with maintenance and security personnel
 - f. Assisting in all emergency calls and disasters
 - g. Investigating and reporting on complaints and disputed airport operations

5.3 Airport Committees

Please describe all airport committees in this section. The committee(s) should be responsible for safety, security, emergency, facilitation or other committees as necessary. There may be one or more committees depending on the complexity of airport operations.

Example:

Airport committees include;

1. Airport Safety Committee
2. Airport Security Committee
3. Airport Emergency Committee
4. Airport Facilitation Committee
- 4.5. Runway Safety Team

The details of each committee are contained in (Specify) and comprise a part of this manual.

5.4 Aerodrome Personnel Qualifications & Procedures

CAA Approval :

Date:

5 - 2

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5.4.1 Training Program

Please specify Airport Training Program or Training Methods for all positions involving in airport operations and key management such as airport manager, airport safety personnel, airport operations personnel, airport maintenance personnel, etc. The aerodrome operator may refer to the airport training program as a separate document.

Training program shall indicate that the airport personnel are qualified and be able to safely perform their duties.

5.4.2 Training and Checking Procedures

Please specify the airport training regime, procedures, and assessment processes. The methods used to ensure that continuous assessments and proficiency checks are to take place in roles that applicable.

The roles may include, but not limited to;

- Airport Manager
- Airport Operations
- Airport Maintenance
- Airport Safety
- Airport Security
- Airport Rescue and Fire Fighting

5.5 Exemptions and Deviations

5.5.1 Exemptions

The aerodrome operator shall summarize the current exemptions for the airport that have been issued by the CAA~~T~~. The table below is an example:

Reference	Period	Description
~~####~~	4-May-2003 or until withdrawn	Embraer 120 operations on Taxiway Romeo – Exemption against non-standard width
~~####~~	Valid until varied or withdrawn	Dash-8 operations on Taxiway Romeo – Exemption against non-standard width

To have CAA~~T~~ issued exemptions, the aerodrome operator shall conduct an Aeronautical Study and it must be approved by the Director General of the Civil Aviation Authority of ~~Thailand~~.

5.5.2 Deviations

In emergency conditions requiring immediate action for the protection of life or property, the aerodrome may deviate from any requirement of CAA~~T~~, or the

Aerodrome Manual, to the extent required to meet that emergency. The aerodrome operator who deviates from a requirement under this section must, within 1 day after the emergency, notify the Civil Aviation Authority of Thailand of the nature, extent, and duration of the deviation. When requested by the Civil Aviation Authority of Thailand, the Aerodrome Operator must provide the details of such deviation in writing.

5.6 Safety Management System

Please specify airport safety management system in accordance with CAA's aerodrome manual standard. The particulars of safety management system in this section should be referred to the Airport Safety Management Manual which comprise a part of this manual.

Example:

(Name) Airport has a separated manual for airport safety management system. The details in (Name) Airport Safety Management Manual will be in accordance with the requirements of CAA.

ABBREVIATIONS

ATC - Air Traffic Control

ANNEX

1. Aerodrome Emergency Plan

EXHIBIT

1. Aerodrome Layout Plan

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Appendix A Attachment E – Survey Questionnaire for Aerodrome Assistance in APAC States with low AGA EI (i.e. below 61%) and/or Air Navigation Deficiencies; Basis for requesting Assistance

Introductory Notes

The survey is developed by the ICAO Asia/Pacific Aerodrome Assistance Working Group to establish the assistance requirements for States which have not completed the certification of aerodromes used for international operations, have with low USOAP AGA EI in AGA area below 75% and/or AGA-related AOP air navigation deficiencies.

Information of the State

Name of the State	
Name and Post of <u>key person (DASS)</u> <u>Contact Person</u>	
Email Address of <u>key</u> <u>Contact</u> Person <u>(DASS)</u>	
USOAP <u>CMA</u> EI in AGA area (%)	
Any <u>AOP</u> Air Navigation Deficiencies?	Yes / No
No. of <u>international</u> aerodromes <u>used for international operations</u>	Total: (); Certified: ()
No. of <u>domestic</u> <u>other</u> aerodromes	Total: () <u>Certified: ()</u>

Questionnaire

Please select Yes or No and provide remarks / explanatory notes as appropriate.

S/N	
CE-1	Primary aviation legislation.
1-1	Are there any “Primary Aviation Legislation” in your State on the provision of aerodromes to facilitate international air navigation?
2	<u>Are there any subsidiary legislation that could be satisfactorily implemented without having to establish primary aviation legislation at a national level?</u>
3	<u>Are these regulations (referred to in Q1 and Q2 above) aligned with those provided by the Annexes to the Convention and that provisions exist for the prosecution of all persons violating the regulations applicable?</u>
4	<u>Are Articles of the Convention referring to a State’s legislation require that the State promulgate primary aviation legislation, as needed, to serve as the legal basis for the safety oversight activities in the State?</u>
	Yes/No Remarks:
1-52	Is an empowered CAA established under the primary aviation legislation, notably in relation to aerodrome safety oversight and its certification?
	Yes/No Remarks:
1-63	Does Primary aviation legislation empower appropriate authority to:
	• promulgate and amend specific operating regulations. • grant the necessary access and inspection powers to the State’s inspectors.

	• ~~create autonomous CAA.~~
	Yes/No Remarks:
1- ~~7~~ 4	Does primary <u>aviation</u> legislation contain the legal basis for enforcement, including the ability to impose operating restrictions, suspend or revoke ~~licences~~ <u>licenses</u> , certificates, authorizations or approvals as well as impose financial penalties?
	Yes/No Remarks:
1- ~~8~~ 5	Does Primary <u>aviation</u> legislation require the immediate notification of accidents and serious incidents by Aerodrome operators <u>to relevant authorities</u> ? ~~?~~
	Yes/No Remarks:
CE-2	SPECIFIC OPERATING REGULATIONS
2-1	Has the State promulgated regulations for standardized operational procedures, services, equipment and infrastructures in conformity with the Annex 14 Vol I to the Convention on International Civil Aviation?
	Yes/No Remarks:
2-2	Do your specific operating regulations contain sufficient details that are consistent with your own legal frameworks, including the non-aviation areas ~~?~~ <u>such as agriculture authorities, wildlife and forest authorities, military authorities, local authorities, etc.</u>
	Yes/No Remarks:
2-3	Has the State developed and implemented the process to ensure the timely amendment of these specific operating regulations in order to keep pace with the amendments to the Annex 14 Vol I to the Convention?
	Yes/No Remarks:
2-4	Does the ~~system~~ <u>amendment process</u> ensure that regulations are repealed when replaced by new ones?
	Yes/No Remarks:
2-5	Do the State's regulations govern the issuance or validation of ~~licences~~ <u>licenses</u> / ratings / certificates / ~~or~~ approvals, as applicable? ~~Does the State meet its obligation of Safety Oversight Responsibility~~
	Yes/No Remarks:
2-6	Has the state established process for exemptions / ~~or~~ exceptions? Is the process supported by safety risk assessments or aeronautical studies, and provide for imposition of limitations, conditions or mitigation measures?
	Yes/No

	Remarks:
2-7	Does the State require a safety risk assessment or aeronautical study to be ~~developed~~ <u>conducted</u> by the aerodrome operator ~~for the purpose of seeking exemption/exception and to demonstrate availability of equivalent level of safety or an alternative acceptable means of compliance? Appropriate mitigation measures?~~ <u>to assess safety concerns arising from, inter alia, deviations from standards and applicable regulations, identified changes at an aerodromes, or when any other safety concerns arise?</u>
	Yes/No Remarks:
2-8	Is there a review and acceptance process of such an assessment (as referred to in the previous question) or study that should be performed by the CAA at the appropriate level?
	Yes/No Remarks:
2-9	Has the State established requirement for publication of such exemption, such as on the CAA website, AIP and/or in aerodrome manual?
10	~~Is there a process to regularly review exceptions/ or exemptions so as to remove exceptions/ or exemptions, where possible, or check the validity of the mitigating measures in place?~~
11	~~Is there a process CAA to assess, before granting an exception or exemption, whether the exception or exemption would lead to differences from SARPs and, if so, ensure that the State notifies ICAO of the differences?~~
	Yes/No Remarks:
CE-3	STATE SYSTEM AND FUNCTIONS
	Establishing a State civil aviation system
3-1	Has the State ~~State~~ established national legislation to provide for an appropriately organized, funded and empowered civil aviation system to fulfil the tasks of aerodrome safety oversight?
	Yes/No Remarks:
3-2	Has the State employed the adequate personnel, including technical and support staff, to carry out its aerodrome safety oversight functions and duties?
	Yes/No Remarks:
3-3	Does the aerodrome regulatory ~~structure establishment~~ address all the technical areas applicable to safety oversight <u>and</u> ~~-, safety data collection and processing analysis and accident and incident investigation?~~
	Yes/No Remarks:
	Staffing requirements

3-4	Does State provide credentials to its technical personnel authorized to perform licensing, certification, approval and/or surveillance functions. Do credentials include the empowering legislation?
	Yes/No Remarks:
3-5	Do these technical personnel have rights to unlimited and unrestricted access to aerodromes and its relevant facilities, documents and the associated inspection powers?
	Yes/No Remarks:
3-6	Has the State established a methodology to determine its staffing needs for personnel performing safety oversight functions and covering all technical disciplines required for effective safety oversight in the aerodrome areas?
7	~~Does your State also take up the role of aerodrome service provider, and personnel from the aerodrome service provider are designated to carry out safety oversight functions?~~
	Yes/No Remarks:
Establishment of service providers	
3-7	Is there a clear separation of functions and responsibilities between the regulatory authority and the aerodrome service provider?
9	~~Is there any mechanism for the avoidance of perceived, potential or actual conflicts of interest?~~
	Yes/No Remarks:
CE-4	QUALIFIED TECHNICAL PERSONNEL
	Initial qualification and experience requirements for technical personnel
4-1	Has the State established the minimum qualifications and experience required for the position of technical staff to be filled?
2	~~Has the State established the procedure for verification and evaluation of qualifications, experience and personal characteristics of each person employed or contracted to perform licensing, certification and surveillance duties?~~
	Yes/No Remarks:
Training of technical personnel	
4-2	Has the State established a training system with a documented training policy and signed by the State authorities?
	Yes/No Remarks:
4-3	Does the training policy commit to provide necessary training to technical personnel in all areas, including initial training i.e. induction and basic training, on-the-job training (OJT), recurrent training and specialized or advanced training?
	Yes/No Remarks:

4-4	Has the State established a training programme for each technical staff position and training plans for each technical staff member? ~~Is it implemented consistently?~~
6	~~Are inspectors required to complete OJT under experienced, senior technical staff before being assigned safety oversight related tasks and responsibilities?~~
7	~~Does the State record completion of the OJT and include the competency assessment?~~
	Yes/No Remarks:
CE-5	TECHNICAL GUIDANCE, TOOLS AND PROVISION OF SAFETY-CRITICAL INFORMATION
5-1	~~Has the state provided Inspectors and staff with the necessary tools, such as transportation, offices, communication facilities, internet and access to technical or an electronic library? Has the state provided State provided adequate office space, office equipment, and means of transportation to appropriate facilities, comprehensive and up-to-date technical guidance material and procedures, safety critical information, tools and equipment, and transportation means to the technical personnel?~~
	Yes/No Remarks:
5-2	Has the States developed <u>aerodrome certification procedural manual, aerodrome inspectors handbook</u> , and <u>publish their own other</u> technical guidance materials addressing all activities ~~of the State's aviation authority and all the/~~ -tasks <u>to be</u> performed by its <u>technical</u> staff?
3	~~Has the state established the procedures for specific tasks or activities clearly defining the following items?~~
	~~• person in charge of each task including authority to approve results/reports, sign letters, reports, approvals and decide enforcement actions.~~
	~~• each step of the process and each task to be performed, templates, expected results and link with other procedures.~~
	~~• details and methodology for each task, sequence of actions, ensure the traceability~~
	~~• for repetitive action (e.g. continuing surveillance), the frequency and the maximum interval between two actions.~~
	Yes/No Remarks:
5- ~~3~~ 4	Has the state published inspector's handbook detailing various procedures, including appropriate checklists and templates?
	Yes/No Remarks:
5- ~~4~~ 5	<u>Is there a process to regularly review exceptions / exemptions so as to remove exceptions / exemptions, where possible, or check the validity of the mitigating measures in place?</u> ~~Has the state provided Inspectors and staff with the necessary tools, such as transportation, offices, communication facilities, internet and access to technical or an electronic library?~~

	Yes/No Remarks:
5-56	Has the state developed guidance for the industry? Does the guidance include templates and standard format for documents to be established by each service provider concerned?
	Yes/No Remarks:
CE-6	LICENSING, CERTIFICATION, AUTHORIZATION AND APPROVAL OBLIGATIONS
	General considerations
6-1	<u>Has the State established the procedure for certification / licensing of its aerodromes with the following elements:</u>
	• <u>Dealing with the expression of interest</u> • <u>Review of initial documents</u> • <u>On-site verification of facilities</u> • <u>Exemption process with safety risk assessment / aeronautical study, where applicable</u> • <u>Process for assessment of corrective action plans (CAPs)</u> • <u>Renewal or review of the continuing validity of aerodrome certificate</u> • <u>Transfer or surrender of aerodrome certificate</u> • <u>That all non-compliances are resolved or addressed by CAPs prior to the issuance of aerodrome certificate</u>
	<u>Yes/No</u> <u>Remarks:</u>
6-2	~~Is there a process to keep evaluations properly documented and recorded and all the pertinent records and evidence kept by the CAA?~~ <u>Has the State approved the outsourced specialists working methodologies, defined deliverables and validate results of evaluations, and evaluation reports are maintained?</u>
	<u>Yes/No</u> <u>Remarks:</u>
6-3	Is there a requirement to properly complete and record checklists used in the <u>aerodrome certification</u> evaluation process <u>with relevant references</u> ?
4	~~Do inspectors document the relevant detailed references (e.g. specific references in a manual) and facilities/equipment/other aspects reviewed on-site?~~
	<u>Yes/No</u> <u>Remarks:</u>
6-45	Are records maintained to prove the effectiveness and ensure traceability of the certification / licensing / approval activities performed and follow-up actions carried out?
	<u>Yes/No</u> <u>Remarks:</u>
6-56	Does the certification file include the following areas?

	• certification application and associated documents; • aerodrome manual; • audit/inspection records; • corrective action plans and evidence of implementation; • exception or exemption records; and • copy of the certificate/~~licence~~license/authorization certificates and approvals
7	~~Has the State established the procedure for certification / licensing of its aerodromes? Such as:~~ ~~Dealing with the expression of interest~~ ~~Review of initial documents~~ ~~On-site verification of facilities,~~ ~~Exemption process with safety risk assessment, where applicable~~
	<u>Yes/No</u> <u>Remarks:</u>
6-68	Are the procedures for certification and approval activities comprehensive, formal and documented?
9	~~Does the procedure for certification/licensing of aerodromes contain dealing with expression of interest, including coordination with other concerned authorities?~~
10	~~Does the procedure include initial review of the documentation submitted by the service provider, including key personnel's competence and operating procedure?~~
11	~~Are on-site audits and/or inspections conducted to verify technical aspects and assess the service provider's organization, competence and implementation of its operating procedures?~~
12	~~Has the State established the process for considering and assessment of exemption request?~~
13	~~Do such requests require conduct of safety assessment / aeronautical studies with on-site inspections along with mitigation measures before granting or denying exemptions?~~
14	~~Is there a process for assessment of the corrective action plans submitted by the aerodrome operator to resolve findings and non-compliances including given timelines?~~
15	~~Does the established procedure elaborate on issuance of the certificate/ license or with indication of operating conditions and limitations, where applicable?~~
16	~~Is the procedure for renewal or review of continuing validity of the certificates/license established?~~
17	~~Is there a procedure for transfer or surrender of certificates/ license?~~
18	~~Is it ensured by the CAA that all non-compliances are resolved or addressed by corrective action plans (with mitigation measures) prior to the issuance of a certificate or approval?~~
	<u>Yes/No</u> <u>Remarks:</u>
CE-7	SURVEILLANCE OBLIGATIONS

7-1	Has the State established and implemented documented surveillance process, by defining and planning inspections, audits and monitoring activities on a continuous basis, to proactively ensure that aviation licence, certificate, authorization and approval holders continue to meet the established requirements?
	<u>Yes/No</u> <u>Remarks:</u>
7-2	Does the CAA conduct on-site inspections (announced and unannounced visits), the review of documents submitted by the service providers, meetings with concerned parties and analyses of available safety information?
	<u>Yes/No</u> <u>Remarks:</u>
7-3	~~Does the defined~~ Is there a surveillance programme <u>and a surveillance plan include including each certified aerodromes in</u> the following areas?
	- the types of surveillance activities (e.g. audits, inspections, tests, safety events analyses, <u>etc.</u>); - the timeframe or frequency of the activities; - items to be covered or scope of the activities; and - related methodology/procedures, job aids and guidance on how the full-cycle activity should be performed,
4	~~Is there a surveillance plan developed for each certified aerodrome based on the applicable surveillance programme?~~ ~~Does the surveillance plan cover all the areas?~~
5	~~Does the State conducts, in addition to scheduled inspections, random or unannounced inspections?~~
6	~~Do the methodologies for the various types of surveillance activities cover all phases including preparation, implementation, reporting and follow-up actions?~~
	<u>Yes/No</u> <u>Remarks:</u>
7-47	Are appropriate procedures, templates and job aids developed and used for surveillance activities?
	<u>Yes/No</u> <u>Remarks:</u>
7-58	Has the CAA established and implemented, ~~for each area,~~ a system for record-keeping and filing <u>for surveillance activities</u> ~~y, which should include:?~~
	~~completed checklists, evaluation reports and associated documentation, including, as~~ ~~applicable, safety assessments;~~ ~~minutes of meetings conducted as part of surveillance; and~~ ~~follow-up reports on the implementation of corrective action plans.~~
	<u>Yes/No</u> <u>Remarks:</u>
CE-8	RESOLUTION OF SAFETY ISSUES (CE-8)

8-1	Does the State ensure that identified safety issues are resolved in a timely manner through a system which monitors and records progress, including actions taken by aerodrome operators?
	<u>Yes/No</u> <u>Remarks:</u>
8-2	Does the system mentioned in the previous question include the following areas?
	• non-compliances and other deficiencies identified by the CAA; • analyses of reported safety events; • negative safety trends <u>e.g. rise of bird strike cases, decreased serviceability of airfield ground lighting, etc.</u>; and • results (including safety recommendations) of aircraft accident and incident investigations.
	<u>Yes/No</u> <u>Remarks:</u>
8-3	Does the State ensure that aerodrome operators report all the safety events through the State's mandatory reporting system? Is this system established by the legislation?
	<u>Yes/No</u> <u>Remarks:</u>
	Follow-up of safety issues
8-4	Does the CAA
	• Promptly advise the aerodrome operator of the deficiency observed; • Provide deadlines for the submission of the corrective action plans; • ~~verify~~ <u>Verify</u> that corrective actions and related timeframes are appropriate; <u>and</u>; • Initiate appropriate follow-up actions to verify the effective implementation of the corrective actions?
	<u>Yes/No</u> <u>Remarks:</u>
	Enforcement
8-5	In the absence of a resolution, does CAA take the appropriate enforcement measures, such as the imposition of limitations, the suspension or revocation of certificates/_licences, or the imposition of financial penalties?
~~6~~	~~Is CAA empowered by the State's primary legislation to take these enforcement measures?~~
	<u>Yes/No</u> <u>Remarks:</u>
~~8-6~~ ⁷	Are enforcement actions commensurate with the safety risks caused by non-compliances or violations?
	<u>Yes/No</u> <u>Remarks:</u>
~~8-7~~ ⁸	Based on the State's legislation and procedures, has the CAA established and implemented clear, comprehensive and detailed enforcement policies and procedures for use by its staff?

	<u>Yes/No</u> <u>Remarks:</u>
	Follow-up of safety recommendations
8-89	Has the State established and implemented a structured process for follow-up of the safety recommendations out of ~~incident/~~ accident / <u>incident</u> investigations?
	<u>Yes/No</u> <u>Remarks:</u>

Appendix G

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

TERMS OF REFERENCE (Amendment Proposed by AP-AA/WG/2 in highlight)

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 which have not completed the implementation of aerodrome certification for all international aerodromes, with low an AGA EI below 75%, and/or AOP 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 which have not implemented aerodrome certification, with non-satisfactory aerodrome certification related PQs, and/or aerodrome certification related air navigation deficiencies 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. The ICAO COSCAPs will support the implementation of Tasks.

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

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Attachment A to WP/11

List of Aerodromes used for International Operations in APAC Region that have yet to be Certified

Serial #	Count	Sub-region	State / Admin	ICAO Code	Name of City	Name of Aerodrome	Type	Listed in...			Info Source
								APAC ANP	Doc 7910	AIP AD 1.5	
1	1	SA	Afghanistan	OHR	Herat	Herat Intl	UNK	0	1	0	FR24 / FG website
2	2	SA	Afghanistan	OAKB	Kabul	Kabul Intl	RS	1	1	0	
3	3	SA	Afghanistan	OAKN	Kandahar	Kandahar Intl	AS	1	1	0	
4	4	SA	Afghanistan	OAMS	Mazar-e-Sharif	Mazar-e-Sharif	UNK	0	1	0	FR24 / TK website
27	5	SA	Bangladesh	VGSY	Sylhet	Osmani Intl	RS	0	1	1	1 PFA 22 Sep 20
29	6	SEA	Brunei	WBSB	Brunei	Brunei Intl	RS	1	1	0	
59	7	NA	China	RCYU	Hualien	Hualien	UNK	0	1	0	Airport website
92	8	NA	China	RCMQ	Taichung	Cingcyuangang	UNK	0	1	0	
93	9	NA	China	RCNN	Tainan	Tainan	UNK	0	1	0	Airport website
134	10	SA	India	VICG	Chandigarh		UNK	0	1	0	FR24
139	11	SA	India	VOGO	Goa		UNK	0	1	0	
150	12	SA	India	VOPB	Port Blair		UNK	0	1	0	
151	13	SA	India	VAPO	Pune		UNK	0	1	0	FR24
152	14	SA	India	VISR	Srinagar		UNK	0	1	0	
197	15	NA	Japan	RJAH	Hyakuri		UNK	0	1	0	FR24
202	16	NA	Japan	RJNK	Komatsu		UNK	0	1	0	FR24
218	17	NA	Japan	RJOS	Tokushima		UNK	0	1	0	Airport website
222	18	NA	Japan	RJOH	Yonago	Miho	UNK	0	1	0	FR24
223	19	PAC	Kiribati	PLCH	Kiritimati	Christmas I.	RS	1	1	0	PSIDS 7 Jun 19
224	20	PAC	Kiribati	NGTA	Tarawa	Bonriki Intl	RS	1	1	0	PSIDS 7 Jun 19
225	21	SEA	Lao PDR	VLVT	Vientiane	Wattay Intl	RS	1	1	0	
226	22	SEA	Lao PDR	VLLB	Luangprabang	Luangprabang Intl	RS	1	1	0	COSCAP-SEA 21 Sep 18
227	23	SEA	Lao PDR	VLSK	Kaisongphimvihan	Savannakhet Intl	RS	1	1	0	COSCAP-SEA 21 Sep 18
228	24	SEA	Lao PDR	VLPB	Pakse	Pakse Intl	RS	1	1	0	COSCAP-SEA 21 Sep 18
237	25	SEA	Malaysia	WMKD	Kuantan	Haji Ahmad Shah	RNS	1	1	0	FR24
239	26	SEA	Malaysia	WBKL	Labuan		RNS	1	1	0	FR24
253	27	PAC	Micronesia	PTPN	Pohnpei I.	Pohnpei Intl	RS	1	1	?	FR24
254	28	PAC	Micronesia	PTKK	Weno I.	FM Chuuk Intl	RS	1	1	?	FR24
255	29	PAC	Micronesia	PTYA	Yap I.	Yap Intl	RS	1	1	?	
256	30	PAC	Micronesia	PTSA	Kosrae I.	Kosrae	UNK	0	1	?	FAA IP AOP/SG/2 27 Jun 18
263	31	PAC	Nauru	ANYN	Nauru I.	Nauru Intl	RS	1	1	0	
294	32	SEA	Philippines	RPVK	Kalibo, Aklan	Kalibo Intl	RS	1	1	0	
297	33	SEA	Philippines	RPLL	Manila	Ninoy Aquino Intl	RS	1	1	0	0-RSGT-2-Mar-20
299	34	SEA	Philippines	RPVP	Puerto Princesa City	Puerto Princesa Intl	RS	1	1	0	COSCAP-SEA 21 Sep 18
300	35	SEA	Philippines	RPSP	Panglao	Bohol-Panglao Intl	RS	1	1	0	FR24 / PFA 6 Oct 20
322	36	SEA	Thailand	VTSG	Krabi		RS	1	1	0	
324	37	SEA	Thailand	VTPH	Prachuap Khiri Khan	Hua Hin	RS	1	1	0	COSCAP-SEA 21 Sep 18
325	38	SEA	Thailand	VTBU	Rayong	U-Taphao Pattaya Intl	RS	1	1	0	
327	39	SEA	Thailand	VTSM	Surat Thani	Samui	RS	1	1	0	COSCAP-SEA 21 Sep 18
328	40	SEA	Thailand	VTSB	Surat Thani		RS	1	1	0	
329	41	SEA	Timor Leste	WPDJ	Dili	Presidente Nicolau Lobato	RS	1	1	0	COSCAP-SEA 21 Sep 18
330	42	SEA	Timor Leste	WPDB	Suai	Commander-in-Chief of the FALINTIL – Kay Rala Xanana Gusmão Intl	RNS	1	1	0	COSCAP-SEA 21 Sep 18
333	43	PAC	Tuvalu	NGFU	Funafuti	Funafuti Intl	RS	1	1	0	

Post-meeting notes:

(1) Philippines provided written evidence subsequent to AOP/SG/4 that Manila/RPLL had been certified. The evidence was considered adequate. Therefore, RPLL has been deleted from this list.

(2) Subsequent to AOP/SG/4, Bangladesh confirmed in writing that Sylhet/VGSY had been certified.

**AGA Technical Assistance Missions Conducted to APAC States
under ICAO No Country Left Behind Initiative**

S. No	2016	2017	2018	2019	2020
A)	APAC CAT assistance missions in AGA area				
1	Bangladesh	Bangladesh (Follow-up CAT mission)	Fiji (Follow- up CAT mission)	Brunei (Funded by COSCAP- SEA)	Maldives
2	Cambodia	Indonesia (Follow-up CAT mission)	Myanmar (Follow-up CAT mission)	Lao PDR (Funded by COSCAP- SEA)	-
3	Indonesia	Myanmar (Follow-up CAT mission)	Samoa	Nepal	-
4	Myanmar	Fiji	Thailand (Follow-up CAT mission)	Pakistan	-
5	Philippines	-	Afghanistan	-	-
6	Papua New Guinea	-	-	-	-
7	Solomon Islands	-	-	-	-
8	Thailand	-	-	-	-
9	Tonga	-	-	-	-
B)	APAC RO and COSCAPs Technical Assistance Missions in AGA				
1	Mongolia	-	Viet Nam	Mongolia (RO/AGA & COSCAP- SEA)	Philippines (ICAO/COSCAP- SEA RSGT)

2	-	-	-	Timor-Leste (COSCAP-SEA – 2 wks.)	Indonesia (ICAO/COSCAP-SEA RSGT)
3	-	-	-	-	Thailand
C)	IPAV				
1	-	Cambodia (3 wks.)	Solomon Islands (2 wks.)	Tonga (2 wks.)	Vanuatu (2 wks.)
2	-	Fiji (2 wks.)	-	-	-
3	-	Timor-Leste (2 wks.)	-	-	-

D)	IFFAS					
S. No	2015	2016	2017	2018	2019	2020
1	Samoa	-	Solomon Islands	-	-	Nauru (Planned)
2	Solomon Islands	-	Tonga	-	-	-
3	Tonga	-	-	-	-	-

ICAO/COSCAPs, ACI Training, Workshops and Seminars and
ICAO Voluntary Fund SAFE Assistance

A) ACI			
S. No	2017	2018	
1	ACI – ICAO Aerodrome Certification Seminar in Sydney, Australia hosted by Sydney Airport from 26 to 30 June 2018	ACI – ICAO Aerodrome Certification Compliance and Auditing Course in Nadi, Fiji from 22 to 26 January 2018	
B) ICAO Voluntary Funds SAFE contributed by United States			
S. No	2021 [Planned]		
1	ICAO Aerodrome Assistance Go-Team funded by US: - Brunei Darussalam - Lao PDR - Timor-Leste		
C) ICAO/COSCAPs			
S. No	2018	2019	2020
1	Aerodrome Safety Management Course incorporating PANS-Aerodromes, ICAO APAC Office, 19 to 23 March 2018 [ICAO GAT]	ICAO Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA) Workshop, ICAO APAC Office, 20 – 22 March 2019 [COSCAP-SEA]	EASA Aerodrome Certification Inspector Course, 20 – 24 Jan. 2020 [COSCAP-SEA]
2	Aerodrome Certification course, ICAO APAC Office, 17 to 21 September 2018 [COSCAP-SEA]	Resolution of Safety Issues Course, ICAO APAC Office, 22 – 26 April 2019 [COSCAP-SEA]	GRF for Runway Surface Conditions Reporting Webinar, 30 April 2020 [COSCAP-SEA]
3	ICAO/ACI Aerodrome Certification Course, ICAO APAC Office, 19 to 23 November 2018 [ICAO GAT]	ICAO Asia/Pacific Regional Aerodrome SMS Seminar, Incheon, Republic of Korea, 27 – 28 May 2019 hosted by MOLIT and Incheon International Airport Company	GRF for Runway Surface Conditions Reporting Webinar for Small Pacific Island States [ICAO APAC], 21 May 2020

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4	ICAO Aerodrome Certification incorporating PANS-Aerodromes Workshop for Pacific Island States, Fiji, 3 to 7 December 2018 [ICAO APAC].	Regional Seminar on Implementation of the New Global Reporting Format for Runway Surface Conditions (GRF), 27 – 28 June 2019 [ICAO and COSCAP-SEA]	GRF On Line Training from ACI and IATA for Aerodrome and OPS Inspectors (Member States of all three COSCAPs), April – June 2020
5	-	ICAO Safety Management Systems for Practitioners (SMxP) Course, 8 – 12 July 2019 [18 Participants from COSCAP-SEA]	ECCAIRS Accident and Incident Data Collection and Analysis Workshop, 29 Jun. – 3 Jul. 2020 [COSCAP-SEA]
6	-	COSCAP-SEA Aerodrome Inspector Course, Lao PDR, 25 Nov. – 4 Dec. 2019	AGA Webinars – Roadmap for Airport Operations Restart, 15 July 2020 [COSCAP-SA]
7	-	ACI-ICAO Implementing Annex 14: Advanced Aerodrome Design and Operations, ICAO APAC Office, Bangkok, 9 – 13 December 2019	ICAO-CANSO A-CDM Implementation Webinar, 22 July 2020
8	-	-	AGA Webinar – The new Global Reporting Format for Runway Surface Conditions, 29 July 2020 [COSCAP-SA]
9	-	-	AGA Webinar – Aerodrome Certification – A Review, 29 Jul. 2020 [COSCAP-SA]
10	-	-	AGA Webinar – Safety Risk Assessments – Aerodromes, 5 Aug. 2020 [COSCAP-SA]
11	-	-	AGA Webinar – Task Resource Analysis – ARFF, 12 Aug. 2020 [COSCAP-SA]

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12	-	-	ICAO-AAWHG Wildlife Hazard Management Webinar, 23 Sep. 2020



NEW ICAO METHODOLOGY FOR ASSESSING AND REPORTING RUNWAY SURFACE CONDITIONS (GRF)

IMPLEMENTATION ACTION PLAN TEMPLATE¹

_____ [Insert name of State]

ID	ACTION	ENTITY RESPONSIBLE	TARGET DATE ²	IMPLEMENTATION DATE ³	REMARKS ³
GRF 1	Review ICAO provisions and guidance and other Organisations guidance (see References)	CAA	31/12/2020		
GRF 2	Designate a focal point to coordinate implementation activities at the national level	CAA	31/12/2020		
GRF 3	Identify concerned focal points in each entity (CAA, Airport, ANSP, Aircraft operators – include BA, GA and military as applicable)	CAA, Airports, ANSP, Aircraft operators	31/12/2020		
GRF 4	Establish an Implementation Coordination Team including staff from the identified stakeholder entities	CAA	15/01/2021		
GRF 5	Conduct the initial training for the CAA, Airports, ANSP and Aircraft Operators' personnel (e.g. ICAO/ACI/IATA online courses, national awareness workshop, etc.)	CAA	01/03/2021		
GRF 6	Identify regulations, standards, procedures and guidance material to be developed/amended	National Focal Point and the Implementation Coordination Team	01/04/2021		
GRF 7	Develop a detailed national implementation plan and safety risk assessment. Each entity should also establish its specific implementation plan and safety risk assessment.	CAA, Airports, ANSP, Aircraft operators	01/04/2021		
GRF 8	Identify the necessary means and resources for the implementation (human, financial and material resources)	National Focal Point and the Implementation Coordination Team	01/04/2021		
GRF 9	Consult with Airport Runway Safety Teams	Airports	14/05/2021		
GRF 10	Develop and promulgate regulations and standards	CAA	14/05/2021		
GRF 11	Develop procedures and guidance material (translate if required)	National Focal Point and the Implementation Coordination Team	15/06/2021		

ID	ACTION	ENTITY RESPONSIBLE	TARGET DATE ²	IMPLEMENTATION DATE ³	REMARKS ³
GRF 12	Provide the necessary means and resources for the implementation (human, financial and material resources)	CAA, Airports, ANSP, Aircraft operators	30/06/2021		
GRF 13	Conduct On-the-Job Training (OJT) on the implementation (ACI on-site GRF training course is available to support Airports)	CAA, Airports, ANSP, Aircraft operators	01/08/2021		
GRF 14	Perform tests/trials prior to the effective implementation	All	01/10/2021		
GRF 15	Applicability date for the new methodology for assessing and reporting runway surface conditions	All	04/11/2021		

Notes: ICAO Runway Safety Go-Team Assistance Missions may be arranged to support States and Airports. ACI APEX Safety Reviews are also available to support Airports.

Remarks: ¹ To be tailored and detailed by States; ² Target dates are indicative only; ³ For input by States

References

Publications / Websites

- Annexes 3, 6, 8, 14, & 15 – applicability date 4 Nov 2021
- PANS Aerodromes (Doc 9981), Aeronautical Information Management (Doc 10066), & Air Traffic Management (Doc 4444)
- Assessment, Measurement and Reporting of Runway Surface Conditions (Cir 355)
- Aeroplane Performance Manual (Doc 10064)
- ICAO GRF website <https://www.icao.int/safety/Pages/GRF.aspx>
- ICAO EUR/NAT Guidance on the Issuance of SNOWTAM
<https://www.icao.int/EURNAT/EUR%20and%20NAT%20Documents/EUR%20Documents/EUR%20Documents/SNOWTAM%20Guidance.pdf>

Training / Events

- ICAO/ACI Online Course for Airport Operators <https://www.olc.aero/product/icao-global-reporting-format/>
- ICAO/IATA Online Course for Aircraft Operators & Flight Crew <https://www.iata.org/en/training/courses/grf-runway-surface/talp38/en/>
- Future ICAO-IATA-CANSO Online Course for ANSPs, ATS & AIS staff
- ICAO APAC Regional GRF Seminar <https://www.icao.int/APAC/Meetings/Pages/2019-AOP-SG3-GRF-Seminar.aspx>
- ICAO Global GRF Symposium <https://www.icao.int/Meetings/grf2019/Pages/default.aspx>

INTERNATIONAL CIVIL AVIATION ORGANIZATION



**ASIA PACIFIC REGIONAL GUIDANCE
ON AERONAUTICAL INFORMATION PUBLICATION –
AD 1.5 STATUS OF CERTIFICATION OF AERODROMES**

VERSION 1.0 – DECEMBER 2020

DRAFT

This guidance material is approved by AOP/SG/4 (10 – 13 November 2020, Video Teleconference) and published by ICAO Asia and Pacific Office, Bangkok.

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

1. Introduction

1.1. The Thirtieth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/30, Bangkok, Thailand, 4 – 6 November 2019) adopted Conclusion APANPIRG/30/4 regarding certification of aerodromes used for international operations in the Asia Pacific States. Through the Conclusion, APANPIRG/30, inter alia:

- Urged States that have not published the status of certification of aerodromes in State's AIP to publish the status as soon as possible in accordance with Annex 14 Vol I (para. 2.13.1), PANS-Aerodromes (para. 2.3.7) and Appendix 2 to PANS-AIM (Doc 10066);
- Agreed that, if any States fails to publish the status of certification of aerodromes in State's AIP by December 2019 will be subject to being included on the APANPIRG AOP Air Navigation Deficiency list against ICAO Annex 14 para. 2.13.1 a), PANS-Aerodromes, para. 2.3.7 and Appendix 2 to PANS-AIM.

1.2. This document serves as regional guidance for APAC States to comply with the AIP-related items of Conclusion APANPIRG/30/4, as well as the aforementioned SARPs and Procedures.

2. Important ICAO References

2.1. This document should be read in conjunction with the following ICAO publications:

- Annex 14, Vol I, Para. 2.13.1 a);
- Doc 9981 PANS-Aerodromes, Part I, Para. 2.3.7;
- Doc 10066 PANS-AIM, Appendix 2; and
- Doc 8126 Aeronautical Information Services Manual.

2.2. In case there is any discrepancy between this document and any SARPs / Procedures / Guidance (including but not limited to those listed in the preceding paragraph), the SARPs / Procedures / Guidance shall prevail.

3. Content Examples for AD 1.5

3.1. Certified aerodrome with a perpetual certificate, i.e. a certificate that does not have an end of validity

<i>Aerodrome name Location indicator</i>	<i>Date of certification</i>	<i>Validity of certification</i>	<i>Remark</i>
1	2	3	4
AKVIN/Akvin EADA	1 JAN 2020	Perpetual	NIL

3.2. Certified aerodrome with a non-perpetual certificate (e.g. for a period of 3 years)

<i>Aerodrome name Location indicator</i>	<i>Date of certification</i>	<i>Validity of certification</i>	<i>Remark</i>
1	2	3	4
AKVIN/Akvin EADA	1 JAN 2020	3 years	NIL

Or

Attachment A

<i>Aerodrome name Location indicator</i>	<i>Date of certification</i>	<i>Validity of certification</i>	<i>Remark</i>
1	2	3	4
AKVIN/Akvin EADA	1 JAN 2020	31 DEC 2022	NIL

3.3. Aerodrome not certified

<i>Aerodrome name Location indicator</i>	<i>Date of certification</i>	<i>Validity of certification</i>	<i>Remark</i>
1	2	3	4
AKVIN/Akvin EADA	Not certified	NIL	NIL

[Important Note for Draft: Para. 3.4 describes the content to be put in AD 1.5 for specific military aerodromes used for international civil operations. It is related to a separate proposal to be considered by AOP/SG/4 and APANPIRG/31. Before the proposal is adopted, para. 3.4 will not be included in this regional guidance.]

3.4. Military aerodrome with an alternative safety oversight framework

Remarks: This part only applies to military aerodromes either (a) designated as alternates for international civil flights; or (b) used for international civil operations only on a limited scale and on an ad hoc basis.

<i>Aerodrome name Location indicator</i>	<i>Date of certification</i>	<i>Validity of certification</i>	<i>Remark</i>
1	2	3	4
AKVIN/Akvin (MIL AD) EADA	Not certified	NIL	Alternative safety oversight framework in place

4. Alternative Content for AD 1.5

- 4.1. States may opt to publish the status of certification of aerodromes through a different platform, e.g. CAA website. This may be beneficial to States with a large number of aerodromes to be listed, or with aerodrome certificates of various validities thus requiring frequent amendments to the list.
- 4.2. If opted so, AD 1.5 should remain in AIP, and the reader should be pointed to the appropriate platform. An example of the text to be included in AD 1.5 is available below:

*The status of certification of aerodromes is available at the following website:
[insert URL]*

- 4.3. The content on the appropriate platform should be organized in the same manner as in AD 1.5.

5. Promulgation of status of certification of aerodromes

- 5.1. The responsible party (Aerodrome operators or certification body) should submit raw data for aerodrome certification status to the AIS well in advance of the planned publication date.

Attachment A

Note: Information should be provided to the AIS sufficiently in advance of the effective date to ensure it is promulgated by AIP Amendment, to avoid the need for NOTAM.

- 5.2. The status of aerodrome certification should be published via appropriate AIS products depending on date of receipt of the raw data at the AIS, and the effective date of the raw data.

Note: 'raw data' may be the effective date of initial certification, an extension of current certification, suspension or withdrawal of certification, or any other new or amended information.

- 5.3. If raw data is received well in advance and its effective date is after the planned publication date of the relevant AIP Amendment, the status of aerodrome certification should be published by AIP Amendment.
- 5.4. When raw data is received well in advance and its effective date is before the planned publication date of the relevant AIP Amendment, the status of aerodrome certification should be promulgated by a NOTAM.
- 5.5. When raw data is received at short notice, the status of aerodrome certification should be promulgated by a NOTAM as shown in the following examples:

(A1136/19 NOTAMN

Q)EACC/QFAXX/IV/NBO/A/000/999/5236N03255W005

A) EADA B) 2001010000 C) PERM

E) AD CERTIFIED.

VALIDITY OF CERTIFICATION: PERPETUAL or 3 YEARS or 31 DEC 2022

REF: AIP AD 1.5)

(A0105/21 NOTAMN

Q)EACC/QFAXX/IV/NBO/A/000/999/5236N03255W005

A) EADA B) 2201010000 C) PERM

E) VALIDITY OF AD CERTIFICATION EXTENDED TO 31 DEC 2023

REF: AIP AD 1.5)

Note 1: For NOTAMs notifying initial certification, extension of certification or permanent withdrawal of certification, Item C) should be PERM. The end of the validity of the current certification should not be used for NOTAM Item C).

Note 2: NOTAM text in item E) should not include unnecessary information such as aerodrome name, location indicator, certification number, certification body etc.,

- 5.6. When the status of aerodrome certification is promulgated by a NOTAM, the information contained in the NOTAM should be incorporated into AIP within three months from the issuing of permanent NOTAM.
- 5.7. When the planned publication date for the AIP Amendment is more than 3 months after the effective date of the raw data, the status of aerodrome certification should be published by AIP Supplement. The information contained in the AIP Supplement should be incorporated into AIP at the next appropriate AIP Amendment.

6. Reserved

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

Updated 30 Oct 2020

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	Afghanistan							
	Herat International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Kabul International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Kandahar International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Mazar-e-Sharif Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				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 PANS- Aerodromes PANS-AIM	American Samoa (US) AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 27 Nov 2020

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 (280m 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 280m 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

Updated 30 Oct 2020

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	Brunei Darussalam 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 faded centre line and other markings;	All pavement edges and strips are cleared from vegetation and lower than adjacent runway pavement especially after the completion of the Airfield Pavement Rehabilitation Project in Nov 2017.	Airport Operator (DCA Aerodrome Division)	Completed	A
					Earth mounds previously found on taxiways strips have been destroyed and flattened.		Completed CLOSED	A
		Taxiway		non provision of enhanced taxiway centre line marking in accordance with Para 5.2.8 of Annex 14, Volume I Objects on taxiway strips; vegetation on pavement joints and maintenance of joints	Both Northern Parallel Taxiway and Southern Parallel Taxiway Centre line have been repainted yellow and enhanced with black borders on each side.	Airport Operator (DCA Aerodrome Division)		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**
		Apron		non provision of ICAO compliant signage in accordance with section 5.4 Annex 14, Volume I	Airfield signages have always been provided at BIA that follow ICAO standards and measurement. Recent replacement of old and faded labels have also been completed in 2018.	Airport Operator (DCA Aerodrome Division)		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;	Duly noted that there is no direct access for fire fighting vehicles to the runway at the moment, but one will be concluded within the second phase of the Airfield Pavement Rehabilitation Project.	Airport Operator (DCA Aerodrome Division)	4th Qtr. 2022	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**
				non provision of road holding position sign at all road entrances to a runway; and	Brunei International Airport aerodrome does not have any roads that link directly to the runway and all access areas via taxiways and have their signages in place. Other areas have been enhanced with 'STOP' marking prior to entrance.	Airport Operator (DCA Aerodrome Division)	Completed CLOSED	A
		Wildlife Hazards:		Establishing a national bird control committee in accordance with APANPIRG Conclusion 18/1.	Aerodrome Division headed by Head of Aerodrome to firstly establish an in-house committee and will cooperate with Regulatory Division	Airport Operator (DCA Aerodrome Division)	4th Qtr. 2021	B
		Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS- Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	China							
	Hualien Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Taichung Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Tainan Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of some of the aerodromes used for international operations yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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 PANS- Aerodromes PANS-AIM	Cook Islands							
	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	Fiji Islands 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	Airport Operator – Fiji Airports	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 has been presented by the Aerodrome Operator for issue of an Exemption until RESA is able to be provided in 2020. Target date – End of 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**
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	Airport Operator – Fiji Airports	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 has been presented by the Aerodrome Operator for issue of an Exemption until RESA is able to be provided in 2020. Target date – End of 2020	A
Annex 14 Volume I PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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 PANS- Aerodromes PANS-AIM	Guam (US)							
	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	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.	300 280m strip width for full length of runway 07/25 will be made available.	AAI	Work in progress. Due to COVID-19 work is held up. PDC for straightening of B taxiway alone is 30-09-2020. 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	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.	300 280m strip width for full length of runway 09/27 will be made available	MIAL	31 Dec 2022. 31 Dec 2020. Due to presence of slum in beginning of RWY 09/27 south – RWY strip 300 280m not available. Due to presence of slum of either side at beginning of RWY 14/32 – RWY strip 300 280m not available.	A
Annex 14 Volume I	Chandigarh Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				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	Goa Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I	Port Blair Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I	Pune Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I	Srinagar Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of some of the aerodromes used for international operations yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	Japan							
	Hyakuri Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Komatsu Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Tokushima Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Miho Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of some of the aerodromes used for international operations yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	Kiribati							
	Christmas Island Airport, Kiritimati	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Bonriki International Airport, Tarawa	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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							A
	Wattay International Airport	Taxiway	ICAO Mission of March 2011	Provision of runway hold position lights in accordance with Para 5.3.19 of ICAO Annex 14, Volume I	Under consideration by Airports of Laos to purpose for support the budgets and installation			
				Provision of enhanced taxiway centre line marking in accordance with Para 5.2.8 of Annex 14, Volume I		Already completed by Airports of Laos in December 2018	Provided Completed [CLOSED]	
		Rescue and Fire Fighting (RFF):		Provision of road holding position sign at all road entrances to a runway;	Completed the design and submit to DCA for Approval		Will complete in December 2019	A
		Wildlife Hazards:		Establishing a national bird control committee in accordance with APANPIRG conclusion 18/1.	We are repairing plan for establishment committee for approval from Ministry		Will complete in December 2019	B
		Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Luang Prabang International Airport	Taxiway		Provision of runway hold position lights in accordance with Para 5.3.19 of ICAO Annex 14, Volume I on new taxiways	Under consideration by Airports of Laos to purpose for support the budgets and installation			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**
		Rescue and Fire Fighting (RFF)		Provision of road holding position sign at all road entrances to a runway	Completed the design and submit to DCA for Approval		Will complete in December 2019	A
		Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Savannakhet International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Pakse International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	Malaysia							
	Kuantan Haji Ahmad Shah Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Labuan Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of some of the aerodromes used for international operations yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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 PANS- Aerodromes PANS-AIM	Marshall Islands AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 12 June 2019

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	Maldives Velana International Airport	Runway/ Taxiways	AGA Mission Report April 2008	Insufficient runway strip.	Runway strip available	Maldives Airports Company Pvt. Ltd	Apron is still within the runway strip. New master plan work is in progress, new runway construction on-going, estimated date of completion: December 2019. Exemption granted by the State to Aerodrome Operator till December 2019.	U

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

Updated 30 Oct 2020

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	Micronesia (Federated States of) Pohnpei International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	FM Chuuk International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Yap International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Kosrae Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	Nauru Nauru International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS- Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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 PANS- Aerodromes PANS-AIM	Niue (New Zealand) AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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 PANS- Aerodromes PANS-AIM	New Zealand AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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 PANS- Aerodromes PANS-AIM	Northern Mariana Islands (US) AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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 PANS- Aerodromes PANS-AIM	Palau AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 20 Nov 2020

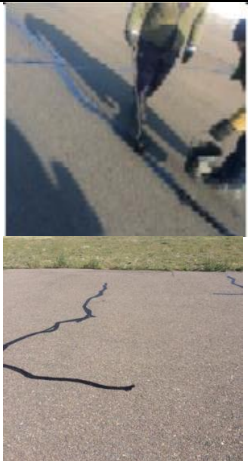
Identification		Deficiencies			Corrective Action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Target date of completion	Priority for action**
Annex 14 Volume I Annex 14 Volume I PANS- Aerodromes PANS-AIM	Philippines							
	Kalibo International Airport, Akla	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Puerto Princesa International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Bohol-Panglao International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

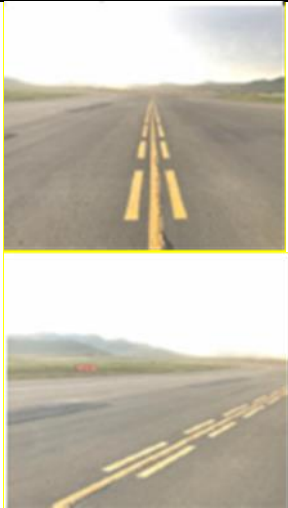
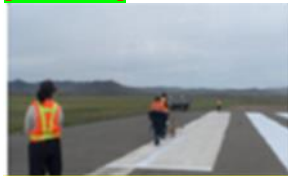
Updated 2 July 2020

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	Runway	ICAO Mission of July 2011	rubber deposits and faded centre line and other faded markings;	Rubber deposits will be removed. The faded lines and faded markings will be provided.	Civil Aviation Authority of Mongolia	The rubber deposits were removed within the 180m ² area of the runway strip in 2017.	A
	Ulaan Baatar International Airport Buyant-Ukhaa Airport						  The faded lines and faded markings were remarked each year. [CLOSED]	

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**
		Taxiway		Resealing cracks on pavement surface with sealants to prevent ingress of water and broken edges which could cause FOD issues.	The cracks will be fixed.	Civil Aviation Authority of Mongolia	 The cracks among with 5445 meter long on the pavement surface of the taxiway, were fixed in 2017 as per prescribed in Aerodrome Manual. [CLOSED]	A
		Taxiway		Provision of enhanced taxiway centre line marking in accordance with Para 5.2.8 of Annex 14, Volume I.	The taxiway centre line marking will be provided in accordance with Para 5.2.8 of Annex 14, Volume I.	Civil Aviation Authority of Mongolia	The taxiway enhanced center line were painted in 2017, as per Para 5.2.8 of Annex 14, Volume I. [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**
								
		Taxiway		faded taxiway markings	The taxiway markings will be repainted.	Civil Aviation Authority of Mongolia	The faded taxiway markings were repainted within the totally 10305 m2 area in 2017, by using 1157 kg white paint, 887.25 kg yellow paint, 42 kg black paint, 98 kg red paint, 756.5 kg diluent and 674.5 kg reflectors, as per Aerodrome Manual. [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**
								
		Taxiway		Maintenance of pavement cracks	Pavements cracks will be fixed.	Civil Aviation Authority of Mongolia	The pavement cracks within the totally 66.24m ² area of the taxiway were repaired by using 10749.35 kg cold mix asphalt and 400 kg modified cements in 2017 as per Aerodrome Manual. 	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**
		Taxiway		provision of runway hold position lights in accordance with Para 5.3.19 of ICAO Annex 14, Volume I.	The runway hold position lights will be provided in accordance with Para 5.3.19 of ICAO Annex 14, Volume I.	Civil Aviation Authority of Mongolia	The RWY hold position marking and mandatory signs were provided to avoid runway incursions on the maneuvering area. Because of the existing International scheduled flights will be transferred to new airport in 2020, the additional runway hold position lights are unrequired to install.	A
				provision of taxiway hold position signs on all hangar taxiways at entrances to the active taxiways/runway.	The taxiway hold position signs on all hangar taxiways at entrances to the active taxiways/runway will be provided.	Civil Aviation Authority of Mongolia	The taxiway information signs on all hangar taxiways at entrances to the active taxiway were provided in 2017. Also intermediate holding position marking were provided on hangar taxiways. [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**
								
		Apron		sealing the cracks on the apron surface	The cracks on the apron surface will be resealed.	Civil Aviation Authority of Mongolia	Total 12840m long cracks on the apron surface were resealed in 2017, as per Aerodrome Manual and in scope of Aerodrome maintenance plan. (CLOSED) 	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.	The signage will be provided in accordance with section 5.4 Annex 14, Volume I. The vegetation in front of the signs will be cut	Civil Aviation Authority of Mongolia	The work on cutting the vegetation in front of the signs was completed in 2017 within the totally 119560 m ² area including, taxiway strip, glide path antenna and apron area, as per Aerodrome manual of, in scope of Aerodrome	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**
							maintenance plan. 	
		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.	The National Bird Control Committee will be established committee in accordance with APANPIRG Conclusion 18/1. The wildlife reports will be submitted to the ICAO IBIS annually.	Civil Aviation Authority of Mongolia	“National bird strike prevention program” was approved by the 48th order of the Minister of Road and Transport, Mongolia, 2 March, 2016. The National Bird Strike Committee was established by the 95th order of the Minister of Road and Transport, Mongolia, 14 April 2016. [CLOSED]	B B

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

Updated 2 July 2020

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	Provision of RESA in accordance with Section 3.5 of Annex 14, Volume I requirements;	RESA will be provided	Yangon Aerodrome Company Limited	(Risk Assessment conducted by the operator submitted on 10 Aug 2018.) RESA for RWY 21 was completed on 15 Nov 2018. See Annex Pg-3. ~~RESA for RWY 03 – 30 Nov 2019~~ Revised date- 31 Dec 2020	A
		Bird Hazard		Establishment of a national bird committee in accordance with APANPIRG Conclusion 18/1.	Establish National Bird Committee	Department of Civil Aviation	Guideline for Wildlife Hazard Management at Aerodromes, DCA-GM-AGA 08 has been developed and published on 29 Oct 2018) ~~31 Dec 2019~~ Revised date- 31 Aug 2020	B
Annex 14, Volume I	Mandalay International Airport	Runway/Taxiway	April 2010	Provision of RESA in accordance with Section 3.5 of Annex 14, Volume I requirements;	RESA will be provided	MC-Jalux Airport Services Co; Ltd;	(Risk Assessment conducted by the operator submitted on 15 March 2019) ~~31 Dec 2019~~ Completed on 27 March 2020 CLOSED	A

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

15 October 2020

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 Tribhuvan 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~~ Estimated Implementation Date is 30/09/2020 (Civil construction works already completed)	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.~~ TIA Master Plan Review from Int'l Consulting firm, first phase of construction will to start within 2020.	A

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

Updated 30 Oct 2020

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 PANS- Aerodromes PANS-AIM	Pakistan AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of one of the aerodromes used for international operations yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	Samoa Faleolo International Airport	Runway Strip	ICAO Mission of Oct. 2015	Insufficient Runway Strip				A
		Aerodrome Pavements		Lack of maintenance of aerodrome pavements in accordance with Annex 14, 10.2				U
Annex 14 Volume I PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	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 PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				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	Sri Lanka Bandaranaike International Airport	Runway/ Taxiway	ICAO mission April 2010	Provision of 280m 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 flush strip with adjacent runway shoulder.	CAASL	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
				Establishment of a national bird committee in accordance with APANPIRG Conclusion 18/1.	National Bird Committee will be established.		1 st 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

Updated 9 Dec 2020

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 at the end of both RWY09 and RWY27 to satisfy Section 3.5 of Annex 14, Volume I requirements.	Airports of Thailand Public Company Limited	Runway End Safety Area will be provided to satisfy Section 3.5 of Annex 14, Volume I requirements. The construction is expected to be completed in 2021.	U
					Remark: - Dimension of RESA RWY09 is 150x190 m. - Dimension of RESA RWY27 is 150x120 m.		The construction is expected to be completed in 2022. Currently, the construction plan has been approved. The budget approval is in progress.	
				Runway strip width insufficient (280m runway strip for precision approach runways in accordance with Para 3.4.5 3 of Annex 14, Volume I.	280m 300m runway strip width for full length of runway will be made available. Except 111.4m length at the beginning of RWY09 (60m strip length before RWY09 threshold plus 51.4m length beyond the threshold), the runway strip width will be extended 150m on the right	Airports of Thailand Public Company Limited	280m runway strip width for full length of runway will be provided. The project is expected to be completed by 2021. The construction is expected to be completed by 2022. Currently, the construction plan has been approved. The budget approval is in progress.	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**
					side of RWY09 centre line and 90.27m on the left side of the runway centre line (due to the marsh near the runway).			
	Krabi Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Hua Hin Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	U-Taphao Pattaya International Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Samui Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Surat Thani Airport	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS-Aerodromes PANS-ATM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	Timor-Leste							
	Presidente Nicolau Lobato International Airport, Dili	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
	Commander-in-Chief of the FALINTIL – Kay Rala Xanana Gusmão International Airport, Suai	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS-Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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 Oct. 2015	Insufficient Runway Strip				A
Annex 14 Volume I PANS- Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	Tuvalu	Aerodrome Certification	Effective from 1 Jan 2021	Aerodrome yet to be certified.				A
Annex 14 Volume I PANS- Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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 PANS- Aerodromes PANS-AIM	Vanuatu AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of aerodromes yet to be published in AIP AD 1.5.				A

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

Updated 30 Oct 2020

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	Viet Nam 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.	Airport Operator (ACV)	- Airport Operator (ACV) periodically reports to CAAV about wildlife strike according to CAAV's Decision 399/QD-CHK dated February 25th 2015 on aviation safety report. - CAAV submitted 2016, 2017, 2018 wildlife strike reports to ICAO on December 17th 2018, and has started to periodically submit wildlife strike reports to ICAO for inclusion in IBIS since 2019. [CLOSED] 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**
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	Airport Operator (ACV)	WORK IN PROGRESS * RESA for the runway 25L/07R: The runway is being re-designed for upgrading and setting up the RESA. Target date of completion: End of 2020. * RESA for the runway 25R/07L: Target date of completion: End of 2021. Exemption granted by CAAV to Airport Operator till RESA is able to be provided. ~~December 2018~~ At present, Tan Son Nhat Intl airport is re-designed for upgrading the runways and setting up the RESA.	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 strike report submission to ICAO for inclusion in IBIS.	Submission of wildlife strike reports to ICAO for inclusion in IBIS.	Airport Operator (ACV)	- Airport Operator (ACV) periodically reports to CAAV about wildlife strike according to CAAV's Decision 399/QD-CHK dated February 25th 2015 on aviation safety report. - CAAV submitted 2016, 2017, 2018 wildlife strike reports to ICAO on December 17th 2018, and has started to periodically submit wildlife strike reports to ICAO for inclusion in IBIS since 2019. [CLOSED] 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**
Annex 14 Volume I PANS- Aerodromes PANS-AIM	AIP	Status of Certification of Aerodromes in AIP	Effective from 1 Jan 2021	Status of certification of one of the aerodromes used for international operations yet to be published in AIP AD 1.5.				A

* 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.



ICAO

**APANPIRG
AERODROMES OPERATIONS AND PLANNING SUB-GROUP (AOP/SG)**

LIST OF AOP FOCAL POINTS [Updated on 20 November 2020]

NAME		TITLE/ORGANIZATION	TEL/FAX NUMBER	E-MAIL
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	1.	Mr. Andrew Sparrow [Ref: APANPIRG/30]	Manager Air Navigation, Aerodromes and Airspace Branch, Civil Aviation Safety Authority Canberra City, Australia	Tel: +612 6217 1690 Fax: +61459895030 andrew.sparrow@casa.gov.au ;
	2.	Mr. Roy Tuomela	Manager ATM System Standards Flight Standards Branch CASA\Aviation Group 16 Furzer Street, Phillip ACT 2606 GPO Box 2005, Canberra ACT 2601	Tel: +612 6217 1421 Mob: +61434 664 716 Roy.Tuomela@casa.gov.au
	3.	Mr. Jason Rainbird	Manager Aerodromes Air Navigation Airspace & Aerodromes Branch CASA\Aviation Group 16 Furzer Street, Phillip ACT 2606 GPO Box 2005, Canberra ACT 2601	Tel: +612 6217 1032 Mob: +61455 634 690 Jason.Rainbird@casa.gov.au
2.	BANGLADESH			
	4.	Mr. MD. Ayub Khan	Assistant Director (SAR) Directorate of Flight Safety & Regulations Civil Aviation Authority of Bangladesh Civil Aviation Authority Headquarters Kurmitola, Dhaka-1229	Tel: +880 2 8901406 ayubcaab@gmail.com ;
3.	BHUTAN			
	5.	Mr. Sangay Wangdi	Head of Aerodrome Bhutan Civil Aviation Authority Paro International Airport, Paro, Bhutan	Tel: +975-8-271 911 Mob: +975-17119277 Fax: +975-8-271 909 swangdi@bcaa.gov.bt ;

LIST OF AOP FOCAL POINTS

NAME		TITLE/ORGANIZATION	TEL/FAX NUMBER	E-MAIL
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	6.	Mr. Mohamad Fauzi bin Mohamad Sidek	Acting Deputy Director (Regulator) Department of Civil Aviation Brunei Darussalam	Tel: +673 233 0142 Mob: +673 816 8909 ddca.regulatory@dca.gov.bn
	7.	Mr. Pg Rasman bin Pg Sulaiman	Aerodrome Inspector Department of Civil Aviation Brunei Darussalam	Tel: +673 233 0142 Mob: +673 885 4714 rasman.sulaiman@dca.gov.bn
	8.	Ms. Norhidayah Haji Ismail	Air Traffic Control Officer (ANS Inspector) Department of Civil Aviation Brunei Darussalam	Tel: +673 233 0142 Mob: +673 883 4614 norhidayah.ismail@dca.gov.bn
5.	CAMBODIA			
	9.	Mr. Eng Samreth	Deputy Director (Aerodrome Inspector) of Airport Standards and Safety State Secretariat of Civil Aviation #44, Phnom Penh International Airport, Russian Blv., Phnom Penh	Tel: +855 98 628811 engsamreth@gmail.com ;
6.	CHINA			
	10.	Mr. Ma Zhigang	Director Civil Aviation Administration of China (CAAC) No.155 Dongsì Xidajie, Dong Cheng District, Beijing, China	Tel: +8610 64091804 Fax: +8610 64019967 zhg_ma@caac.gov.cn ;
	11.	Ms. Lyu Qing	Deputy Assistant Division Chief Civil Aviation Administration of China No. 155, Dongsì Xidajie, Beijing 100710	Tel: +8610 6409 2804 lvqing@caac.gov.cn ;
	12.	Mr. Liang Shixin	Intermediate Engineer CAAC General Station of Quality Supervision of Specialized Engineering No. 6 Yutong East St., Chaoyang Dist., Beijing, China	Tel: +86 18801 297577 liangshixin@caac.gov.cn ;

LIST OF AOP FOCAL POINTS

NAME		TITLE/ORGANIZATION	TEL/FAX NUMBER	E-MAIL
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13.	Mr. Raymond NG	Assistant Director-General of Civil Aviation (Airport Standards) Civil Aviation Department Civil Aviation Department Headquarters 1 Tung Fai Road, Hong Kong Int'l Airport, Lantau, Hong Kong China	Tel.: +852-2910 6196 Fax: +852-2795 8469	rcong@cad.gov.hk
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15.	Ms. Rosa YIP	Senior Safety Officer (Airport) Civil Aviation Department Civil Aviation Department Headquarters Hong Kong China	Tel.: +852-2910 6973 Fax: +852-2795 8469	rmlyip@cad.gov.hk
16.	Mr. Hui Yat Tsun	Safety Officer (Airport) Civil Aviation Department Civil Aviation Department Headquarters Lantau, Hong Kong China	Tel: +852-2910 6975 Fax: +852-2795 8469	ythui@cad.gov.hk
MACAO CHINA				
17.	Mr. LAM Tat Ming (Taft)	Director of Airport Infrastructure & Air Navigation Civil Aviation Authority Macao, China	Tel: +853 2851 1213 Tel: +853 8796 4120 Fax: +853 2833 8089	taftlam@aacm.gov.mo
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18.	Mr. John HOSKING	Ministry of Transport PO Box 61 Avarua, Rarotonga, Cook Islands	Tel: +(682) 28810	john.hosking@cookislands.gov.ck
19.	Mr. Dennis Hoskin	Ministry of Transport PO Box 61 Avarua, Rarotonga, Cook Islands	Tel: +(682) 28810	dennis.hoskin@cookislands.gov.ck

LIST OF AOP FOCAL POINTS

NAME		TITLE/ORGANIZATION	TEL/FAX NUMBER	E-MAIL
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	20.	Mr. Ratu Maibulu Q. Laliqavoka	Technical Officer Aerodromes, Ground Safety Department Civil Aviation Authority of Fiji Private Mail Bag NAP 0354, Nadi Int'l Airport,	Tel: +679 672 1555 Mob: +679 992 8949 maibulu.laliqavoka@caaf.org.fj ;
9.	INDIA			
	21.	Mr. Dinesh Chand Sharma	Joint Director General of Civil Aviation Directorate General of Civil Aviation Aerodrome Standards Directorate, DGCA Hqrs., New Delhi 110003	Tel: +91 11 2465 3883 dcsharma.dgca@nic.in ;
	22.	Mr. Amit Srivastava	Deputy Director of Operations Directorate General of Civil Aviation Aerodrome Standards Directorate, DGCA Hqrs., Opp. Safdarjung Airport, New Delhi 110003	Tel: +91 11 2462 2495 amits.dgca@nic.in ;
10.	INDONESIA			
	23.	Ms. Ade Trisetyo	Aerodrome Inspector Directorate of Airport - Airport Standardization Directorate General Civil Aviation Medan Merdeka Barat No. 8, Jakarta 10110	Tel: +62 350 6661 adeth_rossi@yahoo.com ;
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	40.	Glenn Harris	Assistant Secretary FSM Transportation, Communications & Infrastructure Division of Civil Aviation	–	glenn.harris@tci.gov.fm
18.	MONGOLIA				
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LIST OF AOP FOCAL POINTS

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AOP/SG WORK PROGRAMME AND TASK LIST

The priorities assigned in the list have the following connotation:

High = Tasks of a high priority on which work should be expedited;

Medium = Tasks of medium priority on which work should be under taken as soon as possible but not to the detriment of the High tasks; and

Low = Tasks of medium priority on which work should be undertaken as time and resources permit but not to the detriment of High and Medium priority tasks.

TOR = Terms of Reference of the AOP Sub-Group

Task No.	Ref	Associated ICAO Strategic Objective	Task	Priority	Action Proposed	Action by	Target Date	Status
~~AOP/SG/1/2~~	~~APANPIRG 18 Conclusion 18/62~~ ~~APANPIRG 21 Conclusion 21/54~~	~~Safety~~	~~AOP Air Navigation Deficiencies Assist States to establish action plans with fixed target dates for resolution of safety related deficiencies~~	~~High~~	1) Monitor resolution of AOP air navigation deficiencies <i>Please refer to the Task AOP/SG/2/15</i>	AOP/SG	December 2021	<i>Moved to Task AOP/SG/2/15</i> [COMPLETED]
Note: Tasks AOP/SG/1/1, AOP/SG/1/3 to AOP/SG/1/10 moved below in respective tasks.								
AOP/SG/1 (14 – 16 June 2017):								
~~AOP/SG/1/2~~ AOP/SG/1/1	APANPIRG 18 Conclusion 18/62 APANPIRG 21 Conclusion 21/54	Safety	AOP Air Navigation Deficiencies Assist States to establish action plans with fixed target dates for resolution of safety related deficiencies	High	2) Monitor resolution of AOP air navigation deficiencies <i>Please refer to the Task AOP/SG/2/15</i> <i>AOP/SG/2/2</i>	AOP/SG	December 2021	<i>Moved to Task AOP/SG/2/15</i> <i>AOP/SG/2/2</i> [COMPLETED]

Appendix P to Report of AOP/SG/4

Task No.	Ref	Associated ICAO Strategic Objective	Task	Priority	Action Proposed	Action by	Target Date	Status
~~AOP/SG/1/11~~ AOP/SG/1/2	APANPIRG 27 TOR of AOP/SG	Safety, Capacity & Efficiency	Assist in and monitor the implementation of Airport Collaborative Decision Making (A-CDM) at high-density aerodromes used for international operations in APAC Region through APA-CDM/TF.	High	Monitor the status of implementation of A-CDM at high-density aerodromes used for international operations	AOP/SG and APA-CDM/TF	~~Nov. 2019~~ Nov. 2021	Ongoing
~~AOP/SG/1/12~~ AOP/SG/1/3	APANPIRG 27	Safety	Develop regional guidelines on aerodrome operations personnel competency (AOPC) requirements through AOPC Working Group	Medium	Develop regional guidance material	AOP/SG and AOPC SWG	May 2019	~~Ongoing~~ Refer to AOP/SG/4 WP/08 [COMPLETED]
~~AOP/SG/1/13~~ AOP/SG/1/4	APANPIRG 27/34	Safety	Monitor States provide updated information about airport's Obstacle Limitation Surface (OLS) in AIP	High	Monitor OLS of airports through AP-ADO/TF (Please refer to the Task ~~AOP/SG/2/16~~ AOP/SG/2/3)	States, AOP/SG	Continuous	Ongoing
AOP/SG/2 (27 - 29 June 2018):								
~~AOP/SG/2/14~~ AOP/SG/2/1	APANPIRG/18 Conclusion 18/1 APANPIRG Conclusion 21/2 RAN meeting –Asia/PAC/3, rec 4/6	Safety	Wildlife strike hazard reduction programme	High	Establish Wildlife Hazard Management Working Group (WHM WG)	AOP/SG, ICAO APAC Office	~~31 October 2018~~ Continuous	Established AP-WHM/WG. Ongoing

Task No.	Ref	Associated ICAO Strategic Objective	Task	Priority	Action Proposed	Action by	Target Date	Status
AOP/SG/2/15 AOP/SG/2/2	Beijing Declaration 2018 APANPIRG APAC ANP, Doc 9673, Volume I		1) Assist States in implementation of ICAO aerodrome certification requirement and resolution of air navigation deficiencies;	High	Establish an Asia/Pacific Aerodrome Assistance Working Group (AP-AA WG) Monitor resolution of AOP air navigation deficiencies	AOP/SG; ICAO APAC Office	31 October 2018	Established AP-AA/WG. Ongoing
AOP/SG/2/16 AOP/SG/2/3	TOR of AOP/SG Asia Pacific Air Navigation Plan		(1) Review and monitor provisions of facilities, installations and services at international aerodromes: - visual aids; - rescue and firefighting services and emergency planning; - measurement and reporting by States of the surface condition and unevenness on runway; - preventive maintenance programme; - runway safety programme. (2) Review and monitor the content of the Table AOP I - 1 and, where necessary, after coordination with users and operators, and introduce the respective changes to the APAC ANP and Table AOP II – 1 through the established ICAO procedures.	High	Establish Asia/Pacific Aerodrome Design and Operation Task Force (AP-ADO/TF)	AOP/SG; ICAO APAC Office	~~31 October 2018~~ Continuous	Established AP-ADO/TF. Ongoing

Appendix P to Report of AOP/SG/4

Task No.	Ref	Associated ICAO Strategic Objective	Task	Priority	Action Proposed	Action by	Target Date	Status
AOP/SG/3 (24 - 26 June 2019):								
AOP/SG/3/1	55 th DGCA Action Item 55/42	Safety	Certification of aerodromes used for international operations by 2020 (Beijing Declaration's Commitment)	High	Monitor the progress of certification and report to DGCA through APANPIRG	AOP/SG through AP-AA/WG	By 2020	Ongoing
AOP/SG/4 (10 – 13 November 2020):								
AOP/SG/4/1	Draft Conclusion AOP/SG/4-10	Safety	States/Administrations to develop and implement GRF Implementation Action Plan	High	Monitor the GRF Implementation Action Plan developed by States/Administrations	States AOP/SG	28 February 2021	
AOP/SG/4/2	AOP/SG/4 Report on WP/12	Safety	States to arrange necessary resources to recruit, train and retain qualified and experienced technical staff to effectively perform safety oversight of aerodromes to enhance USOAP Effective Implementation score to at least 75% in AGA area by 2022	High	Provide technical assistance to States with limited resources and low AGA EI	States AP-AA/WG	By 2022	
AOP/SG/4/3	AOP/SG/4 Report on WP/11	Safety	Assist States in certification of aerodromes used for international operations	High	Provide technical assistance to States with aerodromes yet to be certified through Aerodrome Assistance Go-Team and other appropriate methods as agreed with the States concerned	AP-AA/WG assisted by ACI	By 2022	

NOTES ON THE AMENDMENT OF ABOVE TABLE TO ENDORSE AS AOP/SG WORK PROGRAMME

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

~~Text to be deleted is shown with a line through it.~~

text to be deleted

New text to be inserted is highlighted with grey shading.

new text to be inserted

~~Text to be deleted is shown with a line through it~~ followed by
the replacement text which is highlighted with grey shading.

new text to replace existing text

—END—