



DCA-GM- AGA-01

Guideline for Assessing Aerodrome Manual

**Second Edition
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**Department of Civil Aviation
Ministry of Transport and Communications
Myanmar**

FOREWORD

The purpose of Guideline for Assessing Aerodrome Manual is to provide aerodrome regulatory personnel with the checklists and procedures by which to check and review the Aerodrome Manual. This guideline helps ensure standardization and uniformity for the preparation of Aerodrome Manual. If the Aerodrome Manual prepared by aerodrome operator is acceptable in accordance with the Guideline (DCA-GM-AGA-04) and Myanmar Civil Aviation Requirement, Part 139- Aerodrome Certification, the aerodrome certification safety inspectors (ACSI) may approve the Aerodrome Manual.

The aerodrome certification safety inspectors(ACSI) is responsible to review the Aerodrome Manual periodically and to ensure the update and correct information in the manual. The ACSI is responsible for updating and amending of this Guideline. This second edition is superseded first edition.



For Director General
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Director
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AMENDMENT RECORD

The amendments listed have been incorporated into the following amendments.

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CHAPTER 1. FUNCTION AND FORM

101. FUNCTION OF THE AERODROME MANUAL (AM). Part 139 includes terminology and minimum requirements of all certificated aerodromes. The AM serves as the bridge between the requirements of Part 139 and their application to a particular aerodrome, taking into account the aerodrome's size, type/level of activity, and configuration. To ensure the AM fulfills its intended purpose, it should be the following:

- a. **Comprehensive.** The AM must address all Part 139 requirements that apply to the aerodrome. A comprehensive AM will provide aerodrome personnel with all the information they need to comply with these requirements.
- b. **Direct.** The content of the AM should be accurate, clear, and represent directly to Part 139 requirements. An AM that provides clear instructions but avoids excessive detail will help ensure that personnel understand how the aerodrome operator will attain regulatory compliance at the aerodrome and leave the aerodrome with the flexibility necessary to address unforeseen circumstances.

102. ENFORCEABILITY OF THE AM. Section 139.15 establishes the enforceability of the AM. Once the DCA approves the AM, it serves as an extension of Part 139 for the aerodrome.

103. PREPARATION OF THE AM. In addition to specifying technical content, Part 139 stipulates standards for the approval, format, and distribution of the AM.

- a. **Approval.** Part 139 mandates two levels of approval for the AM:
 - (1) **Aerodrome Approval.** Part 139 requires the aerodrome operator to sign and approve the AM before submitting it to the DCA. In this context, "aerodrome operator" means an official of the operator who has the authority to implement and enforce all provisions of the AM. Changes in aerodrome management personnel do not require new aerodrome approval as long as the aerodrome operator continues to keep its AM current. The statement of approval must include the aerodrome name, the official's title and name, the official's signature, the document title, and the date. The approval can be added to a signature page at the front of the AM or, if the AM has a cover, incorporated into the title page.
 - (2) **DCA Approval.** Prior to issuing an Aerodrome Certificate, the DCA must approve an aerodrome operator's AM. Part 139 requires that each page of the AM show DCA approval and the date of initial DCA approval or, if the page has been revised, the date of approval for the most recent change. This requirement applies to all aspects of the AM, including appendices, grid maps, the table of contents, and the aerodrome sign and marking plan. To facilitate this requirement, each AM page should include a location for indicating DCA approval and the approval date. For ease of use, the DCA approval block should have a consistent format and location throughout the document.

b. Format. Page layout, assembly and printing, and organization of content should be considered during preparation of the AM.

(1) Page Layout. The AM is a working document that reflects current aerodrome conditions. It should be easy to maintain and revise. In addition to the date and DCA approval, each page of the AM should specify the page number and document section. The AM must also include a page revision log that can function as an inventory of current pages. This log can simply include columns of page numbers with space for approval dates alongside. This is a very useful device to verify the currency of a page without having to leaf through the entire document. It also serves as a checklist for maintenance of the AM as it tracks pages that have been revised, added, or deleted.

(2) Assembly and Printing. Part 139 requires the aerodrome operator to maintain the AM in printed form. (It can be transmitted to the DCA electronically, but the aerodrome operator should confirm in advance that the DCA can access the file format used.) A simple format will make both the initial assembly and later revisions easier. Odd-sized or multicolor media and certain types of bindings (e.g., spiral or comb) can complicate the processes of reproduction, insertion, filing, and mailing. The DCA suggests the following format for the AM:

1. 8 ½ x 11 inch, loose-leaf paper;
2. Black-and-white printing, except where color is specifically required; and
3. Assembly in a ring binder.

(3) Organization of Content. The organization of the AM should follow the sequence of Sections in Part 139 and in Chapter 5 of this manual. The Checklists in Appendix 1 and 2 provide additional guidance on what should be included in each Section

c. Dissemination. Part 139 requires the aerodrome operator to distribute applicable portions of the AM to the airport personnel who are responsible for their implementation. The AM is not intended to provide complete instructions for all jobs or operational procedures, but it should provide instructions for any critical tasks that are necessary for compliance with Part 139.

CHAPTER 2.AERODROME MANUAL (AM) OVERVIEW

201. REQUIRED CONTENTS. As a general rule, the AM must contain aerodrome data, operating procedures, equipment descriptions, responsibility assignments, and any other information needed by aerodrome personnel to comply with Part 139. In particular, it must address compliance with the provisions of Chapter C & D of Part 139 and any limitations imposed by the DCA. This information will vary from aerodrome to aerodrome.

- a. **Provisions of Chapter C.** Chapter C is the requirement of Aerodrome Manual. The AM must address all required provisions of Chapter C, which comprises Sections 139.31, 139.33 and 139.35. The required Chapter C provisions depend on the class of the airport. The required elements for each class are listed in Appendix 1 of this manual.
- b. **Provisions of Chapter D.** Chapter D is the main body of operational requirements that an aerodrome must meet to obtain and hold an Aerodrome Certificate. The AM must address all required provisions of Chapter D, which comprises Sections 139.51 through 139.201 of the Requirement. The required Chapter D provisions depend on the class of the airport. The required elements for each class are listed in Appendix 1 of this manual.
- c. **Limitations.** The DCA occasionally imposes limitations on certificated aerodromes. These limitations can cover a range of regulatory provisions. Generally, they deal with unusual operational characteristics at an aerodrome, such as a need to restrict air transport operations from using certain areas of the aerodrome or to specify aircraft rescue and fire fighting staging locations. The AM must contain copies of any limitation placed on the aerodrome by the DCA. Sections of the AM that discuss related provisions of Part 139 must refer to applicable limitations.

202. SPECIAL ELEMENTS OF COMPLIANCE. While the Chapter D provisions that must be included in an AM vary for each class of airport, Chapter D also specifies certain special elements that all AMs must include. In most cases, AMs address these mandatory elements by including them in the detailed narratives for the related Chapter D Sections. However, some special elements better themselves to other forms of presentation, such as tables and charts. For example, the aerodrome operator might fulfill the requirement to explain lines of succession for aerodrome operational responsibility by including an organizational chart and a table of the lines of succession, which can be referred to repeatedly throughout the AM.

- a. **Special Elements Dependent on Airport Conditions.** Some of the elements are listed “as required by Section.....” This means the element is necessary only if a particular Section requires it. For example, if aerodrome conditions do not trigger a requirement for a Wildlife Hazard Management Plan according to Section 139.71, the AM does not need to include such a plan.
- b. **Special Elements Not Included in the AM.** The AM should document any special elements that are not included in the manual so a complete accounting of all elements is readily available.

203. GUIDELINES FOR SPECIFICITY. In each Section, the AM should answer the following questions: WHO is going to perform the tasks, WHAT do the tasks consist of, HOW are they to be performed, and WHEN should they occur. WHO, WHAT, HOW, and WHEN are often closely associated, and most instructions will need to address all of them.

- a. **WHO.** The instructions in the AM should be clear to staff who routinely perform the tasks described as well as to staff required to act when the usual chain of responsibility and authority is temporarily interrupted. The AM must explain what is required from a regulatory standpoint and clearly state who (functional position) is primarily responsible for carrying out each function. Since a substitute might not normally perform (or directly oversee) a required task, the AM should provide specific instructions about critical aspects of the job, including whom to contact if problems arise.
- b. **WHAT and HOW.** The WHAT and HOW of AM instructions refer to the tasks assigned to various individuals or departments charged with achieving compliance with Part 139. Unless all personnel assigned to the task are fully familiar with the regulatory requirement, the AM must provide guidance appropriate to the training and experience of the personnel. For example, an instruction in the AM to the ground maintenance crew to “maintain all safety areas in accordance with the Regulation” is not useful unless the crew has sufficient knowledge of Part 139 requirements. A better approach is to identify the physical boundaries of the safety areas and to state clearly how surface conditions are to be maintained.
- c. **WHEN.** The timing of tasks will often be triggered by circumstances, such as a certain depth of snow accumulation or a specific temperature drop. The AM must clearly define the circumstances that trigger action. It must also address the frequency of tasks that occur on a regular basis.

204. EXEMPTIONS. An exemption is a legal document granting an aerodrome operator relief from a requirement of Part 139. Exemptions can be limited to specific periods of time.

- a. **Applying for an Exemption.** To qualify for an exemption, the aerodrome operator must fulfill a number of procedural requirements. An exemption effectively changes the manner in which the aerodrome operator complies with the requirements of its Aerodrome Certificate.
- b. **Exemptions in the AM.** The AM must include in one place, possibly as an appendix, copies of all current exemptions for the aerodrome, including any that pertain to the aircraft rescue and fire fighting (ARFF) requirements listed in Sections 139.59, 139.61, 139.65, 139.67 and 139.111. An category of current exemptions, including references to relevant Part 139 Sections, must be included, as well.

205. DEVIATIONS. During an emergency requiring immediate action for the protection of life and property, the aerodrome operator may deviate from Chapter D of Part 139 to the extent required by the emergency. Deviations are not associated with any specific provision of Part 139, but they can impact the performance of any one of them. Should a deviation be necessary, the aerodrome operator must as soon as practicable, but not later than 14 days notify the DCA of the deviation. If requested by the DCA, the aerodrome operator will provide this notification in writing.

a. Example.

(1) The aerodrome operator sends the entire ARFF capability off the aerodrome in response to a life-threatening fire and, without notifying the air transports, permits normal air transport operations to continue. A deviation should be filed.

b. Reporting a Deviation. The AM must explain how and when aerodrome personnel should notify the DCA of a deviation. The DCA can levy a civil penalty against the aerodrome operator for inappropriate notification of a deviation.

206. VIOLATIONS. Violations are very serious and can result in administrative action, the imposition of a civil penalty, or the suspension/revocation of the aerodrome operator's Aerodrome Certificate. Aerodrome operators that do not fully understand the ramifications of violating Part 139 should contact the **Aerodrome Certification Safety Inspector (ACSI).**

CHAPTER 3. AERODROME MANUAL (AM) PERIODIACLLY REVIEW AND REVISION

301. PERIODIACLLY REVIEW OF THE AM. Part 139 requires aerodrome operators to keep the AM current and update at all times. ACSI shall periodically review the information contained in the AM is correct.

- a. The following items shall be periodically reviewed in the AM:-
 - 1) Current Exemptions
 - 2) Particular of the Aerodrome Site
 - 3) Aerodrome dimensions and related information
 - 4) Aerodrome operating procedures
 - 5) Organization
 - 6) Aerodrome Emergency Plan
 - 7) Safety Management System
- b. ACSI may give written directive to the aerodrome operator requiring the operator to amend the manual in accordance with 139.35.

302. REVIEW THE AM: Careful preparation for the review and revision process will ease this task.

- a. **Lay the Groundwork.** Through its organization, the AM should lend itself to assigning self-contained segments for review to person(s) knowledgeable about particular subjects. The aerodrome operator should identify who will review various parts of the AM and when these reviews will take place. Staggering the review schedule for each section of the AM will ensure that reviewers do not face significant workload increases at any one time. Periodic reviews should make revision of the AM easier, but the aerodrome operator must be prepared to break with the schedule and update the AM immediately if conditions on the aerodrome change.
- b. **Establish the Process.** The aerodrome operator must document the process for review and revision of the AM, including how to amend it to respond to changing situations at the aerodrome. Using the WHO, WHAT, HOW, and WHEN guidelines will help ensure that all necessary elements are addressed. The aerodrome operator should make sure that everyone involved in the review and revision of the AM is aware of this process.

303. AMENDMENT, REVISION AND FOLLOW-UP. The aerodrome operator must submit an AM amendment to the DCA at least 30 days before its effective date. However, aerodrome operators should try to submit amendments as far in advance as possible to allow enough time for DCA review and approval. If timing issues arise, the aerodrome operator must contact the assigned ACSI. The inspector will work with aerodrome management to prepare the change as expeditiously as possible and assist in keeping the aerodrome in compliance with Part 139. In the case of lengthy or complicated changes, the aerodrome operator should discuss with the ACSI the possibility of providing a draft for early review and consideration. A Page Revision Log summarizing individual page and text revisions will help expedite the review process.

- a. Sign and Marking Plans.** The sign and marking plan is part of the AM. The aerodrome operator should submit a copy of the plan as far in advance as possible to ensure DCA approval before the design and procurement phase of related development projects. *Aerodrome sign and marking plans must receive DCA approval before they are implemented.*
- b. Amendment to the AM.** If the aerodrome facilities and operating procedures are substantially unaltered, the aerodrome operator must follow the amendment of Aerodrome Manual. If the aerodrome facilities and operating procedures are substantially changed, the aerodrome operator must submit the new edition of Aerodrome Manual.
- c. Follow-up to the AM.** When a revision to the AM becomes effective, the aerodrome operator must place special emphasis on any effected areas of aerodrome operations to ensure personnel are aware of changes and understand how the changes might impact operations.

CHAPTER 4. TECHNICAL RESOURCES AND LIMITS OF AUTHORITY

401. PART 139 AND ADVISORY CIRCULARS. The DCA publishes ACs on a broad range of subjects. This paragraph describes how these documents relate to Part 139.

- a. General.** ACs usually serve as the DCA's means of publishing information of an advisory nature. In the "aerodromes" subject area, ACs often provide technical specifications and procedures for the design, maintenance, and operation of aerodromes. The information they contain has general acceptance in the aerodrome industry and was often developed with the participation of various members of the aviation community.
- b. Using Advisory Circulars.** The DCA encourages the use of applicable ACs during AM preparation because they contain methods and procedures acceptable to the DCA. The DCA will consider methods of compliance other than those described in ACs, but the applicant will need to demonstrate the acceptability of alternate methods to the satisfaction of the DCA before implementing them. However, in cases in which a regulatory provision or a related DCA policy specifies a certain method or procedure, the Regulation or policy takes precedence. ACs frequently contain some material that, while technically valid, might not be fully applicable to the regulatory purpose. For example, the provisions of Part 139 specify the minimum requirements that certificated aerodromes must meet to achieve a certain level of safety. ACs, however, frequently provide an optimum or state-of-the-art approach, which might identify methods, materials, and results that exceed the requirements and/or scope of Part 139. Aerodrome operators should contact the **ACSI** if there is any doubt about the applicability of technical material to Part 139. While few ACs were developed primarily as regulatory guidance, some of these documents describe the only methods of complying with certain requirements of Part 139. Controls of obstacles, Establishment of runway safety team, etc., is an example of such an AC.

402. AERODROME AUTHORITY LIMITS. A few of the provisions of Part 139, Chapter D, deal with matters beyond the authority of most aerodrome operators, including obstruction lights outside aerodrome boundaries and medical assistance and transportation provided by community sources. Part 139 acknowledges this by using qualifying language such as "to the extent practicable" or "which agrees to provide." Part 139 does not require the aerodrome operator to take actions that exceed its authority.

CHAPTER 5. CONTENTS OF THE AM

501. PURPOSE OF THIS LISTING. This Chapter lists the applicable provisions of Part 139, Chapter D, that apply to specific classes of airports. The aerodrome operator must prepare and maintain an AM that reflects the manner in which the aerodrome will comply with the requirements of these provisions. Except for requirements of a purely administrative nature, all of the items in the AM should satisfy the questions of WHO, WHAT, HOW, and WHEN, as discussed in paragraph 203 of this AC.

In addition to addressing the Chapter D provisions, the AM must address the special elements of compliance referred to in paragraph 202 and any limitations that the DCA has placed on the aerodrome. (Limitations are not covered in this Chapter.) The descriptions and examples presented in this listing do not cover all possible airport situations or all aspects of the Chapter D provisions—this does not mean they are less important or do not need to be included in the AM. Aerodrome operators should speak to the ACSI if they have any questions about the application of these items and examples or about the contents of the AM.

As indicated below and in Appendix 1, certain Sections are not required in the AMs of most Class II airports. Under certain circumstances, however, the DCA might require one or more of these Sections to be added to a Class II airport's AM because of conditions on the aerodrome. For additional guidance, the aerodrome operator should speak to its ACSI. ***Aerodrome operators should consider following the order of the Chapter D when organizing the contents of the AM. Additional guidance on what should be included in each section can be found in the Checklists in Appendix 2.***

502. SECTIONS OF CHAPTER D—OPERATIONS.

SECTION 139.54- Records. This Section outlines the various records the airport operator must keep and the duration of time these records must be retained. To fulfill the requirements of this Section, the AM must include a description of the system for maintaining records. In addition, the airport operator should make sure that airport personnel know that the credentialed ACSI has the authority to inspect these records to ensure compliance with Part 139.

SECTION 139.55—Personnel Requirements. The Part 139 requires specific training and performance documentation. This requirement also covers airport management and supervisory personnel. To fulfill the requirements of this Section, the aerodrome operator must—

- Describe in the AM the lines of succession of aerodrome operational responsibility (preferably in a chart or table) to demonstrate accountability and to satisfy one of the special elements of compliance.
- Describe personnel training. The AM should identify sufficient resources, equipment, and provisions for initial and recurrent training.

SECTION 139.57–Aerodrome Emergency Plan. Aerodrome Emergency Plan contains technical information that will help the aerodrome operator develop the Aerodrome Emergency Plan (AEP) required by Part 139. The AEP is a mandatory part of the AM, and the guidelines for specific statements in paragraph 203 about responsibility and function apply. It must include a grid map or other means of identifying locations and terrain features. The AEP may be kept as a separate document or possibly as an appendix that is referenced in the AM; however, the content is viewed as part of the approved AM.

SECTION 139.59–Rescue and Fire Fighting: Category Determination. To fulfill the requirements of this Section, aerodrome operators must—

- State the aerodrome’s ARFF in the AM as determined by Part 139.59(a) and (b).
- Explain in the AM what the category means in terms of aircraft length. This explanation should contain information on the longest aircraft the category can serve.

SECTION 139.61– Rescue and Fire Fighting: Extinguishing Agents. The AM must include a description of the equipment and agents necessary to meet the aerodrome’s aircraft rescue and fire fighting requirements. The aerodrome operator should—

- List in the AM the ARFF equipment and the type and quantities of agent provided/maintained on each vehicle.
- Specify in the AM the number and type of portable extinguishers the vehicles carry because they can have a bearing on what category the aerodrome can maintain if there is an equipment outage.

The aerodrome operator must also be sure to include in the exemption section of the AM any exemptions to ARFF equipment requirements that have been granted by the DCA(see paragraph 204).

SECTION 139.69–Public Protection. Part 139 requires the aerodrome operator to describe how it intends to provide for public protection. The requirements that address this subject are oriented toward *inadvertent entry* into an area containing hazards for the unwary trespasser. To address the requirements of public protection, the aerodrome operator should—

- Describe in the AM the measures taken at the aerodrome to prevent inadvertent entry by persons or vehicles to any operational areas, even if such entry is not considered a security threat. Fencing is an obvious method to use, as is conspicuous signing and closed gates.
- Provide for regular surveillance of all of the safeguards on the aerodrome for compliance with this provision of Part 139.

SECTION 139.71– Wildlife Hazard Management. To address the wildlife hazard management requirements of this Section, the aerodrome operator must include one of the following:

- (1) A statement of no wildlife activity (unlikely at most airports);
- (2) A statement that a Wildlife Hazard Assessment is currently being conducted;
- (3) A brief statement of the no-hazard findings from a recent Wildlife Hazard Assessment;
- (4) A statement that a Wildlife Hazard Management Plan is currently being developed; or

- (5) A statement that the aerodrome has a Wildlife Hazard Management Plan. If a Wildlife Hazard Management Plan has been developed for the aerodrome, it must be included in the AM, possibly as an appendix. In all cases, the aerodrome operator should—
- Provide instructions in the AM to airport personnel about reporting wildlife activity, should any be observed.
 - Consider including in the AM any information about wildlife type and activity on the aerodrome if such activity exists.
 - Include, if wildlife activity at the aerodrome triggered a Wildlife Hazard Assessment and it was subsequently determined that a Wildlife Hazard Management Plan was not required, a brief statement that identifies the type and extent of the activity that triggered the study. This will serve as an approximate gauge for comparison with subsequent wildlife observations when the situation is reevaluated.

SECTION 139.77–Paved Areas. This Section involving extensive maintenance-type requirements will probably follow similar patterns in the AM. Part 139 contains several specific requirements for paved areas that are available for aircraft use. The requirements are stated in results-oriented terms and are brief enough to include in the AM. To address the requirements of this Section, the airport operator must—

- Include in the AM procedures and other information needed by airport personnel responsible for maintaining these areas. This requirement can be satisfied by including the text from Part 139 about paved areas. This text will also serve as a reminder that this maintenance activity must be accomplished.
- Include the description of movement areas that are available for aircraft use. This description should not include other paved or unpaved areas on your airport (ramps, parking areas, etc.) that may be usable by air carriers but that do not fall within the movement area. The movement area includes the provision that, at an airport with an Airport Traffic Control Tower (ATCT), a clearance is required prior to entering a movement area. This will be the one used in any letters of agreement the airport operator and the ATCT develop to address movement areas. If such agreements result in the removal of certain pavement segments from the controlled movement areas, the AM should describe this removal and include the agreements

SECTION 139.79–Unpaved Areas. If the airport has maintenance procedures for unpaved areas, such as repairing unpaved runways, they must be included in the AM.

SECTION 139.81–Marking, Signs and Lighting. The AM must include a plan showing the runway and taxiway identification system, including the location and inscriptions of signs, runway markings, and holding position markings as well as descriptions and procedures for maintaining marking, sign, and lighting systems. To comply with the requirements of this Section, the aerodrome operator should—

- Include in the AM a legible color diagram of the aerodrome sign and marking systems. This can be added as an appendix. The diagram should identify signs and markings in the appropriate colors, as specified in the current versions of MCAR Part 139, Section-2,

Aerodrome Standards. This diagram is also referred to as the runway and taxiway identification system plan in Part 139 and as the DCA Approved Aerodrome Sign Plan. Signs should be graphically depicted *on* the plan in close proximity to their locations on the airfield, *not* by the number reference to a separate legend or table. Multiple pages might be required to support the need for legible graphics.

- Include contact information for approach lighting maintenance.
- Address the shielding of airport lighting.
- Include clear instructions on just how many and in what sequence lights may be out before the system is considered inoperative.

SECTION 139.83–Identifying, Marking and Lighting Construction and Other Unserviceable Areas. The AM must describe procedures for identifying, marking, and lighting construction and other unserviceable areas of the airport DCA-AC-AGA-20, Operational Safety during works on Aerodromes, will help airport operators plan safe operations during construction and maintenance projects. Notices to Airmen (NOTAM) for Airport Operators, explains how to use the NOTAM system for airport condition reporting.

Periods of construction and maintenance on an airport present special problems for keeping aircraft and construction machinery and personnel safely apart. Normal routes for aircraft taxiing and maneuvering are often disrupted or modified, and standard signing and marking can become temporarily ineffective or even misleading. To address these conditions, the airport operator should—

- Provide instructions in the AM that marking and lighting requirements can be included in construction plans (and costs) at the outset. Keep the air carrier users of the airport up to date with NOTAMs and other appropriate means of communication. Build responsibilities and functions into the AM so that all parties know what is expected of them.
- Planning for construction projects should always address how to avoid damage to utilities. The importance of the utilities that serve NAVAIDs and other air carrier facilities calls for special attention to their protection. The airport operator should designate in the AM a position responsible for assuring compatibility of the construction plans with protection of these critical utilities. The position charged with this responsibility should have enough authority to require revision of the plans or suspension of the work activity if necessary

SECTION 139.103–Aerodrome Maintenance. Part 139 contains maintenance programme for paved areas, aerodrome facilities. To address the requirements of this Section, the aerodrome operator must—

- Include in the AM procedures and other information needed by aerodrome personnel responsible for maintaining these areas. This requirement can be satisfied by including the text from Part 139 about paved areas.
- Include the description of movement areas that are available for aircraft use. This description should not include other paved or unpaved areas on your aerodrome(ramps,

parking areas, etc.). The movement area at an aerodrome with an Airport Traffic Control Tower (ATCT), a clearance is required prior to entering a movement area.

SECTION 139.102 Safety Areas(Strip Portion). Application of Part 139 hinges on the precise delineation of safety areas. The dimensions of a safety area frame the obligations the aerodrome operator has with respect to its maintenance. If construction, reconstruction, or significant expansion of the runway or taxiway began after this date, the associated safety area dimensions must be approved by the DCA. To address the requirements of this Section, the aerodrome operator—

- Must clearly describe in the AM the location and dimensions of safety areas. The description of a safety area is only complete if the dimensional data is accompanied by the date those dimensions were established in accordance with Part 139.
- Must include procedures for maintaining safety areas.
- Should include a map or diagram, especially when describing a runway safety area that has different dimensions for each end.

SECTION 139.104 – Safety Management System (SMS).The AM of Class I airport must describe safety policy and objective, safety risk management, safety assurance and safety promotion.

SECTION 139.107–Works on Aerodrome. The AM must describe procedures for identifying, marking, and lighting construction and other unserviceable areas of the aerodrome. Operational Safety on Aerodromes During Construction, will help aerodrome operators plan safe operations during construction and maintenance projects. Periods of construction and maintenance on an aerodrome present special problems for keeping aircraft and construction machinery and personnel safely apart. Normal routes for aircraft taxiing and maneuvering are often disrupted or modified, and standard signing and marking can become temporarily ineffective or even misleading. To address these conditions, the aerodrome operator should—

- Provide instructions in the AM that marking and lighting requirements can be included in construction plans (and costs) at the outset.
- Keep the air transport users of the aerodrome up to date with NOTAMs and other appropriate means of communication. Planning for construction projects should always address how to avoid damage to utilities. The importance of the utilities that serve NAVAIDs and other air transport facilities calls for special attention to their protection. The aerodrome operator should designate in the AM a position responsible for assuring compatibility of the construction plans with protection of these critical utilities. The position charged with this responsibility should have enough authority to require revision of the plans or suspension of the work activity if necessary.

SECTION 139.111–Rescue and Fire Fighting: Operational Requirements.

This is one of the most critical components of the AM, and it must include a description of the facilities, personnel, and procedures necessary to meet the aerodrome’s aircraft rescue and fire

fighting requirements. A number of questions should be considered when addressing this Section:

- Does the aerodrome operator have full control over the operation of the ARFF unit?
- Can vehicles be dispatched off the aerodrome without the aerodrome operator's permission?
- Is the operator reliably informed whenever an element of ARFF becomes inoperative or unavailable for any reason?

To address the ARFF operational requirements, the aerodrome operator should—

- Allow ARFF personnel as much flexibility as possible within the scope of their mission but build into the AM procedures for activating a fast and reliable information system. This will ensure the aerodrome operator is informed when making decisions about air transport operations.
- Make it a priority to discuss with the Airport Traffic Control Tower (ATCT) manager the role of the ATCT in emergency operations and the particulars of ATCT interactions with the ARFF unit and aerodrome management. It is sometimes mutually beneficial to enter into a letter of agreement with the ATCT to cover certain activities particular to the aerodrome. A copy of any such agreement must be placed in the AM, possibly as an appendix (for example, Letter of Agreement for Emergency Services).
- Describe the alarm system for ARFF response, the requirement for a daily test, and the ATCT role in the alarm system and the test.
- Describe the communications system.
- Identify required training for ARFF personnel and provisions for recurrent training.
- Address provisions for the availability of at least one person trained in basic emergency medical care, as required during air transport operations under Part 139. This person need not be an actual member of the ARFF crew but must be available within a reasonable time in case of an aerodrome emergency.
- Address provisions for fire extinguishing agent and response standards. Aerodrome Manual.
- Identify any roads designated as Emergency Access Roads. The AM should include instructions to ensure Emergency Access Roads are used appropriately and are available for use in the case of an ARFF emergency. Before designating Emergency Access Roads, the aerodrome operator should understand the obligations that go along with such a designation and consider other means of meeting the ARFF response time, such as secondary ARFF stations or vehicle standby areas. Aerodrome operators should coordinate any such designations with the ACSI.
- The AM should provide clear instructions for the procedures to be followed and who is to accomplish them when a required piece of ARFF equipment becomes inoperative.
- The ARFF unit must maintain a response posture for at least a half-hour period bracketing the operation (15 minutes before to 15 minutes after the actual time of the arrival or departure operation—not the scheduled time of the operation). The aerodrome operator should impress upon air transport station management the importance of keeping aerodrome management and the ARFF unit apprised of changes in flight schedules and

develop formal procedures to assure ARFF availability. If certain conditions are met, Part 139 permits a temporary reduction in ARFF presence during periods of air transport activity using aircraft of reduced length. To address such reductions, the airport operator must—

- Specify in the AM the individual or position with the authority to implement the reduction.
- Describe the procedures to be followed.
- Document the system that is in place for the recall of the required complement of ARFF personnel and equipment.
- Describe, if there is a requirement for notifying air transport users of the aerodrome before implementing any reduction, how air transports will be notified and who has the responsibility and authority to undertake this action. The aerodrome operator must be sure to include in the exemption section of the AM any exemptions to ARFF operational requirements that have been granted by the DCA (see paragraph 204).

SECTION 139.112 – Handling and Storing of Hazardous Substances and Materials. This Section addresses fuel for the operation of aircraft. Whether procedures for handling, dispensing, and storing hazardous substances and materials must be included in the AM. If there is aviation fuel available on the aerodrome, regardless of who the fueling agents are, the aerodrome operator must—

- Indicate whether it is or is not the HAZMAT agent.
- Establish fire safety fuel standards for the aerodrome and include them in the AM. The standards should describe how to accomplish the 3-month/periodic inspection of tenant fueling facilities, including all fuel service vehicles, and the procedures to Aerodrome Manual be initiated should noncompliance with the standards be discovered. The AM should also include the inspection checklists for storage facilities and fuel service vehicles.

SECTION 139.115 – Apron Management Service. The AM of Class I airport must describe procedure for apron management including-

1. Arrangements between air traffic control and the apron management unit;
2. Arrangements for allocating aircraft parking positions;
3. Arrangements for initiating engine start and ensuring clearance of aircraft pushback;
4. Marshalling service; and
5. Leader (van) service

SECTION 139.117– Self-inspection Programme. The AM must include procedures for a self-inspection program. Self-inspection allows for monitoring aerodrome conditions and assists aerodrome operators in complying with other requirements of Part 139. Applying the questions of WHO, WHAT, HOW, and WHEN, discussed in paragraph 203 above, will ensure all of the elements of an effective inspection program are accomplished. Procedures for conducting self-inspections must include provisions for documenting any corrective actions taken. Self-inspections are required before air transport operations. Daily inspections are not absolutely required if the aerodrome has no air transport activity, but aerodrome operators should be wary of

allowing long intervals to pass between inspections. To satisfy the requirements of this Section, the aerodrome operator should—

- Include the schedule of self-inspections and identify who is responsible for performing these inspections.
- Identify means of obtaining and documenting corrective action taken on noted discrepancies.
- Identify provisions for initial and recurrent training in the five subject areas specified in Part 139:
 - (1) Airport familiarization,
 - (2) Aerodrome Emergency Plan,
 - (3) Notice to Airmen (NOTAM) notification procedures,
 - (4) Procedures for pedestrians and ground vehicles in movement areas and safety areas, and
 - (5) Discrepancy reporting procedures. This training is in addition to that required in Section 139.55. (*Personnel requirements*)

SECTION 139.119– Pedestrians and Ground Vehicles. The AM of must address procedures for controlling access to movement and safety areas. Stringent control of pedestrians and ground vehicles can prevent problems on the movement and safety areas.

To address the requirements of this Section, the aerodrome operator should—

- Include in the AM clear and precise procedures for the control of pedestrians and ground vehicles and describe the consequences of noncompliance.
- Include vehicle operating procedures for movement/safety areas in this section or possibly in an appendix.
- Identify, if the aerodrome has an ATCT, any procedures or rules that have been jointly agreed to with Air Traffic Control, including radio or other communications arrangements.

SECTION 139.120–Obstacles.The location of marked and lighted obstructions that fall within the aerodrome’s authority and responsibility must be included in the AM. The AM must also describe procedures for removing, marking, and lighting obstructions. To address the requirements of this Section, the aerodrome operator should—

- Consider including with the narrative description a map locating the obstructions and keying them to the description.
- Describe maintenance procedures and responsibilities for lighted obstructions in the AM and specify who to contact in case of an outage and how they are to be repaired. An aerodrome can have a confusing array of obstruction lights with different parties responsible for them according to various lease agreements, contract services, etc.
- Include provisions for airspace evaluations for any proposed construction or alteration of the aerodrome.
- Identify in the AM each object within the aerodrome operator’s area of authority that qualifies as an obstruction but that has been determined to be “no hazard” by an DCA aeronautical study. This information should include the study file reference so it can be

retrieved if necessary. Aerodrome Layout Plan (ALP) approval by the DCA carries the same weight as an aeronautical study with respect to those objects depicted on it.

- Inspect for outages of any obstruction light that can be seen from any portion of the aerodrome and report outages to the owners of the lights.
- Consider assigning responsibility for monitoring obstructions to a staff position on the aerodrome (for example, the airport operations supervisor). If such a position exists, it should be identified in the AM.

SECTION 139.121–Protection of NAVAIDs. The AM must provide procedures for the protection of NAVAIDs. To address the requirements of this Section, the aerodrome operator should—

- Explain in the AM who should be alerted to activity that may interfere with the signal from a NAVAID.
- Include, depending on the placement of the NAVAID, procedures and assignments for security patrols, fence maintenance, etc.

SECTION 139.123 – Aerodrome Condition Reporting. The AM must include provisions for aerodrome condition reporting. The Notices to Airmen (NOTAMs) for Aerodrome Operators contains technical information that will help with the development of this portion of the AM. To address condition reporting requirements, the aerodrome operator should—

- Include in the AM a statement that the aerodrome operator and its staff will report any condition that might affect the safe operation of an air transport operation.
- Work with airline tenants to devise a satisfactory system of information flow and document this system in the AM. The NOTAM system is not a complete solution for adequate notification of air transport users of the airport. Many aerodromes have internal communications systems that extend into air transport agent offices. These systems vary, but some allow the air transport, through its local station agents, to receive field condition information from aerodrome management before the NOTAM information is public. There are also times when field situations occur that may be of interest to air transport users but that are not eligible for NOTAM system coverage.
- Address the need for a letter of agreement at locations where the ATC disseminates field conditions and/or maintains NOTAM records for aerodrome management.

SECTION 139.125 – Unsafe Conditions. If any element of Part 139 meets all procedures, plans, systems and programmes detailed in AM. The AM should make this very clear to aerodrome personnel. The AM must provide personnel with the procedures to be used if an unsafe condition is found and describe what actions must be taken.

SECTION 139.127–Wind Direction Indicators. The AC must describe and identify the location of these facilities at the aerodrome and specify the procedures and responsibilities for maintaining them.

APPENDIX 1. AM ELEMENTS

REQUIRED AERODROME CERTIFICATION MANUAL ELEMENTS

Sr.	Manual elements	Airport certificate class	
		Class I	Class II
1.	Lines of succession of aerodrome operational responsibility	√	√
2.	Each current exemption issued to the aerodrome from the requirements of this part	√	√
3.	Any limitations imposed by the DCA	√	√
4.	A grid map or other means of identifying locations and terrain features on and around the aerodrome that are significant to emergency operations	√	√
5.	The location of each obstruction required to be lighted or marked within the aerodrome's area of authority	√	√
6.	A description of each movement area available for air transports and its safety areas that serves it	√	√
7.	Procedures for avoidance of interruption or failure during construction work of utilities serving facilities or NAVAIDs that support air transport operations	√	
8.	A description of personnel training, as required under § 139.55	√	√
9.	Procedures for maintaining the safety areas § 139.102	√	√
10.	Procedures for maintaining the paved areas, as required under § 139.103	√	√
11.	A plan showing the runway and taxiway identification system, including the location and inscription of signs, runway markings, and holding position markings, as required under § 139.105	√	√
12.	A description of, and procedures for maintaining, the marking, signs, and lighting systems, as required under § 139.105	√	√
13.	A description of the facilities, equipment, personnel, and procedures for meeting the aircraft rescue and fire fighting requirements, in accordance with § 139.61, 139.63, 139.65 and 139.67	√	√

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Sr.	Manual elements	Airport certificate class	
		Class I	Class II
14.	A description of any approved exemption to aircraft rescue and fire fighting requirements, as authorized under § 139.111	√	
15.	Procedures for protecting persons and property during the storing, dispensing, and handling of fuel and other hazardous substances and materials § 139.112	√	
16.	A description of, and procedures for maintaining wind direction indicators, as required under § 139.127	√	√
17.	An emergency plan, as required under § 139.57	√	√
18.	Procedures for conducting the self-inspection program, as required under § 139.117	√	√
19.	Procedures for controlling access to movement areas and safety areas, as required under § 139.119	√	√
20.	Procedures for obstruction removal, marking, or lighting, as required under § 139.120	√	√
21.	Procedures for protection of NAVAIDS, as required under § 139.121	√	√
22.	A description of public protection, as required under § 139.69	√	√
23.	Procedures for wildlife hazard management, as required under § 139.71	√	√
24.	Procedures for airport condition reporting, as required under § 139.123	√	√
25.	Procedures for identifying, marking, and lighting construction and other unserviceable areas, as required under § 139.107	√	
26.	Any other item that the DCA finds is necessary to ensure safety in air transportation	√	√
27.	Procedures for apron management as required under § 139.115	√	
28.	Policy and objective for safety management system (SMS) as required under § 139.104	√	

APPENDIX - 2

CHECKLIST OF THE COMPONENTS OF THE AERODROME MANUAL

1. General	Yes	No
a. Purpose of aerodrome manual		
b. Legal requirements regarding aerodrome certification as contained in the applicable regulation		
c. Distribution of the aerodrome manual		
d. Procedures for distribution and amending the aerodrome manual and the circumstances in which amendments may be needed		
e. Checklist of pages		
f. Foreword of the certificate holder		
g. Table of contents		
h. Current Exemption		
i. Amendment Record		
j. Abbreviations		
k. Title or signature page signed by aerodrome operator		

2 Particulars of Aerodrome	Yes	No
a. Name and address of the aerodrome		
b. Name and address of the aerodrome operator		
c. The name of the accountable executive		

3 Description of the aerodrome (aerodrome characteristics)	Yes	No
a. Latitude and longitude of the aerodrome reference point in World Geodetic System- 1984 (WGS-84) format		
b. Elevation of aerodrome (Runway THR, Touchdown Zone of Precision Approach RWY)		
c. Plan showing the position of the aerodrome reference point.		
d. Layout of the runways, taxiways and aprons.		
e. Aerodrome lighting and markings (including the precision approach path indicator (PAPI) and obstruction lighting)		
f. Siting of navigation aids within the runway strip		
g. Description, height and location of obstacles that infringe upon the standard protection surfaces, whether they are lighted and if they are noted in the aeronautical publications		
h. Date for, and method used to calculate, declared distances and elevations at the beginning and end of each declared distances and elevation at the beginning and end of each declared distance		
i. Details of the surfaces, dimension and classification for bearing strengths		

		of runways, taxiways and aprons		
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4.	List of authorized deviation (if any)	Yes	No

5.	Operational procedure			
5.1	Aerodrome Condition Reporting		Yes	No
	a.	The system of aerodrome condition reporting to the aerodrome control tower and relevant entities and the system that the certificate holder uses to promulgate AIP requirements.		

5.2	Control of access/ Public protection		Yes	No
	a.	Control of access to the aerodrome and its operational areas, including protection of barriers and jet blast, and the control of vehicles in the operational areas.		

5.3	Aerodrome Emergency planning		Yes	No
	a.	Types of Emergency mentioned in AEP.		
	b.	The aerodrome operator's arrangements in response of emergency. These arrangement should take account		
	c.	Description of actions to be taken by the operator as a part of plan for dealing of different emergencies occurring at the aerodrome or in its vicinity.		
		Contact list of organizations, agencies and persons of authority		
	d.	Agreement with other agencies.(eg. Medical services, Hospitals, Mutual aids, local fire department, etc.,)		
	e.	Procedure for appointment of an on-scene commander for the overall emergency operation and description of responsibilities for each type of emergency		
	f	Grid map including access roads,location of water supplies, rendezvous points, staging areas.		
	f.	Reporting mechanism in each type of emergency		
	g.	EOC and Mobile Command Post		
	h.	Details of the test of aerodrome facilities and equipment to be used in emergencies, including the frequency of thosetests.		
	i.	Details of the exercises to test emergency plans, including the frequency of those exercises.		
	j.	Arrangements for personnel training and preparation for dealing with emergencies.		

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5.4	Rescue and fire fighting (RFF)	Yes	No
	a. RFF categories to be provided.		
	b. Where the senior aerodrome fire officer or designated fire watch officers have specific safety accountabilities, these should be included in the relevant chapter of the aerodrome manual.		
	c. Policy and procedures indicating how depletion of the RFF service is to be managed.		
	d. The aerodrome operator's objectives for each RFF category provided should be defined, including a brief description of:		
	1) amounts of extinguishing agents provided;		
	2) discharge rates;		
	3) number of foam-producing appliances;		
	4) levels of protection		
	e. Procedures for:		
	1) monitoring the aeroplane movement areas for the purpose of alerting RFF personnel;		
	2) indicating how the adequacy of the response time capability of the RFF services throughout their functions and locations is monitored and maintained;		
	f. A statement describing the process by which aerodrome operators ensure the initial and continued competence of their RFF personnel, including the following:		
	1) realistic fuel fire training;		
	2) breathing apparatus training in heat and smoke;		
	3) first aid;		
	4) low visibility procedures (LVP);		
	5) health and safety policy with regard to training of personnel in the use of respiratory protection equipment and personal protection equipment.		
	g. Procedures indicating how accidents in the immediate vicinity of the aerodrome are to be accessed. Where difficult environs exist, the aerodrome manual should indicate how these are to be accessed		
	h. Where the aerodrome operator expects the RFF facility to respond to aeroplane accidents landside including procedures to manage the effects on continued aeroplane operations.		
	i. The availability of additional water supplies should be described.		
	j. Aerodrome operator's arrangements for ensuring the adequacy of responses in abnormal conditions, i.e. LVP.		

5.5	Inspections of the movement area	Yes	No
	a. Routine aerodrome inspections, including lighting inspections, and reporting, including the nature and frequency of these inspections.		
	b. Inspecting the apron, runways and taxiways following a report of debris on the movement area.		
	c. Sweeping of runways, taxiways and aprons.		
	d. Measurement and reporting of friction characteristics, water, slush and other contaminants including depths on runways and taxiways.		

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		Yes	No
e.	Assessment and promulgation of runway surface conditions:		
	1) details of inspection intervals and times;		
	2) completion and effective use of an inspection checklist;		
	3) arrangements and methods for carrying out inspections on FOD, lighting, pavement surface, grassing;		
	4) arrangements for reporting the results of inspections and for follow-up;		
	5) arrangements and means of communication with air traffic control during an inspection;		
	6) arrangements for keeping an inspection logbook and the location of the logbook.		

5.6	Maintenance of the movement area	Yes	No
a.	Promulgation of information on the aerodrome operational state, temporary withdrawals of facilities, runway closures, etc.:		
	1) arrangements for maintaining the paved areas, including the runway friction assessments;		
	2) arrangements for maintaining the unpaved runways and taxiways;		
	3) arrangements for maintaining the runway and taxiway strips;		
	4) arrangements for maintaining aerodrome drainage;		
	5) arrangements for maintaining the visual aids, including the measurement of intensity, beam spread and orientation of lights;		
	6) arrangements for maintaining the obstacle lighting;		
	7) arrangements for reporting and action taken in the event of failure or unsafe occurrence.		

5.7	Visual aids	Yes	No
a.	Responsibilities with respect to the aerodrome ground lighting system.		
b.	A full description of all visual aids available on each approach, runway, taxiway and apron, including signs, markings and signals.		
c.	Procedures for operational use and brilliancy settings of the lighting system.		
d.	Standby and emergency power arrangements, including operating procedures both in LVP and during main power failure situations.		
e.	Procedures for routine inspection of aerodrome ground lighting and PAPIs.		
f.	The location of and responsibility for obstacle lighting on and off the aerodrome.		
g.	Procedures for recording inspection and maintenance of visual aids and actions to be taken in the event of failures.		
h.	The control of work which may affect the safety of the aeroplane.		

5.8	Apron management	Yes	No
a.	Arrangements between air traffic control, the aerodrome operator and the apronmanagement unit.		
b.	Arrangements for allocating aeroplane stands.		
c.	Arrangements for initiating engine start and ensuring clearance of		

		aeroplane pushback.		
5.9	Apron safety management		Yes	No
	a.	Procedures for jet blast protection.		
	b.	Arrangements of safety precautions during aeroplane refuelling operations.		
	c.	Arrangements for apron sweeping and cleaning.		
	d.	Arrangements for reporting incidents and accidents on an apron.		
	e.	Arrangements for assessing the safety compliance of all personnel working on the apron.		
	f.	Arrangements for the use of visual docking systems, if provided.		

5.10	Vehicles on the movement area		Yes	No
	a.	Details of the applicable traffic rules (including speed limits and the means of enforcing the rules).		
	b.	Method and criteria for allowing drivers to operate vehicles on the movement area.		
	c.	Arrangements of communicating with air traffic control.		
	d.	Details of the equipment needed in vehicles that operate on the movement area.		

5.11	Wildlife hazard management		Yes	No
	a.	Arrangements and method for dispersal of bird and other wildlife.		
	b.	Reduction of birds and other wildlife.		
	c.	Arrangements for assessing wildlife hazards.		
	d.	Arrangements for implementing wildlife control programmes.		
	e.	Recording and reporting wildlife strikes to the aircraft.		

5.12	Obstacles		Yes	No
	a.	Arrangements for monitoring the height of buildings or structures within the boundaries of the obstacle limitation surfaces (OLS).		
	b.	Arrangements for controlling new developments in the vicinity of aerodromes.		
	c.	The reporting procedure and actions to be taken in the event of the appearance of unauthorized obstacles.		

5.13	The removal of a disabled aeroplane		Yes	No
	a.	Details of the capability for removal of a disabled aeroplane.		
	b.	Arrangements for removing a disabled aeroplane, including the reporting and notifying procedures and liaison with ATC.		
	c.	Name, address and telephone number of Airport coordinator.		
	d.	Plan for removal of disabled aircraft.		
	e.	Lists of available equipment.		

5.14	Handling and storing of hazardous substances and materials.		Yes	No
	a.	Arrangements for special areas on the aerodrome to be set up for the storage of dangerous goods.		
	b.	Procedure for handling and storing of hazardous substances and materials.		

5.15	Low visibility operations		Yes	No
	a.	Obtaining and disseminating meteorological information, including runway visual range (RVR) and surface visibility.		
	b.	Protection of runways during LVP if such operations are permitted.		
	c.	The arrangement for vehicles and personnel operating in the movement area before, during and after low visibility operations.		

5.16	Protection of sites for radar, navigation aids and meteorological equipment		Yes	No
	a.	Description of the areas to be protected and procedures for their protection.		

5.17	Safety management system (SMS)		Yes	No
	a.	Safety policy.		
	b.	Operator's structure and responsibility. This should include:		
		1) the name, status and responsibilities of the accountable executive;		
		2) the name, status and responsibilities of the safety manager;		
		3) the name, status and responsibilities of other senior operating staff;		
		4) the name, status and responsibilities of the official in charge of day-to-day operations;		
		5) an organizational chart supporting the commitment to the safe operation of the aerodrome as well as one simply showing the hierarchy of responsibility for safety management.		
	c.	Training.		
	d.	Complying with regulatory requirements relating to accidents, incidents and mandatory occurrence reporting.		
	e.	Hazard analysis and risk assessment.		
	f.	The management of change.		
	g.	Safety criteria and indicators.		
	h.	Safety audits.		
	i.	Documentation.		
	j.	Safety-related committees.		
	k.	Safety promotion.		
	l.	Responsibility for monitoring the contractors and third parties operating on the aerodrome.		