



European Aviation Safety Agency

NOTICE OF PROPOSED AMENDMENT

NPA 2011-20 (B.II)

RMT.0136 (ADR.001 (a)) & RMT.0137 (ADR.001 (b))

RMT.0140 (ADR.002 (a)) & RMT.0141 (ADR.002 (b))

RMT.0144 (ADR.003 (a)) & RMT.0145 (ADR.003 (b))

**Authority, Organisation and Operations
Requirements for Aerodromes**

NPA 2011-20 (B.II) — AMC/GM

AMC1 – Article 3 Oversight capabilities**CONFLICT OF INTEREST**

The competent authority should ensure that the cases of conflict of interest which are related to family or financial interest are also addressed.

AMC/GM to ANNEX I – Part Authority Requirements (Part-AR)**SUBPART A –GENERAL REQUIREMENTS (ADR.AR.A)****GM1-ADR.AR.A.010 – Oversight documentation****AVAILABILITY OF DOCUMENTATION TO THIRD PARTIES**

The legislative acts, standards, rules, technical publications and similar documents can be made available, in a timely manner, to the aerodrome operators and any other interested party in various ways and formats, such as via its website, the government's official gazette, or any other similar means.

The way for making such material available, including possible application of fees, it is for the competent authority to decide.

Making such documentation available is without prejudice to the application of rules regarding protection of intellectual property rights, or similar applicable legislation.

GM1-ADR.AR.A.015 – Means of compliance**GENERAL**

Alternative means of compliance used by a competent authority or by organisations under its oversight may be used by other competent authorities or organisations only if processed again in accordance with ADR.AR.A.015 (d) and (e).

AMC1-ADR.AR.A.020 – Notification of cases of equivalent level of safety and special conditions**DOCUMENTATION TO BE PROVIDED**

The competent authority should provide the Agency with a description of such equivalent level of safety or special conditions.

Such documentation may include but is not limited to:

- description of the situation;
- rationale;
- description and the technical and operational characteristics of the solution applied;
- safety assessments;
- mitigating measures applied, if applicable.

AMC1-ADR.AR.A.030(d) — Immediate reaction to a safety problem

NOTIFICATION OF MEASURES

In case that the competent authority directs a measure to a provider apron management services, then these measures should also be notified to the aerodrome operator.

GM1-ADR.AR.A.040 — Safety Directives

FORWARDING OF SAFETY DIRECTIVES

Member States' competent authorities may issue safety directives (which may be called operational directives, or otherwise) during its oversight activities, such as an instruction to the aerodrome operator to abstain from a certain activity, or a positive action (e.g. cutting of trees which are found to penetrate the OLS, or the removal of certain object from the aerodrome etc.) needed to maintain the level of safety. Such safety directives are not meant to be forwarded to the Agency.

The safety directives that need to be forwarded to the Agency under ADR.AR.A.040 include, but are not limited, to cases like the following ones, where the competent authority has determined:

- (a) necessary to include additional certification specifications in the certification basis of an aerodrome;
- (b) that aerodrome equipment has presented unusual or frequent or otherwise unjustified malfunctions or failures;
- (c) that the certification specifications established by the Agency are such that under given conditions additional action is required to be undertaken in order to maintain the level of safety;
- (d) that there is immediate need to take certain action in order to respond to a safety recommendation or following an accident or serious incident; or
- (e) that this or similar unsafe condition may be present at other aerodromes of the same Member State.

SUBPART B – MANAGEMENT (ADR.AR.B)**AMC1-ADR.AR.B.005(a) – Management system**

GENERAL

- (a) The following should be considered when deciding upon the required organisational structure:
- (1) the number of certificates and approvals to be issued;
 - (2) the number of declared organisations;
 - (3) the number and complexity of aerodromes, aerodrome operators and providers of apron management services within that Member State;
 - (4) the possible allocation of tasks to third natural or legal persons of resources needed to fulfil the continuing oversight obligations;
 - (5) the level of civil aviation activity;
 - (6) the size of the Member State's aviation industry; and
 - (7) it should also take into account the potential growth of activities in the field of civil aviation.
- (b) The set-up of the organisational structure should ensure that carrying out the various tasks and obligations of the competent authority do not rely solely on individuals. That means that a continuous and undisturbed fulfilment of these tasks and obligations of the competent authority should also be guaranteed in case of illness, accident or leave of individual employees.

GM1-ADR.AR.B.005(a) – Management system

GENERAL

- (a) The competent authority designated by each Member State should be organised in such a way that:
- (1) there is specific and effective management authority in the conduct of all relevant activities;
 - (2) the functions and processes described in the applicable requirements of Regulation (EC) No 216/2008 and its Implementing Rules and AMCs, CSs and GM may be properly implemented;
 - (3) the competent authority's organisation and operating procedures for the implementation of the applicable requirements of the Regulation (EC) No 216/2008 and its Implementing Rules are properly documented and applied;
 - (4) all competent authority personnel involved in the related activities are provided with training where necessary;
 - (5) specific and effective provision is made for the communication and interface as necessary with the Agency and the competent authorities of other Member States; and
 - (6) all functions related to implementing the applicable requirements are adequately described.
- (b) A general policy in respect of activities related to the applicable requirements of Regulation (EC) No 216/2008 and its Implementing Rules, including certification

AMC/GM to Annex I – Part-AR

SUBPART B – MANAGEMENT (ADR.AR.B)

specifications, should be developed, promoted and implemented by the manager at the highest appropriate level; for example the manager at the top of the functional area of the competent authority that is responsible for such activities.

- (c) Appropriate steps should be taken to ensure that the policy is known and understood by all personnel involved, and all necessary steps should be taken to implement and maintain the policy.
- (d) The general policy, whilst also satisfying additional national regulatory responsibilities, should in particular take into account:
 - (1) the provisions of Regulation (EC) No 216/2008;
 - (2) the provisions of the applicable Implementing Rules and their acceptable means of compliance, certification specifications and guidance material;
 - (3) the needs of industry; and
 - (4) the needs of the Agency and of the competent authority.
- (e) The policy should define specific objectives for key elements of the organisation and processes for implementing related activities, including the corresponding control procedures and the measurement of the achieved standard.

AMC1-ADR.AR.B.005(a)(1) – Management system

DOCUMENTED POLICIES AND PROCEDURES

- (a) The various elements of the organisation involved with the activities related to the applicable requirements of Regulation (EC) No 216/2008 and its Implementing Rules should be documented in order to establish a reference source for the establishment and maintenance of this organisation.
- (b) The documented procedures should be established in a way that facilitates their use. They should be clearly identified, kept up-to-date and made readily available to all personnel involved in the relevant activities.
- (c) The documented procedures should cover, as a minimum, the following aspects:
 - (1) policy and objectives;
 - (2) organisation structure;
 - (3) responsibilities and associated authority;
 - (4) procedures and processes;
 - (5) internal and external interfaces;
 - (6) internal control procedures;
 - (7) training of personnel;
 - (8) cross references to associated documents; and
 - (9) assistance from other competent authorities or the Agency (where required).
- (d) Except for smaller competent authorities, it is likely that the information is held in more than one document or series of documents, and suitable cross-referencing should be provided. For example, organisational structure and job descriptions are not usually in the same documentation as the detailed working procedures. In such cases it is recommended that the documented procedures include an index of cross references to all such other related information, and the related documentation should be readily available when required.

AMC1-ADR.AR.B.005(a)(2) – Management system

SCOPE AND DURATION OF INITIAL TRAINING OF AERODROME INSPECTORS

Initial training should encompass:

- initial theoretical training;
- practical training; and
- on-the-job training.

(a) Initial theoretical training

The scope of the initial theoretical training is to familiarise the trainee aerodrome inspectors with the finding categorisation, reporting, follow-up procedures and enforcement. The primary scope of the theoretical training is not the transfer of technical knowledge, as the trainees should possess such knowledge, either from previous work experience or through specialised training, prior to attending the theoretical course (for areas of training see AMC4-ADR.AR.B.005 (a) (2)).

(b) Practical training

The scope of practical training is to instruct on audit/inspection techniques and specific areas of attention without interference with the operation of the aerodrome activities.

(c) On-the-job training

The objective of the on-the-job training is to familiarise the trainees with the particularities of performing an aerodrome audit/inspection in a real, operational environment. The competent authority should ensure that on-the-job training is undertaken only by trainees that have successfully completed the initial theoretical and practical training above by passing a relevant evaluation.

(d) Duration and conduct of the on-job-training

The duration of the on-the-job training should be customised to the particular training needs of every trainee, and should start as soon as possible after the completion of the practical training and cover as much as possible the audit/inspection items which the inspector will be privileged to inspect. The on-the-job training should include at least two aerodrome audits/ inspections.

(e) Elements to be covered during the on-the-job training

On-the-job training should address the following elements:

(1) Preparation of an audit/inspection:

- (i) sources of information for preparation of audit/inspection;
- (ii) areas of concern and/or open findings;
- (iii) selection of aerodrome operator(s) to be audited/inspected;
- (iv) task allocation among members of the audit/inspection team.

(2) Administrative issues of the inspection:

- (i) aerodrome inspector's credentials, rights and obligations;
- (ii) aerodrome access procedures;
- (iii) safety and security airside procedures;

AMC/GM to Annex I – Part-AR

SUBPART B – MANAGEMENT (ADR.AR.B)

- (iv) aerodrome inspector's toolkit (fluorescent vest, checklists, clinometer, distance measurement devices, digital camera, GPS, etc.).

(3) Audit/Inspection:

- (i) introduction — opening meeting;
- (ii) on-site activities (audit/inspection according to the area of expertise of the trainee);
- (iii) findings (identification, categorisation, evidencing, reporting);
- (iv) corrective actions — enforcement.

(4) Closing meeting — debriefing on the audit/inspection conclusions

(5) Preparation, completion and delivery of the audit/inspection report

(6) Human factors elements:

- (i) cultural aspects;
- (ii) resolution of disagreements and/or conflicts;
- (iii) auditee stress.

(7) Team leading

(8) Post-audit/inspection procedures, such as monitoring the status of open audit findings, follow-up audits/inspections, and closing the findings after appropriate action has been taken by the aerodrome operator.

(f) Assessment of trainee aerodrome inspectors:

The assessment of the trainee should be done by the aerodrome inspector providing the training. A trainee should be considered to have successfully completed the on-the-job training only after demonstrating to the aerodrome inspector providing the training that he/she possesses the professional competence, knowledge, judgement and ability to perform aerodrome inspections in an operational environment, in accordance with the applicable requirements.

(g) Aerodrome inspectors providing training and assessing trainees

The aerodrome inspectors providing the training and assessing trainee aerodrome inspectors, should be appointed by the competent authority and should meet the qualification criteria established by that competent authority, which should contain at least the following requirements:

- (1) the appointee has been a qualified aerodrome inspector over the three years prior to his/her appointment;
- (2) the appointee has performed the required number of inspections during the last thirty-six month prior to his appointment, in accordance with AMC4-ADR.AR.B.005.

Additional factors to be considered when nominating aerodrome inspectors to provide training and assess trainee aerodrome inspectors include: knowledge of training techniques, professionalism, maturity, judgment, integrity, safety awareness, communication skills, personal standards of performance.

AMC2-ADR.AR.B.005(a)(2) — Management system**QUALIFICATION OF AERODROME INSPECTORS AFTER SUCCESSFUL COMPLETION OF TRAINING**

AMC/GM to Annex I – Part-AR

SUBPART B – MANAGEMENT (ADR.AR.B)

- (a) Upon the successful completion of the initial training (initial theoretical training; practical training and on-the-job training) the competent authority should issue a formal qualification statement for each qualified aerodrome inspector listing its privileges. The aerodrome inspectors should also be issued credentials, to facilitate their work.
- (b) The background knowledge and/or working experience of the aerodrome inspector determines its privileges (the scope of his/her inspection; what he/she is entitled to inspect). The competent authority should determine what the inspector is entitled to inspect taking into account the following considerations:
 - (1) background knowledge; and
 - (2) working experience.
- (c) The inspecting authority should put in place a system that will ensure that their aerodrome inspectors meet at all times the qualification criteria with regard to the eligibility, training and recent experience.

AMC3-ADR.AR.B.005(a)(2) – Management system

RECENT EXPERIENCE REQUIREMENTS FOR AERODROME INSPECTORS

- (a) An aerodrome inspector will remain qualified if he/she performs a minimum number of two aerodrome audits/inspections during the previous 12 months. In case the minimum number of audits/inspections may not be achieved due to the number of aerodromes in a Member State, audits/inspections conducted on other aerodromes which are open to public use and which however do not fall within the scope of Regulation (EC) No 216/2008, may also be taken into account.
- (b) If an aerodrome inspector loses his/her qualification as a result of not reaching the minimum number of inspections mentioned in paragraph (a), he/she may be re-qualified by the competent authority by performing the number of the missed audits/inspections under the supervision of a qualified aerodrome inspector. The missed audits/inspections should take place within a maximum period of 3 months following the end of the period within which he/she should have reached the minimum number of audits/inspections.
- (c) If an aerodrome inspector loses his/her qualification because he/she has not been engaged in performing audits/inspections for a period larger than that established in paragraph 2 but less than 24 months, he/she should be re-qualified by the competent authority only after successfully completing on-the-job-training and any recurrent training required.
- (d) If an aerodrome inspector loses his/her qualification because he/she has not been engaged in performing audits/inspections for more than 24 months, he/she should be fully re-qualified by the competent authority only after successfully completing initial theoretical, practical and on-the-job training.

AMC4-ADR.AR.B.005(a)(2) – Management System

TRAINING PROGRAMME AND RECURRENT TRAINING

- (a) The competent authority should establish a training programme for its personnel, including its aerodrome inspectors, and a plan for its implementation. The training programme should include, as appropriate to the role, current knowledge, experience and skills, of the personnel, at least the following:
 - (1) aviation legislation organisation and structure;

AMC/GM to Annex I – Part-AR

SUBPART B – MANAGEMENT (ADR.AR.B)

- (2) the Chicago Convention, relevant ICAO Annexes and documents, the applicable requirements of Regulation (EC) No 216/2008, its Implementing Rules and related acceptable means of compliance, certification specifications and guidance material, as well as assessment methodology of the alternative means of compliance and the applicable national legislation;
- (3) the applicable requirements and procedures;
- (4) areas of particular interest include, but are not limited to:
 - (i) management systems, including safety management systems, safety assurance principles, and quality and security management systems as applied to aeronautical data and aeronautical information;
 - (ii) acceptability and auditing of safety managements systems;
 - (iii) change management;
 - (iv) aeronautical studies, safety assessments and reporting techniques;
 - (v) human factors principles;
 - (vi) aerodrome design;
 - (vii) signs, markings and lighting;
 - (viii) aerodrome maintenance;
 - (ix) aerodrome operations, including:
 - (A) aerodrome safeguarding;
 - (B) rescue and fire-fighting;
 - (C) emergency planning;
 - (D) disabled aircraft removal;
 - (E) low visibility operations;
 - (F) adverse weather operations;
 - (G) wildlife management;
 - (H) apron management and apron safety management;
 - (I) handling of hazardous materials;
 - (J) fuel, facilities, storage and handling;
 - (x) evaluation, approval and review of aerodrome manuals;
 - (xi) other suitable technical training appropriate to the role and tasks of the personnel, in particular for those areas requiring approvals.
- (5) The training programme and plan should be updated, as needed, to reflect, at least, changes in aviation legislation and industry. The training programme should also cover the specific needs of the personnel and the competent authority.
- (6) The competent authority should ensure that its personnel, including its aerodrome inspectors, undergo recurrent training at regular intervals defined by the competent authority or whenever deemed necessary, in order to be kept-up-to-date.

GM1-ADR.AR.B.005(a)(2) — Management system**AERODROME INSPECTORS — DUTIES**

AMC/GM to Annex I – Part-AR

SUBPART B – MANAGEMENT (ADR.AR.B)

- (a) An aerodrome inspector is considered to be any person to whom the competent authority has formally assigned tasks related to the safety oversight of aerodromes.
- (b) Apart from the aerodrome oversight tasks, an aerodrome inspector may also undertake other tasks that the competent authority finds necessary.

GM2-ADR.AR.B.005 AR.200(a)(2) – Management System

QUALIFICATION OF PERSONNEL

The term qualification denotes fitness for the purpose through fulfilment of the necessary conditions such as completion of required training or acquisition of a diploma or degree.

Qualification could also be interpreted to mean capacity, knowledge, or skill that matches or suits an occasion, or makes someone eligible for a duty, office, position, privilege, or status. Qualification does not necessarily imply competence.

Certain posts may by nature be associated with the possession of certain qualifications in a specific field (e.g. civil or electrical engineering, wildlife biology etc.). In such cases, the person occupying such a post is expected to possess the necessary qualifications at a level that is in accordance with the applicable national or community legislation.

GM3-ADR.AR.B.005(a)(2) – Management system

QUALIFICATION AND TRAINING – GENERAL

- (a) To ensure personnel remain competent, arrangements should be made for initial and recurrent training as required.
- (b) The basic capability of the competent authority's personnel is a matter of recruitment and normal management functions in selection of personnel for particular duties. Moreover, the competent authority should provide training in the basic skills as required for those duties. However, to avoid differences in understanding and interpretation, it is considered important that all personnel be provided with further training specifically related to the applicable requirements of Regulation (EC) No 216/2008, its Implementing Rules and related AMCs, CS' and GM, as well as related to the assessment of alternative means of compliance.
- (c) The competent authority may provide training through its own training organisation with qualified trainers or through another qualified training source (e.g., training provided by other competent authorities or the Agency).
- (d) When training is not provided through an internal training organisation, adequately experienced and qualified persons may act as trainers, provided their training skills have been assessed. If required, an individual training plan should be established covering specific training skills. Records should be kept of such training and of the assessment, as appropriate.

GM4-ADR.AR.B.005(a)(2) – Management System

SUFFICIENT PERSONNEL

- (a) This guidance material for the determination of the required personnel is limited to the performance of certification and oversight tasks, excluding personnel required to perform tasks subject to any national regulatory requirements.
- (b) The elements to be considered when determining required personnel and planning their availability may be divided into quantitative and qualitative elements:

AMC/GM to Annex I – Part-AR

SUBPART B – MANAGEMENT (ADR.AR.B)

- (1) Quantitative elements:
 - (i) the number of initial certificates to be issued;
 - (ii) the number of aerodromes and aerodrome operators certified by the competent authority; and
 - (iii) the number of providers of apron management services having declared their activity to the competent authority.
- (2) Qualitative elements:
 - (i) the size, nature and complexity of activities of aerodromes and aerodrome operators, as well as providers of apron management services:
 - (A) privileges of the aerodrome operator;
 - (B) type of approval, scope of approval;
 - (C) possible certification to industry standards;
 - (D) types of aerodromes operated;
 - (E) number of personnel; and
 - (F) organisational structure, existence of subsidiaries.
 - (ii) results of past oversight activities, including audits, inspections and reviews, in terms of risks and regulatory compliance:
 - (A) number and level of findings; and
 - (B) implementation of corrective actions.
 - (iii) the size of the Member State's aviation industry and the potential growth of activities in the field of civil aviation, which may be an indication of the number of new applications and changes to existing certificates to be expected.
- (c) Based on existing data from previous oversight planning cycles and taking into account the situation within the Member State's aviation industry, the competent authority may estimate:
 - (1) the standard working time required for processing applications for new certificates;
 - (2) the standard working time required for processing declarations;
 - (3) the number of new declarations or changed declarations;
 - (4) the number of new certificates to be issued for each planning period; and
 - (5) the number of changes to existing certificates to be processed for each planning period.
- (d) In line with the competent authority's oversight policy, the following planning data should be determined specifically for each aerodrome and aerodrome operator, as well as for declared providers of apron management services:
 - (1) standard number of audits/inspections to be performed per oversight planning cycle;
 - (2) standard duration of each audit/inspection;
 - (3) standard working time for audit/inspection preparation, on-site audit/inspection, reporting and follow-up, per aerodrome inspector; and
 - (4) minimum number and required qualification of aerodrome inspectors for each audit/inspection.

AMC/GM to Annex I – Part-AR

SUBPART B – MANAGEMENT (ADR.AR.B)

- (e) Standard working time could be expressed either in working hours per aerodrome inspector or in working days per aerodrome inspector. All planning calculations should then be based on the same unit (hours or working days).
- (f) It is recommended to use a spreadsheet application to process data defined under (c) and (d) above, to assist in determining the total number of working hours/days per oversight planning cycle required for certification, oversight and enforcement activities. This application could also serve as a basis for implementing a system for planning the availability of personnel.
- (g) For each aerodrome, aerodrome operator and provider of apron management services the number of working hours/days per planning period for each qualified aerodrome inspector that may be allocated for certification, oversight and enforcement activities should be determined, taking into account:
 - (1) purely administrative tasks not directly related to oversight and certification;
 - (2) training;
 - (3) participation in other projects;
 - (4) planned absence; and
 - (5) the need to include a reserve for unplanned tasks or unforeseeable events.
- (h) The determination of working time available for certification, oversight and enforcement activities should also consider the possible use of third natural or legal persons.
- (i) Based on the elements listed above, the competent authority should be able to:
 - (1) monitor dates when audits and inspections are due and when they have been carried out;
 - (2) implement a system to plan the availability of its personnel; and
 - (3) identify possible gaps between the number and qualification of its personnel and the required volume of certification and oversight.

Care should be taken to keep planning data up-to-date in line with changes in the underlying planning assumptions, with particular focus on risk-based oversight principles.

GM5-ADR.AR.B.005(a)(2) – Management System

TRAINING PROGRAMME AND RECURRENT TRAINING

When preparing the training programme, the competent authority should determine the areas for which the training may include realistic training elements.

As an example, the RFFS training could include parts of, or be the same with that of an aerodrome operator's RFFS personnel. If an aerodrome operator provides such training, care should be taken to avoid any possible conflict of interest.

GM1-ADR.AR.B.005(a)(3) – Management system

FACILITIES AND OFFICE ACCOMMODATION

Facilities and office accommodation include but is not limited to:

- adequate offices;
- office equipment, including computers and communication means;

- transportation means;
- personnel protective equipment;
- equipment necessary for auditing/inspecting the aerodrome and its facilities, such cameras, clinometers, distance measurement devices, GPS etc.

AMC1-ADR.AR.B.005(c) – Management System

COORDINATION WITH OTHER COMPETENT AUTHORITIES OF THE MEMBER STATE

The competent authority should establish coordination arrangements with other competent authorities of the Member State. Such coordination arrangements should in particular include the following competent authorities:

- (a) security agencies, in order to ensure:
 - (1) international civil aviation security measures are integrated into the design and construction of aerodromes and their facilities;
 - (2) the optimisation of civil aviation security measures.
- (b) environmental protection authorities, for the management of conflicts between safety and environmental requirements;
- (c) local planning and land use authorities.

AMC1-ADR.AR.B.005(d) – Management system

PROCEDURES AVAILABLE TO THE AGENCY

- (a) Copies of the procedures in the competent authority's management system should be made available to the Agency for the purpose of standardisation. These should include any amendments to the procedures. The procedures should provide at least the following information:
 - (1) Regarding continuing oversight functions undertaken by the competent authority, the competent authority's organisational structure with description of the main processes. This information should demonstrate the allocation of responsibilities within the competent authority, and that the competent authority is capable of carrying out the full range of tasks regarding the size and complexity of the Member State's aerodrome industry. It should also consider overall proficiency and authorisation scope of competent authority personnel;
 - (2) changes which significantly affect the competent authority's oversight capabilities;
 - (3) for personnel involved in oversight activities, the minimum professional qualification requirements and experience, and principles guiding appointment (e.g. assessment);
 - (4) how the following are carried out: assessing applications and evaluating compliance, issuance of certificates, performance of continuing oversight, follow-up of findings, enforcement measures and resolution of safety concerns;
 - (5) principles of managing exemptions, derogations, cases of equivalent level of safety and special conditions;
 - (6) systems used to disseminate applicable safety information for timely reaction to a safety problem;

AMC/GM to Annex I – Part-AR

SUBPART B – MANAGEMENT (ADR.AR.B)

- (7) criteria for planning continuing oversight (oversight programme), including adequate management of interfaces when conducting continuing oversight (aerodrome operations and ATS operations for example);
 - (8) outline of the initial training of newly recruited oversight personnel (taking future activities into account), and the basic framework for continuation training of oversight personnel.
- (b) The requirements of particular domains defined within the copy of the procedures of the competent authority's management system (and amendments) should be considered.
 - (c) As part of the continuous monitoring of a competent authority, the Agency may request details of the working methods used, in addition to the copy of the procedures of the competent authority's management system (and amendments). These additional details are the procedures and related guidance material describing working methods for competent authority personnel conducting oversight.
 - (d) Information related to the competent authority's management system may be submitted in electronic format.

AMC1-ADR.AR.B.010(a)(1) – Allocation of tasks

INDEPENDENCE OF PERSONS TO WHOM TASKS ARE ALLOCATED

A natural person or the management and the personnel of a legal person, to whom the competent authority intends to allocate tasks related to the initial certification or continuing oversight of aerodromes, their operators or providers or apron management services should not be involved directly or indirectly in any kind of activity related to planning, design, maintenance, service provision, or any similar activity related to aerodromes, aerodrome operation or aerodrome management.

AMC2-ADR.AR.B.010(a)(1) – Allocation of tasks

QUALIFICATIONS OF PERSONNEL

- (a) A legal person to which tasks related to the initial certification or continuing oversight tasks are to be allocated should have an adequate number of qualified technical personnel to conduct aerodrome inspections and audits and to perform any other task needed during the certification and oversight process, as required by the competent authority.
- (b) The natural person or the personnel of a legal person to whom such tasks are allocated should meet the qualification criteria applicable for competent authorities' aerodrome inspectors prescribed in AMC1-ADR.AR.B.005(a)(2), AMC2-ADR.AR.B.005(a)(2), AMC3-ADR.AR.B.005(a)(2) and AMC4-ADR.AR.B.005(a)(2)..

GM1-ADR.AR.B.020 – Allocation of tasks

CERTIFICATION TASKS

The tasks that may be performed by a natural or legal person on behalf of the competent authority may include any tasks related to the initial certification and continuing oversight of aerodromes and aerodrome operators, as well as declared providers of apron management services, with the exclusion of the issue of certificates or approvals.

AMC1-ADR.AR.B.020(a) – Record-keeping

AMC/GM to Annex I – Part-AR

SUBPART B – MANAGEMENT (ADR.AR.B)

GENERAL

The record-keeping system should ensure that all records are accessible whenever needed within a reasonable time. These records should be organised in a consistent way throughout the competent authority (chronological, alphabetical order, for example).

- (a) Records should be kept in paper form or in electronic format or a combination of both media. Records stored on microfilm or optical disc form are also acceptable. The records should remain legible and accessible throughout the required retention period. The retention period starts when the record has been created or last amended.
- (b) Computer systems should have at least one backup system which should be updated within 24 hours of any new entry. Computer systems should include safeguards against unauthorised alteration of data.
- (c) All computer hardware used to ensure data backup should be stored in a different location from that containing the working data and in an environment that ensures they remain in good condition. When hardware or software changes take place, special care should be taken that all necessary data continue to be accessible at least through the full period specified in ADR.AR.B.020(c).

AMC1-ADR.AR.B.020(a)(1);(a)(2);(a)(3) – Record-keeping

COMPETENT AUTHORITY MANAGEMENT SYSTEM

Records related to the competent authority's management system should include, as a minimum and as applicable:

- (a) the documented policies and procedures;
- (b) the personnel files of competent authority personnel, with supporting documents related to their training and qualifications;
- (c) the results of the competent authority's internal compliance monitoring and risk assessment, including audit findings and corrective actions; and
- (d) the contract(s) established with natural and legal persons to whom tasks have been allocated regarding certification or oversight tasks on behalf of the competent authority.

AMC1-ADR.AR.B.020(a)(4);(a)(5) – Record-keeping

AERODROMES — AERODROME OPERATORS — APRON MANAGEMENT SERVICE PROVIDERS

Records related to a certified aerodrome and its aerodrome operator, or the provider of apron management services having declared its activity to the competent authority should include, as appropriate to the type of organisation:

- (a) the application for a certificate, approval, or declaration;
- (b) the documentation based upon which the certificate or approval has been granted with amendments;
- (c) the documentation related to notifications of changes by the applicant and their assessment;
- (d) the certificate or approval issued, including any changes;
- (e) a copy of the continuing oversight programme listing the dates when audits are due and when such audits were carried out;
- (f) continuing oversight records including all audit and inspection records;

AMC/GM to Annex I – Part-AR

SUBPART B – MANAGEMENT (ADR.AR.B)

- (g) copies of all relevant correspondence;
- (h) details of any exemption or derogation and enforcement actions;
- (i) any report from other competent authorities relating to the oversight of the aerodrome, the aerodrome operator and the provider of apron management services, if applicable; and
- (j) a copy of any other document approved by the competent authority.

AMC1-ADR.AR.B.020(c)(1) – Record-keeping

AERODROMES — AERODROME OPERATORS — PROVIDERS OF APRON MANAGEMENT SERVICES

- (a) Records which are considered to be related to the certification of an aerodrome and to be maintained for the lifespan of the certificate include, but are not limited to, the following:
 - (1) applications submitted;
 - (2) notifications of the certification specifications for an initial certification and any changes thereof, including:
 - (i) any provisions for which an equivalent level of safety has been accepted; and
 - (ii) any special conditions.
 - (3) documentation related to alternative means of compliance used;
 - (4) documentation related to exemptions or derogations granted;
 - (5) aeronautical studies and safety assessments;
 - (6) designs of the aerodrome;
 - (7) declarations made by the applicant;
 - (8) current version of an aerodrome manual; and
 - (9) approvals granted.
- (b) Records for aerodrome equipment, or parts of the aerodrome infrastructure which have been removed from the aerodrome need not be maintained.
- (c) For providers of apron management services, records include, but may not be limited to, the declarations and the relevant documentation submitted by the providers.

AMC1-ADR.AR.B.020(d) – Record-keeping

AERODROMES — AERODROME OPERATORS — PROVIDERS OF APRON MANAGEMENT SERVICES

The competent authority should determine the retention period for those records that need to be maintained for a period of at least 5 years, taking into account:

- (a) the need to have access to data (e.g occurrence reports etc), that would allow it to identify trends, extract conclusions and plan its oversight activities; and
- (b) the nature of the regulated area and the technical lifespan of a system.

GM1-ADR.AR.B.020 – Record-keeping

GENERAL

Records are required to document results achieved or to provide evidence of activities performed. Records become factual when recorded. Therefore, they are not subject to version control. Even when a new record is produced covering the same issue, the previous record remains valid.

GM1-ADR.AR.B.020(a) – Record-keeping

MICROFILM AND OPTICAL STORAGE

Microfilming or optical storage of records may be carried out at any time. The records should be as legible as the original record and remain so for the required retention period.

GM2-AR.ADR.AR.B.020 (a) – Record-keeping

AERODROMES — AERODROME OPERATORS — DOCUMENTATION

Documentation to be kept as records in support of the certificate or approval include the management system documentation, including any technical manuals, such as the aerodrome manual, that have been submitted with the initial application, and any amendments to these documents.

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)**AMC1-ADR.AR.C.005 – Oversight**

GENERAL

- (a) The competent authority should assess the aerodrome operator and monitor its continued competence to conduct safe operations in compliance with the applicable requirements and the certification basis. Similarly, the competent authority should monitor the continued competence of providers of apron management services. The competent authority should ensure that accountability for assessing and monitoring aerodrome operators as well as providers apron management services is clearly defined. This accountability may be delegated or shared, in whole or in part.
- (b) It is essential that the competent authority has the full capability to adequately assess the continued competence of an aerodrome operator or a provider of apron management services by ensuring that the whole range of activities is assessed by appropriately qualified personnel.

GM1-ADR.AR.C.005 – Oversight

GENERAL

- (a) Responsibility for the safe operation of an aerodrome lies with the aerodrome operator. Under these provisions a positive move is made towards devolving upon the aerodrome operator a share of the responsibility for monitoring the safety of operations. The objective cannot be attained unless aerodrome operators are prepared to accept the implications of this policy including that of committing the necessary resources to its implementation. Crucial to success of the policy is the content of Part-ADR.OR which requires the establishment of a management system by the aerodrome operator.
- (b) The competent authority should continue to assess the aerodrome operator's compliance with the applicable requirements, including the effectiveness of its management system. If the management system is judged to have failed in its effectiveness, then this in itself is a breach of the requirements which may, among others, call into question the validity of the certificate.
- (c) The accountable manager is accountable to the competent authority as well as to those who may appoint him/her. It follows that the competent authority cannot accept a situation in which the accountable manager is denied sufficient funds, manpower or influence to rectify deficiencies identified by the management system.

AMC1-ADR.AR.C.010(c) – Oversight programme

OVERSIGHT PLANNING CYCLE

- (a) The oversight planning cycle is determined by the date of issue of the certificate.
- (b) The oversight planning cycle should be 24 months. It may be reduced if there is evidence that the safety performance of the aerodrome operator has decreased.

Moreover, the oversight planning cycle may be extended to a maximum of 36 months if the competent authority has established that, during the previous 24 months:

- (1) the aerodrome operator has demonstrated an effective identification of aviation safety hazards and management of associated risks;

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (2) the aerodrome operator has continuously demonstrated under ADR.OR.B.040 that it has full control over all changes;
- (3) no category 1 findings have been issued; and
- (4) all corrective actions have been implemented within the time period accepted or extended by the competent authority as defined in ADR.AR.C.055(e)(2).

The oversight planning cycle may be further extended to a maximum of 48 months if, in addition to the above, the aerodrome operator has established, and the competent authority has approved, an effective continuous reporting system to the competent authority on the safety performance and regulatory compliance of the aerodrome operator itself.

- (c) For aerodrome operators operating more than one aerodrome in order to avoid duplication of audits, credit may be granted for specific item audits already completed during the current oversight planning cycle subject to the following conditions:
 - (1) there should be satisfactory evidence on record that such specific item audits were carried out and that all corrective actions have been taken; and
 - (2) the competent authority should be satisfied that there is no reason to believe standards have deteriorated in respect of those specific item audits being granted a credit; and
 - (3) the specific item audit being granted a credit should be audited not later than 24 months after the last audit of the item.
- (d) During each oversight planning cycle, meetings with the management of the aerodrome operator, including the accountable manager or its high level delegate, as determined necessary by the competent authority, should take place in order to ensure that both parties remain informed of significant issues.

AMC2-ADR.AR.C.010(b) – Oversight programme**AUDITS, INSPECTIONS AND OVERSIGHT PROCEDURES**

- (a) Each aerodrome operator and each declared provider of apron management services should have an appropriate focal point specifically assigned to it in the competent authority. Where more than one aerodrome inspector is assigned to an aerodrome operator, one of them should be nominated as having overall responsibility for supervision of, and liaison with the aerodrome operator's management, and be responsible for reporting on compliance with the requirements for its operations as a whole.
- (b) Inspections, audits and oversight, on a scale and frequency appropriate to the operation, should include items from the following, indicative, list:
 - (1) aerodrome infrastructure and equipment;
 - (2) visual aids and aerodrome electrical systems;
 - (3) obstacle restriction and control;
 - (4) aerodrome data reporting ;
 - (5) aerodrome emergency planning;
 - (6) rescue and fire-fighting;
 - (7) removal of disabled aircraft;
 - (8) storage facilities and handling of dangerous goods and fuel, including fuel installations, fuel quality, and fuelling equipment;

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (9) low visibility operations;
 - (10) winter and adverse weather operations;
 - (11) protection of radar, navigation aids and other aerodrome equipment;
 - (12) apron management;
 - (13) apron safety management;
 - (14) vehicle control on the movement area;
 - (15) wildlife hazard management;
 - (16) inspections of the movement area;
 - (17) maintenance of the aerodrome systems and the movement area;
 - (18) aerodrome works;
 - (19) protection against hazardous activities in the vicinity of the aerodrome;
 - (20) personnel training and records;
 - (21) aerodrome manuals and documentation;
 - (22) operator's management system, including its safety management system and its quality and security management system for aeronautical data.
- (c) An inspection or an audit should be a 'deep cut' through the items selected and all findings and observations should be recorded.
 - (d) Aerodrome inspectors should analyse and assess the root cause(s) identified and be satisfied that the corrective actions taken are adequate to correct the non-compliance and to prevent re-occurrence.
 - (e) Inspections and audits may be conducted separately or in combination. Inspections and audits may also be coordinated with inspections and audits conducted by the competent authorities responsible for the areas of ATM/ANS to address areas of coordination between aerodrome operator and ATM services. Inspections may, at the discretion of the competent authority, be conducted with or without prior notice to the aerodrome operator or the provider of apron management services.
 - (f) Where it is apparent to an aerodrome inspector that an aerodrome operator or a provider of apron management services has permitted a breach of the applicable requirements, with the result that safety has been, or might have been compromised, the inspector should ensure that the responsible person within the competent authority is informed without delay.
 - (g) In the first few months of a new operation, physical change of the aerodrome or organisational re-structure, aerodrome inspectors should be particularly alert to any irregular procedures, evidence of inadequate facilities or equipment, or indications that management control of the operation may be ineffective.
 - (h) They should take account of any conditions that may indicate a significant deterioration in the operator's financial situation. Examples of trends which may indicate problems in a new aerodrome operator's financial situation could be:
 - (1) significant lay-offs or turnover of personnel; reduced staff resource; increased multi-tasking; changing shift patterns; increased overtime;
 - (2) delays in meeting payroll;
 - (3) reduction of safe operating standards;
 - (4) decreasing standards of training;

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (5) withdrawal of credit by suppliers;
- (6) inadequate maintenance of the aerodrome; and
- (7) shortage of supplies and spare parts.

When any financial difficulties are identified, aerodrome inspectors should increase technical surveillance of the operation with particular emphasis on the upholding of safety standards.

- (i) The number or the magnitude of the non-compliances identified by the competent authority will serve to support the competent authority's continuing confidence in the aerodrome operator's or the of apron management services provider's competence or, alternatively, may lead to an erosion of that confidence. In the latter case the competent authority will need to review any identifiable shortcomings of the management system and take appropriate action if required.

AMC1-ADR.AR.C.010(b); (c) – Oversight programme

AUDIT

- (a) The oversight programme should indicate which aspects will be covered with each audit.
- (b) Part of an audit should concentrate on the aerodrome operator's compliance monitoring reports produced by its compliance monitoring personnel to determine if the aerodrome operator is identifying the root causes of and correcting its problems.
- (c) At the conclusion of the audit, an audit report should be completed by the auditing aerodrome inspector, including all findings raised.

AMC2-ADR.AR.C.010(b) – Oversight programme

AUDITS AND INSPECTIONS

- (a) The competent authority should establish a schedule of audits and inspections appropriate to each aerodrome operator or provider of apron management services. The planning of audits and inspections should take into account the results of the hazard identification and risk assessments conducted and maintained by the aerodrome operator as part of its management system. Aerodrome inspectors should work in accordance with the schedule provided to them.
- (b) The competent authority may, having regard to an aerodrome operator's performance, vary the frequency of an audit or inspection while ensuring that all aspects of the operation are periodically audited and inspected in accordance with the schedule.
- (c) When defining the oversight programme, the competent authority should assess the risks related to the activity of each aerodrome operator or provider of apron management services and adapt the oversight means to the level of risk identified.

GM2-ADR.AR.C.010(b) – Oversight programme

INDUSTRY STANDARDS

- (a) For aerodrome operators having demonstrated compliance with industry standards, the competent authority may adapt its oversight programme, in order to avoid duplication of audits.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (b) Demonstrated compliance with industry standards may not be considered in isolation from the other elements to be considered for the competent authority's risk-based oversight.
- (c) In order to be able to credit any audits performed as part of certification in accordance with industry standards, the following should be considered:
 - (1) the demonstration of compliance is based on certification auditing schemes providing for independent and systematic verification;
 - (2) the existence of an accreditation scheme and accreditation body for certification in accordance with the industry standards has been verified;
 - (3) certification audits are relevant to the requirements defined in Part-ADR.OR, Part ADR.OPS or other regulations as applicable;
 - (4) the scope of such certification audits can easily be mapped against the scope of oversight;
 - (5) audit results are accessible to the competent authority; and
 - (6) the audit planning intervals are compatible with the oversight planning cycle.

GM3-ADR.AR.C.010(b) – Oversight programme

AUDITS, INSPECTIONS AND OVERSIGHT PROCEDURES

Normally the inspections that are carried out by the competent authority should be with prior notice to the aerodrome operator or the provider apron management services.

Such notice should be given in writing and in good time before the inspection, so that the inspected entity can make all the necessary arrangements and preparations and to avoid the disruption of normal operations.

In case an inspection is conducted without prior notice, the aerodrome inspectors should ensure that the operations are affected to the minimum extent possible.

AMC1-ADR.AR.C.015(a) – Initiation of the certification process

ELIGIBILITY CRITERIA

In the case where the application is refused because the applicant does not meet the eligibility criteria, the competent authority should inform the applicant in writing of the right of appeal, as exists under the applicable national legislation.

AMC1-ADR.AR.C.015(a) – Initiation of the certification process

PROCESSING OF APPLICATION

Upon receipt of an application, the competent authority should acknowledge receipt of that application, in writing, within the period defined in the applicable national legislation.

If the competent authority foresees a delay in processing the application, it should notify the applicant as soon as possible, and within the period defined in the applicable national legislation.

The competent authority should respond to any request made by the applicant within the period defined in the applicable national legislation.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

If an applicant fails to submit all necessary documentation, the competent authority should inform him/her in writing, within the period defined in the applicable national legislation.

AMC1-ADR.AR.C.015(b)(1);(2) – Initiation of the certification process

NOTIFICATION OF CERTIFICATION BASIS

- (a) Upon receipt of the application, the competent authority should examine and assess the content of the application and the related documentation, including the proposed certification specifications and any provisions for which compliance is proposed to be demonstrated in an alternative way that provides for an equivalent level of safety. (See also paragraph 1 (a) of AMC1-ADR.AR.C.035(a);(b)).
- (b) The competent authority should establish the certification basis of the aerodrome, which should include:
 - (1) all certification specifications that it finds applicable to the aerodrome design and operation;
 - (2) any provision for which the competent authority is satisfied with the proposal and accepts the applicant to demonstrate an equivalent level of safety (ELOS) based on its application; and
 - (3) any special condition prescribed in accordance with ADR.AR.C.025, that the competent authority finds necessary to be included in the certification basis.
- (c) The competent authority should document and notify the applicant:
 - (1) the certification basis as established in paragraph (b) above; and
 - (2) any change thereto, as a result of certification specifications which became effective after the notification of the certification basis and which the applicant decided to comply with, or that the competent authority has found necessary to be complied with, or design changes made, compliance demonstration results, new special conditions that the competent authority considers necessary etc.
- (d) In addition, the competent authority should assess the documentation demonstrating the way the applicant is proposing to comply with the applicable requirements of the Basic Regulation, Part-ADR.OR, and Part-ADR.OPS and any other applicable requirements that are matching the aerodrome design and its operation. The competent authority should also:
 - (1) examine any request of the applicant for exemption or derogation from any requirement in accordance with article 14 of the Basic Regulation; and
 - (2) evaluate, in accordance with ADR.AR.A.015, any request of the applicant for use of alternative means of compliance.
- (e) The competent authority should take all necessary actions in accordance with article 14 of the Basic Regulation and its Implementing Rules and, as appropriate, document and notify the applicant:
 - (1) the approved mitigation measures for ensuring that the level of safety is not adversely affected in the case of an exemption under article 14 paragraph 4 of the Basic Regulation; and the approved means for demonstrating an equivalent level of protection in the case of derogations under article 14 paragraph 6 of the Basic Regulation for the exemptions and derogations mentioned in paragraph (d)(1) above;
 - (2) the alternative means of compliance whose use have been accepted, mentioned in paragraph (d)(2) above; and

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (3) any subsequent changes concerning subparagraphs (d)(1) or (d)(2) above, as a result of changes to the proposed operation and design, new determinations made by the competent authority or new requests made by the applicant etc.
- (f) When notifying the applicant in accordance with paragraphs (c) and (e), the competent authority should also inform him/her of the right of appeal, as exist under the applicable national legislation.

AMC1-ADR.AR.C.015(b);(1) – Initiation of the certification process

DETERMINATION OF ELEVATION OF AERONAUTICAL BEACONS

The competent authority should determine the elevation which is sufficient for the vertical light distribution of an aerodrome beacon or an identification beacon, as described in CS-ADR-DSN.M.625.

AMC2-ADR.AR.C.015(b);(1) – Initiation of the certification process

RUNWAY LEAD-IN LIGHTING SYSTEM

If a runway lead-in lighting system is provided, the competent authority should determine the point from which that system should extend up to the point where the approach lighting system, or the runway or the runway lighting system is in view.

AMC3-ADR.AR.C.015(b);(1) – Initiation of the certification process

ELECTRICAL POWER SUPPLY SYSTEMS FOR VISUAL AIDS.

The competent authority should determine which obstacle lights are essential for the aerodrome to ensure the safe operation of aircraft and should therefore be provided with a secondary power supply capable of supplying power when there is a failure of the primary power supply.

AMC4-ADR.AR.C.015(b);(1) – Initiation of the certification process

MONITORING SYSTEM

The competent authority should determine the serviceability level of any element of the lighting systems of a runway meant for takeoff for use in runway visual range conditions less than a value of 550 m, below which operations should not continue, in accordance with CS-ADR-DSN.S.900 and CS-ADR-DSN.S.905.

AMC5-ADR.AR.C.015(b);(1) – Initiation of the certification process

COLOURS OF AERONAUTICAL GROUND LIGHTS

- (a) The competent authority should review and judge the acceptability of the outermost isocandela curve, for which a measurement of colour coordinates should be made and recorded by the aerodrome operator.
- (b) Certain light units may have application so that they may be viewed and used by pilots from directions beyond that of the outermost isocandela curve (e.g. stop bar lights at significantly wide runway-holding positions). In such instances, the competent authority should assess the actual application and if necessary require a check of colour shift at angular ranges beyond the outermost curve.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

AMC1-ADR.AR.C.015(c) – Initiation of the certification process

CERTIFICATION OF EXISTING AERODROMES

The certification period of an existing aerodrome should not exceed 18 months since the filing of the application by the applicant.

GM1-ADR.AR.C.015 – Initiation of the certification process

INITIAL INTEREST

Prior to initiating the application process for a certificate the competent authority should arrange for a meeting with the applicant.

During this meeting, the applicant should present to the authority its plans with regard to the aerodrome. The applicant should also make arrangements so that its key personnel are present during this meeting.

In addition, during this meeting, the competent authority should provide general information to the applicant about the applicable requirements for the aerodrome. It should also provide copies of the applicable requirements, application forms and any other relevant documentation and describe the procedures that are followed during the certification process.

Such information to be provided by the competent authority may also include information about approvals, permits or clearances that the applicant may need to obtain from other competent authorities (such as security or environmental protection competent authorities, local planning authorities, etc) of the Member State prior or during the certification process.

The competent authority should make arrangements so that representatives of all involved entities of the competent authority(ies) are present during this meeting.

GM2-ADR.AR.C.015(b) (1);(2) – Initiation of the certification process

CERTIFICATION BASIS – PROPOSALS FOR EQUIVALENT LEVEL OF SAFETY

When the competent authority assesses a proposal of an applicant who has requested to demonstrate an equivalent level of safety (ELOS), the competent authority should pay, amongst others, particular attention to:

- (a) the identification of the intent of the Agency's certification specification(s) in question and assess if the proposal satisfies that intent;
- (b) any possible interconnections/relationships between the Agency's certification specification(s) which the proposal is related to, with any other certification specifications or requirements, in order to identify any implications of the proposal to other design, operational, human or other elements of the system and to establish if such interconnections/relationships and implications have been addressed.

AMC1-ADR.AR.C.020 – Certification Basis

EFFECTIVE CERTIFICATION SPECIFICATIONS

- (a) The certification specifications that the competent authority should use to establish and notify the certification basis to the applicant should be those that were effective during the date of the application.
- (b) Notwithstanding paragraph (a) above, if at any point of the certification process the applicant requests to use certification specifications which came into force after the filing

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

of his/her application or the notification of the certification basis by the competent authority, then the competent authority should examine if it is necessary to also include in the certification basis other certification specifications, which also came into effect after the filing of the initial application and which are, in the opinion of the competent authority, directly related to those certification specifications that have been proposed by the applicant.

- (c) Notwithstanding paragraph (a) and (b) above, the competent authority may at any time, after the filing of the application, decide to include in the certification basis any certification specifications that it deems necessary.

AMC1-ADR.AR.C.035(a)(2) – Issuance of certificate

SAFETY ASSESSEMENTS PROVIDED BY THE AERODROME OPERATOR

- (a) The competent authority should validate the conclusion of a safety assessment, provided by the aerodrome operator to ensure compliance with the applicable requirements (see ADR.OR.B.065).
- (b) The competent authority should analyse the safety assessment and in particular make sure that:
- the identified safety concern(s) has/have been assessed through the safety assessment process and is/are adequately documented.
 - an appropriate coordination has been performed between the parties affected by the safety concern(s);
 - the assessment covers the whole system and the interactions of its elements;
 - the hazards have been properly identified and the level of risk assessed;
 - the proposed mitigation measures are adequate and consistent with the objective of reducing the identified level of risk and the safety objectives, if relevant;
 - the timeframes of the planned implementation of the any associated actions are appropriate.
- (c) The competent authority should either:
- give approval to the aerodrome operator for the safety assessment and the proposed associated actions, such as mitigation measures;
 - coordinate with the aerodrome operator to reach an agreement on revised mitigation measures if some risks have been underestimated or have not been identified; , or
 - impose additional measures or reject the proposal if no agreement can be reached.
- (d) The competent authority should define and undertake oversight actions that ensure that the mitigation and/or additional measures are properly implemented so that the measures actually meet the risk reduction objectives and that the planned timeframes are applied.
- (e) The approval of the safety assessments should be undertaken by the competent authority and notified to the aerodrome operator along with the approval of the change, if such prior approval is required.
- (f) When necessary, the competent authority should require the aerodrome operator to promulgate appropriate information, for use by the aerodrome organisation, various stakeholders, and notably by the air navigation service providers and aircraft operators.

AMC1-ADR.AR.C.035(a);(b) — Issuance of certificate**VERIFICATION OF COMPLIANCE**

(a) Upon receipt of an application for a certificate, the competent authority should:

- (1) nominate an individual, to become the focal point for all aspects of the applicant's certification process and to coordinate all necessary activities, including the competent authority's certification team. The nominated person should be responsible to the responsible person of the competent authority for confirming that all appropriate inspections and audits have been carried out. He/she should also ensure that the necessary prior approvals required are issued in due course.
- (2) verify if the application shows compliance with the applicable requirements. The competent authority should also arrange for the steps to be followed during the certification process. This would, normally, start with the demonstration of compliance of the aerodrome with the notified certification basis (see AMC1 — ADR.AR.C.015(b);(1);(2)), which will require the conduct of technical inspections by the competent authority and/or examination of submitted documentation, the participation to demonstrations, or tests conducted by the applicant, as the case may be, and the competent authority determines appropriate. This should also include the cases where the certification basis includes provisions for which the competent authority has accepted the applicant to demonstrate an equivalent level of safety to or cases of special conditions, as applicable.

If the competent authority is not satisfied with the outcome of the demonstration process for any elements of the certification basis, it should notify the applicant in writing. At the end of this phase, the competent authority should have documented evidence that the aerodrome meets the notified certification basis.

- (3) review the aerodrome manual and any other documentation provided by the applicant; and
- (4) verify compliance with the applicable requirements of Part-ADR.OR, Part-ADR.OPS, as well as any other applicable requirement. When verifying compliance with such requirements, an audit should be conducted covering the following areas:
 - (i) compliance shown by the applicant with the applicable requirements of Part-ADR.OPS or any other applicable requirements;
 - (ii) the applicant's management system and its organisation, including: detailed management structure, including names and qualifications of personnel; adequacy of the organisation and management structure, including allocated resources and numbers of personnel allocated by the applicant to key management tasks and other positions. Care should be taken to verify that the system is comprehensive and is likely to be effective. Of particular importance is a careful review of the qualifications of the applicant's nominated persons. Account should be taken of the relevance of the nominee's previous experience and known record;
 - (iii) safety management and compliance monitoring with applicable requirements;
 - (iv) documentation on which the certificate shall be granted (organisation documentation as required by Part-ADR.OR, including technical manuals, such as the aerodrome manual etc.);
 - (v) adequacy of facilities with regard to the applicant's scope of work.
- (5) in case of non-compliance, the applicant should be informed in writing of the corrections or supplements which are required.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (b) The competent authority should ensure that standardised and approved methods and tools are used by its personnel during the process described in paragraph 1.
- (c) In cases where an application for a certificate is refused, the applicant should be informed of the right of appeal as exist under national regulations.
- (d) Prior to issuing the certificate(s) the competent authority may require the conduct of one or more flights at the aerodrome, as well as any other test, or exercise it finds necessary.
- (e) When the verification process is complete, the competent authority should issue the certificate(s) and ensure the publication of the certification status of the aerodrome in the aeronautical information publication.

GM1-ADR.AR.C.035 – Issuance of certificate

VERIFICATION OF COMPLIANCE

The technical inspections of the aerodrome prescribed in paragraphs (b) and (d)(i) of AMC1-ADR.AR.C.035 (a);(b) should take place prior to the approval of the aerodrome manual.

AMC1-ADR.AR.C.035(a)(3) – Issuance of certificate

NOMINATED PERSONS

When an aerodrome operator submits the name of a nominee for the nominated persons listed mentioned in ADR.OR.D.015, the competent authority should assess his/her qualifications and may interview the nominee or call for additional evidence of his/her suitability before deciding upon his/her acceptability.

GM1-ADR.AR.C.035(a)(3) – Issuance of certificate

NOMINATED PERSONS

Interview with the Accountable Manager, Safety Manager, Compliance Monitoring Manager and other nominated persons

There are two possible cases where an interview/ meeting with nominated post holders may be necessary;

- start of operations before issuing a first certificate for an aerodrome; and
- change of nominated persons at an aerodrome already certified.

Purpose of the meeting:

The aim of the interview and exchange of information between the intended nominated persons and the competent authority is, for the competent authority to acquire information on the intended work areas of the nominated persons and their competence level and give information about the competent authority and at the same time verify their suitability for the posts.

The purpose of the information exchange is to create good contact and understanding between the both parties and to come to a mutual conclusion on, if necessary, possible solutions for training and personal development over time.

Possible agenda items:

- information from the competent authority on organisation and mission of the competent authority, the regulatory framework specifically Safety Management System requirements;

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- information from the nominated person concerning the intended work area;
- enforcement methodology of the competent authority;
- the role and responsibility of the Accountable Manager/Chief Operating Officer/Safety Coordinator or other nominated post holders;
- expected competence requirement of the nominated person in relation to present personal status and experience presented in a CV or equivalent documentation;
- interview/discussion concerning depth of knowledge and understanding of the applicable legislation;
- the role and responsibility of the competent authority and of the nominated person;
- understanding of aviation in general and for the specific nominated post, how operators/activities at the aerodrome including Air Navigation Service Providers, and other aviation activities can impact aircraft safety; and
- distribution of delegated powers depending on the organisational situation.

AMC1-ADR.AR.C.035(d)(1);(2) – Issuance of certificate

ISSUANCE OF SEPARATE CERTIFICATES

- (a) In the case there is a possibility to issue both separate and single certificates, the competent authority should act in accordance with the application made by the applicant.
- (b) In the case there is a possibility to issue separate certificates, both certificates should be issued by the same competent authority.
- (c) In case that an aerodrome operator operates several aerodromes, these shall be listed on the aerodrome operator's certificate.

AMC1-ADR.AR.C.035(f) – Issuance of certificate

LIMITATIONS AND PROCEDURES

- (a) If, during the certification process, a limitation or an operating procedure has been determined as necessary to be imposed on or implemented at the aerodrome, the competent authority should ensure that such limitation or procedure is also included in the aerodrome manual.
- (b) The competent authority should also ensure that the aerodrome manual contains all limitations or any other similar information prescribed in the certification specifications included in the certification basis of the aerodrome.

AMC1-ADR.AR.C.035(g) – Issuance of certificate

APPROVAL OF PROCEDURE FOR THE MANAGEMENT OF CHANGES

The competent authority should establish and document its process to be followed by the aerodrome inspectors when assessing the scope of the changes and the procedure proposed by the aerodrome operator to be followed for the management and notification of the changes. Criteria to be used include but are not limited to:

- (a) frequency of changes;
- (b) magnitude of changes;

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (c) complexity of the aerodrome and type of operations;
- (d) density of traffic at the aerodrome;
- (e) time required to assess the documentation of the changes notified by the aerodrome operator;
- (f) need for the timely publication of the changes and their notification by the AIRAC system;
- (g) previous conduct of the aerodrome operator;
- (h) effectiveness of the safety management system of the aerodrome operator.

AMC1-ADR.AR.C.040(a) – Changes

CHANGES REQUIRING PRIOR APPROVAL

- (a) Upon receiving an application for a proposed change that requires a prior approval, the competent authority should:
 - (1) assess the proposed change in relation to the certification basis and the applicable requirements of Part-ADR.OR, Part-ADR.OPS, as well as any other applicable requirements;
 - (2) assess if the aerodrome operator has identified all the certification specifications, applicable requirements of Part-ADR.OR, Part-ADR.OPS, or other applicable requirements which are related to or affected by the change, as well as any proposal of the applicant for the demonstration of an equivalent level of safety;
 - (3) assess the actions proposed by the aerodrome operator in order to show compliance with (1) and (2) above;
 - (4) review and assess the content of proposed changes to the aerodrome manual; and
 - (5) evaluate the safety assessment that has been submitted by the aerodrome operator, in accordance with AMC1-ADR.AR.C.035(b) and verify its compliance with ADR.OR.B.065.
- (b) The competent authority should also determine:
 - (1) if the proposed change is directly related to any other certification specification which had been included in the certification basis. If the competent authority finds such a relationship, it should include these related certification specifications amongst those to be notified to the applicant; and
 - (2) if the proposed change is such that a special condition, or an amendment to an existing special condition is required.
- (c) The competent authority should document and notify in writing the aerodrome operator:
 - (1) the applicable certification specifications that it has identified to be applicable in accordance with the previous paragraphs;
 - (2) any special conditions, or amendments to special conditions it finds necessary; and
 - (3) any provisions for which the competent authority has accepted the applicant to demonstrate an equivalent level of safety; and
- (d) Any subsequent changes to the items mentioned in paragraph 3, should be documented and notified to the aerodrome operator in writing.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (e) The competent authority should verify the compliance of the aerodrome operator and, depending on the change, examine the need for prescribing any condition for the operation of the aerodrome during the change.
- (f) When notifying the aerodrome operator in accordance with paragraph 3 or 4, the competent authority should also inform him/her of the right of appeal, as exists under the applicable national legislation.

AMC2-ADR.AR.C.040(a) – Changes

EFFECTIVE CERTIFICATION SPECIFICATIONS FOR CHANGES REQUIRING PRIOR APPROVAL

- (a) The certification specifications that the competent authority should use and notify to the applicant should be those that were effective during the date of the application.
- (b) Notwithstanding paragraph (a) above, if at any point of the process the aerodrome operator requests to use certification specifications which came into force after the filing of the application for a change or the notification of the certification specifications by the competent authority, then the competent authority should examine if it is necessary to also notify the aerodrome operator other certification specifications, which also came into effect after the filing of the application for the change and which are, in the opinion of the competent authority, directly related to those certification specifications that have been proposed by the aerodrome operator.
- (c) Notwithstanding paragraph (a) and (b) above, the competent authority may at any time, after the filing of the application for a change, decide to notify the aerodrome operator any certification specifications that it deems necessary for the proposed change.

AMC1-ADR.AR.C.040(f) – Changes

CHANGES NOT REQUIRING PRIOR APPROVAL

- (a) Upon receiving a notification of a change that does not require a prior approval, the competent authority should:
 - (1) assess the change in relation to the certification basis and the applicable requirements of Part-ADR.OR, Part-ADR.OPS, as well as any other applicable requirements;
 - (2) assess if the aerodrome operator has identified all the certification specifications, applicable requirements of Part-ADR.OR, Part-ADR.OPS, or other applicable requirements which are related to or affected by the change, as well as any cases related to demonstration of an equivalent level of safety ;
 - (3) assess the actions proposed by the aerodrome operator in order to show compliance with (1) and (2) above;
 - (4) review and assess the content of the changes to the aerodrome manual; and;
 - (5) evaluate the safety assessment that has been submitted by the aerodrome operator, in accordance with AMC1-ADR.AR.C.035(b) and verify its compliance with ADR.OR.B.065.
- (b) The competent authority should also determine:
 - (1) if the proposed change is directly related to any other certification specification which had been included in the certification basis and if such relationship has been identified by the aerodrome operator; and

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (2) if the proposed change is such that a special condition, or an amendment to an existing special condition is required,
- and document its actions.
- (c) In case the competent authority is not satisfied with the content of the documentation submitted by the aerodrome operator, or it has identified that a special condition should be prescribed or amended, or that more evidence or clarifications are needed, it should notify the applicant in writing and as soon as possible and, if needed, request further amendments or raise a finding, or take any other action it finds necessary, as appropriate.
- (d) The competent authority should verify the compliance of the aerodrome operator and, depending on the change, examine the need for prescribing any condition for the operation of the aerodrome during the change.
- (e) When notifying the applicant in accordance with paragraph 4, the competent authority should also inform him/her of the right of appeal, as exists under the applicable national legislation.

AMC2-ADR.AR.C.040(f) – Changes

EFFECTIVE CERTIFICATION SPECIFICATIONS FOR CHANGES NOT REQUIRING PRIOR APPROVAL

- (a) The certification specifications that the competent authority should use and to assess the notification of the change, should be those which were effective during the date of the notification of the change by the aerodrome operator.
- (b) Notwithstanding paragraph (a) above, at any point of the process the aerodrome operator may request to use certification specifications that came into force after its notification for the change. In such cases, the competent authority should examine if it is necessary to also notify the aerodrome operator other certification specifications, which also came into effect after the date of the notification of the change by the aerodrome operator, and which are, in the opinion of the competent authority, directly related to those already identified as being affected by the change.
- (c) Notwithstanding paragraph (a) and (b) above, the competent authority may at any time, after the notification of change by the aerodrome operator, notify it any certification specifications that it deems necessary for the change.

AMC3-ADR.AR.C.040(a);(f) – Changes

GENERAL

- (a) Changes in nominated persons: The competent authority should be informed of any changes to personnel specified in Part-ADR.OR that may affect the certificate or the terms of approval attached to it. When an aerodrome operator submits the name of a nominee for the nominated persons mentioned in ADR.OR.D.015, the competent authority should assess his/her qualifications and may interview the nominee or call for additional evidence of his/her suitability before deciding upon his/her acceptability (see GM1-ADR.AR.C.035 (a)(3)).
- (b) A documented systematic approach should be used for maintaining the information on when an amendment was received by the competent authority and when it was approved.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (c) The competent authority should receive from the aerodrome operator each management system documentation amendment, including amendments that do not require prior approval by the competent authority. Where the amendment requires the competent authority's approval, the competent authority, when satisfied, should indicate its approval in writing. Where the amendment does not require prior approval, the competent authority should acknowledge receipt in writing within the time limits existing under the relevant national legislation.
- (d) For changes requiring prior approval, in order to verify the aerodrome operator's compliance with the applicable requirements, the competent authority should consider the need to conduct an audit of the operator, limited to the extent of the changes. If required for verification, the audit should include additional interviews and inspections carried out at the aerodrome operator's facilities.

GM1-ADR.AR.C.040(c) – Changes

AMENDMENT OF CERTIFICATE

The competent authority should amend the certificate for any change that affects the terms of approval of the certificate, irrespectively of their magnitude.

GM1-ADR.AR.C.040 (c) – Changes

CHANGE OF NAME OF THE AERODROME OPERATOR

- (a) On receipt of the application and proof of change of name as well as the relevant parts of the aerodrome operator's documentation as required by Part-ADR.OR, the competent authority should re-issue the certificate.
- (b) A name change alone does not require the competent authority to audit the aerodrome operator, unless there is evidence that other aspects of the operator's organisation have changed.

AMC1-ADR.AR.C.045(a);(b) – Change of aerodrome operator

ASSESSMENT OF RISKS ASSOCIATED WITH THE CHANGE OF THE OPERATOR

Prior to issuing the new or amending the existing certificate, the competent authority should ensure that the new operator complies with the applicable requirements.

The competent authority should be satisfied with the arrangements between the current and the proposed operator of the aerodrome with regard to the transfer of the operations.

In addition, the competent authority should assess the safety assessment that has been submitted by the aerodrome operator, in accordance with AMC1-ADR.AR.C.035(b) and verify its compliance with ADR.OR.B.045, to ensure the safe transfer of the operations.

When deciding on the conditions under which the aerodrome will operate during the change, the competent authority should also take into account:

- the extent and depth of the organisational changes (e.g. new nominated persons, level of changes to management positions, restructuring of the organisational structure etc); and
- possible changes to type of operations, or the aerodrome itself.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

GM1-AR.C.050 – Declarations of providers of apron management services

VERIFICATION — DECLARATION

The verification made by the competent authority upon receipt of a declaration does not necessarily imply an inspection. The primary aim is to check whether what is declared complies with applicable requirements.

AMC1-ADR.AR.C.055 – Findings, observations corrective actions and enforcement measures

FINANCIAL PENALTIES

The competent authority may additionally and depending on the nature and the repetitiveness of the findings or the level of implementation of the corrective actions, impose financial penalties as appropriate, which are effective, proportionate and dissuasive.

GM1-ADR.AR.C.055 – Findings, observations corrective actions and enforcement measures

TRAINING

For a level 1 finding it may be necessary for the competent authority to ensure that further training by the aerodrome operator or the provider of the apron management services is carried out and audited by the competent authority before the activity is resumed, dependent upon the nature of the finding.

GM1-ADR.AR.C.055 – Findings, corrective actions and enforcement measures

CATEGORIES OF FINDINGS — DOCUMENTARY EVIDENCE

Examples of documentary evidence include but is not limited to:

- aerodrome or equipment manuals;
- contracts or other types of arrangements;
- training, qualification or medical records;
- inspection records;
- test or exercise results;
- internal audit results;
- maintenance records; and

other similar material required to be maintained by the aerodrome operator or the provider of apron management services.

AMC1-ADR.AR.C.060 (a) – Wildlife hazard management

REPORTING MECHANISM — REPORTING FORM

- (a) The competent authority should establish a mechanism for the collection and analysis of wildlife strike (or near-misses) reports. It should also forward the wildlife strike reports to the ICAO to be included in the ICAO Bird Strike Information System (IBIS) database.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (b) The competent authority should ensure that the reporting forms (paper or electronic format) used by the aerodrome operators or other parties for reporting wildlife strikes, contain at least the following information:
- (1) Operator involved
 - (2) Aircraft make/model
 - (3) Engine make/model
 - (4) Aircraft registration
 - (5) Date, (day, month year)
 - (6) Local time
 - (7) Dawn, day, dusk, night
 - (8) Aerodrome name
 - (9) Runway used
 - (10) Location if en route
 - (11) Height AGL in ft
 - (12) Speed (IAS) in kt
 - (13) Phase of flight:
 - (i) Parked;
 - (ii) Taxi;
 - (iii) Take off run;
 - (iv) Climb;
 - (v) En route;
 - (vi) Descent;
 - (vii) Approach;
 - (viii) Landing roll;
 - (14) Part(s) of aircraft struck or damaged:
 - (i) Radome;
 - (ii) Windshield;
 - (iii) Nose (excluding above);
 - (iv) Engine no (1, 2, 3, 4);
 - (v) Propeller;
 - (vi) Wing/rotor;
 - (vii) Fuselage;
 - (viii) Landing gear;
 - (ix) Tail;
 - (x) Lights;
 - (xi) Other (to be specified)
 - (15) Effect on flight:

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (i) None;
 - (ii) Aborted take-off;
 - (iii) Precautionary landing;
 - (iv) Engines shut down;
 - (v) Other (to be specified)
- (16) Sky condition:
- (i) No cloud;
 - (ii) Some cloud;
 - (iii) Overcast
- (17) Precipitation:
- (i) Fog;
 - (ii) Rain;
 - (iii) Snow
- (18) Bird species
- (19) Number of birds:
- (i) Seen
 - (A) 1
 - (B) 2–10
 - (C) 11–100
 - (D) More
 - (ii) Struck
 - (A) 1
 - (B) 2–10
 - (C) 11–100
 - (D) more
- (20) Size of bird:
- (i) Small
 - (ii) Medium
 - (iii) Large
- (21) Pilot warned of birds:
- (i) (A) yes/no
- (22) Remarks (description of damage, injuries and other pertinent information)
- (23) Reporting person/organisation
- (24) Address and/or instructions for returning the form to the competent authority
- (25) Address within the Member State to which any bird remains, including feather fragments, should be sent.

GM1-ADR.AR.C.060(a) – Wildlife hazard management

REPORTING TO ICAO

Further guidance on reporting bird strikes to ICAO is contained in ICAO Doc 9332 – Manual on the ICAO Bird Strike Information System (IBIS).

AMC1-ADR.AR.C.060(b) – Wildlife hazard management

MITIGATING MEASURES

Where the elimination of existing sites that may attract wildlife to the aerodrome (or its vicinity) is not possible, the competent authority should ensure that a safety assessment of the hazard posed by wildlife to aircraft operations is conducted by the aerodrome operator and that all necessary measures are identified and implemented so that the risk is reduced to a level which is as low as reasonably practicable.

AMC1-ADR.AR.C.60(b) – Wildlife hazard management

PREVENTION OF INCOMPATIBLE LAND USE AROUND AERODROMES – BIRD HAZARD

The following is a non-exhaustive list of types of land uses which should in particular be prevented, eliminated or mitigated:

- (a) fish processing;
- (b) agriculture;
- (c) cattle feed lots;
- (d) garbage dumps and landfill sites;
- (e) factory roofs and parking lots;
- (f) theatres and food outlets;
- (g) wildlife refuges;
- (h) artificial and natural lakes;
- (i) golf or polo-courses, etc.;
- (j) animal farms; and
- (k) slaughter-houses.

GM1-ADR.AR.C.060(b) – Wildlife hazard management

PREVENTION OF INCOMPATIBLE LAND USE AROUND AERODROMES – BIRD HAZARD

Incompatible land use around an aerodrome may influence restrictions on aircraft flights as well as negatively affect aircraft safety.

Land use around an aerodrome may influence bird strikes to aircraft. Birds may be attracted to areas near the aerodrome and in turn go to the aerodrome for food, water, resting or shelter. Some birds may also be struck outside aerodrome property, over a land use that attracts them.

The location of a proposed land use in relation to the aerodrome should be considered, because an attractive land use could create flyways over the aerodrome or through flight paths at the aerodrome.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

In some cases, more than one possible use of an area may have to be considered to ensure that bird hazard will not be increased at or near the aerodrome.

Further guidance on prevention of incompatible land use around aerodromes is contained in ICAO Doc 9137 (Airport Services Manual), Part 3—Bird Control and Reduction.

GM2-ADR.AR.C.060(b) – Wildlife hazard management

COORDINATION

Depending upon the extent of the wildlife hazards in a Member State, a coordination mechanism (e.g. a national committee or equivalent) could serve as a focal point to deal with the analysis of the problem, aerodrome and aircraft operator interface and relevant research or other related activities.

The composition of such a coordination mechanism in each Member State may vary, however, it should include all the authorities associated or interested in the problem. The coordination mechanism should act as an information source in order to identify problems, mutual understanding of concerns, identifying priorities and contribute to the development of the national wildlife hazard control policy.

Such a coordination mechanism could include:

- competent authorities for civil aviation;
- competent authorities for agriculture and environment
- aerodrome operators;
- major aircraft operators;
- pilot's associations;
- aircraft and engine manufacturers.

The coordination mechanism should convene at regular intervals to keep apprised of new developments or serious issues and review the need for updating the wildlife hazard control policy.

Further guidance on coordination mechanisms with regard to wildlife management is included in ICAO Doc 9137, Part 3, Bird Control and Reduction.

GM1-ADR.AR.C.065 – Obstacles – Objects

GENERAL

The establishment of the obstacle limitation surfaces, protection surfaces and other areas associated with an aerodrome aims at ensuring the safety and regularity of operations.

Because of their significance, it is necessary to establish a mechanism to ensure that such established surfaces and areas continuously meet the applicable requirements.

Outside the boundaries of the aerodrome the aerodrome operator has normally no legal power to protect the established surfaces and areas associated with the aerodrome.

Notwithstanding the obligations of the aerodrome operator to monitor the activities around the aerodrome and to take the actions foreseen in Part-ADR.OPS, it is understood that this may not be sufficient to control/prevent the development of new obstacles, or extensions to existing ones, or to remove such obstacles that may endanger safety or make the aerodrome unusable.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

Thus, it is for the Member State's competent authority to exercise its powers to prevent or correct such situations. This can be accomplished in many different ways, depending on the Member State's administrative and legal system, the coordination mechanisms and the powers vested to each competent authority.

In any case, the way in which this objective is to be accomplished, as well as the coordination mechanisms required to be set-up, are left to the Member States.

AMC1-ADR.AR.C.065 – Obstacles (a)

OUTER HORIZONTAL SURFACE

- (a) To facilitate practicable and efficient instrument approach procedures the competent authority may establish an outer horizontal surface and define its outer limits, when an aeronautical study indicates that this is necessary;
- (b) The outer horizontal surface should be a horizontal surface connected to the upper edge of conical surface and spreading outwards;
- (c) The dimensions and characteristics of the outer horizontal surface should be those described in CS-ADR-DSN.H.410.

AMC2-ADR.AR.C.065(a) – Obstacles

ELEVATION DATUM

The competent authority should establish the elevation datum to be used for the measurement of the height of the inner horizontal surface, in accordance with CS-ADR-DSN.H.420.

AMC1-ADR.AR.C.065(a) – Obstacles – Objects

NON-INSTRUMENT RUNWAYS

- (a) New objects or extensions of existing objects should not be permitted above an approach or transitional surface except when, in the opinion of the competent authority, the new object or extension would be shielded by an existing immovable object.
- (b) New objects or extensions of existing objects should not be permitted above the conical surface or inner horizontal surface except when, in the opinion of the competent authority, the object would be shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aircraft.
- (c) Existing objects above any of the conical surface, inner horizontal surface, approach surface and transitional surfaces should as far as practicable be removed except when, in the opinion of the competent 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 or significantly affect the regularity of operations of aeroplanes.

AMC1-ADR.AR.C.065(a) – Obstacles – Objects

NON-PRECISION APPROACH RUNWAYS

- (a) New objects or extensions of existing objects should not be permitted above an approach surface within 3.000 m of the inner edge or above a transitional surface except if in the opinion of the competent authority the new object or extension would be shielded by an existing immovable object.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (b) New objects or extensions of existing objects should not be permitted above the approach surface beyond 3.000 m from the inner edge, the conical surface or inner horizontal surface except when, in the opinion of the competent authority, the object would be shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aircraft.
- (c) Existing objects above the conical surface, the inner horizontal surface, the approach surface and the transitional surfaces should as far as practicable be removed except when, in the opinion of the competent 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 or significantly affect the regularity of operations of aeroplanes.

AMC2-ADR.AR.C.065(a) – Obstacles – Objects

PRECISION APPROACH RUNWAYS

- (a) Fixed objects should not be permitted above the inner approach surface, the inner transitional surface or the balked landing surface, except for frangible objects which because of their function must be located on the strip. Mobile objects should not be permitted above these surfaces during the use of the runway for landing.
- (b) New objects or extensions of existing objects should not be permitted above an approach surface or a transitional surface except when, in the opinion of the competent authority, the new object or extension would be shielded by an existing immovable object.
- (c) New objects or extensions of existing objects should not be permitted above the conical surface and the inner horizontal surface except when, in the opinion of the competent authority, an object would be shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aircraft.
- (d) Existing objects above an approach surface, a transitional surface, the conical surface and inner horizontal surface should as far as practicable be removed except when, in the opinion of the competent authority, an object is shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aircraft.

AMC3-ADR.AR.C.065(a) – Obstacles – Objects

RUNWAYS MEANT FOR TAKE-OFF

- (a) New objects or extensions of existing objects should not be permitted above a take-off climb surface except when, in the opinion of the competent authority, the new object or extension would be shielded by an existing immovable object.
- (b) The competent authority should limit the height of new objects to preserve the characteristics of an obstacle free surface established in accordance with CS.ADR.DSN.J.485
- (c) Existing objects that extend above a take-off climb surface should as far as practicable be removed except when, in the opinion of the competent authority, an object is shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aircraft.

AMC4-ADR.AR.C.065(a) – Obstacles – Objects

OTHER OBJECTS

- (a) Objects which do not project through the approach surface but which would nevertheless adversely affect the optimum siting or performance of visual or non-visual aids should, as far as practicable, be removed.
- (b) (2) Anything which may, in the opinion of the competent authority after aeronautical study, endanger aeroplanes on the movement area or in the air within the limits of the inner horizontal and conical surfaces should be regarded as an obstacle and should be removed in so far as practicable.

AMC5-ADR.AR.C.065(a) – Obstacles – Objects

OBSTACLE PROTECTION SURFACE FOR VISUAL APPROACH SLOPE INDICATOR SYSTEMS

- (a) New objects or extensions of existing objects above a protection surface should not be permitted above an obstacle protection surface except when the new object or extension would be shielded by an existing immovable object.
- (b) Existing objects above a protection surface:
 - (1) Existing objects above an obstacle protection surface should be removed except when, in the opinion of the competent 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;
 - (2) Where an aeronautical study indicates that an existing object extending above an obstacle protection surface could adversely affect the safety of operations of aeroplanes, one or more of the following measures should be taken:
 - (i) suitably raise the approach slope of the system;
 - (ii) reduce the azimuth spread of the system so that the object is outside the confines of the beam;
 - (iii) displace the axis of the system and its associated obstacle protection surface by no more than 5°;
 - (iv) suitably displace the threshold; and

where (iv) is found to be impracticable, suitably displace the system upwind of the threshold to provide an increase in threshold crossing height equal to the height of the object penetration.

AMC1-ADR-AR.C.065 (b);(c) – Obstacles – Objects

OBSTACLES BEYOND THE OBSTACLE LIMITATION SURFACES

- (a) Obstacles beyond the limits of the obstacle limitation surfaces, at least those extending to a height of 150 m or more above ground elevation, should be marked and lighted, except that the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day or medium intensity lights if it is determined by the competent authority to be sufficient.
- (b) Overhead wires, cables, etc., crossing a river, valley or highway should 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, except that the marking of the supporting towers may be omitted when they are lighted by high-intensity obstacle lights by day.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (c) When it has been determined that an overhead wire, cable, etc., needs to be marked but it is not practicable to install markers on the wire, cable, etc., then high-intensity obstacle lights, Type B, should be provided on their supporting towers.
- (d) The marking and lighting of obstacles mentioned in paragraph (a), (b) and (c) above should be done in accordance with the certification specifications adopted by the Agency.

AMC1-ADR-AR.C.065(b);(c) – Obstacles – Objects

OBSTACLES INSIDE THE OBSTACLE LIMITATION SURFACES AND OUTSIDE THE AERODROME

- (a) A fixed obstacle that extends above a take-off climb, approach or transitional surface within 3000 m of the inner edge of the take-off climb or approach surface should be marked and, if the runway is used at night, lighted, except that:
 - (1) such marking and lighting may be omitted when the obstacle is shielded by another fixed obstacle;
 - (2) 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;
 - (3) the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day if medium intensity lights are deemed insufficient; and
 - (4) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient.
- (b) A fixed object, other than an obstacle, adjacent to a take-off climb, approach or transitional surface should 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:
 - (1) 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
 - (2) the object is lighted by high-intensity obstacle lights by day if medium intensity lights are deemed insufficient.
- (c) A fixed obstacle above a horizontal surface should be marked and, if the aerodrome is used at night, lighted, except that:
 - (1) such marking and lighting may be omitted when:
 - (i) the obstacle is shielded by another fixed obstacle; or
 - (ii) for a circuit extensively obstructed by immovable objects or terrain, procedures have been established to ensure safe vertical clearance below prescribed flight paths; or
 - (iii) an aeronautical study shows the obstacle not to be of operational significance;
 - (2) 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;
 - (3) the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day if medium intensity lights are deemed insufficient; and
 - (4) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (d) A fixed object that extends above an obstacle protection surface should be marked and, if the runway is used at night, lighted.

AMC1-ADR-AR.C.065(b) – Obstacles - Objects

LIGHTING OF OBJECTS OUTSIDE THE AREA CONTROLLED BY THE AERODROME OPERATOR

(a) Use of obstacle lights

- (1) The presence of objects which must be lighted should be indicated by low, medium or high-intensity obstacle lights, or a combination of such lights.
- (2) Low-intensity obstacle lights, Type A or B, should be used where the object is a less extensive one and its height above the surrounding ground is less than 45 m.
- (3) Where the use of low-intensity obstacle lights, Type A or B would be inadequate or an early special warning is required, then medium or high-intensity obstacle lights should be used.
- (4) Low-intensity obstacle lights, Type C, should be displayed on vehicles and other mobile objects excluding aircraft.
- (5) Low-intensity obstacle lights, Type D, should be displayed on follow-me vehicles.
- (6) Low-intensity obstacle lights, Type B, should be used either alone or in combination with medium-intensity obstacle lights, Type B, in accordance with subparagraph (7) below.
- (7) Medium-intensity obstacle lights, Type A, B or C, should be used where the object is an extensive one or its height above the level of the surrounding ground is greater than 45 m medium-intensity obstacle lights, Types A and C, should be used alone, whereas medium-intensity obstacle lights, Type B, should be used either alone or in combination with low-intensity obstacle lights, Type B.
- (8) High-intensity obstacle lights, Type A, should be used to indicate the presence of an object if its height above the level of the surrounding ground exceeds 150 m and an aeronautical study indicates such lights to be essential for the recognition of the object by day.
- (9) High-intensity obstacle lights, Type B, should be used to indicate the presence of a tower supporting overhead wires, cables, etc., where:
 - (i) an aeronautical study indicates such lights to be essential for the recognition of the presence of wires, cables, etc.; or
 - (ii) it has not been found practicable to install markers on the wires, cables, etc.
- (10) Where, in the opinion of the competent authority, the use of high-intensity obstacle lights, Type A or B, or medium-intensity obstacle lights, Type A, at night may dazzle pilots in the vicinity of an aerodrome (within approximately 10 000 m radius) or cause significant environmental concerns at day and/or night, a dual obstacle lighting system should be provided. When a dual obstacle lighting system is provided, this system should be composed of high-intensity obstacle lights, Type A or B, or medium-intensity obstacle lights, Type A, as appropriate, for daytime and twilight use and medium-intensity obstacle lights, Type B or C, for night-time use.

(b) Location of obstacle lights.

- (1) One or more low, medium or high-intensity obstacle lights should be located as close as practicable to the top of the object. The top lights should be so arranged as to at least indicate the points or edges of the object highest in relation to the obstacle limitation surface.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (2) In the case of chimney or other structure of like function, the top lights should be placed sufficiently below the top so as to minimise contamination by smoke, etc. (see Figures 1 and Figure 2).
- (3) In the case of a tower or antenna structure indicated by high-intensity obstacle lights by day with an appurtenance, such as a rod or an antenna, greater than 12 m where it is not practicable to locate a high-intensity obstacle light on the top of the appurtenance, such a light should be located at the highest practicable point and, if practicable, a medium-intensity obstacle light, Type A, mounted on the top.
- (4) In the case of an extensive object or of a group of closely spaced objects, top lights should be displayed at least on the points or edges of the objects highest in relation to the obstacle limitation surface, 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 should be marked. Where low-intensity lights are used, they should be spaced at longitudinal intervals not exceeding 45 m. Where medium-intensity lights are used, they should be spaced at longitudinal intervals not exceeding 900 m.
- (5) When the obstacle limitation surface concerned is sloping and the highest point above the obstacle limitation surface is not the highest point of the object, additional obstacle lights should be placed on the highest point of the object.
- (6) Where an object is indicated by medium-intensity obstacle lights, Type A, and the top of the object is more than 105 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights should be provided at intermediate levels if technically feasible. These additional intermediate lights should be spaced as equally as practicable, between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 105 m (see subparagraph (7) below).
- (7) Where an object is indicated by medium-intensity obstacle lights, Type B, and the top of the object is more than 45 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights should be provided at intermediate levels if technically feasible. These additional intermediate lights should be alternately low-intensity obstacle lights, Type B, and medium-intensity obstacle lights, Type B, and should be spaced as equally as practicable between the top lights and ground level or the level of tops of nearby buildings, as appropriate.
- (8) Where an object is indicated by medium-intensity obstacle lights, Type C, and the top of the object is more than 45 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights should be provided at intermediate levels if technically feasible. These additional intermediate lights should be spaced as equally as practicable, between the top lights and ground level or the level of tops of nearby buildings, as appropriate.
- (9) Where high-intensity obstacle lights, Type A, are used, they should be spaced at uniform intervals not exceeding 105 m between the ground level and the top light(s) specified in paragraph (b) (1) above, except that where an object to be marked is surrounded by buildings, the elevation of the tops of the buildings may be used as the equivalent of the ground level when determining the number of light levels.
- (10) Where high-intensity obstacle lights, Type B, are used, they should be located at three levels:

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (i) at the top of the tower;
 - (ii) at the lowest level of the catenary of the wires or cables; and
 - (iii) at approximately midway between these two levels.
- (11) The installation setting angles for high-intensity obstacle lights, Types A and B, should be in accordance with Table 1.
- (12) The number and arrangement of low, medium or high-intensity obstacle lights at each level to be marked should be such that the object is indicated from every angle in azimuth. Where a light is shielded in any direction by another part of the object, or by an adjacent object, additional lights should be provided on that object in such a way as to retain the general definition of the object to be lighted. If the shielded light does not contribute to the definition of the object to be lighted, it may be omitted.
- (c) Low-intensity obstacle lights — Characteristics
- (1) Low-intensity obstacle lights on fixed objects, Types A and B, should be fixed-red lights.
 - (2) Low-intensity obstacle lights, Types A and B, should be in accordance with the specifications in Table 2.
 - (3) Low-intensity obstacle lights, Type C, displayed on vehicles associated with emergency or security should be flashing-blue and those displayed on other vehicles should be flashing-yellow.
 - (4) Low-intensity obstacle lights, Type D, displayed on follow-me vehicles should be flashing-yellow.
 - (5) Low-intensity obstacle lights, Types C and D, should be in accordance with the specifications in Table 2.
 - (6) Low-intensity obstacle lights on objects with limited mobility such as aerobridges should be fixed-red. The intensity of the lights should be sufficient to ensure conspicuity considering the intensity of the adjacent lights and the general levels of illumination against which they would normally be viewed.
 - (7) Low-intensity obstacle lights on objects with limited mobility should as a minimum be in accordance with the specifications for low-intensity obstacle lights, Type A, in Table 2.
- (d) Medium-intensity obstacle lights — Characteristics
- (1) Medium-intensity obstacle lights, Type A, should be flashing-white lights, Type B should be flashing-red lights and Type C should be fixed-red lights.
 - (2) Medium-intensity obstacle lights, Types A, B and C, should be in accordance with the specifications in Table 2.
 - (3) Medium-intensity obstacle lights, Types A and B, located on an object should flash simultaneously.
- (e) High-intensity obstacle lights — Characteristics
- (1) High-intensity obstacle lights, Types A and B, should be flashing-white lights.
 - (2) High-intensity obstacle lights, Types A and B, should be in accordance with the specifications in Table 2.
 - (3) High-intensity obstacle lights, Type A, located on an object should flash simultaneously.

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (4) High-intensity obstacle lights, Type B, indicating the presence of a tower supporting overhead wires, cables, etc., should flash sequentially; first the middle light, second the top light and last, the bottom light. The intervals between flashes of the lights should approximate the following ratios:

Flash interval between	Ratio of cycle time
Middle and top light	1:13
Top and bottom light	2:13
Bottom and middle light	10:13

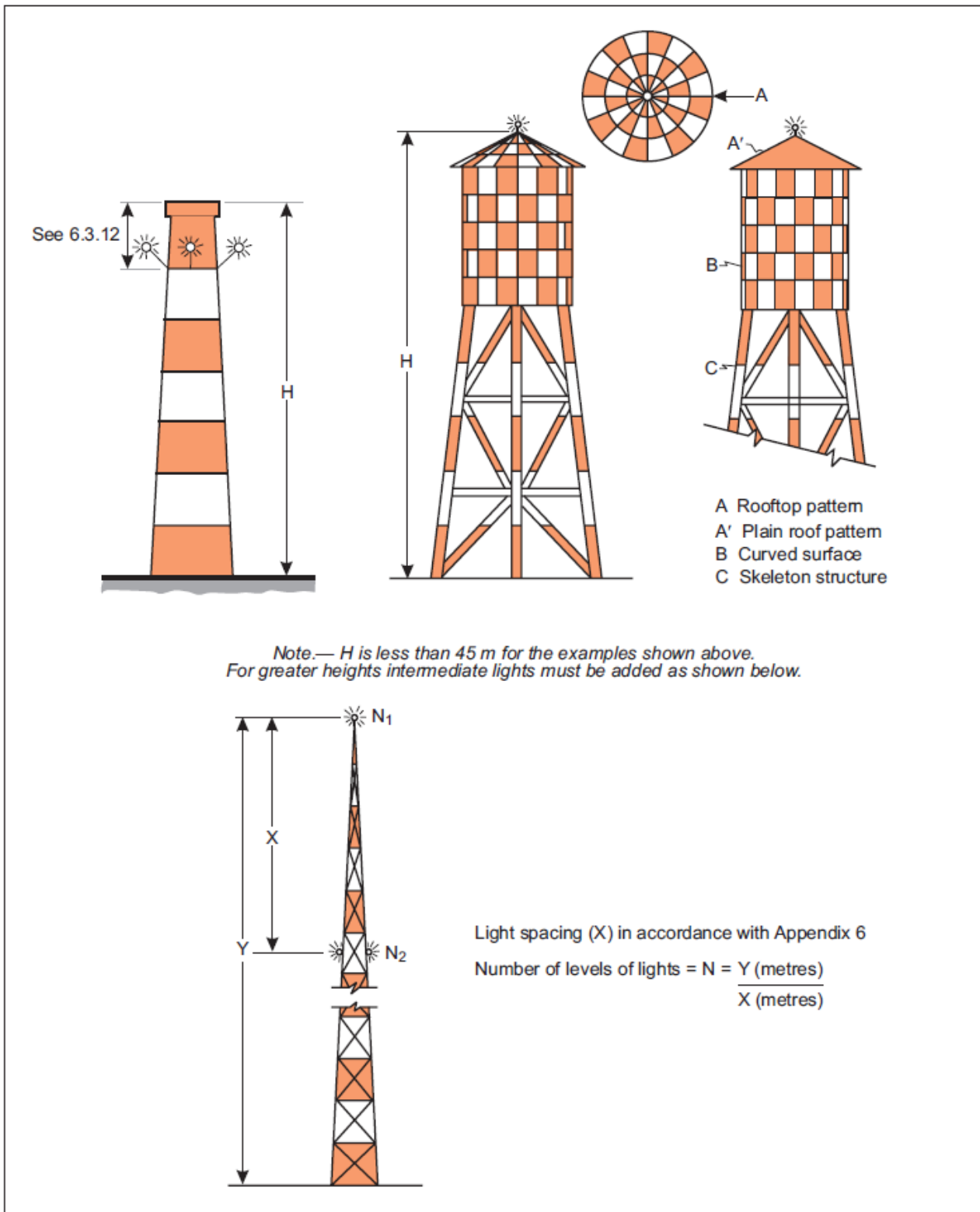


Figure 1

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

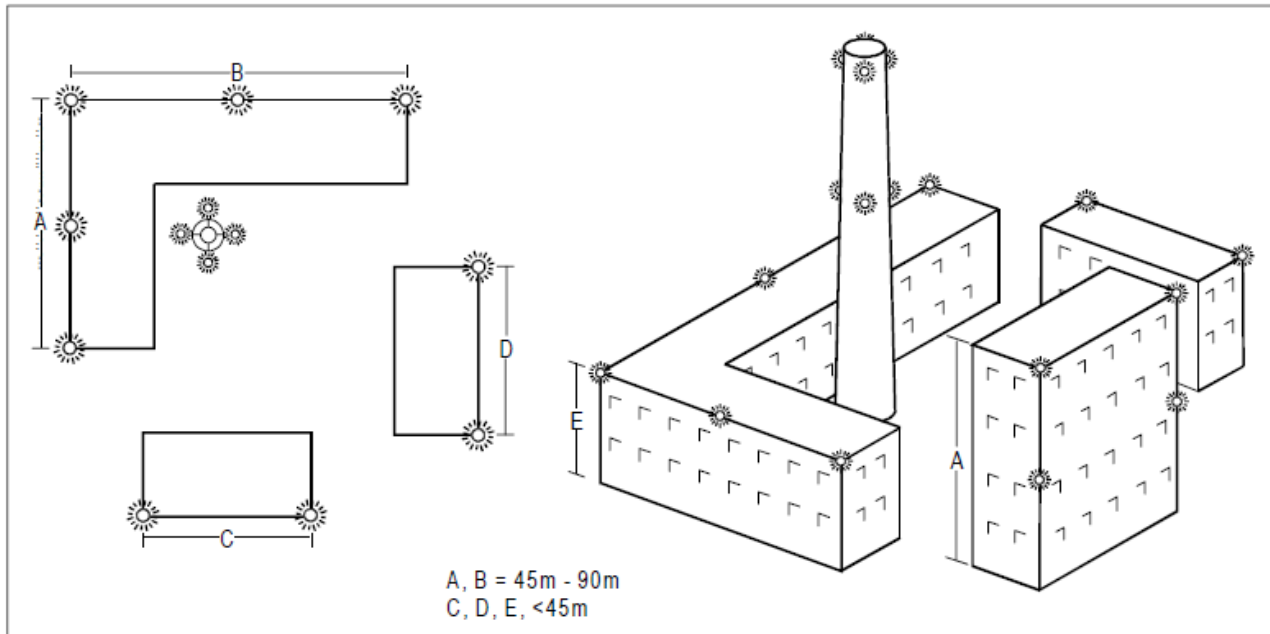


Figure 2

Height of light unit above terrain	Angle of the peak of the beam above the horizontal
Greater than 151 m AGL	0°
122 m to 151 m AGL	1°
92 m to 122 m AGL	2°
Less than 92 m AGL	3°

Table 1 Installation setting angles for high-intensity obstacle lights

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

1	2	3	4	5	6	7	8	9	10	11	12
Light type	Colour	Signal type/flash rate	Peak intensity (cd) at given background luminance			Vertical beam spread ^a	Intensity (c) at given elevation angles when the light unit is levelled ^d				
			Above 500cd/m ²	50-500cd/m ²	Below 50cd/m ²		-10° ^e	-1° ^f	±0° ^f	+6°	+10°
Low-intensity Type A (fixed obstacle)	Red	Fixed	N/A	10 mnm	10 mnm	10°	—	—	—	10 mnm ^g	10 mnm ^g
Low-intensity Type B (fixed obstacle)	Red	Fixed	N/A	32 mnm	32 mnm	10°	—	—	—	32 mnm ^g	32 mnm ^g
Low-intensity Type C (fixed obstacle)	Yellow/blue ^a	Flashing (60–90 fpm)	N/A	40 mnm ^b 400 max	40 mnm ^b 400 max	12° ^h	—	—	—	—	—
Low-intensity Type D (follow-me vehicle)	Yellow	Flashing (60–90 fpm)	N/A	200 mnm ^b 400 max	200 mnm ^b 400 max	12° ⁱ	—	—	—	—	—
Medium-intensity Type A	White	Flashing (20–60 fpm)	20 000 ^b ±25 %.	20 000 ^b ±25 %	2 000 ^b ±25 %	3° mnm	3° max	50 % mnm 75 % max	100 % mnm	—	—
Medium-intensity Type B	Red	Flashing (20–60 fpm)	N/A	N/A	2 000 ^b ±25%	3° mnm	—	50 % mnm 75 % max	100 % mnm	—	—
Medium-intensity Type C	Red	Fixed	N/A	N/A	2 000 ^b ±25 %	3° mnm	—	50 % mnm 75 % max	100 % mnm	—	—
High-intensity Type A	White	Flashing (40–60 fpm)	200 000 ^b ±25%	20 000 ^b ±25%	2 000 ^b ±25 %	3°–7°	3° max	50 % mnm 75 % max	100 % mnm	—	—

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

High-intensity Type B	White	Flashing (40–60 fpm)	100 000 ^b ±25 %	20 000 ^b ±25 %	2 000 ^b ±25 %	3°–7°	3° max	50 % mnm 75 % max	100 % mnm	—	—
<p>^a See 6.3.25.</p> <p>^b Effective intensity as determined in accordance the Aerodrome Design Manual (Doc 9157), Part 4.</p> <p>^c 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 intensity shown in columns 4, 5 and 6. The beam pattern is not necessarily symmetrical about the elevation angle at which the peak intensity occurs.</p> <p>^d Elevation (vertical) angles are referenced to the horizontal.</p> <p>^e Intensity at any specified horizontal radial as a percentage of the actual peak intensity at the same radial when operated at each of the intensities shown columns 4, 5 and 6.</p> <p>^f Intensity at any specified horizontal radial as a percentage of the lower tolerance value of the intensity shown in columns 4, 5 and 6.</p> <p>^g In addition to specified values, lights should have sufficient intensity to ensure conspicuity at elevation angles between ±0° and 50°.</p> <p>^h Peak intensity should be located at approximately 2.5° vertical.</p> <p>ⁱ Peak intensity should be located at approximately 17° vertical.</p> <p>Note: fpm means flashes per minute; N/A means not applicable</p>											

Table 2 Characteristics of obstacle lights

AMC2-ADR-AR.C.065 (b) — Obstacles - Objects**WIND TOURBINES**

- (a) If determined as an obstacle a wind turbine should be marked and/or lighted if it is determined by the competent authority to be an obstacle.
- (b) Markings
 - (1) The rotor blades, nacelle and upper 2/3 of the supporting mast of wind turbines should be painted white, unless otherwise indicated by the competent authority.
 - (2) When the lower 1/3 of the supporting mast of a wind turbine penetrates any obstacle limitation surface, that part of the wind turbine should also be painted white, or the respective colour of the upper 2/3 of the mast.
- (c) Lighting — day use
 - (1) When lighting is deemed necessary by the competent authority, medium-intensity obstacle lights should be used. In the case of a wind farm, i.e. a group of five or more wind turbines, it should be regarded as an extensive object and the lights should be installed:
 - (i) to identify the perimeter of the wind farm;
 - (ii) respecting the maximum spacing between the lights along the perimeter, unless a dedicated risk assessment shows that a greater spacing can be used;
 - (iii) so that, where flashing lights are used, they flash simultaneously; and
 - (iv) so that, within a wind farm, any wind turbines of significantly higher elevation are also identified wherever they are located.
 - (2) Where the highest point of the blade on the vertical position is 150 m or less above ground level, medium intensity white lights should be used.
 - (3) Where the highest point of the blade on the vertical position exceeds 150 m above ground level, high-intensity white lights should be prescribed by the competent authority if medium intensity lights are deemed insufficient.
 - (4) Obstacle lights should be installed on the nacelle in such a manner as to provide an unobstructed view for aircraft approaching them from any direction.
 - (i) The competent authority should prescribe additional intermediate lighting levels.
 - (ii) The wind turbine rotor should not shield lights on intermediate levels.
- (d) Lighting — night use
 - (1) The competent authority should prescribe medium-intensity flashing red lights instead of white lights. The competent authority may prescribe steady lights instead of flashing lights or coded red lights.
 - (2) The competent authority should prescribe additional intermediate lighting levels if it is deemed necessary; these lights should be low-intensity fixed red lights Type A or Type B. The wind turbine rotor should not shield lights on intermediate levels.
 - (3) In the case of a wind farm, i.e. a group of five or more wind turbines, when lighting is deemed necessary, it should be regarded as an extensive object and lights should be installed:

AMC/GM to Annex I – Part-AR

SUBPART C – OVERSIGHT, CERTIFICATION AND ENFORCEMENT (ADR.AR.C)

- (i) To identify the perimeter of the wind farm;
- (ii) In accordance with the maximum between the lights along the perimeter spacing detailed in CS-ADR-DSN.Q.855 (b)(4), unless a dedicated assessment shows that a greater spacing can be used;
- (iii) To ensure redundancy in case of perimeter lighting failure;
- (iv) So that where flashing lights are used, they flash simultaneously;
- (v) So that, within a wind farm, any wind turbines of significantly higher elevation are also identified wherever they are located;
- (4) The light intensity should be reduced so as to prevent dazzling effects, significant environmental concerns or if the competent authority concludes that reduction guarantees a satisfactory level of obstacle visibility.
- (e) The competent authority may prescribe red light instead of white light and steady lighting instead of flashing lighting.

AMC1-ADR.AR.C.070(a) – Confusing, misleading and hazardous lights

LIGHTS THAT MAY ENDANGER THE SAFETY OF AIRCRAFT

- (a) The use of non-aeronautical ground lights near an aerodrome, which might endanger the safety of aircraft, should not be permitted by the competent authority; such non-aeronautical ground lights should be extinguished, screened or otherwise modified, so as to eliminate the source of hazard.
- (b) The competent authority should have as appropriate arrangements with other competent authorities, in order to achieve (a) above.

AMC2-ADR.AR.C.070(a) – Confusing, misleading and hazardous lights

LIGHTS WHICH MAY CAUSE CONFUSION

- (a) The competent authority should ensure that: a non-aeronautical ground light which, by reason of its intensity, configuration or colour, might prevent, or cause confusion in, the clear interpretation of aeronautical ground lights should not be permitted. Such lights should be extinguished, screened or otherwise modified so as to eliminate such a possibility. In particular, attention should be directed to a non-aeronautical ground light visible from the air within the areas described below:
 - (1) 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 centre line in width.
 - (2) Instrument runway code number 2 or 3:
as in (1), except that the length should be at least 3,000 m.
 - (3) Instrument runway code number 1, and non-instrument runway:
within the approach area.
- (b) Arrangements with other competent authorities are in place, as appropriate, to achieve (a) above.

AMC1-ADR.AR.C.070 (b) – Confusing, misleading and hazardous lights

LASER EMISSIONS WHICH MAY ENDANGER SAFETY

- (a) The competent authority should ensure that the following protected zones are established and implemented around an aerodrome and that appropriate arrangements with other competent authorities are in place, in order to protect the safety of aircraft against the hazardous effects of laser emitters:
 - (1) a laser-beam free flight zone (LFFZ);
 - (2) a laser-beam critical flight zone (LCFZ);
 - (3) a laser-beam sensitive flight zone (LSFZ).
- (b) The competent authority should determine the exposure levels and distances that adequately protect flight operations.

GM1-ADR.AR.C.070(b) – Confusing, misleading and hazardous lights

LASER EMISSIONS

When implementing AMC1-ADR.AR.C.070 (b), figures 1, 2 and 3 may be used to determine the exposure levels and distances that adequately protect flight operations.

The restrictions on the use of laser beams in the three protected flight zones, LFFZ, LCFZ and LSFZ, refer to visible laser beams only. Laser emitters operated by the state authorities or the aerodrome operator in a manner compatible with flight safety are excluded. In all navigable airspace, the irradiance level of any laser beam, visible or invisible, is expected to be less than or equal to the maximum permissible exposure (MPE) unless such emission has been notified to the competent authority and permission obtained.

The protected flight zones are established in order to mitigate the risk of operating laser emitters in the vicinity of aerodromes. However, the prevention of the illegal use of laser emitters may require additional measures to be taken.

Further guidance on how to protect flight operations from the hazardous effects of laser emitters is contained in the Manual on Laser Emitters and Flight Safety (ICAO Doc 9815).

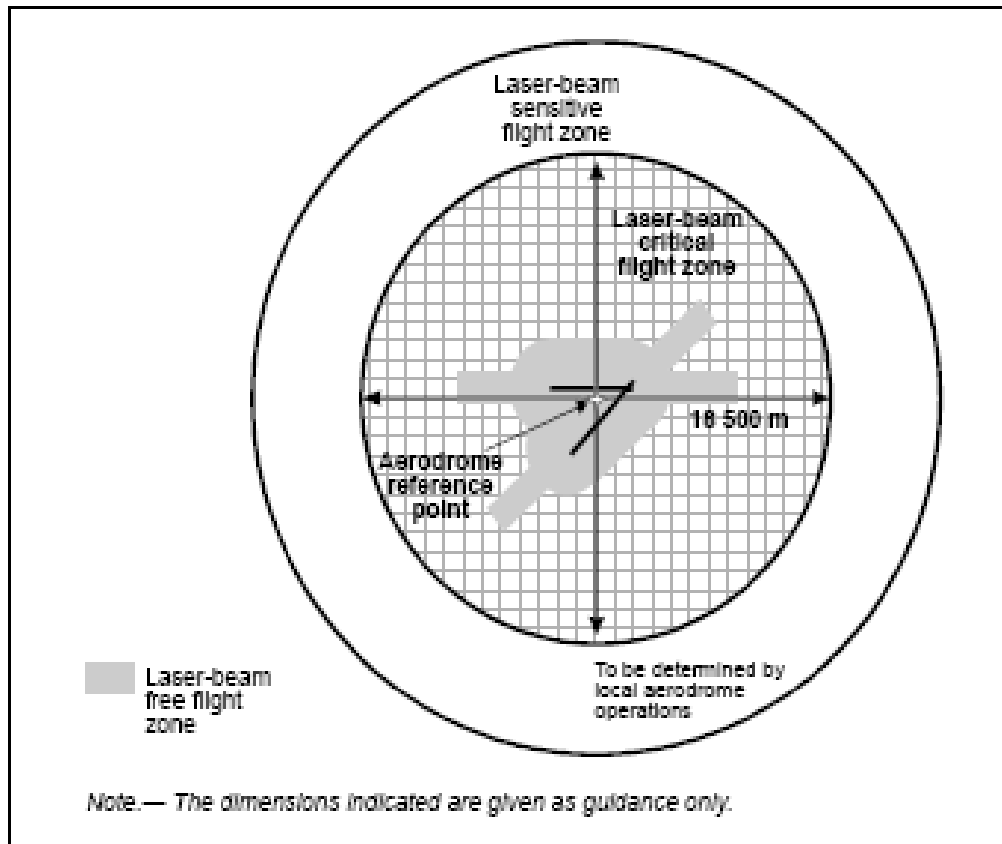


Figure 1

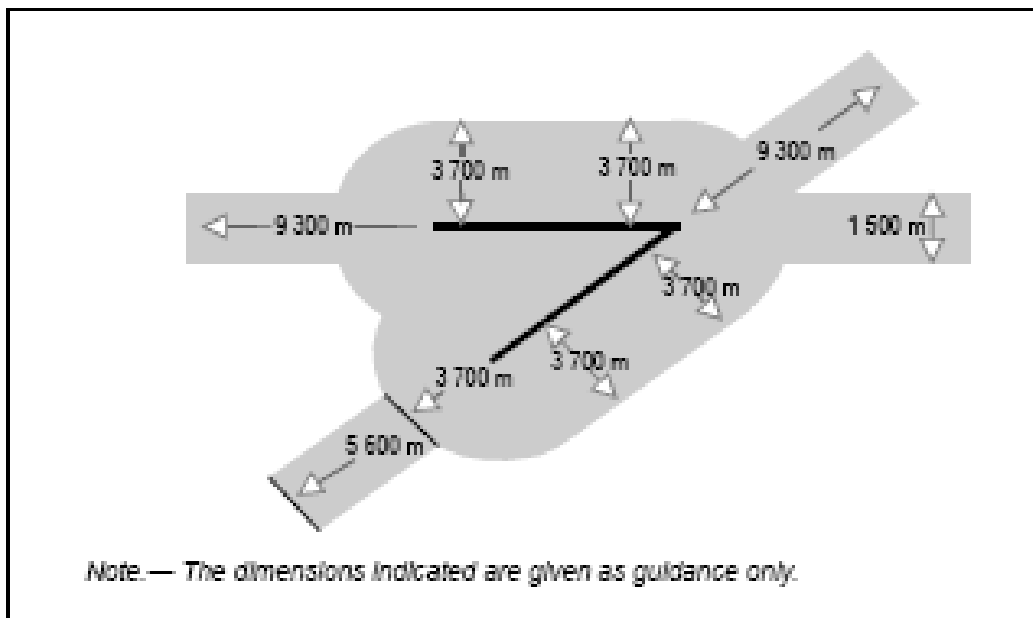


Figure 2

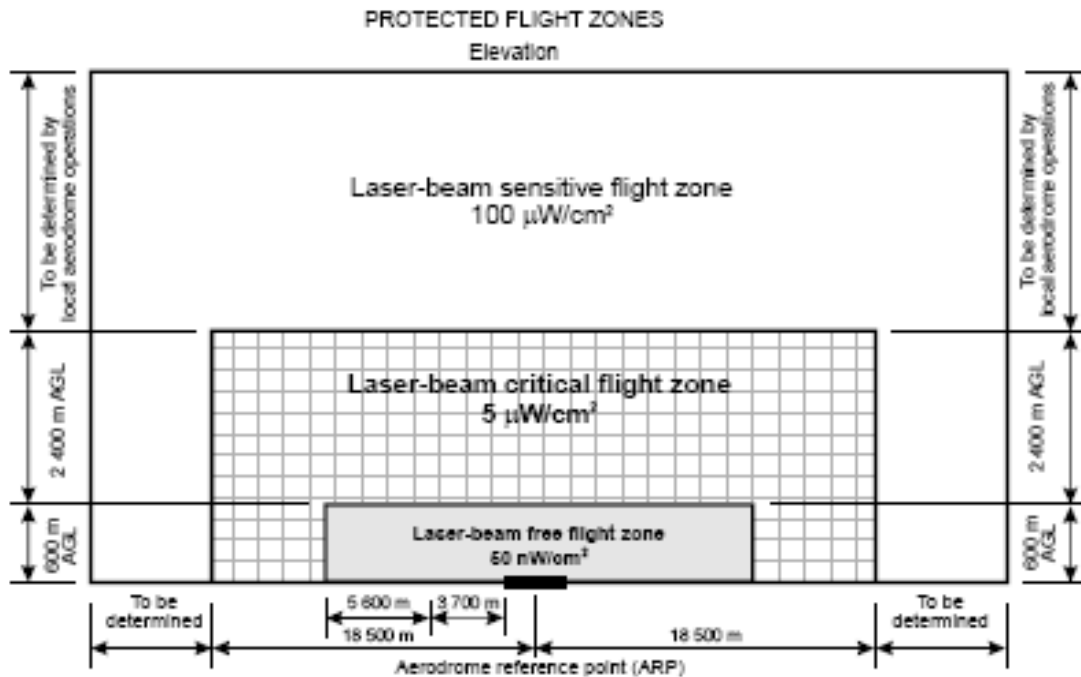


Figure 3

GM2-ADR.AR.C.070 – Confusing, misleading and hazardous lights**USE OF LASER EMITTERS FOR WILDLIFE HAZARD CONTROL ACTIVITIES**

The use of laser emitters by aerodrome operators for wildlife hazard management activities may be allowed by the competent authority, if it is done in a manner that does not endanger safety.

SUBPART A – GENERAL REQUIREMENTS (ADR.OR.A)

GM1-ADR.OR.A.005 – Scope

AERODROMES OPEN TO PUBLIC USE

An aerodrome whose use may or requires prior notice to be given to its operator does not qualify that aerodrome as not being open to public use.

Similarly, the fact that certain aircraft types or operations may not be or are not allowed at a given aerodrome, or that they are allowed under certain conditions or an approval of the competent authority does not mean that such an aerodrome is not open to public use.

To the extent that an aerodrome is used for commercial air transport, by aircraft operators who comply with conditions or limitations such as those described above, an aerodrome should be considered to be under the scope of the Basic Regulation and its Implementing Rules, provided that the other criteria contained in article 4(3a) of the Basic Regulation are also met.

AMC/GM to Annex II – Part-OR
SUBPART B – CERTIFICATION (ADR.OR.B)

SUBPART B – CERTIFICATION (ADR.OR.B)

AMC1-ADR.OR.B.015(a) – Application for a certificate

APPLICATION

The application should be made in writing and be signed by the applicant, using a standardised form adopted by the competent authority.

AMC1-ADR.OR.B.015(b)(1);(2);(3) – Application for a certificate

INFORMATION TO BE PROVIDED TO THE COMPETENT AUTHORITY

- (a) The applicant should provide its telephone and fax number and e-mail address for communication with the competent authority. In addition, the applicant should indicate to the authority the names of its employees whom the competent authority would contact in order to address any issues that might arise during the evaluation of the application and the certification process.
- (b) The applicant should provide the competent authority information with regard to:
 - (1) location of the aerodrome: the exact location of the aerodrome should be depicted on a map of a suitable scale;
 - (2) the type of operations at the aerodrome:
 - (i) operations during the day and/or night and type of approaches;
 - (ii) the aircraft types to be served at the aerodrome and the aircraft type to be used for the design of the aerodrome; and
 - (iii) any limitations to the operation of the aerodrome.
 - (3) the design of the aerodrome should:
 - (i) be in a suitable scale;
 - (ii) meet the applicable aeronautical data requirements; and
 - (iii) be in an electronic format, if this is acceptable to the competent authority.
 - (4) the design of the aerodrome should include all the necessary information, including:
 - (i) runway(s) orientation;
 - (ii) the dimensions of the aerodrome's physical characteristics;
 - (iii) the visual and non-visual aids;
 - (iv) the obstacle limitation surfaces and any other surfaces applicable, showing any obstacles or objects that could endanger safety present; and
 - (v) the aerodrome facilities, installations and equipment and their location.
- (c) The applicant should propose to the competent authority the certification specifications which are applicable to the proposed aerodrome. These should consist of a list of:
 - (1) the certification specifications that are matching the design and the operation of the aerodrome; and

AMC/GM to Annex II – Part-OR

SUBPART B – CERTIFICATION (ADR.OR.B)

- (2) the certification specifications for which the applicant proposes to show compliance in a different manner and demonstrate an equivalent level of safety. Such a proposal has to be acceptable to the competent authority. In such cases, the applicant should also propose the method that will be used to demonstrate compliance and achieve an equivalent level of safety (ELoS) and submit all the necessary documentation to support the proposal.
- (3) Any other proposal for which the applicant assumes that the certification specifications issued by the Agency are inadequate or inappropriate.
- (d) The applicant should provide the competent authority documentation to demonstrate how he/she will comply with the applicable requirements of the Basic Regulation, Part-ADR.OR, and Part-ADR.OPS and any other applicable requirements that are matching the aerodrome design and its operation.

The applicant should indicate the requirements for which an exemption or derogation is proposed, if applicable. In such cases, the applicant should also submit to the competent authority the necessary justification and documentation for the exemption or the derogation, in accordance with article 14 of the Basic Regulation.

Additionally, the applicant should indicate to the competent authority the means of compliance that intends to use, in order to show compliance with the applicable requirements. Such information should also include the intended use of alternative means of compliance with the applicable requirements, and all relevant documentation in accordance with article ADR.OR.A.015.

AMC1-ADR.OR.B.015(b)(3) – Application for a certificate

PROVISION OF EVIDENCE OF ARRANGEMENTS WITH THIRD PARTIES

The applicant should provide all necessary evidence for arrangements with third parties that provide or intend to provide services or undertake activities at the aerodrome, whose activities may have an impact on safety. Such evidence should cover all organisations with which the aerodrome operator needs to have arrangements, including those mentioned in ADR.OR.C.005.

AMC1-ADR.OR.B.015(b)(4) – Application for a certificate

ADEQUACY OF RESOURCES

The applicant should provide all necessary information needed in order to demonstrate to the competent authority that its proposed organisation and management, including its financial capability, are suitable and properly matched to the scale and scope of the operation.

In demonstrating such compliance the applicant should, amongst others, take into account in its analysis the following:

- the size and complexity of the aerodrome;
- the type of traffic;
- the type of operations;
- the level and the density of the traffic;
- the operating hours of the aerodrome;
- the amount of full-time-equivalent (FTEs) necessary for each activity;

AMC/GM to Annex II – Part-OR
SUBPART B – CERTIFICATION (ADR.OR.B)

- human factors principles;
- labour legislation; and
- the degree of subcontracting.

In case of subcontracting, the applicant should provide to the authority with all necessary evidence of such contracts.

The aerodrome operator should have the ability to discharge its responsibilities with regard to safety. The accountable manager should have access, as well as the authorisation, to the necessary resources to ensure that operations are carried out in accordance with the regulations. The resources should also include personnel, tools and equipment as well as financial resources.

AMC2-ADR.OR.B.015(b)(4) — Application for a certificate

ARRANGEMENTS WITH PARTIES NECESSARY FOR THE OPERATION OF THE AERODROME

The applicant should indicate those services that are going to be provided directly by himself and those that will be provided by contacted third parties with regard to the adequacy of the resources.

The applicant should also provide the necessary evidence needed, that is contractual arrangements, if third parties are going to be involved in the provision of services. In addition, the applicant should provide any relevant information needed regarding such third parties.

AMC1-ADR.OR.B.015(b)(5) — Application for a certificate

RELATIONSHIP OF THE APPLICANT WITH THE AERODROME OWNER

The applicant should demonstrate to the competent authority, in accordance with the applicable national legislation that he/she is duly authorised to undertake all activities necessary under the provisions of the Basic Regulation and its Implementing Rules and any other applicable national or Community rule.

The applicant should also provide the competent authority all information necessary, under the applicable national legislation, to demonstrate to the competent authority his/ her relationship between the aerodrome owner and/or the owner of the land to be used for the aerodrome development.

Such documentation should include but is not limited to, contracts, lease agreements, authorisations between the persons involved, etc.

AMC1-ADR.OR.B.015(b)(8) — Application for a certificate

AERODROME MANUAL

The aerodrome manual and its amendments may be submitted to the competent authority in electronic format, if this is acceptable to the competent authority.

GM1-ADR.OR.B.015 — Application for a certificate

INITIAL INTEREST

AMC/GM to Annex II – Part-OR
SUBPART B – CERTIFICATION (ADR.OR.B)

Prior to submitting an application for a certificate to the competent authority, an applicant should arrange for a meeting with the competent authority.

During this meeting, the applicant should present to the authority its plans with regard to the aerodrome.

The applicant should also make arrangements so that its key personnel are present during this meeting.

During the meeting, the applicant may be provided by the competent authority with general information about the applicable requirements for the aerodrome.

It may also be provided with copies of the applicable requirements and a description of the procedures that are followed during the certification process.

The applicant may also be informed by the competent authority about possible approvals, permits or clearances that may be needed to be obtained from other competent authorities of the Member State.

GM2-ADR.OR.B.015(b)(1);(2);(3) – Application for a certificate

AERODROME BOUNDARIES

The map attached to the application for an aerodrome certificate should show the boundary of the area subject to certification. It should therefore include at least runways, taxiways, aprons, associated strips and, in most cases, the area adjacent to the terminal building. The defined area will be the subject of aerodrome oversight by the competent authority once the certificate is awarded.

The above aerodrome boundary should not be confused with boundaries established for other purposes such as the land ownership boundaries used by local planning authorities or those used to designate security restricted zones. While the aerodrome owner may own land adjacent or near to the aerodrome, they may exclude those areas, including those that may be set aside for the movement of aircraft but over which the aerodrome operator has no direct control, e.g. maintenance areas.

Any developments and activities outside of the aerodrome boundary but adjacent to it should be subject to the aerodrome operator's safety management system.

GM1-ADR.OR.B.025 – Compliance

The obligations of the aerodrome operator prescribed under ADR.OR.B.025 are not limited to the initial certification.

On the contrary, the aerodrome operator is meant to comply with ADR.OR.B.025 at any stage and in all cases where compliance has to be demonstrated in accordance with the provisions of this Regulation e.g. a change of the infrastructure, a change in the operation, implementation of a safety directive etc.

AMC1-ADR.OR.B.040(a) – Changes

CHANGES REQUIRING PRIOR APPROVAL

- (a) The aerodrome operator should ensure that prior to initiating any change to the aerodrome or its operation, which requires prior approval, an application is submitted to

AMC/GM to Annex II – Part-OR

SUBPART B – CERTIFICATION (ADR.OR.B)

the competent authority. The applicant should provide documentation containing a description of the proposed change, in which the following are identified:

- (1) the parts of the aerodrome and the aerodrome manual, which are affected by the change, including relevant appropriate detailed design drawings.
 - (2) the certification specifications with which the proposed change has been designed to comply with; including the certification specifications for which the applicant proposes to show compliance in a different manner in order to accomplish and equivalent level of safety (for such cases see AMC1-ADR.OR.B.015(b)(1); (2); (3), paragraph 3(b));
 - (3) the requirements of Part-ADR.OR and Part-ADR.OPS and any other applicable requirements that have to be complied with as a result of the proposed change, including the way in which compliance is intended to be demonstrated.
 - (4) the safety assessment required under ADR.OR.B.065.
- (b) Examples of such changes include, but are not limited to, the following:
- (1) changes to the physical characteristics of a runway; such as:
 - (i) new runway(s): a development resulting in the construction of a 'new' runway (e.g. new construction, or the change of an existing grass surface to a paved surface);
 - (ii) runway extension or shortening resulting in an amendment to declared distances;
 - (iii) threshold relocation (Instrument Status): a development involving relocation of the instrument runway threshold, or relocation of a non-instrument runway threshold in preparation for instrument status;
 - (iv) changes to runway designation.
 - (2) changes of the aerodrome visual aids or other changes to the aerodrome, when such changes are associated with a change (upgrade or downgrade) of the intended operations (e.g. to accommodate low visibility operations and/or night operations);
 - (3) changes in the aerodrome operating minima;
 - (4) change that affects the obstacle limitation surfaces associated with approved type of approaches;
 - (5) change in the level of the rescue and fire-fighting services;
 - (6) changes in the organisational structure of the organisation, including responsibilities, and accountabilities;
 - (7) changes related to fuel provision.

AMC1-ADR.OR.B.040(c) – Changes**CHANGES NOT REQUIRING PRIOR APPROVAL**

- (a) The aerodrome operator should ensure that for every change that a prior approval is not required, the procedure approved by the competent authority for managing such changes, is implemented. The documentation to be provided to the competent authority in such cases is described in paragraph 1 of ADR.OR.B.040(d).

AMC/GM to Annex II – Part-OR

SUBPART B – CERTIFICATION (ADR.OR.B)

- (b) The Certification Specifications that should be used for a change not requiring a prior approval are those which were in effect on the date of the notification of the change to the competent authority.
- (c) Notwithstanding paragraph (b), the aerodrome operator may decide to use certification specifications that became effective after the date of the notification of the change to the competent authority.

GM1-ADR.OR.B.040 – Changes

MAINTENANCE ACTIVITIES

Routine maintenance activities, such as re-painting of the markings, changing of light-bulbs etc, affect certain elements of the certification basis and therefore qualify as changes, and therefore should be treated as such. The procedure to be followed depends on whether such a change requires or not a prior approval of the competent authority.

AMC1- ADR.OR.B.045(a) – Assessment of changes

SAFETY ASSESSEMENT FOR A CHANGE

A safety assessment for a change should include:

- (a) identification of the scope of the change;
- (b) identification of hazards;
- (c) determination of the safety criteria applicable to the change;
- (d) risk analysis in relation to the harmful effects or improvements in safety related to the change;
- (e) risk evaluation and, if required, risk mitigation for the change to meet the applicable safety criteria;
- (f) verification that the change conforms to the scope that was subject to safety assessment and meets the safety criteria; and
- (g) the specification of the monitoring requirements necessary to ensure that the aerodrome and its operation will continue to meet the safety criteria after the change has taken place.

AMC1- ADR.OR.B.045(b) – Assessment of changes

SCOPE OF THE SAFETY ASSESSMENT

The scope of the safety assessment should include the following elements and their interaction:

- (a) the aerodrome, its operation, management and human elements being changed;
- (b) interfaces and interactions between the elements being changed and the remainder of the system;
- (c) interfaces and interactions between the elements being changed and the environment in which it is intended to operate; and
- (d) the full lifecycle of the change from definition to operations.

AMC/GM to Annex II – Part-OR
SUBPART B – CERTIFICATION (ADR.OR.B)

AMC1- ADR.OR.B.045(d) — Assessment of changes**SAFETY CRITERIA**

The safety criteria used should be defined in accordance with the procedures for the management of change contained in the aerodrome manual.

The safety criteria used should, depending on the availability of data, be specified with reference to explicit quantitative acceptable safety risk levels, recognised standards and/or codes of practice, the safety performance of the existing system or a similar system elsewhere may be used.

AMC1-ADR.OR.B.055 — Change of aerodrome operator**REQUIRED DOCUMENTATION**

- (a) Apart from the safety assessment, the current and future aerodrome operator should provide detailed arrangements and plans with regard to the transfer of operations.
- (b) The new aerodrome operator should also provide all the evidence and documentation required for a newly certified aerodrome in accordance with the applicable requirements, identifying also any change to the management system of the aerodrome, including but not limited to organisational structure, appointed and nominated persons, number of personnel, arrangements with other organisations etc, or any other evidence the competent authority finds is needed.
- (c) However, documentation related to the design, facilities, equipment and operation of the aerodrome need not be submitted, unless changes to these elements are to take place as well.

AMC1-ADR.OR.B.065 — Termination of operation**TERMINATION OF OPERATION**

The aerodrome operator should notify, in writing, the competent authority and the Aeronautical Information Service provider, in case of intended termination of the operation of the aerodrome. In such cases, the notification should be done in such time in advance, so as to allow for the timely publication of the changes and their notification by the Aeronautical Information Regulation And Control (AIRAC) system in accordance with the related timeframe.

Upon the termination of the operation, the aerodrome operator should apply closed runway markings, as well as any other measure the authority has found appropriate.

SUBPART C — ADDITIONAL OPERATOR RESPONSIBILITIES (ADR.OR.C)**AMC1-ADR.OR.C.005(e) Operator Responsibilities**

PUBLICATION OF INFORMATION TO THE AERONAUTICAL INFORMATION PUBLICATION

A description of cases involving exemptions, derogations, cases of equivalent level of safety, special conditions, including limitations with regard to the use of the aerodrome, should be published in the aeronautical information publication, after coordination with the competent authority.

GM1-ADR.OR.C.010 — Use of the aerodrome by large aircraft

ELEMENTS TO BE ASSESSED

When assessing the possibility of operation of aircraft whose code letter is higher than the code letter of the aerodrome reference code, the aerodrome operator should, amongst other issues, assess the impact of the characteristics of the aircraft on the aerodrome, its facilities, equipment and its operation, and vice versa.

Aircraft characteristics to be assessed include, but are not limited to:

- (a) fuselage length;
- (b) fuselage width;
- (c) fuselage height;
- (d) tail height;
- (e) wingspan;
- (f) wing tip vertical clearance;
- (g) cockpit view;
- (h) distance from the pilot's eye position to the nose landing gear and to the main landing gear;
- (i) landing gear design;
- (j) outer main gear wheel span;
- (k) wheelbase;
- (l) main gear steering system;
- (m) maximum aircraft mass;
- (n) landing gear geometry, tire pressure and ACN values;
- (o) engine data;
- (p) Maximum passenger and fuel carrying capacities;
- (q) flight performance;
- (r) technology evolution.

Further guidance on this issue is contained in ICAO Circular 305-AN/177 and ICAO Circular 301-AN/174.

ADR.OR.C.030 — Occurrence reporting

GENERAL

The aerodrome operator should establish procedures to be used for reporting to the competent authority and any other organisation required. The procedures should include:

- (a) description of the applicable requirements for reporting;
- (b) description of the reporting mechanism, including reporting forms, means and deadlines;
- (c) personnel responsible for reporting;
- (d) description of mechanism and personnel responsibilities for identifying root causes and the actions that may be needed to be taken to prevent similar occurrences in the future, as appropriate.

AMC1-ADR.OR.C.040 — Prevention of fire

The aerodrome operator should develop procedures and assign responsibilities for the control of smoking or activities that involve the use of fire hazard.

In addition, these procedures should address the adoption and use of mitigating measures when necessary activities (e.g. maintenance etc) which might involve fire hazard need to be authorised.

Such authorised activities may never include smoking since it is prohibited.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

SUBPART D – MANAGEMENT (ADR.OR.D)

AMC1-ADR.OR. D.005(a)(2) – Management

QUALITY MANAGEMENT SYSTEM

- (a) A quality management system supporting the origination, production, storage, handling, processing, transfer and distribution of aeronautical data and aeronautical information should:
- define the quality policy in such a way as to meet the needs of different users as closely as possible;
 - set up a quality assurance programme that contains procedures designed to verify that all operations are being conducted in accordance with applicable requirements, standards and procedures, including the relevant requirements of this Regulation;
 - provide evidence of the functioning of the quality system by means of manuals and monitoring documents;
 - appoint management representatives to monitor compliance with, and adequacy of, procedures to ensure safe and efficient operational practices; and
 - perform reviews of the quality system in place and take remedial actions, as appropriate.
- (b) An EN ISO 9001 certificate, issued by an appropriately accredited organisation, is considered as a sufficient means of compliance.

AMC2-ADR.OR.D.005(a)(2) – Management

SECURITY MANAGEMENT FOR AERONAUTICAL DATA AND AERONAUTICAL INFORMATION PROVISION ACTIVITIES

- (a) The security management objectives should be:
- (1) to ensure the security of aeronautical data aeronautical information received, produced or otherwise employed so that it is protected from interference and access to it is restricted only to those authorised; and
 - (2) to ensure that the security management measures meet appropriate national or international requirements for critical infrastructure and business continuity, and international standards for security management, including: ISO/IEC 17799:2005 – Information technology – Security techniques – Code of practice for information security management ISO 28000:2007: – Specification for security management systems for the supply chain.
- (b) Regarding the ISO standards, the relevant certificates issued by an appropriately accredited organisation, are considered as a sufficient means of compliance.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

AMC1-ADR.OR. D.005(b)(1) – Management**SAFETY MANAGEMENT SYSTEM**

The safety management system of an aerodrome operator should include an organisational structure for the management of safety proportionate and appropriate to the size of the organisation and the nature and type of operations. Clearly defined lines of responsibilities, authorisations and accountabilities within the organisation should be identified. Depending on the organisational complexity and structure, this should include a Safety Services Office and a Safety Review Board or similar.

(a) Safety Services Office

- (1) The Safety Services Office should be independent and neutral in terms of the processes and decisions made regarding the delivery of services by the line managers of operational units;
- (2) The function of the Safety Services Office should be to:
 - (i) manage and oversee the hazard identification system;
 - (ii) monitor safety performance of operational units directly involved in aerodrome operations;
 - (iii) advise senior management on safety management matters; and
 - (iv) assist line managers with safety management matters;
- (3) Operators of multiple aerodromes should either establish a central Safety Services Office and appropriate safety departments/functions at all aerodromes or separate Safety Services Office at each aerodrome. Arrangements should be made to ensure continuous flow of information and adequate coordination.

(b) Safety Review Board

- (1) The Safety Review Board should be a high level committee that considers matters of strategic safety in support of the accountable manager's safety accountability;
- (2) The board should be chaired by the accountable manager and be composed of heads of functional areas;
- (3) The Safety Review Board should monitor:
 - (i) safety performance against the safety policy and objectives;
 - (ii) that any safety action is taken in a timely manner; and
 - (iii) the effectiveness of the organisation's safety management system
- (4) The Safety Review Board should ensure that appropriate resources are allocated to achieve the established safety performance.
- (5) Operators of multiple aerodromes should ensure that all aerodromes are represented in the Safety Review Board, at the appropriate management level.

GM1-ADR.OR. D.005(b)(1) – Management**SAFETY SERVICES OFFICE**

The role of the Safety Services Office may be exercised by the nominated person(s) for the safety management function, considering the size of the organisation, the type and complexity of operations.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

SAFETY REVIEW BOARD

Depending on the size of the organisation, the type and complexity of operations, the responsibilities of the Safety Review Board may be included in other high level committees of the organisation.

SAFETY ACTION GROUP

- (a) A Safety Action Group may be established as a standing group or as an ad hoc group to assist or act on behalf of the Safety Review Board;
- (b) More than one safety action group may be established depending on the scope of the task and specific expertise required.
- (c) A safety action group should report to and take strategic direction from the safety review board and should be comprised of managers, supervisors and personnel from operational areas.
- (d) The Safety Action Group should:
 - (i) monitor operational safety;
 - (ii) resolve identified risks;
 - (iii) assess the impact on safety of operational services;
 - (iv) ensure that safety actions are implemented within agreed timescales; and
 - (v) review the effectiveness of previous safety recommendations and promotions.

further guidance on this issue is contained in ICAO Doc 9859.

AMC1-ADR.OR. D.005(b)(2) – Management**SAFETY POLICY**

- (a) The safety policy should:
 - (1) be endorsed by the accountable manager;
 - (2) clearly identify safety as the highest organisational priority over commercial, operational, environmental or social pressures;
 - (3) reflect organisational commitments regarding safety and its proactive and systematic management;
 - (4) be communicated, with visible endorsement, throughout the organisation;
 - (5) include safety reporting principles;
 - (6) be periodically reviewed to ensure it remains relevant and appropriate to the organisation.
- (b) The safety policy should:
 - (1) include a commitment:
 - (i) to improve towards the highest safety standards;
 - (ii) to comply with all applicable legal requirements, meet all applicable standards and consider best practices;
 - (iii) to provide appropriate resources;

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

- (iv) to enforce safety as one primary responsibility of all managers and staff;
- (2) include the safety reporting procedures;
- (3) with reference to a just culture clearly indicate which types of operational behaviours are unacceptable and include the conditions under which disciplinary action would not apply;
- (4) be periodically reviewed to ensure it remains relevant and appropriate.

GM1-ADR.OR. D.005(b)(2) – Management

SAFETY POLICY

The safety policy is the means whereby the aerodrome operator states its intention to maintain and, where practicable, improve safety levels in all its activities and to minimise its contribution to the risk of an aircraft accident as far as is reasonably practicable.

Further guidance on this issue is contained in ICAO Doc 9859.

GM2-ADR.OR. D.005(b)(2) – Management

EXAMPLE SAFETY POLICY

SAFETY POLICY STATEMENT

Safety is one of our core business functions. We are committed to developing, implementing, maintaining and constantly improving strategies and processes to ensure that all our aviation activities take place under a balanced allocation of organisational resources, aimed at achieving the highest level of safety performance and meeting European Union and international standards, while delivering our services.

All levels of management and all employees are accountable for the delivery of this highest level of safety performance, starting with the [chief executive officer (CEO)/managing director/or as appropriate to the organisation].

Our commitment is to:

- Support the management of safety through the provision of all appropriate resources, that will result in an organisational culture that fosters safe practices, encourages effective safety reporting and communication, and actively manages safety with the same attention to results as the attention to the results of the other management systems of the organisation;
- Enforce the management of safety as a primary responsibility of all managers and employees;
- Clearly define for all staff, managers and employees alike, their accountabilities and responsibilities for the delivery of the organisation's safety performance and the performance of our safety management system;
- Establish and operate hazard identification and risk management processes, including a hazard reporting system, in order to eliminate or mitigate the safety risks of the consequences of hazards resulting from our operations or activities to a point which is as low as reasonably practicable (ALARP);
- Ensure that no action will be taken against any employee who discloses a safety concern through the hazard reporting system, unless such disclosure indicates, beyond any

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

reasonable doubt, an illegal act, gross negligence, or a deliberate or wilful disregard of regulations or procedures;

- Comply with and, wherever possible, exceed, legislative and regulatory requirements and standards;
- Ensure that sufficient skilled and trained human resources are available to implement safety strategies and processes;
- Ensure that all staff are provided with adequate and appropriate aviation safety information and training, are competent in safety matters, and are allocated only tasks commensurate with their skills;
- Establish and measure our safety performance against realistic safety performance indicators and safety performance targets;
- Continually improve our safety performance through management processes that ensure that relevant safety action is taken and is effective; and
- Ensure externally supplied systems and services to support our operations are delivered meeting our safety performance standards.

(Signed) _____

CEO/Managing Director/or as appropriate

Further guidance on the issue of safety policy is contained in ICAO Doc 9859.

GM3-ADR.OR. D.005(b)(2) – Management

SAFETY POLICY — JUST CULTURE

The safety policy should actively encourage effective safety reporting and, by defining the line between acceptable performance (often unintended errors) and unacceptable performance (such as negligence, recklessness, violations or sabotage), provide fair protection to reporters. A safety or just culture may not however preclude the 'criminalisation of error', which is legally, ethically and morally within the sovereign rights of any Member State, provided Community law and established international agreements are observed. A judicial investigation, and consequences of some form, may be expected following an accident or serious incident especially if a system failure resulted in lives lost or property damaged, even if no negligence or ill-intent existed. A potential issue could therefore exist if voluntary hazard reports, which relate to latent deficiencies of a system or its performance, are treated in the same way as those concerning accident and serious incident investigations. The intent of protecting hazard reports should not challenge the legitimacy of a judicial investigation or demand undue immunity. However, legal argument does usually take precedence over any technical or safety-related argument.

Further guidance on safety policy and just culture is contained in see ICAO Doc 9859.

AMC1-ADR.OR.D.005(b)(3) Management

HAZARD IDENTIFICATION PROCESS

- (a) Reactive, proactive and predictive schemes for hazard identification should be the formal means of collecting, recording, analysing, acting on and generating feedback about hazards and the associated risks that affect the safety of the operational activities.
- (b) All reporting systems, including confidential reporting schemes, should include an effective feedback process.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

GM1-ADR.OR.D.005(b)(3) – Management**HAZARD IDENTIFICATION**

- (a) Hazard identification may include the following factors and processes:
- (1) design factors, including equipment and task design;
 - (2) procedures and operating practices, including their documentation and checklists, and their validation under actual operating conditions;
 - (3) communications, including means, terminology and language;
 - (4) personnel factors, such as company policies for recruitment, training, remuneration and allocation of resources;
 - (5) organisational factors, such as the compatibility of production and safety goals, the allocation of resources, operating pressures and the corporate safety culture;
 - (6) work environment factors, such as ambient noise and vibration, temperature, lighting and the availability of protective equipment and clothing;
 - (7) regulatory oversight factors, including the applicability and enforceability of regulations, the certification of equipment, personnel and procedures and the adequacy of oversight;
 - (8) defences, including such factors as the provision of adequate detection and warning systems, the error tolerance of equipment and the resilience of equipment to errors and failures; and
 - (9) human performance, restricted to medical conditions and physical limitations.
- (b) Hazard identification may use internal and external sources.
- (1) Internal sources:
 - (i) voluntary occurrence reporting schemes;
 - (ii) safety surveys;
 - (iii) safety audits;
 - (iv) normal operations;
 - (v) monitoring schemes;
 - (vi) trend analysis;
 - (vii) feedback from training; and
 - (viii) investigation and follow-up of incidents
 - (2) External sources:
 - (i) accident reports;
 - (ii) state mandatory occurrence reporting system; and
 - (iii) state voluntary reporting system.
- (c) The methods used for hazard identification depends on the resources and constraints of each particular aerodrome operator and on the size and the complexity of the operations. Nevertheless, hazard identification, regardless of implementation, complexity and size, is part of the aerodrome operator's safety documentation. Under mature safety management practices, hazard identification is a continuous, ongoing daily activity. It is

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

an integral part of the aerodrome operator's processes. There are three specific conditions under which special attention to hazard identification should be paid. These three conditions should trigger more in depth and far reaching hazard identification activities and include:

- (1) any time that the aerodrome operator experiences an unexplained increase in safety related events or regulatory infractions;
 - (2) any time major operational changes are foreseen, including changes to key personnel or other major equipment or systems; and
 - (3) before and during periods of significant organisational change, including rapid growth of contraction, corporate mergers, acquisitions or downsizing.
- (d) Hazard identification may use the following tools and techniques:
- (1) brainstorming, which is an unbounded but facilitated discussion with a group of experts;
 - (2) Hazard and Operability (HAZOP) Study, which is a systematic and structured approach using parameter and deviation guidewords. This technique relies on a very detailed system description being available for study and usually involves breaking down the system into well-defined subsystems and functional or process flows between subsystems. Each element of the system is then subject to discussion within a multidisciplinary group of experts, against the various combinations of the guidewords and deviations;
 - (3) checklists, which are lists of known hazards or hazard causes that have been derived from past experience. The past experience could be previous risk assessments or similar systems or operations, or from actual incidents that have occurred in the past. The technique involves the systematic use of an appropriate checklist and the consideration of each item on the checklist for possible applicability to a particular system. Checklists should always be validated for applicability prior to use;
 - (4) Failure Modes and Effects Analysis (FMEA), which is a 'bottom up' technique, used to consider ways in which the basic components of a system can fail to perform their design intent. The technique relies on a detailed system description and considers the ways in which each sub-component of the system could fail to meet its design intent and what the consequences could be for the overall system. For each sub-component of a system the FMEA should consider:
 - (i) all the potential ways that the component could fail;
 - (ii) the effects that each of these failures would have on the system behaviour;
 - (iii) the possible causes of the various failure modes;
 - (iv) how the failures might be mitigated within the system or its environment.

The system level at which the analysis is applied can vary and is determined by the level of detail of the system description used to support the analysis. Depending on the nature and complexity of the system, the analysis could be undertaken by an individual system expert or by a team of system experts acting in group sessions.
 - (5) the Structured What-If Technique (SWIFT) is a simple and effective alternative technique to HAZOP and involves a multidisciplinary team of experts. It is a facilitated brainstorming group activity but is typically carried out on a higher level system description, having fewer sub-elements, than for HAZOP and with a reduced set of prompts.

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

- (e) Identified hazards are registered in a hazard log. The nature and format of such log may vary from a simple list of hazards to a more sophisticated relational database linking hazards to mitigations, responsibilities and actions. The following information may be included in the hazard log:
 - (1) unique hazard reference number against each hazard;
 - (2) hazard description;
 - (3) indication of the potential causes of the hazard;
 - (4) qualitative assessment of the possible outcomes and severities of consequences arising from the hazard;
 - (5) qualitative assessment of the risk associated with the possible consequences of the hazard;
 - (6) description of the risk controls for the hazard;
 - (7) indication of responsibilities in relation to the management of risk controls.
- (f) Additionally, the following information may also be included in the log:
 - (1) a quantitative assessment of the risk associated with the possible consequences of the hazard;
 - (2) record of actual incidents or events related to the hazard or its causes;
 - (3) risks tolerability statement;
 - (4) statement of formal system monitoring requirements;
 - (5) indication of how the hazard was identified;
 - (6) hazard owner;
 - (7) assumptions;
 - (8) third party stakeholders.

Further guidance on hazard identification is contained in ICAO Doc 9859.

GM2-ADR.OR.D.005(b)(3) – Management

HAZARD IDENTIFICATION

(a) PROACTIVE (LEADING) INDICATORS:

Metrics that measure inputs to the safety system (either within an organisation, a sector or across the total aviation system) to manage and improve safety performance.

Proactive indicators indicate good safety practices being introduced, developed and adapted, which by their inclusion seek to establish a proactive safety environment that engenders continuous improvement. They provide useful information when accident and incident rates are low to identify latent hazards and potential threats, and consequent opportunities for improvement.

There should always be a connection between a proactive indicator and the unwanted outcomes (or reactive indicators) that their monitoring is intended to warn against.

(b) REACTIVE (LAGGING) INDICATORS:

Metrics that measure events that have already occurred and that impact on safety performance.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

As reactive indicators only reflect system failures their use can only result in determining a reactive response. Although they do measure failure to control hazards, they do not normally reveal why the system failed or if there are any latent hazards.

(c) **PREDICTIVE INDICATORS (PRECURSOR EVENTS):**

These metrics can be considered as Indicators that do not manifest themselves in accidents or serious incidents. They indicate less severe system failures or 'near misses', which when combined with other events may lead to an accident or serious incident.

In a large organisation, a mature safety management system should include all of these measures. Risk management effort, however, should be targeted at Leading Indicators and Precursor Events.

Further guidance on hazard identification is contained in ICAO Doc 9859.

AMC1-ADR.OR.D.005(b)(4) – Management

SAFETY RISK ASSESSMENT AND MITIGATION

- (a) A formal safety risk assessment and mitigation process should be developed and maintained that ensures analysis (in terms of probability and severity of occurrence), assessment (in terms of tolerability) and control (in terms of mitigation) of risks.
- (b) The levels of management who have the authority to make decisions regarding the tolerability of safety risks, in accordance with (a) above, should be specified in the aerodrome manual.

Further guidance on safety risk assessment and mitigation is contained in ICAO Doc 9859.

GM1-ADR.OR.D.005(b)(4) – Management

SAFETY RISK ASSESSMENT AND MITIGATION

Safety risk assessment is the analysis of the safety risks of the consequences of the hazards that have been determined. Safety risk analysis breaks down the risks into two components — the probability of occurrence of a damaging event or condition and the severity of the event or condition, should it occur. Safety risk decision making and acceptance should be specified through a risk tolerability matrix. The definition and final construction of the matrix should be left to the operator to design, be documented in the aerodrome manual and be subject to an approval by the competent authority.

Further guidance on safety risk assessment is contained in ICAO Doc 9859.

GM1-ADR.OR.D.005 (b)(4) – Management

SAFETY ASSESSMENT FOR RISK MANAGEMENT

(a) **Applicability and Scope**

- (1) For the application of safety risk management to aerodromes, this guidance material presents the general methodology to conduct safety assessments on an aerodrome. It provides guidance to defining the scope of the safety concern, Hazard Identification, safety risk assessment as well as through appropriate reasoning to evaluate the suitability of proposed solutions and the need for alternate measures, operational procedures or operating restrictions for the specific operations concerned.

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

- (2) The methodology provides a basic safety assessment process and lists some key aspects that should be taken into consideration when conducting, reviewing or evaluating a safety assessment. The purpose of this guide is to:
 - (i) give guidance to when a safety assessment should be carried out;
 - (ii) outline a suitable safety assessment process that can be used by aerodrome operators;
 - (iii) identify the key aspects for conducting, reviewing and evaluation of a safety assessment.
 - (3) The safety assessment process can be used to assess safety risks associated to each identified safety concern in the aerodrome operation.
- (b) Basic considerations
- (1) A safety assessment is an element of the risk management process of a Safety Management System that is used to assess safety concerns, such as; identified changes at an aerodrome or when any other safety concerns arise or hazards are identified in the aerodrome infrastructures, systems or operations.
 - (2) When an identified safety hazard affect service providers on the aerodrome, such as aircraft operators, Air Navigation Service Providers (ANSPs) or ground service providers, the involvement of all the affected parties in the safety assessment process is necessary.
 - (3) A safety assessment considers the impact of the safety concern, on all relevant factors determined to be safety-significant. The list below provides a number of items that may need to be considered when conducting a safety assessment. The items in this list are non-exhaustive and in no particular order:
 - (i) human factors;
 - (ii) training;
 - (iii) safety management system;
 - (iv) organisational structure and management;
 - (v) aerodrome layout, including runway configurations, runway lengths, taxiway, taxilane and apron configurations, gates, jet bridges, visual aids, RFFS infrastructure and capabilities;
 - (vi) types of aircraft and their dimensions and performance characteristics intended to operate at the aerodrome;
 - (vii) traffic density and distribution;
 - (viii) aerodrome ground services;
 - (ix) air-ground communications and time parameters for voice and data link communication;
 - (x) type and capabilities of surveillance systems, and the availability of systems providing controller support and alert functions;
 - (xi) flight instrument procedures and related aerodrome equipment;
 - (xii) operational procedures;
 - (xiii) aerodrome technical installations, such as Advanced Surface Movement Guidance and Control Systems (A-SMGCS) or NAVAIDS;

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

- (xiv) obstacles or hazardous activities at or in the vicinity of the aerodrome;
- (xv) planned construction or maintenance works at or in the vicinity of the aerodrome;
- (xvi) any significant local or regional weather phenomena;
- (xvii) airspace complexity, ATS route structure and classification of the airspace, which may change the pattern of operations or the capacity of the same airspace.

- (4) Subsequent to the completion of the safety assessment that requires mitigation measures, the aerodrome operator is responsible for monitoring the effectiveness of the implemented mitigation measures.
- (5) Any measures taken that result in a change should be adequately promulgated to all affected personnel.
- (6) Documentation of the whole safety assessment process applied with all working documents and results, including a detailed description of the risk assessment conducted for each case analysed should be made available for authority oversight.

(c) Responsibility

- (1) The Safety Manager is responsible for the management and application of the safety assessment process.
- (2) A safety assessment should be carried out to assess if a particular risk is acceptable within the aerodrome operations or whether mitigation measures are required. When the risk is determined as acceptable the assessment results should be endorsed by an accountable manager within the senior management.
- (3) To protect objectivity, care should be taken to avoid endorsement of safety assessment conclusions by persons within the management who have the responsibility to directly audit subsequent procedures.

(d) Necessity for conducting a safety assessment

- (1) A safety assessment is carried out for all safety concerns, including; identified safety hazards, deviations from requirements or certification specifications or and identified change or for any other items or circumstances where such an assessment is considered a contribution to safety assurance. A safety assessment is an everyday process at an aerodrome with a functioning management system. It may be applied in different scale depending on the safety concern to be assessed. The list below is not exhaustive but identifies some of the main reasons for a safety assessment to be applied.
 - (i) An EASA certification specification is not met;
 - (ii) A hazard is identified, through the voluntary safety reporting system, through an audit or an inspection, internal or external, through an accident or incident report or through any other mechanism;
 - (iii) A change in applicable requirements;
 - (iv) The aerodrome undergoes or is affected by a change in infrastructure, systems, processes, procedures, environment or organisation that may impact the safety of aerodrome operations.

(e) Safety Assessment Process

(1) Introduction

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

- (i) The primary objective of a safety assessment is to ensure a defined level or attain a higher level of safety by assessing how a specific safety concern affects the safety of aerodrome operations.
 - (ii) The safety assessment process includes the preparation for processing a safety concern, the safety risk management process, the verification of the adequacy of mitigation measures that may exist or be implemented to reduce the level of risk, the promulgation of safety information derived from the process and subsequent documentation and storage of the entire process.
 - (iii) The assessment process allows each identified hazard, and associated risk, to be evaluated in order of risk potential so that priorities can be established and, if necessary, resources can be allocated more effectively for the higher risks.
 - (iv) It is important that, all parties affected by or with a stake in the specific case under review are involved and can contribute to the assessment process. For example changes on an aerodrome often impact several activities; therefore safety assessments for potential hazards associated with changes often need to be carried out in a cross-organisational manner, involving experts from all the involved parties, internal or external, to the aerodrome organisation. Prior to the assessment, a preliminary identification of the required tasks and the organisations to be involved in the process should be conducted.
 - (v) A safety assessment is initially composed of four basic steps:
 - (A) definition of the safety concern, root cause analysis where appropriate and identification of the relevant regulatory requirements and compliance;
 - (B) hazard identification and identification of potential consequences;
 - (C) risk assessment;
 - (D) mitigation definition, development of mitigation implementation plan, promulgation, documentation and conclusion of the assessment.
 - (vi) Each one of the steps listed in (e)(1)(V) includes a number of detailed procedures, some listed here below, allowing for the full safety assessment process to be conducted. A generic safety assessment process flow chart is provided in Figure 1.
- (2) Definition of the safety concern, root cause analysis where appropriate and identification of the relevant regulatory requirements and compliance.
- (i) The perceived safety concern is analysed to determine if it is sustained or rejected. Justification for rejecting the safety concern should be made and documented. Sustained safety concern should be precisely described, including timescales and projected phases if relevant, location, involved or affected parties, activities and entities as well as potential influence on specific processes, procedures, systems and operations.
 - (ii) An initial evaluation of the compliance with the appropriate provisions in the regulations applicable to the aerodrome is conducted.
 - (iii) In order to ensure that the safety assessment addresses the fundamental causes of the safety concern, a root cause analysis is performed and root causes are determined.

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

- (iv) Where special conditions are established their rationale and justification are identified, documented and taken into account in the risk assessment.
 - (v) If a safety assessment has been previously conducted for similar cases (e.g. maintenance of the runway or of the visual aids) in the same context, the aerodrome operator can use some elements from these assessments 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 evaluated.
- (3) Hazard identification and identification of potential consequences
- (i) To actively seek to identify safety hazards related to every aspect of the safety concern various hazard identification methods are applied. These should be conducted in a manner in which there is an acceptable level of confidence that all hazards are identified. It may be supported by brain storming sessions, expert opinion, industry knowledge, operational experience and judgement. The identification of hazards is conducted by at least considering:
 - (A) Accident causal factors and critical events based on a simple causal analysis of available accident and incident databases;
 - (B) Events that may have occurred in similar circumstances or that have been subsequent to the resolution of a similar problem.

Prior to implementing changes, hazard identification shall be conducted for potential new hazards that may emerge in the operation during or after implementation of the planned changes.
 - (ii) Following the steps listed in (3)(i), for each identified hazard all potential outcomes or consequences are allocated.
 - (iii) Where no hazards are identified a safety justification to support that the hazard identification process was complete and correct should be documented and stored.
- (4) Risk assessment overview
- (i) Understanding all the risks is the basis for the subsequent evaluation of existing or potential new mitigation measures that might be needed for safe operations.
 - (ii) The level of risk of each identified potential consequence is estimated in the risk assessment. This risk assessment will determine the severity of a consequence and the probability of the consequence occurring.
 - (iii) The appropriate safety objective for each type of risk is specified in terms of verifiable safety acceptance criteria which may be defined by:
 - (A) Reference to a safety acceptance criteria associated with recognised standards and/or codes of practices;
 - (B) Reference to the safety performance of the existing system;
 - (C) Reference to the acceptance of a similar system elsewhere;
 - (D) Application of explicit safety risk levels.
 - (iv) Safety acceptance criteria are specified in either quantitative terms (e.g. identification of a numerical probability) or qualitative terms (e.g. comparison

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

with an existing situation). The selection of the safety acceptance criteria is conducted according to the organisation's policy with respect to safety improvements and is justified for the specific hazard.

(iv) Risk Assessment

- (A) The risk assessment takes into account the probability of occurrence of a hazard and the severity of its consequences; the risk is evaluated by combining the two values for severity and probability of occurrence.
- (B) Each identified risk must be classified by probability of occurrence and severity of impact. This process of risk classification will allow the aerodrome to determine the level of risk posed by a particular hazard. The classification of probability and severity refers to potential events.
- (C) The severity classification includes five classes ranging from 'catastrophic' (class A) to 'not significant' (class E). The examples in Table 1 serve as a guide to better understand the definition.

Severity class	Definition	Examples
A Catastrophic	<ul style="list-style-type: none"> — accident — equipment destroyed — loss of aircraft — multiple deaths 	<ul style="list-style-type: none"> — mid-air collision between aircraft — collision between aircraft and/or other object during take-off or landing
B Hazardous	<ul style="list-style-type: none"> — a large reduction in safety margins / no safety barriers remaining — the outcome is not under control — major equipment damage — serious or fatal injury to a number of people 	<ul style="list-style-type: none"> — runway incursion, significant potential, 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 — Controlled Flight Into Terrain is only marginally be avoided
C Major	<ul style="list-style-type: none"> — serious incident or accident — significant reduction in safety margins — serious equipment damages — injury to persons 	<ul style="list-style-type: none"> — runway incursion, ample time and distance, (no potential for a collision) — collision with obstacle on apron/ parking position (hard collision) — employee falling down from height — near Controlled Flight Into Terrain — missed approach with ground contact of the wing ends during the touch down — large fuel puddle near the aircraft while passengers are on board
D Minor	<ul style="list-style-type: none"> — nuisance, operations limitations — minor incident — small damages to aircraft, vehicles or objects 	<ul style="list-style-type: none"> — 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 A/C) — slight excess of MTOW — aircraft is rolling into PAX-bridge (slight collision)

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

		— forklift is tilting
E Not significant	— non-significant consequences — circumstances which may lead to a non-significant reduction of safety and no immediate effect on safety	— increase in work load for the crew during taxiing — slight increase of braking distance — hoarding is tumbling down because of strong wind — cart loosing baggage

Table 1: Severity classification scheme with examples

- (D) The classification of the severity of an event shall be based on a 'credible case' but not on a 'worst case' scenario. A credible case is expected to be possible under reasonable conditions (probable course of events). A worst case may be expected under extreme conditions and combinations of additional and improbable hazards. If worst cases are to be introduced implicitly, it is necessary to estimate appropriate low frequencies.
- (E) The probability classification includes five classes ranging from 'extremely improbable' (class 1) to 'frequent' (class 5). The examples in Table 2 serve as a guide to better understand the definition.

Probability class	Meaning	Definition
5 Frequent	Likely to occur many times (has occurred frequently)	more frequent than once in a year ($>1/y$)
4 Reasonably probable	Likely to occur some times (has occurred infrequently)	once in a year to once in 10 years ($1-0.1/y$)
3 Remote	Unlikely to occur (has occurred rarely)	once in 10 years to once in 100 years ($0.1-0.01/y$)
2 Extremely remote	Very unlikely to occur (not known to have occurred)	once in 100 years to once in 1000 years ($0.01-0.001/y$)
1 Extremely improbable	Almost inconceivable that the event will occur	less than once in 1'000 years ($<0.001/y$)

Table 2: Probability classification scheme

- (F) The probability classes presented in Table 2 are defined with quantitative limits.
- (a) The classification refers to the probability of events per year. This is reasoned through the following:
- (1) Many hazards at airports are not directly related to aircraft movements.
 - (2) The assessment of risks should be conducted with the emphasis to minimise use of expert judgement by using

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

where available, appropriate objective methods for evaluating risk.

- (b) Frequencies per year are numbers which correspond to experience and they are easier to estimate and validate than extremely small frequencies per movement. If necessary probability per year can easily be transformed into frequencies per movement and vice versa. The following transformation rules must be considered:
 - (1) Transformation of frequencies per year to frequencies per movement:
 - (i) The estimated frequency per year shall be divided by the number of movement related to the respective hazard.
 - (2) Transformation of frequencies per movement to frequencies per year (e.g. if generally known accident rates shall be used for the estimation of a frequency per year):
 - (i) The known frequency per movement (= rate) shall be multiplied with the related number of movements.
 - (ii) Example: The failure rate to pass a stop bar on a defined airport is assumed to be 10^{-4} per passage. If 10'000 aircraft will annually pass that stop bar, the frequency will be one stop bar violation per year.
- (G) A risk assessment matrix may be used to classify the identified risks. The aim of the matrix is to provide means to obtain a safety risk index for each risk. The index can be used to determine tolerability of the risk and to enable the prioritisation of relevant actions in order to make a decision on risk tolerability and acceptance.
 - (a) Given that the prioritisation is dependent on both probability and severity of the events, the prioritisation criteria will be two-dimensional. Three main classes of risk priority are defined:
 - (1) risks with high priority;
 - (2) risks with mean priority;
 - (3) risks with low priority.
 - (b) The risk assessment matrix presented in Table 3 has no fixed limits for tolerability but points to a floating assessment where identified hazards are given risk priority for their risk contribution towards the safety of aerodrome operations. For this reason, the priority classes are intentionally not edged along the probability and severity classes.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

Probability		Risk Assessment Matrix				
Frequent	5	High priority				
Reasonably probable	4					
Remote	3			Mean priority		
Extremely remote	2					
Extremely improbable	1					Low priority
Severity		A	B	C	D	E
		Catastrophic	Hazardous	Major	Minor	Not significant

Table 3: Risk Assessment matrix with prioritisation classes

- (c) The definition of the edged limits for the probability and severity classes can be conducted by the aerodrome operator in order to establish the specific level of risk tolerability for the aerodrome operations.
- (5) Mitigation, verification, promulgation, documentation and conclusion.
- (i) Risk mitigation
- (A) In some cases, the result of the risk assessment can be that the safety acceptance criteria are met. In such a case no specific mitigation measures are necessary and the safety assessment process can be documented and stored. In the other cases further measures, operational procedures and operating restrictions to mitigate risks may be required to reduce the frequency of the event occurring or reduce the severity of its consequences until the specified safety acceptance criteria is met.
- (B) If the risk falls in the high priority, or mean priority areas of the assessment matrix, elimination of the hazard or other mitigation measures will be required to reduce the risk to a lower level. Mitigation measures are actions such as elimination of the risk or changes to operating procedures, equipment or infrastructure that are aimed to reduce either one or both the level of severity and the level of probability.
- (C) As a general guideline the following actions or measures can be associated with the risk classes defined in (e)(iv)(G)(a):
- (a) High priority: Urgent mitigation measures may be necessary and, if not already conducted, a detailed safety assessment of the specific hazard shall be performed.

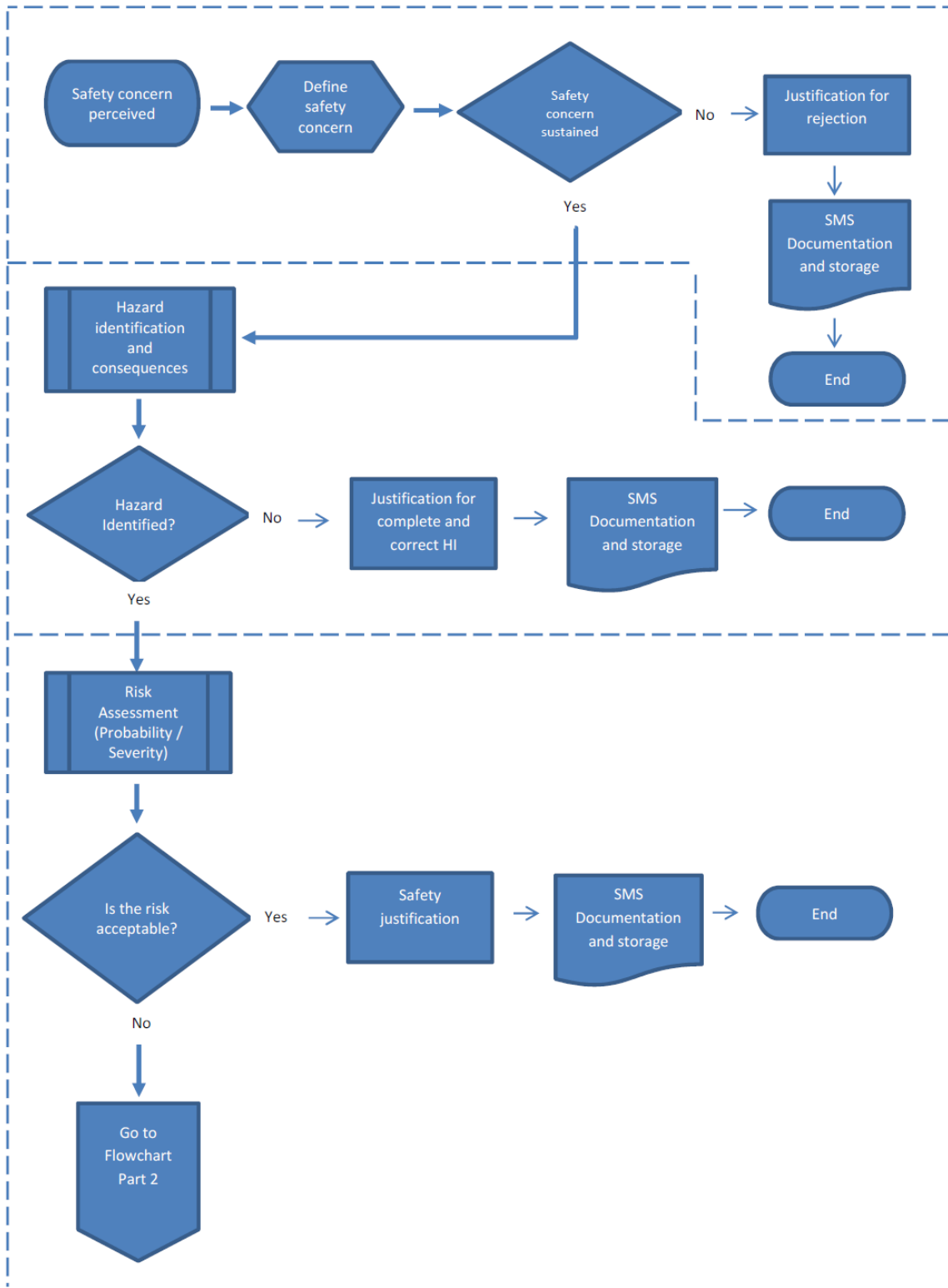
AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

- (b) Mean priority: If mitigation measures are identified and provide adequate risk reduction, they shall be applied. A detailed safety assessment should be performed.
 - (c) Low priority: The hazard shall be further monitored.
 - (D) Once each hazard is identified, its consequences and associated risks shall be assessed in terms of severity and probability, it must be ascertained that all the assessed hazards are appropriately managed. The exposure to a given hazard is taken into account to decide its acceptability in terms of risk. An initial identification of existing risk mitigation measures are conducted prior to identifying additional mitigation measures.
 - (E) Once the existing mitigation measures have been identified or additional mitigation measures have been defined, the level of risk needs to be reassessed in terms of severity and likelihood taking into account the further mitigation measures introduced.
 - (F) All identified risk mitigation measures should be documented and included in an implementation plan. In order to control the risk during implementation, the implementation plan should include the order of implementation, timeframes for implementation, promulgation as well as responsibilities for specific mitigation measures.
- (ii) Verification that the mitigation measures reduce risk to an acceptable level may require a safety justification.
- (A) Implementation should begin only after verification of the effectiveness of the mitigation measures, supported by a safety justification.
 - (B) The verification of the effectiveness of mitigation measure should be conducted with a review process, such as an inspection, audit or other means.
- (iii) Promulgation to all affected personnel and other concerned parties of appropriate safety information derived from the safety assessment shall be ensured.
- (A) In order to ensure adequate dissemination of information to interested parties, safety relevant conclusions of the safety assessment should be promulgated in the relevant aerodrome documentation or information systems.
 - (B) The promulgation of this information may be done by amending the appropriate procedures in the Aerodrome Manual, direct documented communication to the concerned personnel and parties, through the Aeronautical Information Publication (AIP), Notice to Airmen (NOTAM) Automated Terminal Information Service (ATIS) or by other relevant means.
- (iv) Documentation and storage
- (A) The safety assessment is documented and stored according to the aerodrome operator's SMS documentation procedures.
 - (B) The safety assessment documentation has to be accessible in its entirety and readily available to be presented to the competent authority for oversight purposes.

- (C) The safety assessment is concluded by ensuring it is referred to the appropriate regular review process.

Safety Assessment Flowchart Part 1



Safety Assessment Flowchart part 2

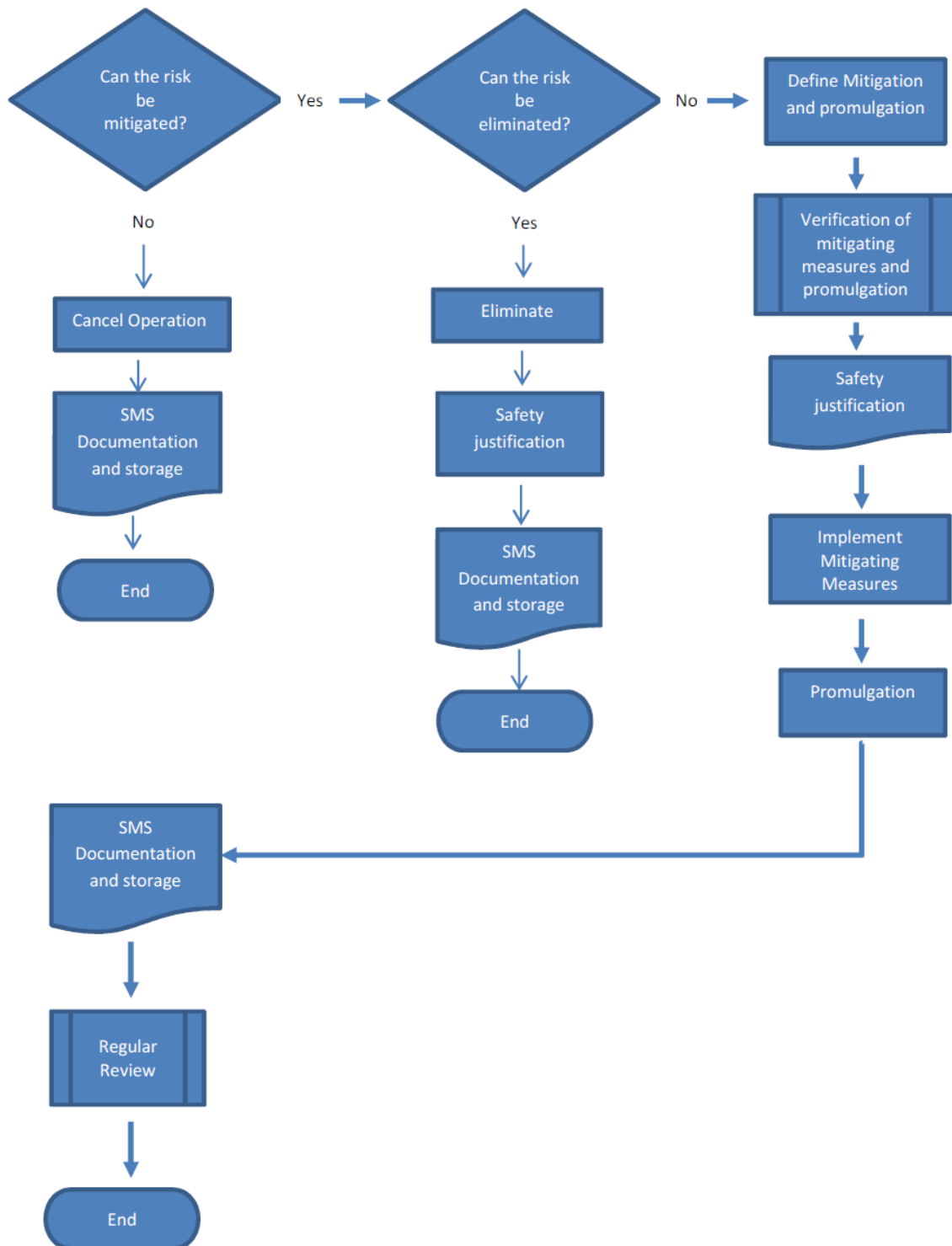


Figure 1 — Safety Assessment Process Flow Charts Part 1 and 2

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

- (f) Regular review
 - (1) Changes applied after safety assessments should be reviewed at regular intervals to determine if the risk controls are still valid.
 - (2) If any of the factors involved in the safety assessment that was conducted have changed either the entire safety assessment or relevant parts will need to be reviewed in order to determine the new level of implied risk and adequacy of risk mitigation measures.
 - (3) The regular review can be included in the regular internal audit schedule or conducted through a separate review process established and documented in the aerodrome manual.
- (g) Submitting a safety assessment to the competent authority
 - (1) A safety assessment should be registered and documented according to SMS documentation procedures and when requested for review or approval as foreseen in the applicable requirements, submitted to the competent authority to show that the aerodrome operator has suitably assessed the safety concern and taken subsequent actions as appropriate for elimination or mitigation measures.

AMC1-ADR.OR.D.005(b)(5) – Management

SAFETY PERFORMANCE MONITORING AND MEASUREMENT

- (a) Safety performance monitoring and measurement should be the process by which the safety performance of the operator is verified in comparison to the safety policy and objectives, identified safety risks and the mitigation measures.
- (b) This process should include:
 - (1) safety reporting;
 - (2) safety studies, which are rather large analyses encompassing broad safety concerns;
 - (3) safety reviews including trends reviews, which are conducted during introduction and deployment of new technologies, change or implementation of procedures, or in situations of structural change in operations, or to explore increase in incidents or safety reports;
 - (4) safety audits which focus in the integrity of the operator's management system, and periodically assess the status of safety risk controls;
 - (5) safety surveys, which examine particular elements or procedures of a specific operation, such as problem areas or bottlenecks in daily operations, perceptions and opinions of operational personnel and areas of dissent or confusion;
 - (6) internal safety investigations, whose scope should extend the scope of occurrences required to be reported to the competent authority; and
 - (7) setting safety performance indicators and measuring performance against them.

GM1-ADR.OR.D.005(b)(5) – Management

SAFETY PERFORMANCE MONITORING AND MEASUREMENT

The following generic aspects/areas could be considered:

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

- (a) accountability for management of the operational activities and its ultimate accomplishment;
- (b) authority to direct, control or change the procedures as well as to make key decisions such as safety risk acceptance decisions;
- (c) procedures for operational activities;
- (d) controls, including hardware, software, special procedures or procedural steps and supervisory practices designed to keep operational activities on track;
- (e) interfaces, including lines of authority between departments, lines of communication between employees, consistency of procedures, and clear delineation of responsibility between organisations, work units and employees;
- (f) process measures to provide feedback to responsible parties that required actions are taking place, required outputs are being produced and expected outcomes are being achieved.

AMC1-ADR.OR.D.005(b)(6) – Management

THE MANAGEMENT OF CHANGE

The aerodrome operator should manage safety risks related to a change. The management of change should be a documented process to identify external and internal change that may have an adverse effect on safety.

It should make use of the aerodrome operator's existing hazard identification, safety risk assessment and mitigation processes.

For assessment of changes ADR.OR.B.045 and its related AMCs also apply.

GM1-ADR.OR.D.005(b)(6) – Management

THE MANAGEMENT OF CHANGE

- (a) Change can introduce new hazards, impact the appropriateness and/or effectiveness of existing safety risk mitigation strategies. Changes may be external to the organisation or internal.
- (b) A formal process for the management of change should take into account the following considerations:
 - (1) Criticality of systems and activities;
 - (2) Stability of systems and operational environments;
 - (3) Past performance.
- (c) System description is one of the fundamental preliminary activities in the planning of the safety management system, to determine a baseline hazard analysis for the baseline system.

As part of the formal process of the management of change, the system description and the baseline hazard analysis should be reviewed periodically, even if circumstances of change are not present, to determine their continued validity.

When changes to the system are made, and periodically thereafter, the operator should go over its system and its actual operational environment, in order to make sure it

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

continues to be fully aware of the circumstances under which the provision of service takes place.

Further guidance on the management of change is contained in ICAO Doc 9859.

AMC1-ADR.OR.D.005(b)(7) – Management

CONTINUOUS IMPROVEMENT OF THE SAFETY MANAGEMENT SYSTEM

The aerodrome operator should develop and maintain a formal process to identify the causes of substandard performance of the Safety Management System, determine the implications of substandard performance of the Safety Management System in operations, and eliminate or mitigate such causes. Continuous improvement should be achieved through:

- (a) proactive evaluation of facilities, equipment, documentation and procedures;
- (b) proactive evaluation of an individual's performance, to verify the fulfilment of that individual's safety responsibilities;
- (c) reactive evaluations in order to verify the effectiveness of the system for control and mitigation of safety risks.

AMC2-ADR.OR.D.005(b)(7) – Management

CONTINUOUS IMPROVEMENT OF THE QUALITY AND SECURITY MANAGEMENT FOR AERONAUTICAL DATA AND AERONAUTICAL INFORMATION PROVISION ACTIVITIES

The aerodrome operator should develop and maintain a formal process to identify the causes of substandard performance of the Quality and Security Management Systems for aeronautical data and aeronautical information provision activities, determine the implications of their substandard performance in operations, and eliminate or mitigate such causes. Continuous improvement should be achieved through:

- (a) proactive evaluation of facilities, equipment, documentation and procedures;
- (b) proactive evaluation of an individual's performance, to verify the fulfilment of that individual's responsibilities;
- (c) reactive evaluations in order to verify the effectiveness of the system for control and mitigation of risks.

GM1-ADR.OR.D.005(b)(7) – Management

CONTINUOUS IMPROVEMENT OF THE SAFETY MANAGEMENT SYSTEM

Continuous improvement of the safety management system, as part of the safety assurance, is achieved through the application of:

- (a) internal evaluations;
- (b) independent audits (both internal and external);
- (c) strict document controls;
- (d) continuous monitoring of safety controls and mitigation actions.

Further guidance on continuous improvement of the safety management system is contained in ICAO Doc 9859.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

AMC1-ADR.OR.D.005(b)(8) – Management

TRAINING

- (a) The aerodrome operator should establish a safety training programme to all staff, regardless of their level in the organisation.
- (b) The safety training programme should consist of the following:
 - (1) a documented process to identify training requirements for each area of activity within the aerodrome organisation, and track completion of required training;
 - (2) a validation process that measures the effectiveness of training;
 - (3) initial job-specific training;
 - (4) induction/initial training incorporating safety management system , including Human Factors and organisational factors; and
 - (5) recurrent safety training.
- (c) A training file should be developed for each employee, including management, to assist in identifying and tracking employee training requirements and verifying that personnel have received the planned training.
- (d) The aerodrome operator should specify initial and recurrent safety training standards for operational personnel, managers and supervisors, senior managers and the accountable manager. The amount and level of detail of safety training should be appropriate to the individual's responsibility and involvement in the SMS.
- (e) The aerodrome operator should specify safety training responsibilities, including contents, frequency, validation and safety training records management.
- (f) The information provided in points (d) and (e) above should be included in the aerodrome manual.

This training programme may be combined with the training programme provided for in AMC1-ADR.OR.D.015 (h).

GM1-ADR.OR.D.005(b)(8) – Management

STAFF SAFETY TRAINING REQUIREMENTS

- (a) Operational personnel
 - (1) Safety training should address safety responsibilities, including adherence to all operating and safety procedures, and recognising and reporting hazards;
 - (2) The training objectives should include the organisation's safety policy and SMS fundamentals and overview;
 - (3) The contents should include:
 - (i) definition of hazards;
 - (ii) consequences and risks;
 - (iii) the safety risk management process, including roles and responsibilities; and
 - (iv) safety reporting and the organisation's safety reporting system(s).
- (b) Managers and supervisors

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

- (1) Safety training should address safety responsibilities, including promoting the SMS and engaging operational personnel in hazard reporting;
 - (2) In addition to the training objectives established for operational personnel, training objectives for managers and supervisors should include a detailed knowledge of the safety process, hazard identification and safety risk management and mitigation, and change management;
 - (3) In addition to the contents specified for operational personnel, the training contents for supervisors and managers should include safety data analysis.
- (c) Senior managers
- (1) Safety training should include safety responsibilities, including compliance with European Union, national and the organisation's own safety requirements, allocation of resources, ensuring effective inter-departmental safety communication and active promotion of the SMS;
 - (2) In addition to the objectives of the two previous employee groups, safety training should include safety assurance and safety promotion, safety roles and responsibilities, and establishing acceptable levels of safety.
- (d) Accountable manager
- The training should provide the accountable manager with a general awareness of the organisation's safety management system, including safety management system roles and responsibilities, safety policy and objectives, safety risk management and safety assurance.

Further guidance on the issue staff safety training is contained in ICAO Doc 9859.

AMC1-ADR.OR.D.005(b)(9) – Management

SAFETY COMMUNICATION

- (a) The aerodrome operator should communicate safety management system objectives and procedures to all operational personnel, and the SMS should be visible in all aspects of operations.
- (b) Communication should flow between the safety manager and operational personnel throughout the organisation.
- (c) Safety communication should aim to:
 - (1) ensure that all staff are fully aware of the safety management system;
 - (2) convey safety-critical information;
 - (3) explain why particular actions are taken;
 - (4) explain why safety procedures are introduced or changed.

GM1-ADR.OR.D.005(b)(9) – Management

SAFETY COMMUNICATION

- (a) An aerodrome operator, may use the following tools to communicate safety information:
 - (1) safety Management System Manual;
 - (2) safety processes and procedures;

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

- (3) safety newsletters, notices and bulletins; and
- (4) websites or emails;
- (b) Regular meetings with personnel where information, actions and procedures are discussed may be used to communicate safety matters.

Further guidance on safety communication is contained in ICAO Doc 9859.

AMC1-ADR.OR.D.005(b)(10) – Management

COORDINATION OF THE AERODROME EMERGENCY RESPONSE PLAN

- (a) The coordination of the aerodrome emergency response plan, established in accordance with the requirements contained in Part-ADR.OPS, with the safety management system should ensure continuous improvement of the systems and procedures contained within the plan.
- (b) Continuous improvement may, amongst others, be obtained by:
 - (1) conducting a review of the relevant parts of the emergency response plan after a full or partial exercise;
 - (2) debriefing and analysing the emergency response operations after an emergency situation;
 - (3) developing new emergency procedures or systems as part of the emergency response plan when new hazards are identified by the safety management system,
 to ensure, amongst others, the coordination with the emergency response plans of other interfacing organisations.

AMC1-ADR.OR.D.005(c) – Management

AERODROME OPERATOR MANAGEMENT SYSTEM DOCUMENTATION

- (a) The aerodrome operator's management system documentation should at least include the following information:
 - (1) a statement signed by the accountable manager to confirm that the aerodrome operator will continuously work in accordance with the applicable requirements and the operator's documentation;
 - (2) the aerodrome operator's scope of activities;
 - (3) the titles and names of persons referred to in ADR.OR.D.015;
 - (4) an organisation chart showing the lines of responsibility between the persons referred to in ADR.OR.D.005 (b)(1);
 - (5) a general description and location of the facilities;
 - (6) procedures specifying how the aerodrome operator ensures compliance with the applicable requirements;
 - (7) the amendment procedure for the operator's management system documentation; and
 - (8) safety management system outputs.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

AMC2-ADR.OR.D.005(c) – Management

AERODROME OPERATOR SAFETY MANAGEMENT MANUAL

- (a) In cases where safety management is set out in a Safety Management Manual (SMM) it should be the key instrument for communicating the approach to safety for the aerodrome operator. The SMM should document all aspects of safety management, including the safety policy, objectives, procedures and individual safety responsibilities;
- (b) The contents of the documentation should include:
 - (1) scope of the safety management system;
 - (2) safety policy and objectives;
 - (3) safety responsibilities of key safety personnel;
 - (4) documentation control procedures;
 - (5) safety assessment process including hazard identification and risk management schemes;
 - (6) monitoring of implementation and effectiveness of safety actions and risk mitigation measures;
 - (7) safety performance monitoring;
 - (8) hazard reporting system;
 - (9) incident reporting and investigation;
 - (10) emergency response planning;
 - (11) management of change (including organisational changes with regard to safety responsibilities);
 - (12) safety promotion; and
 - (13) safety management system outputs.

GM1-ADR.OR.D.005(c) – Management

AERODROME OPERATOR MANAGEMENT SYSTEM DOCUMENTATION

It is not required to duplicate information in several manuals. The Safety Management Manual is considered to be a part of the aerodrome manual.

AMC1-ADR.OR.D.005(d) – Management

COMPLIANCE MONITORING

GENERAL

- (a) The implementation and use of a compliance monitoring function should enable the aerodrome operator to monitor compliance with the relevant requirements of this Part, Part-ADR.OPS and any other applicable requirements.
 - (1) The aerodrome operator should specify the basic structure of the compliance monitoring function applicable to the activities conducted;
 - (2) The compliance monitoring function should be structured according to the size of organisation and the complexity of the activities to be monitored, including those which have been sub-contracted.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

- (b) An aerodrome operator should monitor compliance with the procedures it has designed to ensure safe activities. In doing so, an aerodrome operator should as a minimum, and where appropriate, monitor:
- (1) organisational structure;
 - (2) plans and objectives;
 - (3) privileges of the organisation;
 - (4) manuals, logs and records;
 - (5) training standards;
 - (6) required resources; and
 - (7) management system.

AMC2-ADR.OR.D.005(d) – Management

COMPLIANCE MONITORING DOCUMENTATION

- (a) Relevant documentation should include the relevant part(s) of the aerodrome operator's management system documentation.
- (b) In addition, relevant documentation should also include the following:
- (1) terminology;
 - (2) specified activity standards;
 - (3) a description of the organisation;
 - (4) the allocation of duties and responsibilities;
 - (5) procedures to ensure regulatory compliance;
 - (6) the compliance monitoring programme, reflecting:
 - (i) schedule of the monitoring programme;
 - (ii) audit procedures;
 - (iii) reporting procedures;
 - (iv) follow-up and corrective action procedures; and
 - (v) recording system;
 - (7) training syllabus for compliance monitoring; and
 - (8) document control.
- (c) Training
- (1) Staff responsible for the compliance monitoring function should receive training on this task. Such training should cover the requirements of compliance monitoring, manuals and procedures related to the task, audit techniques, reporting and recording;
 - (2) Time should be provided to train all personnel involved in compliance management and for briefing the remaining personnel; and
 - (3) The allocation of time and resources should be governed by the volume and complexity of the activities concerned.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

AMC3-ADR.OR.D.005(d) – Management**COMPLIANCE MONITORING — STAFFING**

Auditors used for compliance monitoring audits and inspections should meet the following criteria:

- (a) should not have involvement in the area of the activity which is to be audited;
- (b) should have relevant operational and/or maintenance experience or other appropriate experience;
- (c) external auditors used, should be familiar with the type of operation, maintenance or other activities of the aerodrome operator.

AMC4-ADR.OR.D.005(d) – Management**COMPLIANCE MONITORING — AUDIT SCHEDULING**

- (a) The compliance monitoring function should include a defined audit schedule and a periodic review cycle for each area. The aerodrome operator should ensure that the compliance monitoring function is audited according to a defined audit schedule. The schedule should allow for unscheduled audits when trends are identified. Follow-up audits should be scheduled to verify that corrective action was carried out and that it was effective and completed, in accordance with the policies and procedures specified in the aerodrome manual.
- (b) An aerodrome operator should establish a schedule of audits to be completed during a specified calendar period. All aspects of the aerodrome and its operation should be audited within the first 12 months since the date of the issuance of the certificate. After that, an audit or a series of audits should be conducted within a maximum period of 36 months, to cover the whole aerodrome and its operation in a manner and at intervals set out in the aerodrome manual, unless the competent authority requires further audits.

AMC1-ADR.OR.D.010 – Contracted activities**COMPLIANCE MONITORING RESPONSIBILITY WHEN CONTRACTING ACTIVITIES**

- (a) An aerodrome operator may decide to contract certain activities to external organisations.
- (b) A contract should exist between the aerodrome operator and the contracted organisation clearly defining the contracted activities and the applicable requirements.
- (c) The contracted safety related activities relevant to the agreement should be included in the operator's safety assurance process;
- (d) The aerodrome operator should ensure that the contracted organisation has the necessary authorisation, declaration or approval when required, and commands the resources and competence to undertake the task; to this end, a prior audit of the contracted party should be conducted to ensure that the contracted organisation meets the applicable requirements and the requirements specified by the aerodrome operator's itself.
- (e) If the aerodrome operator requires the contracted organisation to conduct an activity which exceeds the contracted organisation's authorisation or approval, the aerodrome

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

operator is responsible for ensuring that the contracted organisation's compliance monitoring takes account of such additional requirements.

AMC1-ADR.OR.D.015(a) – Personnel requirements

ACCOUNTABLE MANAGER

- (a) The accountable manager should:
- (1) ensure that all necessary resources are available to operate the aerodrome in accordance with the Aerodrome Manual;
 - (2) ensure that, if there is a reduction in the level of resources or abnormal circumstances which may affect safety, the required reduction in the level of operations at the aerodrome is implemented;
 - (3) establish, implement and promote the safety policy; and
 - (4) ensure compliance with relevant applicable requirements, certification basis and the organisation's safety management system, as well as its quality and security management system with regard to aeronautical data and aeronautical information provision activities.
- (b) The accountable manager should have:
- (1) an appropriate level of authority within the organisation to ensure that activities are financed and carried out to the standard required;
 - (2) knowledge and understanding of the documents that prescribe relevant aerodrome safety standards;
 - (3) understanding of the requirements for competence of aerodrome management personnel, so as to ensure that competent persons are in place;
 - (4) knowledge and understanding of safety, quality and security management systems related principles and practices, and how these are applied within the organisation;
 - (5) knowledge of the role of the accountable manager; and
 - (6) knowledge and understanding of the key issues of risk management within the aerodrome.

AMC2-ADR.OR.D.015(a) – Personnel requirements

ACCOUNTABLE MANAGER

- (a) If the responsibilities mentioned in paragraph (c) are delegated, the level of technical knowledge and understanding expected of an accountable manager is high level, with particular reference to his/her own role in ensuring that standards are maintained. If the responsibilities mentioned in paragraph (c) are not delegated, the accountable manager should meet the qualification requirements for each non-delegated task and responsibility;
- (b) During periods of absence, the day-to-day responsibilities of the accountable manager may be delegated; however, the accountability ultimately remains with the accountable manager.
- (c) Depending on the size and the complexity of operations, the accountable manager may delegate some of the responsibilities to other persons within the organisation, who have

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

demonstrated that they possess adequate experience, knowledge and technical expertise in those areas. Such responsibilities could be:

- (1) the day-to-day management of aerodrome operations, coordination with Air Traffic Services and Apron Management Services;
- (2) establishment and implementation of an aerodrome emergency plan and the provision of adequate rescue and fire-fighting services;
- (3) implementation and maintenance of an appropriate aerodrome wildlife risk management programme;
- (4) establishment and implementation of an appropriate aerodrome infrastructure maintenance programme;
- (5) establishment, implementation, coordination and recording of a personnel training programme; and
- (6) the implementation and management of the quality and security management of aeronautical data and aeronautical information provision activities.

In any case, the accountability, ultimately, remains with the accountable manager.

GM2-ADR.OR.D.015(a) – Personnel requirements

OPERATIONS MANAGEMENT

- (a) The management of the day-to-day operations may include, but not limited to:
- (1) aerodrome inspections (including visual aids inspections) according to the provisions of the Aerodrome Manual;
 - (2) timely and efficient application of wildlife risk management measures;
 - (3) implementation of the procedures related to aerodrome operations in winter operations, adverse weather conditions, reduced visibility or at night, if required;
 - (4) measurement of runway friction coefficient, when required;
 - (5) implementation of procedures to control works on the movement area;
 - (6) monitoring of obstacles around the aerodrome;
 - (7) implementation of procedures related to aerodrome emergency plan;
 - (8) coordination with the local Air Navigation Services Provider; and
 - (9) coordination with Apron Management Services.

EMERGENCY PLAN MANAGEMENT

- (a) The emergency plan management may include, but not limited to:
- (1) establishment of an aerodrome emergency plan;
 - (2) coordination with other organisations, such as aircraft operators, air navigation service provider, ground handling services providers and Local/State Authorities in implementing the aerodrome emergency plan;
 - (3) coordination of aerodrome emergency exercises;
 - (4) provision of rescue and fire-fighting services, organisation, staffing, training and periodic checking;
 - (5) revision of aerodrome emergency plan; and

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

- (6) provisions for disabled aircraft removal.

WILDLIFE MANAGEMENT

- (a) The wildlife management may include, but not limited to:
 - (1) establishment of a wildlife risk management programme;
 - (2) planning and Organisation of wildlife control measures according to the wildlife risk management programme;
 - (3) reviewing wildlife strike reports, daily wildlife activity records and maintenance reports, to determine the requirement for short or long term control measures; and
 - (4) ensure supply, safe keeping and correct maintenance of wildlife control equipment and consumables.

TRAINING MANAGEMENT

- (a) The training management may include, but not limited to:
 - (1) establishment of training needs analysis for personnel involved in aerodrome operations, maintenance and rescue and fire-fighting;
 - (2) establishment of an effective training programme;
 - (3) coordination of personnel training programme; and
 - (4) maintenance of personnel training records;

MAINTENANCE MANAGEMENT

- (a) The maintenance management may include, but not limited to:
 - (1) establishment of a maintenance programme for the aerodrome infrastructure;
 - (2) monitoring of the implementation of the maintenance programme; and
 - (3) provision of resources for ad hoc repairs.

QUALITY AND SECURITY MANAGEMENT FOR AERONAUTICAL DATA AND AERONAUTICAL INFORMATION PROVISION ACTIVITIES

- (a) establishing and maintaining the quality and security management with regard to aeronautical data and aeronautical information;
- (b) establishing and maintaining arrangements with third parties involved in the provision of required services.

AMC1-ADR.OR.D.015(b) – Personnel requirements

COMPLIANCE MONITORING

- (a) To ensure that the aerodrome operator continues to meet the requirements of this Part and other applicable Parts, the accountable manager should identify and nominate a compliance monitoring manager whose role is to verify, by monitoring the activities of the aerodrome, that the standards required by Part-OR and other applicable parts, and any additional requirements as established by the aerodrome operator, are being carried out properly under the supervision of the relevant head of each functional area of the organisation; if more than one person is nominated, then there should be clearly defined responsibilities and one person should be the focal point and have the overall responsibilities of the compliance monitoring manager.

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

- (b) The compliance monitoring manager should be responsible for ensuring that the compliance monitoring programme is properly established, implemented, maintained and continually reviewed and improved;
- (c) The compliance monitoring manager should:
 - (1) have direct access to the accountable manager;
 - (2) in the fulfilment of its role be independent of line management;
 - (3) have access to all parts of the organisation, and as necessary, any contracted organisation.
- (d) The compliance monitoring manager should have:
 - (1) adequate practical experience and expertise in aerodrome operations or maintenance or similar area;
 - (2) adequate knowledge of knowledge of safety and quality assurance principles and management;
 - (3) knowledge of the aerodrome manual;
 - (4) comprehensive knowledge of the applicable requirements in the area of aerodrome.

GM1-ADR.OR.D.015(b) – Personnel requirements

COMPLIANCE MONITORING

Depending on the size of the organisation and the type and complexity of operations, the compliance monitoring function may be exercised by the accountable manager or other independent means.

AMC1-ADR.OR.D.015(c) – Personnel requirements

SAFETY MANAGEMENT

- (a) The safety manager should be the focal point and responsible for the development, administration and maintenance of an effective safety management system. If more than one person is nominated to the safety management function, then there should be clearly defined responsibilities and one person should be the focal point and have the overall responsibilities of the safety manager.
- (b) The role of the safety manager should be to:
 - (1) facilitate hazard identification, risk analysis and management;
 - (2) monitor the implementation and functioning of the safety management system, including the necessary safety actions;
 - (3) manage the safety reporting system of the aerodrome;
 - (4) provide periodic reports on safety performance;
 - (5) ensure maintenance of safety management documentation;
 - (6) ensure that there is safety management training available and that it meets acceptable standards;
 - (7) provide advice on safety matters; and
 - (8) initiate and participate in internal occurrence/accident investigations.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

- (c) The safety manager should have:
- (1) adequate practical experience and expertise in aerodrome operations or maintenance or similar area;
 - (2) adequate knowledge of safety and quality management;
 - (3) knowledge of the aerodrome manual;
 - (4) comprehensive knowledge of the applicable requirements in the area of aerodrome.
- (d) The safety management function should normally belong to the Safety Services Office.

GM1-ADR.OR.D.015(c) – Personnel requirements

SAFETY MANAGEMENT

In the case of small organisations where combination of responsibilities may prevent sufficient independence in this regard, the arrangement for safety assurance may be supplemented by additional independent means.

AMC1-ADR.OR.D.015(d) – Personnel requirements

AERODROME MANAGER

The aerodrome manager should have:

- (a) clearly defined responsibilities, authorisations and resources available for the management and coordination of the day-to-day operation of the aerodrome, in accordance with the applicable requirements and the aerodrome manual;
- (b) adequate practical experience and expertise in aerodrome operations or maintenance or similar area;
- (c) comprehensive knowledge of the applicable requirements in the area of aerodromes;
- (d) appropriate level of knowledge of safety and quality management; and
- (e) knowledge of the aerodrome manual.

AMC1-ADR.OR.D.015(e) – Personnel requirements

DETERMINATION OF PERSONNEL NEEDS AND QUALIFICATIONS

- (a) The aerodrome operator should determine the required personnel for the planned tasks in accordance with AMC1-ADR.OR.B.015 (b)(4).
- (b) The aerodrome operator should determine the required personnel qualifications, in accordance with the applicable requirements (and the national and European Union legislation where this is applicable), and include them in the aerodrome manual. A documented system with defined responsibilities should be in place, in order to identify any needs for changes with regard to personnel qualifications.

GM1-ADR. OR.D.015 AR.200(e) – Personnel requirements

QUALIFICATION OF PERSONNEL

The term qualification denotes fitness for the purpose through fulfilment of the necessary conditions such as completion of required training, or acquisition of a diploma or degree.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

Qualification could also be interpreted to mean capacity, knowledge, or skill that matches or suits an occasion, or makes someone eligible for a duty, office, position, privilege, or status. Qualification does not necessarily imply competence.

Certain posts may by nature be associated with the possession of certain qualifications in a specific field (e.g. rescue and fire-fighting, civil, mechanical or electrical engineering, wildlife biology etc.). In such cases, the person occupying such a post is expected to possess the necessary qualifications at a level that is in accordance with the applicable national or European Union legislation.

AMC1-ADR.OR.D.015(f) – Personnel requirements

PERSONNEL RECORDS

- (a) The aerodrome operator should have a system in place to record the following information for each person:
 - (1) personnel previous working experience;
 - (2) competency checks, including language proficiency as appropriate;
 - (3) training.
- (b) Latest changes should be reflected into personnel records.
- (c) Personnel records should be kept, as long as they are employed by the aerodrome operator.

GM1-ADR.OR.D.015(f) – Personnel requirements

TRAINING RECORDS

The training records maintained for each individual should include as a minimum:

- (a) the name of the trainee;
- (b) the date(s) and the duration of the training;
- (c) the place where the training was received;
- (d) the name of the organisation that provided the training;
- (e) the subjects covered and the methodology of the course;
- (f) any comments made by the instructor, if applicable;
- (g) the performance evaluation of the trainee, if applicable;
- (h) the name of the instructor; and
- (i) the signature of the individual that received the training.

AMC1-ADR.OR.D.015(k) – Personnel requirements

DISTRIBUTION OF RULES AND PROCEDURES

- (a) The aerodrome operator should have a system in place to distribute the rules and procedures to personnel to exercise their duties.

- (b) The aerodrome operator should run competency checks, prescribed in the aerodrome manual, to verify that personnel are aware of the rules and procedures relevant to their duties.

GM1-ADR.OR.D.015(g) – Personnel requirements

DISTRIBUTION MEANS OF RULES AND PROCEDURES

The aerodrome operator may use electronic means or conventional means to distribute rules and procedures to personnel. The method used should verify that the information reached the intended recipient.

AMC1-ADR.OR.D.015(g) – Personnel Requirements

TRAINING PROGRAMME

- (a) The training programme should cover all personnel involved in the operation, maintenance and management of the aerodrome and those persons operating unescorted on the movement area and other operational areas of the aerodrome, regardless of their level in the organisation.
- (b) The training programme should consist of the following:
 - (1) a documented process, included in the aerodrome manual, to identify training requirements for each area of activity and track completion of required training;
 - (2) a documented validation process that measures the effectiveness of training;
 - (3) initial training;
 - (4) on the job training; and
 - (5) recurrent training.
- (c) Training frequencies, contents, syllabi and checking programmes should comply with the requirements prescribed in Part-ADR.OPS.
- (d) The training programme should contain procedures:
 - (1) for training and checking;
 - (2) to be applied in the event that personnel do not achieve or maintain the required standards.
- (e) A training file should be developed for each employee, including management, to assist in identifying and tracking employee training requirements and verifying that personnel have received the planned training.
- (f) The aerodrome operator should specify training standards for initial, on-the-job, and recurrent training, including training responsibilities, contents, syllabi, frequency, validation and training records management, of the persons referred to in paragraph (a).
- (g) The information provided in paragraph (d), (e) and (f) above should be included in the aerodrome manual.

AMC2-ADR.OR.D.015(g) – Personnel requirements

INSTRUCTORS — ASSESSORS

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

- (a) The aerodrome operator should nominate instructors and assessors to be used for the implementation of the training and proficiency check programmes.
- (b) A person may be qualified and nominated both as an instructor and as an assessor by the aerodrome operator. However, such a person may not provide assessment for own instruction, courses or material.
- (c) Instructors
 - (1) Theoretical instruction shall be given by appropriately qualified instructors. They should have:
 - (i) appropriate level and depth of knowledge in the field where instruction is to be given;
 - (ii) documented ability to use appropriate instructional techniques;
 - (iii) at least 2 years of experience in the field where instruction is to be given.
 - (2) Instruction on practical skills shall be given by appropriately qualified instructors, who have the following qualifications:
 - (i) meet the theoretical knowledge and the working experience requirements appropriate to the instruction being given;
 - (ii) have demonstrated the ability to instruct and to use appropriate instructional techniques;
 - (iii) have practiced instructional techniques in the areas in which it is intended to provide instruction; and
 - (iv) receive regular refresher training to ensure that the instructional competences are maintained.
- (d) Assessors
 - (1) The persons who are responsible for assessing the competence and skills of the personnel should:
 - (i) have demonstrated the ability to assess the performance of, and conduct tests and checks in the areas covered by the training;
 - (ii) receive regular refresher training to ensure that the assessment standards are maintained up to date; and
 - (iii) meet the theoretical knowledge requirements appropriate to the instruction being given and have at least 2 years of working experience in the area of instruction.

AMC1-ADR.OR.D.025(a) – Coordination with other relevant organisations

COORDINATION OF SAFETY PROCEDURES

Coordination and interface with the safety procedures of other relevant organisations that are active at the aerodrome include but is not limited to the following: aircraft operators, air navigation service providers, providers of apron management services, ground handling service providers, providers of services to persons with reduced mobility, aircraft maintenance organisations, public authorities that operate on the movement area etc, as well as other organisations that perform activities independently at the aerodrome.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

AMC2-ADR.OR.D.025(b) – Coordination with other relevant organisations

SAFETY PROGRAMMES — AERODROME SAFETY COMMITTEES

- (a) The aerodrome operator should:
 - (1) organise, coordinate and implement programmes to promote safety at the aerodrome;
 - (2) coordinate and promote the exchange of information and joint investigation of incidents and accidents.
- (b) The aerodrome operator should establish, coordinate and lead local safety committees dealing with runway safety, and the safety of the operations on the movement area and at the aerodrome in general. All relevant organisations operating or providing services at the aerodrome should participate to such safety committees.

AMC3-ADR.OR.D.025(c) Coordination with other relevant organisations

COMPLIANCE OF OTHER ORGANISATIONS

In order to ensure compliance of the organisations operating or providing services at the aerodrome, with the regulatory requirements and with the content of aerodrome manual, the aerodrome operator should conduct audits and inspections of such organisations, through its compliance monitoring function (see AMC3-ADR.OR.D.005 (d)).

GM1-ADR.OR.D.025 – Coordination with other relevant organisations

AERODROME SAFETY COMMITTEES

- (a) Apron Safety Committee
 - (1) The operator should establish an Apron Safety Committee;
 - (2) The Apron Safety Committee has an advisory role to the operator;
 - (3) Management:
 - (i) The Apron Safety Committee should be chaired by an Aerodrome Operator's Official, responsible for aerodrome operations; and
 - (ii) The Safety Manager should act as the secretary of the Committee.
 - (4) Composition

Participation includes, but is not limited to:

 - (i) aerodrome users active in flight operations and/or aircraft handling;
 - (ii) aerodrome rescue and fire-fighting services;
 - (iii) aerodrome operations;
 - (iv) wildlife management;
 - (v) aerodrome maintenance; and
 - (vi) air navigation service provider(s).
 - (5) Tasks:
 - (i) To receive and evaluate reports on operational safety issues;

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

- (ii) To receive reports and statistical information on accidents and incidents and propose solutions;
 - (iii) To advise on apron safety issues.
- (6) The Apron Safety Committed should convene at regular intervals.
- (b) Local Runway Safety Team
 - (1) The operator should establish and lead a Local Runway Safety Team and act on local runway safety issues.
 - (2) Composition

Participation includes, but is not limited, to:

 - (i) aerodrome operations;
 - (ii) air navigation service providers;
 - (iii) aircraft operators that operate of the Aerodrome;
 - (iv) airport rescue and fire-fighting services.
 - (3) Role

The role of the Local Runway Safety Team should be to advise the appropriate Management on potential runway safety issues and to recommend mitigating measures.
 - (4) The Local Runway Safety Team may have the following tasks:
 - (i) Identification of potential runway safety issues;
 - (ii) Develop and run local awareness campaigns;
 - (iii) Assisting in verifying that communications between Air Traffic Controllers, Pilots and Vehicle Drivers are satisfactory; and
 - (iv) Make observations on a regular basis in different weather and light conditions to assess whether all markings and signage are adequate and understandable by all parties.

GM3-ADR.OR.D.025 – Coordination with other relevant organisations

OTHER ACTIVITIES

The certification of an aerodrome is based upon aviation activities that are required to use a certified aerodrome. However, many other activities take place on an aerodrome that do not require the aerodrome to be certified such as private flights, flying training, gliding, ground handling etc. The effect of these activities on those operations requiring the use of a certificated aerodrome should be considered by the aerodrome operator, with the aim of mitigating these risks wherever practicable. There should be actions of sharing the risks and agreeing the mitigation with all relevant aerodrome users to encourage integrated safety management and closer cooperation among all stakeholders.

AMC1-ADR.OR.D.030(a) – Safety reporting system

REPORTING SYSTEM

AMC/GM to Annex II – Part-OR

SUBPART D – MANAGEMENT (ADR.OR.D)

- (a) An effective occurrence reporting system should include, apart from aerodrome operator's personnel, aircraft operators, ground handling service providers, air navigation service providers and any other organisation operating on the aerodrome or providing services at the aerodrome;
- (b) The reporting system should include voluntary reporting possibilities intended for safety hazards identified by the reporter and that may have potential safety consequences;
- (c) The aerodrome operator should identify which occurrences are mandatory to be reported;
- (d) The aerodrome operator should provide the means and the format for the occurrence reporting, which should be such that meets the existing reporting requirements foreseen in the applicable legislation in terms of time, format and required information to be reported;
- (e) The occurrence reporting system should include an acknowledgement to the reporter for the submission of the report;
- (f) The reporting process should be as simple as possible and well documented, including details as to what, how, where, whom and when to report;
- (g) Regardless of the source or method of submission, once the information is received, it should be stored in a manner suitable for easy retrieval and analysis;
- (h) Access to the submitted reports should be restricted to persons responsible for storing and analysing them;
- (i) Protection of the identity of the reporter should be ensured. This should be achieved by not recording any identifying information of the occurrence; and
- (j) Occurrence reporting system should include a feedback system to the reporting person, on the outcome of the occurrence analysis.

GM1-ADR.OR.D.030(a);(c);(d) – Safety reporting system

NEED FOR OCCURRENCE REPORTING

- (a) The overall purpose of the occurrence reporting system is to use reported information to improve the level of safety performance of the aerodrome and not to attribute blame.
- (b) The objectives of the occurrence reporting system should be:
 - (1) to enable an assessment to be made of the safety implications of each relevant incident and accident, including previous similar occurrences, so that any necessary action can be initiated; and
 - (2) to ensure that knowledge of relevant incidents and accidents is disseminated, so that other persons and organisations may learn from them.

AMC2-ADR.OR.D.030(b);(c) – Safety reporting system

WILDLIFE MANAGEMENT REPORTING

The aerodrome operator should ensure that the reporting system specifically addresses the requirement for all third parties (aircraft operators, aircraft mechanics, air traffic controllers, etc) and all aerodrome personnel, to submit reports related to wildlife strikes and relevant identified hazards to the aerodrome operator.

AMC/GM to Annex II – Part-OR
SUBPART D – MANAGEMENT (ADR.OR.D)

The reporting of such third parties should be done irrespectively of any other requirements according to which they have to report to the competent authority of the aerodrome or the state of registry of the aircraft involved, or any other competent authority in the context of the national occurrence reporting programme.

AMC1-ADR.OR.D.035 – Record keeping**DOCUMENTATION TO BE RETAINED**

- (a) The system employed by the aerodrome operator for record-keeping should provide for adequate procedures, storage facilities, and reliable traceability of the records related to the activities of the aerodrome operator that are subject to the Basic Regulation and its Implementing Rules.
- (b) Records should be kept in paper form or in electronic format or a combination of both. Records stored on microfilm or optical disc format are also acceptable. The records should remain legible throughout the required retention period. The retention period starts when the record has been created or last amended.
- (c) Paper systems should use robust material which can withstand normal handling and filing.
- (d) Computer systems should have at least one backup system which should be updated within 24 hours of any new entry. Computer systems should include safeguards against the ability of unauthorised personnel to alter the data.
- (e) All computer hardware used to ensure data backup should be stored in a different location from that containing the working data and in an environment that ensures they remain in good condition. When hardware or software changes take place, special care should be taken that all necessary data continues to be accessible at least through the full retention period. In the absence of any indication, all records should be kept for a minimum period of five years.

AMC 2 – ADR.OR.D.035 Record keeping**RECORDING OF AIRCRAFT MOVEMENTS**

- (a) The aerodrome operator should employ a system to be used for recording the aircraft movements at the aerodrome.
- (b) Such a system should allow the aerodrome operator to record:
 - (1) the number of movements of each aircraft type using the aerodrome;
 - (2) the type of each aircraft movement (commercial air transportation, cargo, etc.);
 - (3) the date of each movement; and
 - (4) the number of passengers.
- (c) Such records should be kept for a minimum of 5 years..
- (d) The system used should also satisfy paragraphs (b) to (f) of AMC1-ADR.OR.D.035.

GM1-ADR.OR.D.035 – Record keeping

GENERAL

Microfilming or optical storage of records may be carried out at any time. The records should be as legible as the original record and remain so for the required retention period.

SUBPART E – AERODROME MANUAL (ADR.OR.E)

AMC1-ADR.OR.E.005 – Aerodrome manual

GENERAL

- (a) The aerodrome manual may vary in detail according to the complexity of the operation and of the type of the aerodrome.
- (b) The aerodrome manual or parts of it may be presented in any form, including electronic form. In all cases, the accessibility, usability and reliability should be assured.
- (c) The aerodrome manual should be such that:
 - (1) all parts of the manual are consistent and compatible in form and content;
 - (2) the manual can be readily amended; and
 - (3) the content and amendment status of the manual is controlled and clearly indicated.
- (d) The aerodrome manual should include a description of its amendment and revision process specifying:
 - (1) the person(s) who may approve amendments or revisions;
 - (2) the conditions for temporary revisions and/or immediate amendments or revision required in the interest of safety; and
 - (3) the methods by which all personnel and organisations are advised of changes to the aerodrome manual.
- (e) The aerodrome manual may contain parts of, or refer to other controlled documents, such as aerodrome equipment manual, which are available at the aerodrome for use by the personnel.

AMC2-ADR.OR.E.005 – Aerodrome manual

The aerodrome manual should include at least the following information:

'A. PART A – GENERAL

0. Administration and control of the aerodrome manual including the following:

0.1. Introduction:

- 0.1.1 a statement that the aerodrome manual complies with all applicable requirements;*
- 0.1.2 a statement that the aerodrome manual contains operational instructions that are to be complied with by the relevant personnel;*
- 0.1.3 a list and brief description of the various parts, their contents, applicability and use;*
- 0.1.4 explanations and definitions of terms needed for the use of the manual;*

0.2 System of amendment and revision:

- 0.2.1 details of the person(s) responsible for the issuance and insertion of amendments and revisions;*

AMC/GM to Annex II – Part-OR

SUBPART E –AERODROME MANUAL (ADR.OR.E)

- 0.2.2 a record of amendments and revisions with insertion dates and effective dates;
- 0.2.3 a statement that handwritten amendments and revisions are not permitted, except in situations requiring immediate amendment or revision in the interest of safety;
- 0.2.4 a description of the system for the annotation of pages or paragraphs and their effective dates;
- 0.2.5 a list of effective pages or paragraphs;
- 0.2.6 annotation of changes;
- 0.2.7 temporary revisions; and
- 0.2.8 description of the distribution system for the aerodrome manual, its amendments and revisions.

1. General information

General information including the following:

- 1.1 purpose and scope of the aerodrome manual;
- 1.2 legal requirements for an aerodrome certificate and the aerodrome manual as prescribed in Part-ADR.OR;
- 1.3 conditions for use of the aerodrome by its users;
- 1.4 the obligations of the aerodrome operator; rights of the competent authority.

B. PART B — AERODROME ADMINISTRATION, MANAGEMENT SYSTEM, INCLUDING SAFETY, AND QUALITY AND SECURITY MANAGEMENT FOR AERONAUTICAL DATA AND AERONAUTICAL INFORMATION PROVISION ACTIVITIES

2. A description of the management system including the following:

- 2.1 Aerodrome organisation and responsibilities including the following: a description of the organisational structure, including the general organigramme and other departments' organigrammes. The organigramme should depict the relationships between the departments. Subordination and reporting lines of all levels of organisational structure (Departments, Sections etc) related to safety should be shown. Responsibilities and duties of management and nominated persons as well as other operational, maintenance personnel should be included.
- 2.2. A description of the safety management system, including:
 - 2.2.1 scope of the safety management system;
 - 2.2.2 safety policy and objectives;
 - 2.2.3 safety responsibilities of key safety personnel;
 - 2.2.4 documentation control procedures;
 - 2.2.5 hazard identification and risk management schemes;
 - 2.2.6 monitoring of implementation and effectiveness of safety actions and risk mitigation measures;
 - 2.2.7 safety performance monitoring;
 - 2.2.8 safety reporting and investigation;

AMC/GM to Annex II – Part-OR

SUBPART E –AERODROME MANUAL (ADR.OR.E)

2.2.9 emergency response planning;

2.2.10 management of change (including organisational changes with regard to safety responsibilities); and

2.2.11 safety promotion.

2.3 A description of the compliance monitoring function and related procedures.

2.4 A description of quality and security management system for aeronautical data and aeronautical information provision activities and related procedures.

2.5 Procedures for reporting to the competent authority.

2.6 Policy and procedures related to use of alcohol and illicit or prescribed substances.

2.7 Procedures for complying with safety directives and reaction to safety problems.

2.8 A description of the method for recording aircraft movements.

3. Procedures related to training including the following:

3.1 training programme, including frequencies, syllabi and checking programmes for all personnel involved in the operation, maintenance and management of the aerodrome and those persons operating unescorted on the movement area and other operational areas of the aerodrome. Training syllabi and checking programmes should be developed in accordance with the requirements pertaining to their duties, as prescribed in Part-ADR.OPS.

3.2 procedures:

3.2.1 for training and checking;

3.2.2 to be applied in the event that personnel do not achieve or maintain the required standards.

3.3 description of documentation to be stored and storage periods.

C. PART C — PARTICULARS OF THE AERODROME SITE

4. A description of the aerodrome site including in particular, the following information:

4.1 a plan showing the distance of the aerodrome from the nearest city, town or other populous area;

4.2 detailed maps and charts of the aerodrome showing the aerodrome's location (longitude and latitude) and boundaries, major facilities, aerodrome reference point, layout of runways, taxiways and aprons, aerodrome visual and non-visual aids, and wind direction indicators;

4.3 a plan showing the location of any aerodrome facilities and equipment outside the boundaries of the aerodrome;

4.4 description of the physical characteristics of the aerodrome, elevations, visual and non-visual aids, as well as the information regarding the aerodrome reference temperature, strength of pavements, rescue and fire fighting level, ground aids and main obstacles;

4.5 description of any cases of exemptions or derogations, equivalent level of safety, special conditions and operating limitations.

4.6 description of the types of operations that the aerodrome is approved to conduct.

- D. *PART C — PARTICULARS OF THE AERODROME REQUIRED TO BE REPORTED TO THE AERONAUTICAL INFORMATION SERVICE*
5. *The aeronautical information services available and the procedures for the promulgation of general information, including the following:*
- 5.1 *the name of the aerodrome;*
 - 5.2 *the location of the aerodrome;*
 - 5.3 *the geographical coordinates of the aerodrome reference point determined in terms of the World Geodetic System — 1984 (WGS-84) reference datum;*
 - 5.4 *the aerodrome elevation and geoid undulation;*
 - 5.5 *the elevation of each threshold and geoid undulation, the elevation of the runway end and any significant high and low points along the runway, and the highest elevation of the touchdown zone of a precision approach runway;*
 - 5.6 *the aerodrome reference temperature;*
 - 5.7 *details of the aerodrome beacon; and*
 - 5.8 *the name of the aerodrome operator and contact details of the aerodrome operator.*
6. *Aerodrome dimensions and related information, including the following:*
- 6.1 *runway — 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;*
 - 6.2 *length, width and surface type of strip, runway end safety areas, stopways; length, width and surface type of taxiways; apron surface type and aircraft stands; clearway length and ground profile;*
 - 6.3 *visual aids for approach procedures, approach lighting type and visual approach slope indicator system; marking and lighting of runways, taxiways, and aprons; other visual guidance and control aids on taxiways and aprons, location and type of visual docking guidance system; availability of standby power for lighting;*
 - 6.4 *the location and radio frequency of VOR aerodrome checkpoints;*
 - 6.5 *the location and designation of standard taxi routes;*
 - 6.6 *the geographical coordinates of each threshold, appropriate taxiway centre line points and aircraft stands;*
 - 6.7 *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;*
 - 6.8 *pavement surface type and bearing strength using the Aircraft Classification Number — Pavement Classification Number (ACN-PCN) method;*
 - 6.9 *pre-flight altimeter check locations established and their elevation;*
 - 6.10 *declared distances;*
 - 6.11 *contact details and capability of with regard to the removal of disabled aircraft;*
 - 6.12 *category of rescue and fire fighting; and*
 - 6.13 *exemptions or derogations from the applicable requirements, cases of equivalent*

level of safety, special conditions and limitations.

- E. PART D — PARTICULARS OF THE AERODROME OPERATING PROCEDURES AND SAFETY MEASURES*
- 7. Aerodrome reporting, including:*
 - 7.1 arrangements for reporting any changes to the competent authority and recording the reporting of changes;*
 - 8. Procedures for accessing the aerodrome movement area, including:*
 - 8.1 coordination with the security agencies;*
 - 8.2 prevention of unauthorised entry into the movement area;*
 - 9. Aerodrome emergency plan including:*
 - 9.1 dealing with emergencies at the aerodrome or in its vicinity;*
 - 9.2 tests for aerodrome facilities and equipment to be used in emergencies, including their frequency;*
 - 9.3 exercises to test emergency plans, including their frequency.*
 - 10. Rescue and fire fighting, including:*
 - 10.2 description of facilities, equipment, personnel and procedures for meeting the fire fighting requirements.*
 - 11. Procedures for the inspection of the aerodrome movement area and obstacle limitation surfaces, including:*
 - 11.1 responsible personnel for runway friction characteristics assessments and water-depth measurements;*
 - 11.2 communicating with air traffic services during inspections;*
 - 11.3 inspection checklists, logbook and record keeping;*
 - 11.4 inspection intervals and times; reporting results and follow-up actions.*
 - 12. Procedures for the inspection and routine and emergency maintenance of visual aids and non-visual, as appropriate, and aerodrome electrical systems, including:*
 - 12.1 inspection checklists, logbook and record keeping;*
 - 12.2 inspection intervals and times; reporting results and follow-up actions.*
 - 13. Maintenance and repair instructions, servicing information, troubleshooting and inspection procedures of aerodrome equipment.*
 - 14. Procedures for maintenance of the movement area, including:*
 - 14.1 paved areas; unpaved runways and taxiways; runways and runway strips and aerodrome drainage.*
 - 15. Procedures for aerodrome works, including:*
 - 15.1 coordinating, planning and carrying out construction and maintenance work;*
 - 15.2 communicating with air traffic control during the progress of such work.*
 - 16. Procedures for apron management including:*
 - 16.1 transfer of the aircraft between air traffic control and the apron management unit;*

AMC/GM to Annex II – Part-OR

SUBPART E – AERODROME MANUAL (ADR.OR.E)

- 16.2 allocation of aircraft parking positions;
- 16.3 engine start and aircraft push-back;
- 16.4 marshalling and follow-me service.
- 17. Procedures for apron safety management including:
 - 17.1 protection from jet blasts;
 - 17.2 enforcement of safety precautions during aircraft refuelling operations;
 - 17.3 apron cleaning/sweeping;
 - 17.4 monitoring compliance of personnel on the apron with safety procedures.
- 18. Procedures for the control of vehicles operating on or in the vicinity or the movement area, including traffic rules, speed limits, and method for issuing driving permits and enforcement means.
- 19. Procedures for wild life hazard management, including assessing wild life hazards and arrangements for implementation of wildlife control programme.
- 20. Procedures for obstacle control and monitoring within and outside of the aerodrome boundaries and notification to the competent authority.
- 21. Removal plan of disabled aircraft, relevant arrangements, equipment and procedures for its implementation.
- 22. Procedures for ensuring the safe handling and storage of fuel and dangerous goods in the aerodrome, including:
 - 22.1 equipment, storage areas, delivery, dispensing and handling;
 - 22.2 quality and correct specification of aviation fuel; audit and inspection intervals, record keeping.
- 23. Low visibility operations: description of operational procedures including coordination with Air Traffic Services, standard taxiing routes, control of activities and measurement and reporting of runway visual range.
- 24. Procedures for the winter operations.
- 25. Snow removal plan and procedures for its implementation, including a description of the available means and relevant arrangements.
- 26. Procedures for operations in adverse weather conditions.
- 27. Procedures for night operations.
- 28. Procedures for the protection of radar and other navigational aids, control of activities, and ground maintenance in the vicinity of these installations.
- 29. Procedures and measures for the prevention of fire at the aerodrome.'

All procedures contained in the aerodrome manual should include and clearly define the roles, responsibilities and contact details of responsible aerodrome personnel, other persons or organisations, including the competent authority and other state agencies involved, as appropriate, and take into account the need for establishing direct communication during non-working hours.

GM1-ADR.OR.E.010 — Aerodrome manual

FORM OF THE AERODROME MANUAL

The aerodrome manual is a key document both for the aerodrome operator and the competent authority. The manual is the source document describing how the aerodrome infrastructure, facilities and operational procedures will operate safely.

As well as the operational procedures, the competent authority will expect the aerodrome manual to be an accurate reflection of the day-to-day functioning of the aerodrome's safety management system and its safety culture. It will need to show how the aerodrome intends to measure its performance against safety targets and objectives. The reader of an aerodrome manual should be given a clear statement of how safety is developed, managed and maintained on the aerodrome. All safety policies, operational procedures and instructions should be contained in detail when relevant or cross-referenced to other formally accepted or recognised publications.

At larger aerodromes the size and complexity of operations and related procedures may dictate that these procedures could not easily be included in a single document. In such circumstances it is acceptable to identify and reference within the manual the procedures which are not included within it. If this system is to be successful it is essential that any referenced information, documentation and procedures are made available as necessary to all operational staff in a similar way as the aerodrome manual itself. For that purpose, a computerised database containing the referenced procedures and information could be suitable. For many small aerodromes, the manual can be both simple and brief as long as it covers procedures essential for satisfactory day-to-day operations. Nevertheless it is possible to adopt a common format embracing the essential elements that define a safety management system.

GM2-ADR.OR.E.005 – Structure of the aerodrome manual

PURPOSE AND SCOPE OF THE AERODROME MANUAL

An efficient management structure and a systematic approach to aerodrome operation is essential. The aerodrome manual should contain all the relevant information to describe this structure satisfactorily. It is one of the means by which all aerodrome operating staff can be informed as to their duties and responsibilities with regard to safety. It should describe the aerodrome infrastructure, services and facilities, all operating procedures, and any restrictions on aerodrome availability.

Accountability for safety must start at the very top of any organisation. One of the key elements in establishing safe working practices is the 'top down' approach where all staff should understand the safety aims of the organisation, the chain of command, and their own responsibilities and accountabilities. As safety management principles are applied, the aerodrome manual should be expanded to describe clearly how the safety of operations is to be managed. To a reader or user of the aerodrome manual there should never be any doubt in terms of 'safety accountability' for each domain or activity described. Each section should define who is accountable, who is responsible, who has the authority, who has the expertise and who actually carries out the tasks described in any section.

The principle objective of an aerodrome manual should be to show how management will accomplish its safety responsibilities. The manual will set out the policy and expected standards of performance and the procedures by which they will be achieved.

The aerodrome operator should ensure that:

- the responsibilities of the aerodrome operator are clearly described;
- the tasks and activities that are to be done by the aerodrome operator or its subcontractors are listed;

- the means and procedures in order to complete these tasks and activities are described or appended, together with the necessary details on their frequencies and operating modes.

Where responsibilities are attributed to other stakeholders, the aerodrome manual should clearly identify them.

AMC/GM to ANNEX III – Part Operations Requirements (Part-OPS)**SUBPART A – AERODROME DATA (ADR.OPS.A)****AMC-ADR-OPS.A.005 Aer onautical Data** TXT ADD

- (a) Data relevant to the aerodrome and available services should include, but may not be limited to, items in the following list:
 - (1) aerodrome reference point;
 - (2) aerodrome and runway elevations;
 - (3) aerodrome reference temperature;
 - (4) aerodrome dimensions and related information;
 - (5) strength of pavements;
 - (6) pre-flight altimeter check location;
 - (7) declared distances;
 - (8) condition of the movement area and related facilities;
 - (9) disabled aircraft removal;
 - (10) rescue and fire-fighting;
 - (11) visual approach slope indicator systems;
- (b) The aerodrome operator should provide obstacles and terrain data within the boundary of the aerodrome (Area 3) and in the Terminal Control Area (Area 2) within the aerodrome boundary;
- (c) The aerodrome operator should establish arrangements with the ANS providers and the competent authority for the provision of obstacles and terrain data in the Terminal Control Area (Area 2) outside of the aerodrome boundary;

GM- ADR-OPS.A.005 – Aeronautical data**AERODROME REFERENCE POINT**

- (a) The aerodrome reference point is located near the initial or planned geometric centre of the aerodrome and normally remains where first established;
- (b) The aerodrome reference point is reported to the AIS in degrees, minutes and seconds;

AERODROME AND RUNWAY ELEVATIONS

The following are measured and reported to the AIS:

- (a) The aerodrome elevation and geoid undulation at the aerodrome elevation position to the accuracy of one-half metre or foot;
- (b) For non-precision approaches, the elevation and geoid undulation of each threshold, the elevation of the runway end and any significant high and low points along the runway, to the accuracy of one-half metre or foot;
- (c) For precision approach runway, the elevation and geoid undulation of the threshold, the

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

elevation of the runway end and the highest elevation of the touchdown zone, to the accuracy of one-quarter metre or foot;

AERODROME REFERENCE TEMPERATURE

- (a) The aerodrome reference temperature is determined in degrees Celsius;
- (b) The aerodrome reference temperature is the monthly mean of the daily maximum temperatures for the hottest month of the year (the hottest month being that which has the highest monthly mean temperature), averaged over a period of years;

AERODROME DIMENSIONS AND RELATED INFORMATION

The following data are measured or described, as appropriate, for each facility provided on the aerodrome:

- (a) Runway:
 - (1) true bearing to one-hundredth of a degree;
 - (2) designation number;
 - (3) length;
 - (4) width;
 - (5) displaced threshold location to the nearest metre or foot;
 - (6) slope;
 - (7) surface type;
 - (8) type of runway, and
 - (9) for a precision approach runway category I, the existence of an obstacle free zone when provided;
- (b) Strip/Runway End Safety Area/Stopway
 - (1) Length and width to the nearest metre or foot;
 - (2) Surface type;
- (c) Taxiway
 - (1) Designation;
 - (2) Width;
 - (3) Surface type;
- (d) Apron
 - (1) Surface type;
 - (2) Aircraft stands;
- (e) the boundaries of the air traffic control service;
- (f) clearway:
 - (1) length to the nearest metre or foot;
 - (2) ground profile;

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

- (g) visual aids for approach procedures, marking and lighting of runways, taxiways and aprons, other visual guidance and control aids on taxiways and aprons, including taxi-holding positions and stopbars, and location and type of visual docking guidance systems;
- (h) location and radio frequency of any VOR aerodrome checkpoint;
- (i) location and designation of standard taxi-routes; and
- (j) distances to the nearest metre or foot of localiser and glide path elements comprising an instrument landing system (ILS) or azimuth and elevation antenna of a microwave landing system (MLS) in relation to the associated runway extremities.
- (k) The geographical coordinates of:
 - (1) each threshold;
 - (2) appropriate taxiway centre line points; and
 - (3) each aircraft stand;

are measured and reported to the AIS in degrees, minutes, seconds and hundredths of seconds.

STRENGTH OF PAVEMENTS

- (a) The bearing strength of a pavement intended for aircraft of apron (ramp) mass greater than 5 700 kg is made available using the aircraft classification — pavement classification number (ACN-PCN) method, by reporting all of the following information:
 - (1) the pavement classification number (PCN);
 - (2) pavement type for ACN-PCN determination;
 - (3) subgrade strength category;
 - (4) maximum allowable tire pressure category or maximum allowable tire pressure value; and
 - (5) evaluation method;
- (b) Information on pavement type for ACN-PCN determination, subgrade strength category, maximum allowable tire pressure category and evaluation method, is reported using the following codes:
 - (1) Pavement type for ACN-PCN determination:
 - (i) Rigid pavement: Code R;
 - (ii) Flexible pavement: Code F;
 - (2) Subgrade strength category:
 - (i) High strength: characterized by $K = 150 \text{ MN/m}^3$ and representing all K values above 120 MN/m^3 for rigid pavements, and by $\text{CBR} = 15$ and representing all CBR values above 13 for flexible pavements — Code A;
 - (ii) Medium strength: characterised by $K = 80 \text{ MN/m}^3$ and representing a range in K of 60 to 120 MN/m^3 for rigid pavements, and by $\text{CBR} = 10$ and representing a range in CBR of 8 to 13 for flexible pavements — Code B;

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

- (iii) Low strength: characterized by $K = 40 \text{ MN/m}^3$ and representing a range in K of 25 to 60 MN/m^3 for rigid pavements, and by $\text{CBR} = 6$ and representing a range in CBR of 4 to 8 for flexible pavements — Code C;
- (iv) Ultra low strength: characterized by $K = 20 \text{ MN/m}^3$ and representing all K values below 25 MN/m^3 for rigid pavements, and by $\text{CBR} = 3$ and representing all CBR values below 4 for flexible pavements — Code D;
- (3) Maximum allowable tire pressure category:
 - (i) Unlimited: no pressure limit — Code W;
 - (ii) High: pressure limited to 1.75 MPa — Code X;
 - (iii) Medium: pressure limited to 1.25 MPa — Code Y;
 - (iv) Low: pressure limited to 0.50 MPa — Code Z;
- (4) Evaluation method:
 - (i) Technical evaluation: representing a specific study of the pavement characteristics and application of pavement behaviour technology — Code T;
 - (ii) Using aircraft experience: representing a knowledge of the specific type and mass of aircraft satisfactorily being supported under regular use — Code U;
- (c) The bearing strength of a pavement intended for aircraft of apron (ramp) mass equal to or less than 5 700 kg, is reported by giving the following information:
 - (1) maximum allowable aircraft mass; and
 - (2) maximum allowable tire pressure.

PRE-FLIGHT ALTIMETER CHECK LOCATION

- (a) One or more pre-flight altimeter check locations may be established;
- (b) The elevation of a pre-flight altimeter check location is given as the average elevation, rounded to the nearest metre or foot, of the area which is located. The elevation of any portion of a pre-flight altimeter check location may be within 3 m (10 ft) of the average elevation for that location;
- (c) Pre-flight check location may be located on an apron. Locating a pre-flight altimeter check location on an apron enables an altimeter check to be made prior to obtaining taxi clearance and eliminates the need for stopping for that purpose after leaving the apron. Normally an entire apron can serve as a satisfactory altimeter check location.

DECLARED DISTANCES

- (a) The following distances are calculated to the nearest metre or foot for a runway and reported to the AIS and ANSP:
 - (1) Take-off run available (TORA);
 - (2) Take-off distance available (TODA);
 - (3) Accelerate stop distance available (ASDA);
 - (4) Landing distance available (LDA).

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

- (b) The take-off run available (TORA), take-off distance available (TODA), accelerate stop distance available (ASDA) and landing distance available (LDA) are calculated according to the following:

- (1) Where a runway is not provided with a stopway or a clearway and the threshold is located at the extremity of the runway, the four declared distances should normally be equal to the length of the runway

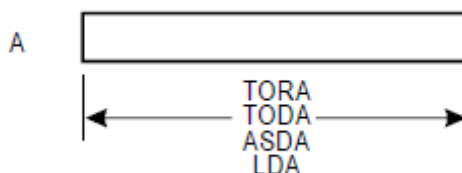


Figure 1

- (2) When a runway is provided with a clearway (CWY), then the TODA will include the length of clearway

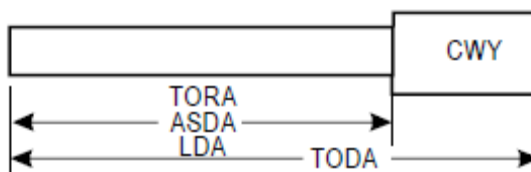


Figure 2

- (3) Where a runway is provided with a stopway (SWY), then the ASDA will include the length of stopway

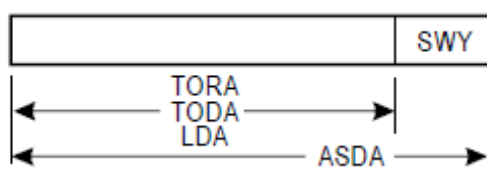


Figure 3

- (4) Where a runway has a displaced threshold, then the LDA will be reduced by the distance the threshold is displaced. A displaced threshold affects only the LDA for approaches made to that threshold; all declared distances for operations in the reciprocal direction are unaffected

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

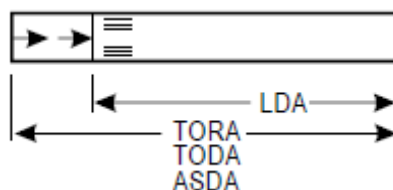


Figure 4

- (5) Where a runway is provided with more than one of the clearway, stopway or having a displaced threshold, then more than one of the declared distances will be modified. The modification will follow the same principle as in (1)–(4)

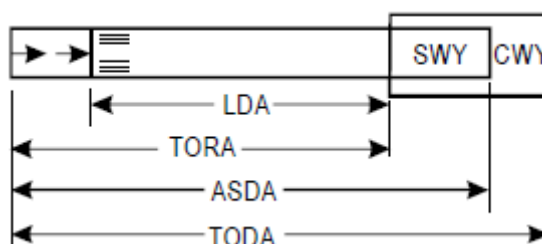


Figure 5

- (c) The information on declared distances may be provided according to the following table:

RUNWAY	TORA	ASDA	TODA	LDA
	m	m	m	m
09	2 000	2 300	2 580	1 850
27	2 000	2 350	2 350	2 000
17	NU	NU	NU	1 800
35	1 800	1 800	1 800	NU

Table 1

If a runway direction cannot be used for take-off or landing, or both, because it is operationally forbidden, then this should be declared and the words 'not usable' or the abbreviation 'NU' entered.

CONDITION OF THE MOVEMENT AREA AND RELATED FACILITIES

- (a) The condition of the movement area and the operational status of related facilities is monitored and report is made on matters of operational significance or affecting aircraft performance, particularly in respect of the following:

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

- (1) construction or maintenance work;
- (2) rough or broken surfaces on a runway, a taxiway or an apron;
- (3) snow, slush, ice, wet ice, wet snow on ice or frost on a runway, a taxiway or an apron;
- (4) water on a runway, a taxiway or an apron;
- (5) snow banks or drifts adjacent to a runway, a taxiway or an apron;
- (6) anti-icing or de-icing liquid chemicals or other contaminants on a runway, a taxiway or apron;
- (7) other temporary hazards, including parked aircraft;
- (8) failure or irregular operation of part or all of the aerodrome visual aids; and
- (9) failure of the normal or secondary power supply.

Water on a runway

- (b) Whenever water is present on a runway and a report of the runway surface conditions is made, the following terms are used:
 - (1) Wet — the surface is soaked but there is no standing water;
 - (2) STANDING WATER — for aeroplane performance purposes, a runway where more than 25 % of the runway surface area (whether in isolated areas or not) within the required length and width being used is covered by water more than 3 mm deep;
- (c) Information that a runway or portion thereof maybe slippery when wet is made available to the aerodrome users.

Snow, slush or ice on a runway

- (a) Runway surface condition is assessed and reported whenever an operational runway is contaminated by snow, slush, ice or frost;
- (b) The following terms are used to describe the runway surface condition whenever snow, slush, ice or frost is present and reported:
 - (1) Dry snow;
 - (2) Wet snow;
 - (3) Compacted snow;
 - (4) Wet compacted snow;
 - (5) Slush;
 - (6) Ice;
 - (7) Wet ice;
 - (8) Frost;

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

- (9) Dry snow on ice;
- (10) Wet snow on ice;
- (11) Chemically treated;
- (12) Sanded;

and include, where applicable, the assessment of contaminant depth;

- (c) The contaminant type, distribution and for loose contaminants, depth for each third of the runway, is assessed;
- (d) Runway surface friction measurements are used to conduct runway condition assessment. Runway surface friction measurements made on a runway that is contaminated by slush, wet snow or wet ice should not be reported;
- (e) Assessment of the friction of a runway is made in descriptive terms of 'estimated' surface friction. The estimated surface friction should be categorised as good, medium to good, medium, medium to poor, and poor and promulgated in SNOWTAM format as well as using appropriate ATC phraseologies;
- (f) The estimated surface friction, based on the measured coefficient, when the runway is covered by compacted snow or ice only is reported according to the following table (indicative):

Measured Coefficient (μ)	Estimated Surface Friction	Code
0.40 and above	Good	5
0.39 to 0.36	Medium to good	4
0.35 to 0.30	Medium	3
0.29 to 0.26	Medium to poor	2
0.25 and below	Poor	1

Table 2

- (g) Assessed surface condition information, including estimated surface friction, is reported for each third of a runway. The thirds are called A, B and C;
 - (1) For the purpose of reporting information to aeronautical service units, Section A should always be the section associated with the lower runway designation number;
 - (2) When giving landing information to a pilot before landing, the sections should be referred to as first, second or third part of the runway. The first part should always mean the first third of the runway as seen in the direction of landing;
 - (3) Assessments are made along two lines parallel to the runway, i.e. along a line on each side of the centreline approximately 3 m, or that distance from the centreline at which most operations take place;

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

- (4) In cases where a continuous friction measuring device is used, the mean values are obtained from the friction values recorded for each section;
- (5) In cases where a spot measuring friction measuring device is used as part of the total assessment of the estimated surface friction, each third of the runway should have three tests carried out on it, where achievable;
- (h) Whenever dry snow, wet snow or slush is present on a runway, the mean depth over each third of the runway is assessed to an accuracy of approximately 2 cm for dry snow, 1 cm for wet snow and 0.3 cm for slush.

DISABLED AIRCRAFT REMOVAL

- (a) The contact details (telephone/telex number(s), email address, etc.) of the office of the aerodrome coordinator of operations for the removal of an aircraft disabled on or adjacent to the movement area is made available on request to aircraft operators;
- (b) Information concerning the capability to remove an aircraft disabled on or adjacent to the movement area is made available;
- (c) The capability to remove a disabled aircraft may be expressed in terms of the largest type of aircraft which the aerodrome is equipped to remove.

RESCUE AND FIRE-FIGHTING

- (a) Information concerning the level of protection provided at an aerodrome for aircraft rescue and fire-fighting purposes is made available;
- (b) The level of protection normally available at the aerodrome is expressed in terms of the category of the rescue and fire-fighting services and in accordance with the types and amounts of extinguishing agents normally available at the aerodrome;
- (c) Changes in the level of protection normally available at the aerodrome for rescue and fire-fighting is notified to the appropriate air traffic services units and aeronautical information services units to enable those units to provide the necessary information to arriving and departing aircraft. When such a change has been corrected, the above units are advised accordingly;
- (d) A change in the level of protection is expressed in terms of the new category of the rescue and fire-fighting services available at the aerodrome.

VISUAL APPROACH SLOPE INDICATOR SYSTEMS

The following information concerning a visual approach indicator system is made available:

- (a) associated runway designation number;
- (b) Type of system. For an AT-VASIS, PAPI or APAPI installation, the side of the runway on which the lights are installed, i.e. left or right, is given;

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

- (c) where the axis of the system is not parallel to the runway centre line, the angle of displacement and the direction of displacement, i.e. left or right, is indicated;
- (d) nominal approach slope angle(s); and
- (e) minimum eye height(s) over the threshold of the on-slope signal(s).

AMC-ADR-OPS.A.010 – Data quality requirements ^{TXT}

- (a) Aeronautical data integrity requirements should be based upon the potential risk resulting from the corruption of data and upon the use to which the data item is put. Consequently, the following classifications and data integrity levels should apply:
 - (1) critical data, integrity level 1×10^{-8} : there is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;
 - (2) essential data, integrity level 1×10^{-5} : there is a low probability when using corrupted essential data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe; and
 - (3) routine data, integrity level 1×10^{-3} : there is a very low probability when using corrupted routine data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe.
- (b) The aerodrome operator should determine and report aerodrome-related aeronautical data in accordance with the accuracy and integrity requirements set in the following tables:

Table 3. Latitude and longitude		
Latitude and longitude	Accuracy Data Type	Integrity Classification
Aerodrome reference point	30 m surveyed/calculated	1×10^{-3} routine
Nav aids located at the aerodrome	3 m surveyed	1×10^{-5} essential
Obstacles in Area 3	0.5 m surveyed	1×10^{-5} essential
Obstacles in Area 2 (the part within the aerodrome boundary)	5 m surveyed	1×10^{-5} essential
Runway thresholds	1 m surveyed	1×10^{-8} critical
Runway end (flight path alignment point)	1 m surveyed	1×10^{-8} critical
Runway centre line points	1 m	1×10^{-8}

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

	surveyed	critical
Runway-holding position	0.5 m surveyed	1×10^{-8} critical
Taxiway centre line/parking guidance line points	0.5 m surveyed	1×10^{-5} essential
Taxiway intersection marking line	0.5 m surveyed	1×10^{-5} essential
Exit guidance line	0.5 m surveyed	1×10^{-5} essential
Apron boundaries (polygon)	1 m surveyed	1×10^{-3} Routine
De-icing/anti-icing facility (polygon)	1 m surveyed	1×10^{-3} Routine
Aircraft stand points/INS checkpoints	0.5 m surveyed	1×10^{-3} Routine

Table 4. Elevation/altitude/height

Elevation/altitude/height	Accuracy data type	Integrity classification
Aerodrome elevation	0.5 m surveyed	1×10^{-5} essential
WGS-84 geoid undulation at aerodrome elevation position	0.5 m surveyed	1×10^{-5} essential
Runway threshold, non-precision approaches	0.5 m surveyed	1×10^{-5} essential
WGS-84 geoid undulation at runway threshold, non-precision approaches	0.5 m surveyed	1×10^{-5} essential
Runway threshold, precision approaches	0.25 m surveyed	1×10^{-8} critical
WGS-84 geoid undulation at runway threshold, precision approaches	0.25 m surveyed	1×10^{-8} critical
Runway centre line points	0.25 m surveyed	1×10^{-8} critical
Taxiway centre line/parking guidance line points	1 m surveyed	1×10^{-5} essential

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

Obstacles in Area 2 (the part within the aerodrome boundary)	3 m surveyed	1×10^{-5} essential
Obstacles in Area 3	0.5 m surveyed	1×10^{-5} essential
Distance measuring equipment/precision (DME/P)	3 m surveyed	1×10^{-5} essential

Table 5. Declination and magnetic variation

Declination/variation	Accuracy data type	Integrity classification
Aerodrome magnetic variation	1 degree surveyed	1×10^{-5} essential
ILS localizer antenna magnetic variation	1 degree surveyed	1×10^{-5} essential
MLS azimuth antenna magnetic variation	1 degree surveyed	1×10^{-5} essential

Table 6. Bearing

Bearing	Accuracy data type	Integrity classification
ILS localizer alignment	1/100 degree surveyed	1×10^{-5} essential
MLS zero azimuth alignment	1/100 degree surveyed	1×10^{-5} essential
Runway bearing (True)	1/100 degree surveyed	1×10^{-3} routine

Table 7. Length/distance/dimension

Length/distance/dimension	Accuracy data type	Integrity classification
Runway length	1 m surveyed	1×10^{-8} critical
Runway width	1 m surveyed	1×10^{-5} essential
Displaced threshold distance	1 m surveyed	1×10^{-3} routine
Stopway length and width	1 m surveyed	1×10^{-8} critical
Clearway length and width	1 m surveyed	1×10^{-5} essential
Landing distance available	1 m surveyed	1×10^{-8} critical

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

Take-off run available	1 m surveyed	1×10^{-8} critical
Take-off distance available	1 m surveyed	1×10^{-8} critical
Accelerate-stop distance available	1 m surveyed	1×10^{-8} critical
Runway shoulder width	1 m surveyed	1×10^{-5} essential
Taxiway width	1 m surveyed	1×10^{-5} essential
Taxiway shoulder width	1 m surveyed	1×10^{-5} essential
ILS localizer antenna-runway end, distance	3 m calculated	1×10^{-3} routine
ILS glide slope antenna-threshold, distance along centre line	3 m calculated	1×10^{-3} routine
ILS marker-threshold distance	3 m calculated	1×10^{-5} essential
ILS DME antenna-threshold, distance along centre line	3 m calculated	1×10^{-5} essential
MLS azimuth antenna-runway end, distance	3 m calculated	1×10^{-3} routine
MLS elevation antenna-threshold, distance along centre line	3 m calculated	1×10^{-3} routine
MLS DME/P antenna-threshold, distance along centre line	3 m calculated	1×10^{-5} essential

- (c) Accuracy requirements for aeronautical data should be based upon a 95 % confidence level and in that respect, three types of positional data should be identified: surveyed points (e.g. runway threshold), calculated points (mathematical calculations from the known surveyed points of points in space, fixes) and declared points (e.g. flight information region boundary points);
- (d) Geographical coordinates indicating latitude and longitude should be determined and reported to the aeronautical information services in terms of the World Geodetic System — 1984 (WGS-84) geodetic reference datum, identifying those geographical coordinates which have been transformed into WGS-84 coordinates by mathematical

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

means and whose accuracy of original field work does not meet the requirements in Table 3;

- (e) The order of accuracy of the field work should be such that the resulting operational navigation data for the phases of flight will be within the maximum deviations, with respect to an appropriate reference frame, as indicated in the Tables 3–7;
- (f) In addition to the elevation (referenced to mean sea level) of the specific surveyed ground positions at aerodromes, geoid undulation (referenced to the WGS-84 ellipsoid) for those positions as indicated in Tables 3–7 should be determined and reported to the aeronautical information services authority;
- (g) Protection of electronic aeronautical data while stored or in transit should be totally monitored by the cyclic redundancy check (CRC). To achieve protection of the integrity level of critical and essential aeronautical data as classified in (a)(1) and (a)(2) above, a 32 or 24-bit CRC algorithm should apply respectively;
- (h) To achieve protection of the integrity level of routine aeronautical data as classified in (a)(3) above, a 16-bit CRC algorithm should apply;
- (i) The aerodrome operator should implement the procedures to:
 - (1) monitor data relevant to the aerodrome and available services originating from the aerodrome operator and promulgated by the relevant ANS providers;
 - (2) notify the relevant AIS and ANS providers of any changes necessary to ensure correct and complete data relevant to the aerodrome and available services.

AMC-ADR-OPS.A.015 — Co ordination between Aeronautical Information Services Providers, ANSPs and Aerodrome Operators TXT REV

- (a) The aerodrome operator should report on matters of operational significance or affecting aircraft and aerodrome operations in order to take appropriate action, particularly in respect of the following:
 - (1) construction or maintenance work;
 - (2) rough or broken surfaces on a runway, a taxiway or an apron;
 - (3) snow, slush, ice, wet ice, wet snow on ice or frost on a runway, a taxiway or an apron;
 - (4) water on a runway, a taxiway or an apron;
 - (5) snow banks or drifts adjacent to a runway, a taxiway or an apron;
 - (6) anti-icing or de-icing liquid chemicals or other contaminants on a runway, a taxiway or an apron;
 - (7) other temporary hazards, including parked aircraft;
 - (8) failure or irregular operation of part or all of the aerodrome visual aids; and
 - (9) failure of the normal or secondary power supply;
 - (10) changes to the disabled aircraft removal;

AMC/GM to Annex III – Part-OPS

SUBPART A – AERODROME DATA (ADR.OPS.A)

(11) changes to visual approach slope indicator system.

- (b) The aerodrome operator should notify the changes in the level of protection normally available at an aerodrome for rescue and fire-fighting to the appropriate ANSPs and aeronautical information services providers to enable them to provide the necessary information to arriving and departing aircraft. When such a change has been corrected, the above units shall be advised accordingly;
- (c) The aerodrome operator should observe the predetermined, internationally agreed AIRAC effective dates in addition to 14 days postage time when submitting the raw information/data to aeronautical information services that affect charts and/or computer-based navigation systems which qualify to be notified by the aeronautical information regulation and control (AIRAC) system.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)**SUBPART B — AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS****AMC1-ADR-OPS.B.005 — Aerodrome Emergency Planning** TXT

- (a) The aerodrome emergency plan of the operator should observe human factors principles to ensure optimum response in emergency operations;
- (b) The aerodrome operator should ensure the plan includes the ready availability of, and coordination with, appropriate specialist rescue services to be able to respond to emergencies 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 these areas.

AMC2-ADR-OPS.B.005 — Aerodrome Emergency Plan Document TXT REV

- (a) The aerodrome operator should include at least the following in the aerodrome emergency plan document:
 - (1) Types of emergencies planned for;
 - (2) Agencies involved in the plan;
 - (3) Responsibility and role of each agency, the emergency operations centre and the command post for each type of emergency;
 - (4) Information on names and telephone numbers of offices or people to be contacted in the case of a particular emergency; and
 - (5) A grid map of the aerodrome and its immediate vicinity.

AMC3-ADR-OPS.B.005 — Aerodrome emergency exercise TXT REV

The aerodrome operator should ensure that the emergency plan is tested by conducting:

- (a) a full-scale aerodrome emergency exercise at intervals not exceeding two years; and
- (b) partial emergency exercises in the intervening year to ensure that any deficiencies found during the full-scale aerodrome emergency exercise have been corrected;

and reviewed thereafter, or after an actual emergency, so as to correct any deficiency found during such exercises or actual emergency; (we have to check with R1 responses to SL).

GM1-ADR-OPS.B.005 — Purpose of the Aerodrome Emergency Plan

- (a) The purpose of the aerodrome emergency plan is to ensure that there is:
 - (1) orderly and efficient transition from normal to emergency operations;
 - (2) delegation of airport emergency authority;
 - (3) assignment of emergency responsibilities;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (4) authorisation by key personnel for actions contained in the plan;
- (5) co-ordination of efforts to cope with the emergency; and
- (6) safe continuation of aircraft operations or return to normal operations as soon as possible.

GM2-ADR-OPS.B.005 – Coordination with other agencies

- (a) The aerodrome emergency plan establishes the procedures for coordinating the response of different aerodrome agencies (or services) and those agencies in the surrounding community that could be of assistance in responding to an emergency;
- (b) Coordination of the aerodrome emergency plan with the surrounding community is required;
- (c) Emergency mutual aid agreements are necessary to define responsibilities and/or liabilities of each contributing party with surrounding communities. These agreements could include the following:
 - (1) clarification of the political and jurisdictional responsibilities of the several agencies that may be involved in order to avoid problems when an emergency occurs;
 - (2) establishment of the command authority; i.e. a single on-scene commander (with designated alternates if necessary);
 - (3) designation of communication priorities at the accident site;
 - (4) organisation of emergency transportation facilities under a pre-designated coordinator(s);
 - (5) predetermination of the legal authorities and liabilities of all cooperating emergency personnel; and
 - (6) prearrangements for use of portable and heavy rescue equipment from available sources.
- (d) The aerodrome emergency plan is implemented similarly whether it is an on-airport or an off-airport aircraft accident/incident.

GM3-ADR-OPS.B.005 – Command during emergencies

- (a) In an on-airport aircraft accident/incident the aerodrome operator is normally in command;
- (b) In an off-airport aircraft accident/incident, the agency in command will be the agency agreed upon in the mutual aid emergency agreement between the aerodrome operator and the surrounding community.
- (c) When an aircraft accident/incident occurs just outside the aerodrome perimeter, the jurisdictional responsibility will be as agreed upon in the mutual aid emergency agreement between the aerodrome operator and the surrounding community. This,

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

however, should not affect the immediate response by aerodrome personnel or by agencies having roles in the aerodrome emergency plan.

GM4-ADR-OPS.B.005 – Aerodrome Emergency Plan Document

- (a) The aerodrome emergency plan document, may include the following:
- (1) 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;
 - (2) details of tests for aerodrome facilities and equipment to be used in emergencies, including the frequency of those tests;
 - (3) details of exercises to test emergency plans, including the frequency of those exercises;
 - (4) a list of organisations, 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;
 - (5) the establishment of an aerodrome emergency committee to organize training and other preparations for dealing with emergencies; and
 - (6) the appointment of an on-scene commander for the overall emergency operation.

GM5-ADR-OPS.B.005 – Contents of an Aerodrome Emergency Plan Document

- (a) The structure of the aerodrome emergency plan may be as follows:

Section 1 – Emergency telephone numbers

This section is limited to essential telephone numbers according to the aerodrome needs, including:

- (1) air traffic services;
- (2) rescue and fire-fighting services (fire departments);
- (3) police and security;
- (4) medical services:
 - (i) hospitals;
 - (ii) ambulances; and
 - (iii) doctors — business/residence;
- (5) aircraft operators;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (6) ground handling agencies;
- (7) government authorities;
- (8) civil defence; and
- (9) others.

Section 2 – Aircraft accident on the airport

- (1) action by air traffic services (airport control tower or airport flight information service);
- (2) action by rescue and fire-fighting services;
- (3) action by police and security services;
- (4) action by the aerodrome operator:
 - (i) vehicle escort; and
 - (ii) maintenance;
- (5) action by medical services:
 - (i) hospitals;
 - (ii) ambulances;
 - (iii) doctors; and
 - (iv) medical personnel.
- (6) action by aircraft operator involved;
- (7) action by emergency operations centre and mobile command post;
- (8) action by government authorities;
- (9) communication network (emergency operations centre and mobile command post);
- (10) action by agencies involved in mutual aid emergency agreements;
- (11) action by transportation authorities (land, sea, air);
- (12) action by public information officer(s);
- (13) action by local fire departments when structures involved; and
- (14) action by all other agencies.

Section 3 – Aircraft accident off the airport

- (1) action by air traffic services (airport control tower or airport flight information service);
- (2) action by rescue and fire-fighting services;
- (3) action by local fire departments;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (4) action by police and security services;
- (5) action by aerodrome operator;
- (6) action by medical services;
 - (i) hospitals;
 - (ii) ambulances;
 - (iii) doctors; and
 - (iv) medical personnel.
- (7) action by agencies involved in mutual aid emergency agreements;
- (8) action by aircraft operator involved;
- (9) action by emergency operations centre and mobile command post;
- (10) action by government authorities;
- (11) action by communication networks (emergency operations centre and mobile command post);
- (12) action by transportation authorities (land, sea, air);
- (13) action by public information officer; and
- (14) action by all other agencies.

Section 4 – Malfunction of aircraft in flight (Full emergency or local standby)

- (1) action by air traffic services (airport control tower or flight information service);
- (2) action by airport rescue and fire-fighting services;
- (3) action by police and security services;
- (4) action by the aerodrome operator;
- (5) action by medical services:
 - (i) hospitals;
 - (ii) ambulances;
 - (iii) doctors; and
 - (iv) medical personnel.
- (6) action by aircraft operator involved;
- (7) action by emergency operations centre and mobile command post; and
- (8) action by all other agencies.

Section 5 – Structural fires

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (1) action by air traffic services (airport control tower or airport flight information service);
- (2) action by rescue and fire-fighting services (local fire department);
- (3) action by police and security services;
- (4) action by airport authority;
- (5) evacuation of structure;
- (6) action by medical services:
 - (i) hospitals;
 - (ii) ambulances;
 - (iii) doctors; and
 - (iv) medical personnel.
- (7) action by emergency operations centre and mobile command post;
- (8) action by public information officer; and
- (9) action by all other agencies.

Section 6 – Sabotage including bomb threat (aircraft or structure)

- (1) action by air traffic services (airport control tower or airport flight information service);
- (2) action by emergency operations centre and mobile command post;
- (3) action by police and security services;
- (4) action by the aerodrome operator;
- (5) action by rescue and fire-fighting services;
- (6) action by medical services:
 - (i) hospitals;
 - (ii) ambulances;
 - (iii) doctors; and
 - (iv) medical personnel.
- (7) action by aircraft operator involved;
- (8) action by government authorities;
- (9) isolated aircraft parking position;
- (10) evacuation;
- (11) searches by dogs and trained personnel;
- (12) handling and identification of luggage and cargo on board aircraft;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (13) handling and disposal of suspected bomb;
- (14) action by public information officer; and
- (15) action by all other agencies.

Section 7 – Unlawful seizure of aircraft

- (1) action by air traffic services (airport control tower or airport flight information service);
- (2) action by rescue and fire-fighting services;
- (3) action by police and security services;
- (4) action by the aerodrome operator;
- (5) action by medical services;
 - (i) hospitals;
 - (ii) ambulances;
 - (iii) doctors; and
 - (iv) medical personnel.
- (6) action by aircraft operator involved;
- (7) action by government authorities;
- (8) action by emergency operations centre and mobile command post;
- (9) isolated aircraft parking position;
- (10) action by public information officer; and
- (11) action by all other agencies.

Section 8 – Incident on the airport

An incident on the airport may require any or all of the actions detailed in Section 2, 'Aircraft accident on the airport'. Examples of incidents the airport authority should consider include fuel spills at the ramp, passenger loading bridge, and fuel storage area; dangerous goods occurrences at freight handling areas; collapse of structures; vehicle/aircraft collisions; etc.

Section 9 – Persons of authority - site roles

To include but not limited to the following according to local requirements:

- (1) On-airport:
 - (i) Aerodrome chief fire officer;
 - (ii) Airport authority;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (iii) Police and security — Officer-in-charge; and
 - (iv) Medical coordinator.
- (2) Off-airport:
- (i) Local chief fire officer;
 - (ii) Government authority; and
 - (iii) Police and security — officer-in-charge.

The on-scene commander will be designated as required from within the pre-arranged mutual aid emergency agreement.

GM6-ADR-OPS.B.005 — Types of Emergencies

- (a) At least the following types of emergencies may be included in the aerodrome emergency plan:
- (1) Aircraft emergencies;
 - (2) Sabotage including bomb threats;
 - (3) Unlawfully seized aircraft;
 - (4) Dangerous goods occurrences;
 - (5) Building fires;
 - (6) Natural disasters; and
 - (7) Public health emergencies;
- (b) The aircraft emergencies for which services may be required are generally classified as:
- (1) 'aircraft accident': an aircraft accident which has occurred on or in the vicinity of the airport;
 - (2) 'full emergency': an aircraft approaching the airport is, or is suspected to be, in such trouble that there is imminent danger of an accident; and
 - (3) 'local standby': an aircraft approaching the airport is known or is suspected to have developed some defect, but the trouble is not such as would normally involve any serious difficulty in effecting a safe landing.

GM7-ADR-OPS.B.005 — Involved Agencies in Emergencies

- (a) The following agencies should participate in response to an emergency:
- (1) On the aerodrome:
 - (i) Air Traffic Control Unit;
 - (ii) Rescue and fire-fighting services;
 - (iii) Aerodrome administration;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (iv) Medical and ambulance services;
 - (v) Aircraft operators;
 - (vi) Ground handling agencies;
 - (vii) Security services; and
 - (viii) Police.
- (2) Off the aerodrome:
- (i) Fire departments;
 - (ii) Police;
 - (iii) Health authorities (including medical, ambulance, hospital and public health services);
 - (iv) Military; and
 - (v) Harbour or coast guard, if applicable.

GM8-ADR-OPS.B.005 – Emergency Operations Centre

- (a) An emergency operations centre and a command post could be available for use during an emergency;
- (b) The emergency operations centre may be a part of the aerodrome facilities and responsible for the overall coordination and general direction of the response to an emergency;
- (c) The command post is a facility capable of being moved rapidly to the site of an emergency, when required, and undertakes the local coordination of those agencies responding to the emergency;
- (d) A person may be assigned to assume control of the emergency operations centre and, when appropriate, another person the command post;
- (e) The role of the emergency operations centre is to support the on-scene commander in the mobile command post for aircraft accidents/incidents;
- (f) The emergency operations centre could be the command, co-ordination and communication centre for unlawful seizure of aircraft and bomb threats;
- (g) The emergency operations centre may be operationally available 24 hours a day;
- (h) The efficiency of the emergency operations centre could be enhanced by establishing it at location having a clear view of the movement area and isolated aircraft parking position, wherever possible;
- (i) The emergency operations centre is necessary to have adequate equipment and personnel to communicate with the appropriate agencies involved in the emergency, including the mobile post, when this is deployed. The communication and electronic devices may be checked daily.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)**GM9-ADR-OPS.B.005 – Mobile Command Post**

- (a) The mobile command post contains the necessary equipment and personnel to communicate with all agencies involved in the emergency, including the emergency operations centre. The communication and electronic devices may be checked each month.
- (b) Maps, charts, and other relevant equipment and information needs to be available at the mobile command post.

GM10 – ADR-OPS.B.005 – Communication System

- (a) Adequate communication systems linking the command post and the emergency operations centre with each other and with the participating agencies may be provided in accordance with the plan and consistent with the particular requirements of the aerodrome;
- (b) The communication systems used may consist of a sufficient number of radio transceivers, telephones and other communication devices to establish and maintain a primary and a secondary means of communication;
- (c) The role of the communication systems is to provide a primary, and, where necessary, an alternate means for effective direct communications between the following, as applicable:
 - (1) The alerting authority and the rescue and fire-fighting (RFF) units serving the airport;
 - (2) Air traffic control tower and/or flight service station, the appropriate fire department alarm room/dispatch centre(s) and the fire-fighting and rescue crews en route to an aircraft emergency and at the accident/incident site;
 - (3) Appropriate mutual aid agencies located on or off the airport, including an alert procedure for all auxiliary personnel expected to respond;
 - (4) The RFF vehicles, including a communication capability between crew members on each RFF vehicle.
- (d) A communications system may be established in order to provide rapid response of the emergency equipment to accidents and incidents occurring in the terminal areas and at the apron. Apron accidents include aircraft cabin fires, refuelling spills and fires, aircraft and vehicle collisions and medical emergencies;
- (e) It is important to test frequently the communication systems used during emergencies to verify the operability of all radio and telephone networks;
- (f) A complete and current list of interagency telephone numbers could be available to all agencies and to personnel responsible for the aerodrome emergency plan, to ensure rapid notification in case of emergencies. These phone numbers need to be verified frequently to ensure they are correct. Updated lists may be distributed to all emergency plan participants on a continual basis.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)**GM11 — ADR-OPS.B.005 — Emergencies in difficult environments**

At those aerodromes located close to water and/or swampy areas, or difficult terrain, the aerodrome emergency plan may include the establishment, testing and assessment at regular intervals of a predetermined response for the specialist rescue services.

GM12 — ADR-OPS.B.005 Emergency Exercises

(a) Full-scale exercises

- (1) Full-scale emergency exercises need to be supported by all aerodrome and community authorities concerned;
- (2) Objectives of the exercise needs to be defined;
- (3) Involved departments and agencies have to be thoroughly familiar with the airport emergency plan and develop individual plans in coordination with the general plan;
- (4) The emergency exercises may be held in locations which will provide maximum realism while ensuring minimum disruption of the airport operations. Various scenarios can be used. The exercise may be held either during the day or at night on the airport;
- (5) In order to obtain the maximum benefit from a full-scale emergency exercise, it is important to review the entire proceedings. An observer critique team could be organised, comprised of members who are familiar with mass casualty accident proceedings. Each member of the critique team observes the entire exercise and completes the appropriate emergency drill critique forms. As soon as convenient after the exercise (not later than seven days), a critique meeting needs to be held so members of the team can present their observations and recommendations for improvement of the airport emergency plan procedures and associated airport emergency plan document.
- (6) The exercise may be followed by a full debriefing, critique and analysis. It is important that representatives of all organisations which participate in the exercise actively participate in the critique.

(b) Partial emergency exercises

- (1) Partial emergency exercises could involve at least one unit, such as rescue and fire-fighting services or medical, or combination of several units, as appropriate;
- (2) Partial emergency exercises ensure that any deficiencies found during the full-scale airport emergency exercise have been corrected.

(c) Tabletop exercises

- (1) Tabletop exercises may be held every six months, except during that six month period when a full-scale emergency exercise is held.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)**AMC1-ADR-OPS.B.010 – Communication and alerting systems** *TXT*

The aerodrome operator should ensure that:

- (a) a discrete communication system is provided linking a fire station with the control tower, any other fire station on the aerodrome and the rescue and fire-fighting vehicles;
- (b) an alerting system for rescue and fire-fighting personnel, capable of being operated from that station, is provided at the fire station, any other fire station on the aerodrome and the aerodrome control tower.

AMC2-ADR-OPS.B.010 – RFFS level of protection *TXT*

- (a) The aerodrome operator should ensure that:
 - (1) the level of protection normally available at an aerodrome is determined and expressed in terms of the category of the rescue and fire-fighting services (RFF category) as described in (2), (3) and (4) below and in accordance with the types and amounts of extinguishing agents normally available at the aerodrome;
 - (2) the RFF category is determined according to the Table 1, based on the longest aeroplanes expected to operate at the aerodrome and 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 in Table 1, column 3, for that category, then the category for that aeroplane should actually be one category higher;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND INSTALLATIONS (ADR.OPS.B)

Aerodrome category for rescue and fire fighting		
Aerodrome Category (1)	Aeroplane overall length (2)	Maximum fuselage width (3)
1	0 m up to but not including 9 m	2 m
2	9 m up to but not including 12 m	2 m
3	12 m up to but not including 18 m	3 m
4	18 m up to but not including 24 m	4 m
5	24 m up to but not including 28 m	4 m
6	28 m up to but not including 39 m	5 m
7	39 m up to but not including 49 m	5 m
8	49 m up to but not including 61 m	7 m
9	61 m up to but not including 76 m	7 m
10	76 m up to but not including 90 m	8 m

Table 1

- (3) If the number of expected movements of the aeroplanes in the RFF category is less than 700 in the busiest consecutive three months, the level of protection is not less than one category below the determined category;
- (4) If the number of expected movements of the aeroplanes in the RFF category is equal or above 700 in the busiest consecutive three months, the level of protection is equal to the determined category;
- (b) The aerodrome operator should ensure that during anticipated periods of reduced activity, the level of protection available is 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.

AMC3-ADR-OPS.B.010 – Number of RFFS vehicles and rescue equipment TXT

- (a) The aerodrome operator should ensure that:
 - (1) the minimum number of rescue and fire-fighting vehicles at the aerodrome, will be in accordance with the following table:

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND INSTALLATIONS (ADR.OPS.B)

Aerodrome category	Rescue and fire-fighting vehicles
1	1
2	1
3	1
4	1
5	1
6	2
7	2
8	3
9	3
10	3

Table 1

- (2) Rescue equipment commensurate with the level of aircraft operations is provided on the rescue and fire-fighting vehicles;
- (b) If the aerodrome is located near a water/swampy area or other difficult environment, or a significant portion of the approach/departure operations take over these areas, the aerodrome operator should ensure that suitable rescue equipment and services are available.

AMC4-ADR-OPS.B.010 – Extinguishing agents ^{TXT}

The aerodrome operator should ensure that:

- (a) Both principal and complementary extinguishing agents are provided at the aerodrome;
- (b) Principal extinguishing agent includes:
- (1) a foam meeting the minimum performance level A; or
 - (2) a foam meeting the minimum performance level B; or
 - (3) a foam meeting the minimum performance level C; or
 - (4) a combination of these agents;

except for aerodromes in categories 1 to 3, where it should preferably meet the minimum performance level B;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND INSTALLATIONS (ADR.OPS.B)

- (c) The complementary extinguishing agent is a dry chemical powder suitable for extinguishing hydrocarbon fires, or any other alternate agent having equivalent fire-fighting capability;
- (d) The amounts of water for foam production and of the complementary agents provided on the rescue and fire-fighting vehicles are in accordance with the determined aerodrome category and Table 1;

Minimum usable amounts of extinguishing agents								
	Foam meeting performance level A		Foam meeting performance level B		Foam meeting performance level C		Complementary agents	
Aerodrome category (1)	Water (L) (2)	Discharge rate foam solution/minute (L) (3)	Water (L) (4)	Discharge rate foam solution/minute (L) (5)	Water (L) (6)	Discharge rate foam solution/minute (L) (7)	Dry chemical powders (kg) (8)	Discharge Rate (kg/sec) (9)
1	350	350	230	230	160	160	45	2.25
2	1 000	800	670	550	460	360	90	2.25
3	1 800	1 300	1 200	900	820	630	135	2.25
4	3 600	2 600	2 400	1800	1 700	1 100	135	2.25
5	8 100	4 500	5 400	3 000	3 900	2 200	180	2.25
6	11 800	6 000	7 900	4 000	5 800	2 900	225	2.25
7	18 200	7 900	12 100	5 300	8 800	3 800	225	2.25
8	27 300	10 800	18 200	7 200	12 800	5 100	450	4.5
9	36 400	13 500	24 300	9 000	17 100	6 300	450	4.5
10	48 200	16 600	32 300	11 200	22 800	7 900	450	4.5

Note: The quantities of water shown in columns 2, 4 and 6 are based on the average overall length of aeroplanes in a given category

Table 1

except that for aerodrome categories 1 and 2, up to 100 % of the water may be replaced by complementary agent.

For the purpose of agent substitution, 1 kg of complementary agent is equivalent if to 1 L of water for foam production.

Note: The amounts of water specified for foam production are predicated on an application rate of 8.2 L/min/m² for a foam meeting performance level A, or 5.5.L/min/m² for a foam meeting performance level B and 3.75L/min/m² for a foam meeting performance level C.

- (e) The quantity of foam concentrates separately provided on vehicles for foam production is proportionate to the quantity of water provided and the foam concentration selected;
- (f) When different performance level foams are provided at an aerodrome the conversion ratio should be calculated, documented for each rescue and fire-fighting vehicle and applied to the overall rescue and fire-fighting requirement;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (g) The discharge rate of the foam solution is not less than the rates shown in Table 1;
- (h) The complementary agents comply with the appropriate specifications of the International Organisation for Standardisation (ISO);
- (i) The discharge rate of complementary agents is not less than the values shown in Table 1.

AMC5-ADR-OPS.B.010 – Response time TXT REV

- (a) The aerodrome operator should ensure that:
 - (1) Rescue and fire-fighting service achieve a response time of two minutes, but in no case exceeding three minutes, to any point of each operational runway, in optimum visibility and surface conditions;
 - (2) Rescue and fire-fighting service achieve a response time not exceeding three minutes to any other part of the movement area, in optimum visibility and surface conditions;
 - (3) Any vehicle, other than the first responding vehicle(s), required to deliver the amount of extinguishing agents specified in Table 1 of AMC4-ADR-OPS.B.010 achieve continuous agent application and arrive in three minutes, but in no case exceeding four minutes, from the initial call;
 - (4) Suitable guidance, equipment and/or procedures for rescue and fire-fighting services are provided, to meet the operational objective as nearly as possible in less than optimum conditions of visibility, especially during low visibility operations.

AMC6-ADR-OPS.B.010 – Personnel TXT REV

- (a) The aerodrome operator should ensure that:
 - (1) During flight operations, sufficient trained personnel is detailed and readily available to ride the rescue and fire-fighting vehicles and to operate the equipment at maximum capacity;
 - (2) Personnel is deployed in a way that ensures the minimum response times can be achieved and continuous agent application at the appropriate rate can be fully maintained considering also the use of hand lines, ladders and other rescue and fire-fighting equipment normally associated with aircraft rescue and fire-fighting operations;
 - (3) All responding rescue and fire-fighting personnel are provided with protective clothing and respiratory equipment to enable them to perform their duties in an effective manner.

AMC7-ADR-OPS.B.010 – Training of RFFS personnel TXT REV

- (a) The aerodrome operator should ensure that:

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (1) The rescue and fire-fighting personnel are properly trained to perform their duties in an efficient manner and actively participate in live fire drills commensurate with the types of aircraft and type of rescue and fire-fighting equipment in use at the aerodrome, including pressure-fed fuel fires drills;
- (2) The rescue and fire-fighting personnel training programme includes training in human performance, including team coordination.

AMC8-ADR-OPS.B.010 – Medical standards for RFFS personnel ADD REV

The aerodrome operator should determine/ensure an appropriate medical standard to be met by RFF personnel.

GM1-ADR-OPS.B.010 – Availability of rescue and fire-fighting services

Public or private organisations, suitably located and equipped, may be designated to provide the rescue and fire-fighting service. The fire station housing these organisations may normally be located on the aerodrome, although an off-aerodrome location is not precluded, provided that the response time can be met.

GM2-ADR-OPS.B.010 – Communication System

- (a) Communication means are provided for direct communication between the rescue and fire-fighting service and the flight crew of an aircraft in emergency;
- (b) Communication means are provided to ensure the immediate summoning of designated personnel not on standby duty;
- (c) Communication means are provided to ensure two-way communication with the rescue and fire-fighting vehicles in attendance at an aircraft accident or incident.

GM3-ADR-OPS.B.010 – Number of RFFS personnel

In determining the number of personnel required to provide for rescue, consideration is necessary to be given to the types of aircraft using the aerodrome. Staffing levels are promulgated, or reference to, the Aerodrome Manual.

GM4-ADR-OPS.B.010 – Training of Rescue and Fire Fighting Personnel

- (a) The training of rescue and fire-fighting personnel may include initial and recurrent training in at least the following areas:
 - (1) airport familiarisation;
 - (2) aircraft familiarisation;
 - (3) rescue and fire-fighting personnel safety;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND INSTALLATIONS (ADR.OPS.B)

- (4) emergency communications systems on the aerodrome, including aircraft fire-related alarms;
- (5) use of the fire hoses, nozzles, turrets and other appliances;
- (6) application of the types of extinguishing agents required;
- (7) emergency aircraft evacuation assistance;
- (8) fire-fighting operations;
- (9) adaptation and use of structural rescue and fire-fighting equipment for aircraft rescue and fire-fighting;
- (10) dangerous goods;
- (11) familiarisation with fire fighters' duties under the aerodrome emergency plan; and
- (12) protective clothing and respiratory protection;
- (13) low visibility procedures;
- (14) human performance including team coordination;
- (15) protective clothing and respiratory protection;
- (16) composite materials;
- (17) recognition of aircraft ballistic parachute systems during emergency operations.

AMC-ADR.OPS.B.015 — Monitoring and Inspection of movement area and related facilities ADD

- (a) The aerodrome operator should establish a monitoring and inspection program of the movement area which is commensurate with the traffic expected at the aerodrome. Inspections of the movement area should be carried out each day at least once where the code number is 1 or 2 and at least twice where the code number is 3 or 4;

The inspections should cover at least the following items:

- (1) Visual aids;
- (2) Other lighting systems required for the safety of aerodrome operations;
- (3) Pavements and adjacent ground surfaces;
- (4) Drainage systems;
- (5) Fencing and other access control devices;
- (6) The movement area environment inside the aerodrome boundary, and outside the aerodrome boundary within line of sight;
- (7) FOD and wildlife;

in order to identify any default or potential hazards to the safety of aircraft or aerodrome operations.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)**GM1-ADR-OPS.B.015 — Pavements and adjacent ground surfaces inspection**

(a) Paved Areas Inspection

The following may be observed during a paved areas inspection:

- (1) General cleanliness with particular attention to material which could cause engine ingestion damage. This may include debris from runway maintenance operations or excessive grit remaining after runway gritting. Any build-up of tire rubber deposits should be noted;
- (2) Signs of damage to the pavement surface including cracking and spalling of concrete, condition of joint sealing, cracking and looseness of aggregate in asphalt surfaces or break-up of friction courses;
- (3) After rain, flooded areas should be identified and marked, if possible, to facilitate later resurfacing;
- (4) damage of light fittings;
- (5) cleanliness of runway markings;
- (6) the condition and fit of pit covers;
- (7) The extremities of the runway should be inspected for early touchdown marks; blast damage to approach lights, marker cones and threshold lights; cleanliness and obstacles in the runway end safety area.

(b) Adjacent ground surfaces inspection

The following may be observed during the inspection:

- (1) the general state of ground cover vegetation ensuring in particular that excessive length is not obscuring lights, signs, markers, etc.;
- (2) any developing depressions should be noted and plotted;
- (3) any unreported aircraft wheel tracks should be carefully plotted and reported;
- (4) the condition of signs and markers;
- (5) the general bearing strength of grass areas, particularly those close to aircraft pavement surface;
- (6) waterlogged grass areas.

GM2-ADR-OPS.B.015 — Visual Aids Inspection

(a) Flight checks of visual aids

Flight checks of approach and runway lighting systems are periodically carried out to ensure the pattern is correct and the lights are working. The opportunity should also be taken to identify any confusing or misleading lights in the vicinity of the aerodrome.

(b) Ground checks of visual aids

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

Ground checks of light units in approach lighting systems and runway lighting systems may be performed regularly. The checks ensure that the requirements for intensity, beam coverage and beam direction are fulfilled.

GM3-ADR-OPS.B.015 – Obstacles

- (a) All authorised obstacles are checked for proper lighting and marking;
- (b) Any unauthorised obstacles are reported to the designated persons or organisations immediately.

GM4-ADR-OPS.B.015 – Inspection logbook

- (a) It is necessary to keep a logbook for all the routine and non-routine inspections of the movement area and related facilities;
- (b) The inspection logbook should include:
 - (1) Details of inspection intervals and times;
 - (2) Names of persons carrying out the inspection;
 - (3) Findings, if any.

GM5-ADR-OPS.B.015 – Follow up of inspections

Arrangements may exist for reporting the results of inspections and for taking prompt follow-up actions to ensure correction of unsafe conditions.

GM6-ADR-OPS.B.015 – Personnel requirements for movement area inspections

- (a) The names and roles of persons responsible for carrying out inspections may be designated.
- (b) Personnel who conduct inspections may receive training in at least the following areas:
 - (1) Aerodrome familiarisation, including airport signs, markings and lighting;
 - (2) Aerodrome Manual;
 - (3) Aerodrome Emergency Plan;
 - (4) Notice to Airmen (NOTAM) notification procedures;
 - (5) Aerodrome driving rules;
 - (6) Aerodrome inspection procedures and techniques;
 - (7) Procedures for reporting inspection findings.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (c) Inspectors may use checklists covering the various inspection areas. A sketch of the aerodrome should accompany the checklist so that the location of problems can be marked for easy identification.
- (d) Inspectors may review the most recently completed checklist from the previous inspection cycle prior to beginning the inspection.
- (e) If construction is in progress, inspectors should be familiar with the safety plan of the construction.

AMC-ADR-OPS.B.020 – Wildlife Strike Hazard Reduction ADD

- (a) The aerodrome operator should:
 - (1) participate in the national wildlife strike hazard reduction programme;
 - (2) record and report to the competent authority wildlife strikes to aircraft;
 - (3) ensure that wildlife hazard assessments are made by competent personnel;
 - (4) establish, implement and maintain a wildlife risk management programme.

GM1-ADR-OPS.B.020 – Wildlife Risk Assessment

- (a) The aerodrome operator may:
 - (1) conduct a risk assessment using strike data for each species and update this regularly;
 - (2) take into account the number of strikes for each species and the severity of damage arising from those strikes;
 - (3) target actions on those species which occur with the highest frequency and create the greatest damage.
- (b) Wildlife risk assessments may be made by competent personnel.

GM2-ADR-OPS.B.020 – Wildlife Risk Management Program

The wildlife risk management program may include at least the following elements:

- (a) assignment of personnel:
 - (1) a person who is accountable for developing and implementing the wildlife risk programme;
 - (2) a person who oversees the daily activities and analyses the collected data and carry out risk assessments in order to develop and implement the wildlife risk management programme;
 - (3) trained and qualified staff who detect and record the birds/wildlife and assess the bird/wildlife hazard and to expel hazardous birds/wildlife.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (b) a process to report, collect and record data of struck and living birds/wildlife;
- (c) a process to analyse the data and to assess the bird/wildlife hazard to develop mitigation, proactive and reactive measures. This should include a risk assessment methodology;
- (d) a process of habitat and land management both on and in its vicinity in order to reduce the attractiveness of the area to birds/wildlife;
- (e) a process to expel or remove hazardous birds/wildlife, including by lethal means where appropriate;
- (f) a process for liaison with non-airport agencies and local landowners etc. to ensure the airport is aware of developments that may contribute to creating additional bird hazards within the airport vicinity's infrastructure, vegetation, land use and activities (for example crop harvesting, seed planting, ploughing, establishment of land or water features, hunting, etc. that might attract birds/wildlife).

GM3-ADR-OPS.B.020 – Wildlife training

- (a) The aerodrome wildlife control personnel is necessary to receive formal training prior to their initial engagement as wildlife controllers;
- (b) Training for aerodrome wildlife control may be documented and records retained, to satisfy periodic reviews, audits and competence checks;
- (c) Training of airport wildlife control personnel is conducted by qualified aerodrome wildlife control personnel or specialists with proven experience in this field;
- (d) Successful completion of an airport wildlife training course is demonstrated by completion of a written and/or practical test to an agreed pass score;
- (e) Wildlife control initial training may at least address the following general areas:
 - (1) understand the nature and extent of the aviation wildlife management problem and local hazard identification;
 - (2) an understanding of the national and local regulations, standards and guidance material related to airport wildlife management programs (use of best-practice models);
 - (3) appreciation of the local wildlife ecology and biology, including (where applicable) the importance of good airfield grass management policies and the benefits to wildlife control they can deliver;
 - (4) the importance of accurate wildlife identification and observations, including the use of field guides;
 - (5) local and national laws and regulations relating to rare and endangered species and species of special concern, and the aerodrome operators policies relating to them;
 - (6) wildlife strike remains collection and identification policies and procedures;
 - (7) long-term (passive) control measures, including on and off airport habitat management including identification of wildlife attractions, vegetation policies, air

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

navigation aids protection, and drainage system and water body management practicalities;

- (8) short-term (active) tactical measures, using well established effective wildlife removal, dispersal and control techniques;
 - (9) documentation of wildlife activities and control measures, and reporting procedures (the aerodrome wildlife management plan);
 - (10) firearms and field safety, including the use of personal protective equipment; and
 - (11) wildlife strike risk assessment and risk management principles and how these programs integrate with the aerodrome's safety management system.
- (f) Wildlife control staff is necessary to be fully aware of the conditions and terms of the operations of the aerodrome environment. Where this is not relevant, the wildlife control personnel should receive appropriate training, including:
- (1) Aerodrome airside driver training including aerodrome familiarisation, air traffic control communications, signs and marking, navigational aids, aerodrome operations and safety and other matters the aerodrome operator deem appropriate;
 - (2) Aircraft familiarisation, including aircraft identification, aircraft engine design, and impact of wildlife strikes on aircraft systems.
- (g) It has to be ensured that wildlife control staff maintains competence in the role. This could be achieved either by annual refresher training or another system of monitoring acceptable to the competent authority. The maintenance of competence may include the areas in (e) and (f) above and also include:
- (1) reviewing firearms safety;
 - (2) changes in the local environment;
 - (3) changes in risk management policy;
 - (4) recent wildlife events at the aerodrome;
 - (5) improvements in active and passive measures; and
 - (6) any other matters as the airport operator deems appropriate.

GM4-ADR-OPS.B.020 – Recording and reporting of wildlife strikes and observed wildlife

- (a) It is necessary to maintain a record of all wildlife activity or 'bird/wildlife log'. The log may include at least the following information:
 - (1) Numbers, species and location of birds/wildlife seen;
 - (2) Actions taken to disperse birds/wildlife and the results of these actions;
- (b) The log is completed at regular intervals by the wildlife control staff;
- (c) The log is analysed to identify which species represent a hazard at which times of day or year, or under which weather conditions, etc.;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (d) The aerodrome operator may have a system in place to collect bird/wildlife strike reports.

AMC-OPS.B.025 – Operation of vehicles *ADD*

- (a) Depending upon the scale and complexity of the aerodrome and the individual requirements of the driver, the training programme should take into account the following main areas:
- (1) a generic airside vehicle driver training programme which covers operational safety and the health and safety aspects of operating vehicles, plant and equipment in close proximity to aircraft on the movement and manoeuvring areas, aprons, stands and airside roads;
 - (2) specific training on the vehicle, plant and equipment, e.g. car, tug, high loader, coach;
 - (3) Drivers required to operate on the manoeuvring area should receive additional training on the hazards associated with runways and taxiways and in the correct use of RTF and standard phraseology;
- (b) An aerodrome operator should establish a system for issuing movement area driving authorisations and the conditions of their renewal.

GM1-ADR-OPS.B.025 – Movement Area Driving Training

- (a) The training for driving on the movement area may include the following:
- (1) the geography of the aerodrome;
 - (2) aerodrome signs, markings and lights;
 - (3) radiotelephone operating procedures, if the duties require to drive on the manoeuvring area;
 - (4) terms and phrases used in aerodrome control including the ICAO spelling alphabet, if the duties require interaction with aerodrome control;
 - (5) rules of air traffic services as they relate to ground operations;
 - (6) airport rules and procedures;
 - (7) low visibility procedures; and
 - (8) specialist functions as required, for example, in rescue and fire-fighting.

GM2-ADR-OPS.B.025 – Grant, suspension or revocation of an airside driving permit

- (a) The aerodrome operator may grant an airside driving permit to persons provided that:
- (1) Their tasks involve driving on the movement area;
 - (2) They hold a State driving license or any other driving license recognised by the State;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (3) They hold a special State driving license if their duties involve the operation of a specialised vehicle;
- (4) Meet the medical criteria according to the National Legislation;
- (5) Hold a State Radiotelephony Operating License if its duties involve driving on the manoeuvring area;
- (6) Have successfully completed an airside driving classroom course and passed the written exams;
- (7) Have successfully demonstrated competency, as appropriate, in:
 - (i) The operation or use of vehicle transmit/receive equipment;
 - (ii) Understanding and complying with air traffic control and local procedures;
 - (iii) Vehicle navigation on the aerodrome; and
 - (iv) Special skills required for the particular function;
- (b) The airside driving permit may be valid for 2 years and renewed thereafter, provided that the driver has successfully completed a refresher training course and meets the requirements (a)(1)–(a)(4) above;
- (c) The aerodrome operator may suspend or revoke an airside driving permit when the person:
 - (1) Does not fulfil the requirements (a)(1)–(a)(4);
 - (2) Has repeatedly been reported to violate movement area driving rules;
 - (3) Has been reported to drive under the effect of alcohol or drugs.

AMC-ADR-OPS.B.030 – Surface Movement Guidance and Control System TXT REV

- (a) The aerodrome operator should develop a surface movement guidance and control system taking into account:
 - (1) the density of air traffic;
 - (2) the visibility conditions under which operations are intended;
 - (3) the need for pilot orientation;
 - (4) the complexity of the aerodrome layout; and
 - (5) movements of vehicles.
- (b) The aerodrome operator should ensure that:
 - (1) The surface movement guidance and control system is designed to assist in the prevention of inadvertent incursions of aircraft and vehicles onto an active runway;
 - (2) The system is designed to assist in the prevention of collisions between aircraft, and between aircraft and vehicles or objects, on any part of the movement area.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND INSTALLATIONS (ADR.OPS.B)

- (c) The aerodrome operator should ensure that where a surface movement guidance and control system is provided by selective switching of stop bars and taxiway centre line lights, the following requirements are met:
- (1) taxiway routes which are indicated by illuminated taxiway centre line lights should be capable of being terminated by an illuminated stop bar;
 - (2) the control circuits shall be so arranged that when a stop bar located ahead of an aircraft is illuminated, the appropriate section of taxiway centre line lights beyond it is suppressed; and
 - (3) the taxiway centre line lights are activated ahead of an aircraft when the stop bar is suppressed.
- (d) The aerodrome operator should develop the surface movement guidance and control system (SMGCS) procedures in cooperation with the aerodrome Air Traffic Service Provider and the major aircraft operators at the aerodrome.

GM- ADR-OPS.B.030 – Surface Movement Guidance and Control System

- (a) The SMGC system comprises an appropriate combination of visual aids, non-visual aids, procedures, control, regulation, management and information facilities;
- (b) Surface movement radar for the manoeuvring area may be provided at an aerodrome intended for use in runway visual range conditions less than a value of 350 m;
- (c) Surface movement radar for the manoeuvring area may be provided at an aerodrome other than that in (b) above when traffic density and operating conditions are such that regularity of traffic flow cannot be maintained by alternative procedures and facilities.

AMC-ADR-OPS.B.035 – Operations in winter conditions ADD

- (a) The aerodrome operator should prepare in collaboration with ANSP, major aircraft operators and other relevant parties, procedures for winter maintenance (snow plan). The procedures should include requirements for inspections, criteria for snow-clearing, priorities for snow-clearing, criteria for preparation of operational surfaces, requirements for marking of snow-covered operational surfaces and methods for assessing and reporting the surface conditions. The criteria specified in the winter maintenance procedures should be minimum criteria for maintaining safe aerodrome operations, incl. criteria for suspension of runway operation;
- (b) The aerodrome operator should ensure that snow, slush, ice, standing water and other contaminants are removed from the surface of a paved runway as rapidly and completely as possible to minimise accumulation;
- (c) The aerodrome operator should not use chemicals which may have harmful effects on aircraft or pavements.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)**GM1-ADR-OPS.B.035 — Aerodrome Snow Plan**

- (a) The aerodrome snow plan is published and made available to all concerned in snow clearance;
- (b) Details of the equipment available at the aerodrome are published in the AIP;
- (c) The aerodrome snow plan may include the following:
 - (1) The Snow Committee members and the person in charge of the snow clearance operation, with a chain of command giving a breakdown in duties;
 - (2) Methods of communication between aerodrome operations, air traffic control and the Meteorological Office;
 - (3) The equipment available for snow clearance. This should include equipment for ploughing, sweeping and blowing snow;
 - (4) Priority of surfaces to be cleared and clearance limits for aircraft using the aerodrome;
 - (5) Collection of information for SNOWTAM and dissemination of this information;
 - (6) Designated snow dumping or melting areas to avoid confusion during the actual clearance operations;
 - (7) An alerting system in order that sufficient warning to be given to all bodies concerned;
 - (8) The manpower available, including staff for equipment maintenance arrangements for shifts, and call out procedures;
 - (9) Deployment of equipment and tactical approaches to be used;
 - (10) General principles to be followed in deciding when to close runways for snow clearance and designation of management personnel authorised to make the decision;
 - (11) Methods of assessing and reporting the surface conditions;
 - (12) Criteria for the suspension of runway operations.

AMC-ADR-OPS.B.040 — Night Operations ^{ADD}

The aerodrome operator for aerodromes operated at night should ensure that visual aids are installed, operated and maintained to permit aircraft operations to be performed safely.

AMC-ADR-OPS.B.045 — Low Visibility Operations ^{ADD}

- (a) The aerodrome operator should, in collaboration with ANSPs and major aircraft operators at the aerodrome establish low visibility procedures (LVP) if movement of aircraft is permitted when the RVR is less than 550 metres;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (b) Low visibility procedures (LVP) should be approved by the competent authority before implementation;
- (c) When low visibility procedures (LVP) are in effect, the aerodrome operator should make available to AIS and/or ATS, as appropriate, information on the status of the aerodrome facilities;
- (d) The aerodrome operator should establish and implement procedures to ensure that, when low visibility procedures (LVP) are in effect, persons and vehicles operating on an apron are restricted to the essential minimum;
- (e) The procedures to be established by the aerodrome operator to ensure safe aerodrome operations during low visibility conditions should cover the following subjects:
 - (1) physical characteristics of the runway environment, including approach and departure areas;
 - (2) obstacle limitation surfaces;
 - (3) visual aids compliant to AMC-ADR-OPS.B.040 (night operations);
 - (4) non-visual aids;
 - (5) secondary power supplies;
 - (6) movement area safety;
 - (7) RFFS.

AMC-ADR-OPS.B.050 – Operations in adverse weather conditions ^{ADD}

The aerodrome operator should, together with the ANSPs and major aircraft operators at the aerodrome, and other parties, establish and implement procedures required to mitigate the risk of operation of the aerodrome under adverse weather conditions such as strong winds, heavy rain and thunderstorms, including the suspension of operations on the runway(s) if deemed necessary.

AMC-ADR-OPS.B.055 – Fuel quality ^{ADD}

- (a) The aerodrome operator should ensure, either by itself or through formal arrangements with third parties, that organisations involved in storing and dispensing of fuel to aircraft, implement procedures to:
 - (1) Maintain the installations and equipment for storing and dispensing the fuel in such condition so as not to render unfit for use in aircraft;
 - (2) Mark such installations and equipment in a manner appropriate to the grade of the fuel;
 - (3) Take fuel samples at appropriate stages during the storing and dispensing of fuel to aircraft, and maintain records of such samples; and
 - (4) Use adequately qualified and trained staff in storing, dispensing and otherwise handling fuel on the aerodrome.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)**GM-ADR-OPS.B.055 – Fuel quality**

The aerodrome operator, in order to ensure compliance, may use:

- (a) audit reports to organisations involved in storing and dispensing of fuel to aircraft, or
- (b) relevant national procedures providing for the assurance of fuel quality.

AMC-ADR-OPS.B.060 – Access to the movement area ADD

- (a) The aerodrome operator should:
 - (1) Establish a system for issuing movement area access authorisations and the conditions of their renewal;
 - (2) Define the training syllabus for persons operating at the apron and on the movement area or other operational areas appropriate to the functions performed;
 - (3) Establish an access control system.

GM- ADR-OPS.B.060 – Access to the movement area

- (a) Access to the movement area may be granted to persons, provided that:
 - (1) Their duties require access to the movement area; and
 - (2) They have successfully completed a movement area safety training course.
- (b) Access authorisations to persons may be renewed provided that:
 - (1) Their duties require access to the movement area; and
 - (2) They have successfully completed a refresher movement area safety training course.
- (c) The movement area safety training may include the following:
 - (1) Aerodrome familiarisation;
 - (2) Privileges of the access authorisations;
 - (3) Apron markings and signs;
 - (4) Safety measures;
 - (5) Emergency procedures.
- (d) Access authorisations to persons may be suspended or revoked when:
 - (1) Their duties doesn't require access to the movement area anymore; or
 - (2) They change employer; or
 - (3) They repeatedly violated the privileges of the access authorisations; or
 - (4) They repeatedly violated the safety rules on the movement area;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (e) Temporary movement area access authorisations may be granted to persons for a limited period of time provided that:
 - (1) Their duties require access to the movement area for a limited period of time; and
 - (2) They are escorted by persons holding movement area access authorisations;

AMC-ADR-OPS.B.065 – Visual Aids and Aerodrome Electrical Systems ADD

- (a) The aerodrome operator should establish a monitoring system of aerodrome ground lights so as to automatically inform the local Air Navigation Service Provider when safe operation is no longer possible;
- (b) The aerodrome operator should establish procedures with the ANS provider for the provision and operation of visual aids;
- (c) The aerodrome operator should establish procedures in coordination with the ANS provider for the provision and removal of temporary markings, lights and signs.

GM-ADR-OPS.B.065 – Visual aids

The term 'visual aids' includes also apron markings, lighting and visual docking systems.

AMC1-ADR-OPS.B.070 – Aerodrome works safety ADD

- (a) The procedures should be appropriate to the volume and nature of operations at the aerodrome;
- (b) Construction or maintenance work on the aerodrome should be planned, established, implemented or approved by the aerodrome operator;
- (c) The scope of work, physical extent and time period should be notified to concerned relevant parties. If such work will render limitations to the use of a particular runway, additional measures should be implemented to ensure safety;
- (d) Roles and responsibilities for operations and tasks associated with the reduction of runway length available and the work in progress (WIP) are clearly understood and complied with;
- (e) The aerodrome operator should put in place appropriate measures to monitor the safety of the aerodrome and aircraft operations during aerodrome works such that timely corrective action is taken when necessary to assure continued safe operations;
- (f) The aerodrome operator should ensure the works site is returned to operational use in a safe and timely manner by ensuring:
 - (1) The works site is cleared of personnel, vehicles and plant in a safe and timely manner;
 - (2) The works-affected area is inspected for operational serviceability in accordance with the hand-back procedures;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (3) Relevant authorities or organisations are notified of the restoration of aerodrome serviceability in accordance with procedures, using suitable means of communication.

AMC2-ADR-OPS.B.070 – Runway pavement overlays TXT

The aerodrome operator should ensure that:

- (a) When a runway is to be returned temporarily to an operational status before resurfacing is complete, the temporary ramp should comply with the applicable CSs;
- (b) Before a runway being overlaid is returned to a temporary operational status, a runway centre line marking conforming to the applicable CSs should be provided;
- (c) The location of any temporary threshold should conform to the applicable CSs.

AMC3-ADR-OPS.B.070 – Marking and lighting of Unserviceable areas TXT ADD

- (a) The aerodrome operator should ensure that:
 - (1) Unserviceability markers are displayed whenever 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;
 - (2) On a movement area used at night, unserviceability lights should be used;
 - (3) Unserviceability markers and lights are placed at intervals sufficiently close so as to delineate the unserviceable area.
- (b) Unserviceability markers shall consist of conspicuous upstanding devices such as flags, cones or marker boards;
- (c) Unserviceability markers and lights should meet the applicable CSs.

GM1-ADR-OPS.B.070 – Routine Maintenance works

- (a) Persons or sections entering the movement area to perform routine maintenance need to have a written approval by the aerodrome operator;
- (b) Entrance to the movement area is subject to clearance by the unit responsible for that area (ATC, apron management, aerodrome operator, etc.) using appropriate means (R/T, telephone, etc.);
- (c) For individuals carrying out routine maintenance duties it is necessary to comply with local rules concerning the control and operation of vehicles in the movement area.

GM2-ADR-OPS.B.070 – Minor construction/maintenance work

- (a) A system of work permits is necessary for minor works on the movement area;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (b) The actual system employed at each aerodrome is jointly agreed between the aerodrome operator and air traffic control;
- (c) The objectives of the work permits are:
 - (1) no work is taking place on the movement area without the knowledge of aerodrome operator's staff and air traffic control;
 - (2) permitted times of work are strictly followed; and
 - (3) all individuals taking part in the work are briefed in detail on the following:
 - (i) precise areas in which work may be done;
 - (ii) the routes to be followed to and from the working area;
 - (iii) the R/T procedures to be used;
 - (iv) the safety precautions to be observed , the maintenance of a listening watch and the use of look-outs; and
 - (v) the reporting procedure to be followed on completion of work.
- (d) At the conclusion of work, aerodrome operator's staff, or other appropriate staff, is necessary to inspect the working area to ensure that it has been left in a satisfactory condition.

GM3-ADR-OPS.B.070 – Major construction/maintenance work

- (a) Before the commencement of any substantial work on the movement area liaison group comprising representatives from the Aerodrome Operator, Air Traffic Control and subcontractors' agents may be established;
- (b) The group could meet as often as considered necessary to review progress and consider the need for any change in working practices to meet operational requirements;
- (c) As far as practicable, working areas are blocked off from the active parts of the movement area by the erection of physical barriers;
- (d) Consideration should be given to the marking and lighting of barriers;
- (e) The lights of taxiways leading into working areas should be permanently 'off';
- (f) Before works commence, the following needs to be established:
 - (1) the hours of work;
 - (2) the authorised routes;
 - (3) the communications facilities to be used;
 - (4) the permitted heights of vehicles and equipment and the limitations to be placed on operating heights of cranes; and
 - (5) any limitation to be placed on use of electrical equipment which might cause interference with navigational facilities or aircraft communications.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (g) Contractors need to be informed for possible hazards to personnel working on aerodromes, in particular the jet blast problem and noise;
- (h) Where contractors work on or traverse aircraft pavement areas, these areas need to be inspected thoroughly before they are opened again for aircraft use, with particular attention to the presence of debris and the general cleanliness of the surface;
- (i) Where aircraft are constantly using areas open to contractors, inspections at frequent intervals are required to ensure that the contractor has carried out any necessary cleaning;
- (j) Adequate marking arrangements are provided for crane jibs when extra conspicuity is considered desirable;
- (k) If work is of prolonged duration, a constant watch is required to ensure that the marking and lighting of obstacles and unserviceable areas does not degrade below acceptable limits;
- (l) The effect of tall cranes on ILS and radar in conjunction with those responsible for electronic landing aids and steps taken to reduce limitations to the minimum, needs to be considered.

GM4-ADR.OPS.B.070 – Use of unserviceability lights

When lights are used to mark temporary unserviceable areas at night or during reduced visibility conditions, these lights mark the most potentially dangerous extremities of the area. A minimum of four such lights could be used, except where the area is triangular in shape where a minimum of three lights may be employed. The number of lights may be increased when the area is large or of unusual configuration. At least one light is installed for each 7.5 m of peripheral distance of the area. If the lights are directional, they are orientated so that as far as possible their beams are aligned in the direction from which aircraft or vehicles will approach. Where aircraft or vehicles will normally approach from several directions, consideration should be given to adding extra lights or using omnidirectional lights to show the area from these directions. Unserviceable area lights should be frangible. Their height should be sufficiently low to preserve clearance for propellers and for engine pods of jet aircraft.

AMC1-ADR-OPS.B.075 – Safeguarding of aerodromes ADD

- (a) The aerodrome operator should have procedures to monitor the changes in the obstacle environment, marking and lighting and in human activities or land use on the aerodrome and its surroundings. The scope, limits, tasks and responsibilities for the monitoring should be defined in coordination with the relevant ANS providers and with the competent authority and other relevant authorities.
- (b) The limits of the aerodrome surroundings that should be monitored by the aerodrome operator are defined in coordination with the competent authority and should include the areas that can be visually monitored during the inspections of the manoeuvring area.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (c) The aerodrome operator should have procedures to mitigate the risks associated with changes on the aerodrome and its surroundings identified with the monitoring procedures. The scope, limits, tasks and responsibilities for the mitigation of risks associated to obstacles or hazards outside the perimeter fence of the aerodrome should be defined in coordination with the relevant ANS providers and with the competent authority and other relevant authorities.
- (d) The risks caused by human activities and land use which should be assessed and mitigated should include:
 - (1) obstacles and the possibility of induced turbulence;
 - (2) the use of hazardous, confusing and misleading lights;
 - (3) the dazzling caused by large and highly reflective surfaces;
 - (4) sources of non-visible radiation or the presence of moving or fixed objects which may interfere with, or adversely affect, the performance of aeronautical communications, navigation and surveillance systems;
 - (5) non-aeronautical ground light near an aerodrome which may endanger the safety of aircraft and which should be extinguished, screened or otherwise modified so as to eliminate the source of danger.

AMC2-ADR-OPS.B.075 – Obstacle restriction and removal TXT REV

- (a) The aerodrome operator should ensure that, within its area of responsibility as defined in AMC1-ADR-OPS.B.075 (b) and (c), obstacles are restricted and removed as follows:
 - (1) Objects on runway strips
 - (i) An object situated on a runway strip which may endanger aeroplanes should be regarded as an obstacle and should, as far as practicable, be removed;
 - (ii) No fixed object, other than visual aids required for air navigation purposes and satisfying the relevant frangibility requirements as defined in the applicable CSs, should be permitted on a runway strip:
 - (A) within 77.5 m of the runway centre line of a precision approach runway category I, II or III where the code number is 4 and the code letter is F; or
 - (B) within 60 m of the runway centre line of a precision approach runway category I, II or III where the code number is 3 or 4; or
 - (C) within 45 m of the runway centre line of a precision approach runway category I where the code number is 1 or 2.
 - (iii) No mobile object shall be permitted on this part of the runway strip during the use of the runway for landing or take-off.
 - (2) Non-precision approach runways

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (i) New objects or extensions of existing objects should not be permitted above an approach surface within 3 000 m of the inner edge or above a transitional surface except when, in the opinion of the appropriate authority, the new object or extension would be shielded by an existing immovable object;
 - (ii) New objects or extensions of existing objects should not be permitted above the approach surface beyond 3 000 m from the inner edge, the conical surface or inner horizontal surface except when, in the opinion of the competent authority, the object would be shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aeroplanes;
 - (iii) Existing objects above the conical surface, the inner horizontal surface, the approach surface and the transitional surfaces should as far as practicable be removed except when, in the opinion of the competent 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 or significantly affect the regularity of operations of aeroplanes.
- (3) Precision approach runways
- (i) Unless its function requires it to be there for air navigation purposes, no equipment or installation should be:
 - (A) on a runway strip, a runway end safety area, a taxiway strip or within the distances specified in Table 1, if it would endanger an aircraft; or

Code letter	Taxiway, other than aircraft stand taxilane, centre line to object (metres)
A	16.25
B	21.5
C	26
D	40.5
E	47.5
F	57.5

Table 1

- (B) on a clearway if it would endanger an aircraft in the air.
- (ii) Any equipment or installation required for air navigation purposes which must be located:
 - (A) on that portion of a runway strip within:
 - (a) 75 m of the runway centre line where the code number is 3 or 4; or

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND INSTALLATIONS (ADR.OPS.B)

- (b) 45 m of the runway centre line where the code number is 1 or 2; or
 - (B) on a runway end safety area, a taxiway strip or within the distances in Table 1; or
 - (C) on a clearway and which would endanger an aircraft in the air;

shall be frangible and mounted as low as possible.
- (iii) Any equipment or installation required for air navigation purposes which must be located on the non-graded portion of a runway strip should be regarded as an obstacle and should be frangible and mounted as low as possible.
- (iv) Unless its function requires it to be there for air navigation purposes, no equipment or installation should be located within 240 m from the end of the strip and within:
 - (A) 60 m of the extended centre line where the code number is 3 or 4; or
 - (B) 45 m of the extended centre line where the code number is 1 or 2;

of a precision approach runway category I, II or III.
- (v) Any equipment or installation required for air navigation purposes which must be located on or near a strip of a precision approach runway category I, II or III and which:
 - (A) is situated on that portion of the strip within 77.5 m of the runway centre line where the code number is 4 and the code letter is F; or
 - (B) is situated within 240 m from the end of the strip and within:
 - (a) 60 m of the extended runway centre line where the code number is 3 or 4; or
 - (b) 45 m of the extended runway centre line where the code number is 1 or 2; or
 - (C) penetrates the inner approach surface, the inner transitional surface or the balked landing surface;

should be frangible and mounted as low as possible.
- (vi) Fixed objects should not be permitted above the inner approach surface, the inner transitional surface or the balked landing surface, except for frangible objects which because of their function must be located on the strip. Mobile objects should not be permitted above these surfaces during the use of the runway for landing.
- (vii) New objects or extensions of existing objects should not be permitted above an approach surface or a transitional surface except when, in the opinion of the competent authority, the new object or extension would be shielded by an existing immovable object.
- (viii) New objects or extensions of existing objects should not be permitted above the conical surface and the inner horizontal surface except when, in the

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

opinion of the competent authority, an object would be shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aeroplanes.

- (ix) Existing objects above an approach surface, a transitional surface, the conical surface and inner horizontal surface should as far as practicable be removed except when, in the opinion of the competent authority, an object is shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aeroplanes.

(4) Runways meant for take-off

- (i) New objects or extensions of existing objects should not be permitted above a take-off climb surface except when, in the opinion of the competent authority, the new object or extension would be shielded by an existing immovable object.
- (ii) If no object reaches the 2 % (1:50) take-off climb surface, new objects should be limited to preserve the existing obstacle free surface or a surface down to a slope of 1.6 % (1:62.5).
- (iii) Existing objects that extend above a take-off climb surface should as far as practicable be removed except when, in the opinion of the competent authority, an object is shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aeroplanes.

(5) Other objects

- (i) Objects which do not project through the approach surface but which would nevertheless adversely affect the optimum siting or performance of visual or non-visual aids should, as far as practicable, be removed.
- (ii) Anything which may, in the opinion of the competent authority after aeronautical study, endanger aeroplanes on the movement area or in the air within the limits of the inner horizontal and conical surfaces should be regarded as an obstacle and should be removed in so far as practicable.

AMC3-ADR-OPS.075 – Marking and lighting of obstacles TXT REV

- (a) The aerodrome operator should ensure that all obstacles penetrating the obstacle limitation surfaces of an aerodrome within its area of responsibility should be marked and/or lighted unless such marking or lighting can be omitted when an aeronautical study shows that marking and/or lighting is not required from a safety view-point;
- (b) The aerodrome operator should ensure that fixed objects that extend above an obstacle protection surface within its area of responsibility should be marked and, if the runway is used at night, lighted;

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (c) The aerodrome operator should ensure that elevated aeronautical ground lights within the movement area should be marked so as to be conspicuous by day. Obstacle lights should not be installed on elevated ground lights or signs in the movement area;
- (d) The aerodrome operator should ensure that obstacles within the distance specified in Table 1, from the centre line of a taxiway, an apron taxiway or aircraft stand taxilane should be marked and, if the taxiway, apron taxiway or aircraft stand taxilane is used at night, lighted.

Code letter	Taxiway other than aircraft stand taxilane, centre line to object (m)	Aircraft stand taxilane centre line to object (m)
A	16.25	12
B	21.5	16.5
C	26	24.5
D	40.5	36
E	47.5	42.5
F	57.5	50.5

Table 1

AMC4-ADR-OPS.B.075 – Obstacles that extends above a take-off climb surface TXT REV

The aerodrome operator should ensure that fixed obstacles extending above a take-off climb surface within its area of responsibility, should be marked and, if the runway is used at night, lighted, except that:

- (a) such marking and lighting may be omitted when the obstacle is shielded by another fixed obstacle;
- (b) 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;
- (c) the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day; and
- (d) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient.

AMC5-ADR-OPS.B.075 – Objects, other than obstacles, adjacent to a take-off climb surface TXT REV

The aerodrome operator should ensure that fixed objects, other than obstacles, adjacent to a take-off surface and within its area of responsibility should 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:

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)

- (a) 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
- (b) the object is lighted by high-intensity obstacle lights by day.

AMC6-ADR-OPS.B.075 — Obstacles that extends above an approach or transitional surface TXT REV

The aerodrome operator should ensure that fixed obstacles extending above an approach or transitional surface and within its area of responsibility is marked and, if the runway is used at night, lighted, except that:

- (a) such marking and lighting may be omitted when the obstacle is shielded by another fixed obstacle;
- (b) 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;
- (c) the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day; and
- (d) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient.

AMC7-ADR-OPS.B.075 — Fixed obstacles above a horizontal surface TXT REV

The aerodrome operator should ensure that fixed obstacles above a horizontal surface and within its area of responsibility are marked and, if the aerodrome is used at night, lighted, except that:

- (a) such marking and lighting may be omitted when:
 - (1) the obstacle is shielded by another fixed obstacle; or
 - (2) for a circuit extensively obstructed by immovable objects or terrain, procedures have been established to ensure safe vertical clearance below prescribed flight paths; or
 - (3) an aeronautical study shows the obstacle not to be of operational significance.
- (b) 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;
- (c) the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day; and
- (d) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)**AMC8-ADR-OPS.B.075 — Marking of objects** TXT REV

- (a) The aerodrome operator should ensure that an object within its area of responsibility should be coloured to show a chequered pattern if it has essentially unbroken surfaces and its projection on any vertical plane equals or exceeds 4.5 m in both dimensions; The pattern and the colours should be in accordance with the applicable CSs;
- (b) The aerodrome operator should ensure that an object within its area of responsibility should be coloured to show alternating contrasting bands if:
 - (1) it has essentially unbroken surfaces and has one dimension, horizontal or vertical, greater than 1.5 m, and the other dimension, horizontal or vertical, less than 4.5 m; or
 - (2) it is of skeletal type with either a vertical or a horizontal dimension greater than 1.5 m.

The dimensions and colours of the bands should be in accordance with the applicable CSs.

- (c) The aerodrome operator should ensure that an object within its area of responsibility is coloured in a single conspicuous colour if its projection on any vertical plane has both dimensions less than 1.5 m. Orange or red should be used, except where such colours merge with the background;
- (d) The aerodrome operator should ensure that markers displayed on or adjacent to objects within its area of responsibility are located in conspicuous positions so as to retain the general definition of the object and shall be recognizable in clear weather from a distance of at least 1 000 m for an object to be viewed from the air and 300 m for an object to be viewed from the ground in all directions in which an aircraft is likely to approach the object;
- (e) Spacing, dimensions and colours of markers should be in accordance with the applicable CSs;
- (f) The aerodrome operator should ensure that flags used to mark objects within its area of responsibility are displayed around, on top of, or around the highest edge of, the object. When flags are used to mark extensive objects or groups of closely spaced objects, they should be displayed at least every 15 m. Flags should not increase the hazard presented by the object they mark;
- (g) The aerodrome operator should ensure that flags meet the applicable CSs.

AMC9-ADR-OPS.B.075 — Location of obstacle lights TXT REV

The aerodrome operator should ensure that the location and characteristics of the obstacle lights within its area of responsibility are in accordance with the applicable CSs for obstacle lights.

AMC/GM to Annex III – Part-OPS

SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)**AMC-ADR-OPS.B.080 — Marking and lighting of vehicles and other mobile objects** ^{TXT}
^{REV}

- (a) The aerodrome operator should ensure that all vehicles operating on the manoeuvring area are marked by colours or display flags;
- (b) When mobile objects are marked by colour, a single conspicuous colour, preferably green for emergency vehicles and yellow for service vehicles, should be used;
- (c) When flags are used to mark mobile objects, they should comply with the applicable CSs;
- (d) Low-intensity obstacle lights, Type C, should be displayed on vehicles and other mobile objects excluding aircraft;
- (e) Low-intensity obstacle lights, Type D, should be displayed on follow-me vehicles.

AMC-OPS.B.085 — Handling of hazardous materials ^{TXT}

- (a) The aerodrome operator shall ensure that all agents involved in the handling and storing of any hazardous materials comply with the established procedures;
- (b) The procedures shall include at least the following:
 - (1) Designated personnel to receive and handle hazardous substances and materials;
 - (2) Assurance from the shipper that the cargo can be handled safely, including any special handling procedures required for safety;
 - (3) Special areas for storage of hazardous materials while on the airport.

GM- OPS.B.085 — Handling of hazardous materials

- (a) The procedure should ensure the safe handling of hazardous materials or dangerous goods on the aerodrome, including:
 - (1) Flammable liquids and solids;
 - (2) Corrosive liquids;
 - (3) Compressed gases;
 - (4) Magnetised or radioactive materials;
 - (5) Explosives;
 - (6) Biological substances.
- (b) The aerodrome operator should include the following information in the procedure for handling hazardous materials:
 - (1) Responsibilities of the aerodrome operator and each organisation involved in the handling, storage and transport by air of hazardous materials;
 - (2) Applicable regulations, standards and technical references;
 - (3) Handling of hazardous materials incidents;

AMC/GM to Annex III – Part-OPS

*SUBPART B – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND
INSTALLATIONS (ADR.OPS.B)*

(4) Handling procedures.

SUBPART C — AERODROME MAINTENANCE**AMC-ADR-OPS.C.005 — General** *ADD*

- (a) The aerodrome operator should ensure that a maintenance programme is established, including preventive maintenance where appropriate to maintain aerodrome facilities in a condition which does not impair the safety of aeronautical operations. The scope of the maintenance programme should include, but may not be limited to, the following items:
 - (1) Visual aids and other lighting systems required for the safety of aerodrome operations;
 - (2) Power supply and other electrical systems;
 - (3) Pavements, other ground surfaces and drainage systems;
 - (4) Fencing and other access control devices;
 - (5) Equipment and vehicles which are necessary for the safety of aerodrome operations;
 - (6) Buildings which are necessary for the safety of aerodrome operations.
- (b) The design and application of the maintenance programme should observe human factors principles.

AMC-ADR-OPS.C.010 — Pavements, other ground surfaces and drainage *ADD*

- (a) The aerodrome operator should remove mud, dust, sand, oil, rubber deposits and other pollutants from the surface of a paved runway as rapidly and completely as possible to minimize accumulation, and not to impair the surface friction characteristics of the runway;
- (b) Taxiways and aprons should be kept clear of pollutants to the extent necessary to enable aircraft to be taxied to and from an operational runway;
- (c) Drainage systems should be periodically checked and, if necessary cleaned or maintained, to ensure efficient water run-off;
- (d) The aerodrome operator should measure the runway surface friction characteristics for maintenance purpose with a continuous friction measuring device using self-wetting features . The frequency of these measurements should be sufficient to determine the trend of the surface friction characteristics of the runway;
- (e) The aerodrome operator should take corrective maintenance action to prevent the runway surface friction characteristics for either the entire runway or a portion thereof from falling below the minimum friction level specified by the State;
- (f) When the friction of a significant portion of a runway is found to be below the minimum friction level value, the aerodrome operator should report such information in order to promulgate it in a NOTAM specifying which portion of the runway is below the minimum friction level and its location on the runway.

AMC-ADR-OPS.C.015 – Visual Aids and Electrical Systems ^{ADD}

- (a) The aerodrome operator should establish a system of corrective and preventive maintenance which ensures that a light is deemed unserviceable when the main beam average intensity is less than 50 % of the value specified in the applicable CSs. For light units where the designed main beam average intensity is above the specified in the applicable CSs, the 50 % value shall be related to that design value;
- (b) The aerodrome operator should establish a system of preventive maintenance of visual aids to ensure lighting and marking system reliability and serviceability as required for the intended operations.