



General principles and procedures for all stages of aerodrome certification

(Chapter 2 of the PANS-Aerodromes, 1st ed)

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Overview

- **Initial certification**
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Scope of certification

- Covers all relevant specifications established through the regulatory framework applicable to the aerodrome
- The relevant specifications stem from Annex 14, Volume I, Standards and Recommended Practices (SARPs), as well as other relevant additional requirements



Scope of certification (cont'd)

Includes at least the following subjects:

- compliance of the aerodrome infrastructure with the applicable regulations for the operations the aerodrome is intended to serve
- the operational procedures and their day-to-day application, when applicable, concerning
 - aerodrome data and reporting
 - access to the movement area



Scope of certification (cont'd)

- aerodrome emergency plan
- rescue and fire fighting (RFF)
- inspection of the movement area
- maintenance of the movement area
- snow and ice control, and other hazardous meteorological conditions
- visual aids and aerodrome electrical systems
- safety during aerodrome works



Aerodrome technical inspections

- Include, as a minimum
 - an inspection of the infrastructure, obstacle limitation surfaces (OLS), visual and non-visual aids and aerodrome equipment for the use of aeroplanes
 - an inspection of the RFF services; and
 - an inspection of wildlife hazard management



Technical inspection options

- *Option 1: full inspections*
 - at aerodromes where an SMS is not fully operational
 - conducted using checklists developed by the State (see Appendix 1 for critical areas to be inspected)
 - follow-up inspection instead of a full inspection if technical inspections have previously been conducted

Technical inspection options (cont'd)

- *Option 2: demonstration of compliance by the operator*
 - At aerodromes where an SMS has been fully implemented, the aerodrome operator should ensure that the requirements in the checklists provided by the State have been complied with
 - According to the answers to the checklist, the aerodrome operator may need to undertake safety assessments and provide them, together with the completed checklists, to the State for acceptance
 - The State should then analyze the documents completed by the applicant and conduct sample on-site checks according to this analysis



Aerodrome manual

- An application for an aerodrome certificate shall be accompanied by an aerodrome manual produced in accordance with the applicable regulation
- All aerodrome operating staff to have access to the **relevant parts** of the manual
 - The term “operating staff” refers to those persons, whether or not they are employed by the aerodrome operator, whose duties are concerned either with ensuring safety of aerodrome operations or require them to have access to the aerodrome movement areas and all other areas within the aerodrome perimeter.
 - When considered suitable for security or management reasons, the aerodrome operator may restrict the access of some operating staff to parts of the aerodrome manual, if they are suitably briefed by other means to perform their duties adequately and this would not impair the safety of aerodrome operations.



Aerodrome manual (cont'd)

Scope:

- The aim and objectives of the aerodrome manual and how it is to be used by operating staff and other stakeholders should be stated in the manual
- It contains all the relevant information to describe the management and operational structure
- It is the means by which all aerodrome operating staff are fully informed as to their duties and responsibilities with regard to safety, including information and instructions related to those matters specified in the applicable regulation
- It describes the aerodrome services and facilities, all operating procedures, and any restrictions in place



Aerodrome manual (cont'd)

Ownership:

- The aerodrome operator is responsible for developing and maintaining the aerodrome manual, as well as providing appropriate personnel access to it
- It is the responsibility of the aerodrome operator to be satisfied with the appropriateness of each provision of the aerodrome manual to a particular operation and to make amendments and additions as necessary



Aerodrome manual (cont'd)

Format:

- Shall be submitted as part of the certification process, containing, inter alia, information on how operational procedures and their safe management will be delivered
- accurately reflects the aerodrome's SMS and shows, in particular, how the aerodrome intends to measure its performance against safety targets and objectives
- All aerodrome safety policies, operational procedures and instructions are contained in detail or cross referenced to other formally accepted or recognized publications



Aerodrome manual (cont'd)

- Contents of the manual
 - See 2.2.2 of Chapter 2.
 - Attachments A and C to Chapter 2 provide additional guidance
- Updating of the manual
 - Responsibility for maintaining the accuracy of the aerodrome manual is clearly defined in the manual.
 - The manual is updated using a defined process and includes a record of all amendments, effective dates and amendment approvals.
 - Any amendments or additions should be communicated to the State in accordance with the continued oversight requirements established by the State.



Approval/acceptance of aerodrome manual

- Prior to on-site verification of the aerodrome (including procedures and SMS), the aerodrome manual is reviewed by the State
- Prior to the approval/acceptance of the aerodrome manual, the State should verify that
 - the operator has submitted an application
 - the aerodrome manual submitted by the aerodrome operator contains all the required information; and
 - all the procedures related to aerodrome certification that will be assessed by the on-site verification team are provided in the aerodrome manual



Approval/acceptance of aerodrome manual (cont'd)

- The State formally informs the aerodrome operator when the aerodrome manual is accepted
- The aerodrome operator should inform the State of any changes to the approved/accepted aerodrome manual between the time of the application for a certificate and the end of the on-site verification



On-site verification

- The scope of the on-site verification covers the subjects included in the aerodrome manual.
- The on-site verification confirms that the aerodrome operations are carried out effectively in accordance with the applicable regulation and procedures described in the manual.
- The on-site verification of the SMS is normally included at this stage of initial certification, but depending on the implementation status of the SMS at the aerodrome, a specific verification of the SMS can be conducted separately.



On-site verification (cont'd)

On-site verification of the SMS focuses explicitly on the components required for granting the certificate and, when applicable, covers all other requirements for an SMS

- The minimal SMS components that are to be in operation before the certificate can be granted are described in Appendix 1 of Chapter 2 of Doc 9981
- **SMS requirements also apply to the aerodrome operator's subcontractors** in the domains within the scope of certification



On-site verification (cont'd)

- **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
- At the end of an on-site verification, a preliminary list of findings is given to the aerodrome operator
- An on-site verification report is also sent to the aerodrome operator after the classification of findings by the State



Corrective action plan

- In case of findings, the State should require the operator to develop a corrective action plan proposing ways to eliminate or mitigate the findings, with deadlines for each subsequent action
- **The State may impose immediate appropriate measures** on the aerodrome operator, if necessary, until actions have been taken to remove or mitigate the findings



Issuance of the certificate

- When no findings are reported or once the corrective action plans are accepted, and mitigation measures are agreed upon, the State grants the aerodrome certificate to the applicant
- An appendix may be attached to the certificate describing the essential conditions prevailing at the aerodrome, which may include:
 - the aerodrome reference code;
 - critical aeroplane type;



Issuance of the certificate (cont'd)

- the operational conditions for the accommodation of critical aeroplanes for which the facility is provided;
- RFF category;
- the operational restrictions at the aerodrome; and
- the authorized deviations related to aerodrome compatibility described in Chapter 4, their inherent operational conditions/restrictions and validity



Issuance of the certificate (cont'd)

- The State may accept a deviation on the basis of a safety assessment framework
- Accepted deviations should be listed in the aerodrome manual together with their validity and references to the related documents (including any safety assessments)



Issuance of the certificate (cont'd)

- As long as the granting conditions are maintained, the validity of the certificate is either limited in time or unlimited
 - In determining the duration of validity of the certificate, account may be taken of the number of technical staff required for the inspection activities, the complexity of the inspection activities to be performed including the number of aerodromes to be inspected and the maturity of the aerodrome operator's safety management system
- During the period of validity of the certificate, the State monitors the timely implementation of the corrective action plans within the continued oversight



Promulgation of the status of certification

- The State shall promulgate the status of certification of aerodromes in the aeronautical information publication, including:
 - aerodrome name and ICAO location indicator;
 - date of certification and, if applicable, validity of certification; and
 - remarks, if any



Promulgation of the status of certification (cont'd)

- Where safety concerns have been observed on the aerodrome, special conditions or operational restrictions may be attached to the certificate and published in the aeronautical information publication (AIP) or by NOTAM until completion of the corrective action plan. In this case, validity may be shortened to be consistent with the duration and content of the corrective action plan. Other possible measures that may be taken by the State include suspension and revocation of the certificate



Continued oversight principles

- The State should plan continued oversight actions in such a way as to ensure that each subject covered by the scope of certification is subject to oversight
- The development and operation of an aerodrome's SMS should ensure that the aerodrome operator takes appropriate actions regarding the safety on the aerodrome
 - When an aerodrome has a fully developed and operational SMS, the continued oversight of the aerodrome does not have to be as exhaustive as for one with a developing SMS. Oversight activities in this case should focus on the SMS itself in order to ensure that the aerodrome SMS is operating continuously and adequately



Continued oversight principles (cont'd)

- A periodic audit cycle should be developed which consists of:
 - at least one audit of the SMS; and
 - sample checks on specific subjects (to verify the level of maturity of SMS)
- the SMS should be audited as appropriate until it is considered to be sufficiently mature

Audit of selected items

- After initial certification has taken place, continued oversight actions of a subject may not require complete audit of all subject items and may instead be on the basis of sample assessment of selected items based on risk profile
- The audit of the selected items should consist of:
 - a desk-based review of the appropriate documents, and
 - an on-site verification



Influence of aerodrome safety performance and risk exposure

The number of audits of the SMS during a period should be determined taking into account the following criteria:

- the regulator's confidence in the operator's SMS
- other factors contributing to the level of risk at the aerodrome, for example, the complexity of the aerodrome, the aerodrome's infrastructure or organization, the density of traffic, type of operations and other specific conditions



Influence of aerodrome safety performance and risk exposure (cont'd)

- For aerodromes with a fully implemented SMS, in addition to the audit of the SMS, some sample subjects should be checked to ensure that the SMS has identified all safety-critical issues. This also helps to ensure that the SMS is operating adequately. The selection of these subjects should be determined taking into account:
 - an analysis of the safety occurrences on the aerodrome
 - known information related to safety at the aerodrome that may highlight subjects of concern



Influence of aerodrome safety performance and risk exposure (cont'd)

- specific subjects most significant for safety
- the complexity of the aerodrome
- any significant development or change to aerodrome infrastructure; and
- the subjects previously selected in order to cover all within a certain number of oversight cycles

Continued oversight plans and programmes

An oversight plan should be determined by the State, for each certified aerodrome and communicated to the aerodrome operator. This plan should ensure that:

- for aerodromes where an SMS is not fully functional:
 - each subject within the scope of certification appears at least once and is subject to specified oversight actions; and
 - the SMS is audited as appropriate;



Continued oversight plans and programmes (cont'd)

- for the aerodromes with a fully functional SMS:
 - the SMS is audited at least once; and
 - other oversight actions on selected subjects are conducted as appropriate.
- **The plan and programme should be updated** annually to show the oversight actions that have actually been carried out, including observations on certain actions that have not been undertaken as planned.



Unannounced inspections

- Planning of the aerodrome audit does not prevent the State from carrying out unannounced inspections, if deemed necessary
- These inspections follow the same methodology as the scheduled audit or technical inspection as appropriate and may be carried out using the same checklists or could be aimed at a specific subject of concern



Monitoring of corrective actions plans

- Corrective actions plans should be monitored by the State until all items are closed to ensure that mitigating actions are carried out to the standard and timescale agreed
- The State should regularly review the status of each pending action
- When a deadline has been reached, the State should verify that the related corrective actions have been adequately implemented
- Where a corrective action plan does not result in appropriate action being taken within acceptable timelines, **increased oversight** can be taken by the State



Increased oversight

When an aerodrome's corrective action plan does not ensure that appropriate corrective action has been taken within acceptable timelines, and after coordination between the State and the operator, the State may decide that increased oversight of this operator is necessary. The scope of increased oversight may cover specific subjects or be all-encompassing.



Increased oversight (cont'd)

- The State should notify the aerodrome operator in writing:
 - that it is being placed under increased oversight and outline the subjects concerned and from which date;
 - the reasons for the increased oversight and what it consists of; and
 - what actions are required by the aerodrome



Increased oversight (cont'd)

- When an aerodrome is placed under increased oversight, the State should:
 - carry out appropriate oversight actions on the subjects concerned;
 - follow very carefully the implementation of the corrective actions plan; and
 - allocate sufficient time/resources to the oversight of the concerned aerodrome



Increased oversight (cont'd)

- The oversight actions carried out under increased oversight are the same as those carried out normally, but are more exhaustive and address all the subjects concerned
- **When increased oversight is concluded** on an aerodrome for a specific subject, the State should advise the aerodrome operator in writing, stating the end of the procedure and the reason
- **The aerodrome certificate can be amended, suspended or revoked** according to the outcome of the increased oversight



Aerodrome safety coordination

- Coordination affecting aerodrome safety
- State's feedback on occurrences
- Management of change
- Obstacle control
- Oversight of third parties



Coordination affecting aerodrome safety

- Coordination between the aerodrome operator, aeroplane operators, air navigation service providers and all other relevant stakeholders to ensure the safety of operations
- The aerodrome operator should ensure that all users of the aerodrome comply with the safety requirements of the aerodrome operator. The aerodrome operator monitors such compliance



State's feedback on occurrences

- Aerodrome operators are required to report safety occurrences at their aerodromes to their State in accordance with the applicable regulation
- Aerodrome operators shall report accidents and serious incidents, including:
 - runway excursions;
 - undershoots;
 - runway incursions;
 - landing or take-off on a taxiway; and
 - wildlife strike-related events



State's feedback on occurrences (cont'd)

- In addition to accidents and serious incidents, aerodrome operators should report safety occurrences of the following types:
 - foreign object debris/damage- (FOD) related event;
 - other excursions (i.e. from a taxiway or apron);
 - other incursions (i.e. on taxiway or apron); and
 - ground collisions



State's feedback on occurrences (cont'd)

- Aerodrome operators should ensure that analysis of safety occurrences at the aerodrome is performed by competent personnel who have been trained to perform these tasks
- Aerodrome operators should coordinate with all users of the aerodrome to improve the completeness and accuracy of the collection of safety occurrences and their related critical data



State's feedback on occurrences (cont'd)

- The State should review and analyze the information provided by the operator in the occurrences reports to ensure that:
 - all occurrences are adequately analysed by the aerodrome operator;
 - significant trends are identified (either on a specific aerodrome or at a national level). Further in-depth analysis on the subject should be carried out if required so that the appropriate actions can be taken; and
 - the most serious/significant occurrences should be carefully followed up by the State.
- The output of these analyses can be used as input for the planning of continued oversight.



Management of change

- As part of their SMS, aerodrome operators should have in place procedures to identify changes and to examine the impact of those changes on aerodrome operations
- A safety assessment will be carried out to identify hazards and propose mitigation actions for all changes that are found to have an impact on the aerodrome operations



Management of change (cont'd)

Impact on the safety of aerodrome operations may result from:

- changes in the characteristics of infrastructures or the equipment;
- changes in the characteristics of the facilities and systems located in the movement area;
- changes in runway operations (e.g. type of approach, runway infrastructure, holding positions);
- changes to the aerodrome networks (e.g. electrical and telecommunication);
- changes that affect conditions as specified in the aerodrome's certificate;
- long-term changes related to contracted third parties;
- changes to the organizational structure of the aerodrome; and
- changes to the operating procedures of the aerodrome

Obstacle control

Obstacle control raises an issue for each State in regard to the responsibilities of each potential party involved. The responsibilities of those parties have to be clearly defined as follows:

- who is responsible for obstacle surveys;
- who is responsible for the surveillance of the emergence of new obstacles; and
- when obstacles are identified, who is responsible for taking action (i.e. removal, marking, lighting, displacement, instrument procedures) and enforcing that action



Obstacle control (cont'd)

- Once the responsibilities have been defined, appropriate authority should be given to the entity responsible for the enforcement action required



Oversight of third parties

- Compliance of third parties with the safety provisions established by the aerodrome operator should be monitored using the appropriate means



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Thank You