

PART 12—AERODROME REQUIREMENTS

ARRANGEMENT OF REQUIREMENTS

INFORMATION TO BE INCLUDED IN AERODROME MANUAL—PART 12 S. 7 (3)

1. General
2. Particulars of the Aerodrome Site
3. Particulars of the Aerodrome Required to be Published in the Aeronautical Information Publication (AIP)
 - General Information
 - Aerodrome Dimensions and Related Information
4. Particulars of the Aerodrome operating Procedures and Safety Measures
 - Aerodrome Reporting Process
 - Access to the Aerodrome
 - Aerodrome Emergency Plan
 - Rescue and Fire-fighting
 - Inspection of the Aerodrome Movement Area
 - Visual Aids and Aerodrome Electrical Systems
 - Maintenance of the Movement Area
 - Aerodrome Works - Safety
 - Apron Management
 - Apron Safety Management
 - Airside Vehicle Control
 - Wildlife Hazard Management
 - Obstacle Control
 - Removal of Disabled Aircraft
 - Handling of Dangerous Goods
 - Low-visibility Operations
 - Protection of Sites for Radar and Navigational /Landing Aids
5. Details of the Aerodrome Administration and Safety Management System
 - (a) Aerodrome Administration
 - Safety Management Systems (SMS)
 - AERODROME OPERATING REQUIREMENTS S 10
 1. Aerodrome Data
 2. Notifying and Reporting
 3. Visual aid for Navigation
 4. Works on Aerodrome
 5. Aerodrome Emergency Plan
 6. Rescue and Fire Fighting
 7. Apron Control and Management Services
 8. Ground Vehicle and Pedestrians
 9. Protection of Navigational Aids
 10. Aerodrome inspection Programme
 11. Public Protection
 12. Aerodrome Security

ARRANGEMENT OF REQUIREMENTS—*continued*

13. Aeronautical Studies
14. Bird Hazard Reduction
15. Pavement Strength and Overload Operations
16. Aerodrome Operator's Safety Management System
17. Quality Control Programme
18. Environmental Protection
19. Removal of Disabled Aircraft

INFORMATION TO BE INCLUDED IN HELIPORT OPERATOR'S MANUAL S 15

1. General Information
2. Particulars of Heliports site
3. Particulars of the Heliport Required to be Reported to the Aeronautical Information Service (AIS) :
4. Heliport Operating Procedures and Safety Measures
5. Particulars of Quality Systems
6. Helicopter Rescue and Fire Fighting
7. Particulars of Environmental Protection

HELIPORT OPERATIONS REQUIREMENTS – S.18

1. Heliport Data
2. Notifying and Reporting
3. Physical Characteristics
4. Visual Aid
5. Maintenance of Heliport Facilities
6. Heliport Operator's Safety Management System
7. Protection of Navigational Aids
8. Quality Control Systems
9. Heliport Rescue and Fire Fighting
10. Environmental Protection
11. Heliport Emergency Management Systems
12. Public Protection and Heliport Security
13. Aeronautical Studies

INFORMATION TO BE INCLUDED IN AERODROME MANUAL—PART 12 S.7 (3)

1. GENERAL

General information includes the following :

- (a) Purpose and scope of the Aerodrome Manual ;
- (b) The legal requirement for an Aerodrome Certificate and an Aerodrome Manual as prescribed in the national regulations ;
- (c) Conditions for use of a Public/Private Aerodrome ; a statement to indicate that the Aerodrome shall at all times, when it is available for the take-off and landing of Aircraft, be also available to all persons on equal terms and conditions ;
- (d) The available aeronautical information systems and procedures for its promulgation ;
- (e) The system for recording aircraft movements ; and
- (f) Obligations of the Aerodrome Operator to the Authority including granting authorised personnel, access to the Aerodrome to carry out safety audit inspection, testing and to be responsible for notifying/reporting as prescribed in the Regulations.
- (g) Co-ordination Policy or Letters of Agreement between AIS and Aerodrome Operator on areas of co-ordination including but not limited to Aerodrome Emergency Planning, Aerodrome Condition Reporting and Aerodrome Vehicle Operations.

2. PARTICULARS OF THE AERODROME SITE

General information, including the following :

- (a) a plan of the Aerodrome showing the main Aerodrome facilities for the operation of the Aerodrome including, particularly, the location of each Wind Direction Indicator ;
- (b) a plan of the Aerodrome showing the Aerodrome boundaries ;
- (c) a plan showing the distance of the Aerodrome from the city or other populous area, and the location of any Aerodrome facilities and equipment outside the boundaries of the Aerodrome ; and
- (d) particulars of the title of the Aerodrome site. If the boundaries of the Aerodrome are not defined in the title documents particulars of the title to, or interest in, the property on which the Aerodrome is located and a plan showing the boundaries and position of the Aerodrome.

3. PARTICULARS OF THE AERODROME REQUIRED TO BE REPORTED TO THE AERONAUTICAL INFORMATION SERVICE (AIS)

GENERAL INFORMATION

- (a) the name of the Aerodrome ;
- (b) the location of the Aerodrome ;
- (c) the geographical coordinates of the Aerodrome reference point determined in terms of the World Geodetic System – 1984 (WGS-84) reference datum ;
- (d) the Aerodrome elevation and geoid undulation ;

B 1440

(e) 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 ;

(f) the Aerodrome reference temperature ;

(g) details of the Aerodrome beacon ; and

(h) the name of the Aerodrome operator and the address and telephone number at which the Aerodrome operator may be contacted at all times.

AERODROME DIMENSIONS AND RELATED INFORMATION

General information, including the following :

(a) 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 ;

(b) length, width and surface type of strip, runway end safety areas, stopways ;

(c) length, width and surface type of taxiways ;

(d) apron surface type and aircraft stands ;

(e) clearway length and ground profile ;

(f) visual aids for approach procedures, viz, approach lighting type and visual approach slope indicator system (PAPI/APAPI and T-VASIS/AT-VASIS) ; marking and lighting of runways, taxiways, and aprons ; other visual guidance and control aids on taxiways (including runway holding positions, intermediate holding positions and stop bars) and aprons, location and type of visual docking guidance system ; availability of standby power for lighting.

(g) the location and radio frequency of VOR Aerodrome checkpoints ;

(h) the location and designation of standard taxi routes ;

(i) the geographical coordinates of each threshold ;

(j) the geographical coordinates of appropriate taxiway centre line points ;

(k) the geographical coordinates of each aircraft stand ;

(l) 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. (This information may best be shown in the form of charts such as those required for the preparation of aeronautical information publications, as specified in Annexes 4 and 15 to the Convention) ;

(m) pavement surface type and bearing strength using the Aircraft Classification Number – Pavement Classification Number (ACN-PCN) method ;

(n) one or more pre-flight altimeter check locations established on an apron and their elevation ;

(o) declared distances : take-off run available (TORA), take-off distance available (TODA), accelerate-stop distance available (ASDA), landing distance available (LDA) ;

(p) disabled aircraft removal plan : the telephone/telex/facsimile numbers and email address of the Aerodrome coordinator for the removal of a disabled aircraft on or adjacent to the movement area, information on the capability to remove a disabled aircraft, expressed in terms of the largest type of aircraft which the Aerodrome is equipped to remove ; and

(q) rescue and fire-fighting : the level of protection provided, expressed in terms of the category of the rescue and fire-fighting services, which should be in accordance with the longest aeroplane normally using the Aerodrome and the type and amounts of extinguishing agents normally available at the Aerodrome.

Note : The accuracy of the information in Paragraph 4 above is critical to aircraft safety. Information requiring engineering survey and assessment should be gathered or verified by qualified technical persons.

4. PARTICULARS OF THE AERODROME OPERATING PROCEDURES AND SAFETY MEASURES

AERODROME REPORTING

Particulars of the procedures for reporting any changes to the Aerodrome information set out in the AIP and procedures for requesting the issue of NOTAMS, including the following :

(a) arrangement for reporting any changes to the NCAA and recording the reporting of changes during and outside the normal hours of Aerodrome operations ;

(b) the names and roles of persons responsible for notifying the changes, and their telephone numbers during and outside the normal hours of Aerodrome operations ; and

(c) the address and telephone numbers, as provided by the NCAA, of the place where changes are to be reported to the NCAA.

ACCESS TO THE AERODROME MOVEMENT AREA

Particulars of the procedures that have been developed and are to be followed in coordination with the agency responsible for preventing unlawful interferences in civil aviation at the Aerodrome and for preventing unauthorized entry of persons, vehicles, equipment, animals or other things into the movement area, including the following :

(a) the role of the Aerodrome operator, the aircraft operator, Aerodrome fixed base operators, the Aerodrome security entity, the NCAA and other government departments, as applicable ; and

(b) the names and roles of the personnel responsible for controlling access to the Aerodrome, and the telephone numbers for contacting them during and after working hours.

AERODROME EMERGENCY PLAN

Particulars of the Aerodrome emergency plan, including the following :

(a) plans for dealing with emergencies occurring at the Aerodrome or in its vicinity, including the malfunction of aircraft in flight ; structural fires ; sabotage, including bomb threats (aircraft or structure) ; unlawful seizure of aircraft ; and

B 1442

incidents on the airport covering “during the emergency” and “after the emergency” considerations ;

(b) details of test for Aerodrome facilities and equipment to be used in emergencies, including the frequency of those tests ;

(c) details of exercises to test emergency plans, including the frequency of those exercises ;

(d) a list of organizations, agencies and persons of authority, both on and off airport, for site roles ; their telephone and facsimile numbers, e-mail and SITA addresses and the radio frequencies of their offices ;

(e) the establishment of an Aerodrome emergency committee to organize training and other preparations for dealing with emergencies ; and

(f) the appointment of an on-scene commander for the overall emergency operation.

RESCUE AND FIRE-FIGHTING

Particulars of the facilities, equipment, personnel and procedures for meeting the rescue and fire-fighting requirements, including the names and roles of the persons responsible for dealing with the rescue and fire-fighting services at the Aerodrome.

Note :- This subject should also be covered in appropriate detail in the Aerodrome emergency plan.

INSPECTION OF THE AERODROME MOVEMENT AREA AND OBSTACLE LIMITATION SURFACE BY THE AERODROME OPERATOR

Particulars of the procedures for the inspection of the Aerodrome movement area and obstacle limitation surfaces, including the following :

(a) arrangement for carrying out inspections, including runway friction and water-depth measurements on runways and taxiways, during and outside the normal hours of Aerodrome operations ;

(b) arrangement and means of communicating with the Aerodrome air traffic control unit during an inspection ;

(c) arrangements for keeping an inspection logbook, and the location of the logbook ;

(d) details of inspection intervals and times ;

(e) inspection checklist ;

(f) arrangement for reporting the results of inspections and for taking prompt follow-up actions to ensure correction of unsafe conditions ; and

(g) the names and roles of persons responsible for carrying out inspections, and their telephone number during and after working hours.

(h) procedure to monitor and report the condition of movement areas.

(i) procedure to report the presence of water on runway.

(j) procedures to report slippery runway condition.

VISUAL AIDS AND AERODROME ELECTRICAL SYSTEMS

Particulars of the procedures for the inspection and maintenance of aeronautical lights (including obstacle lighting), signs, markers and Aerodrome electrical systems, including the following :

- (a) arrangement for carrying out inspections during and outside the normal hours of Aerodrome operation, and the checklist for such inspection ;
- (b) arrangements for recording the results of inspections and for taking follow up action to correct deficiencies ;
- (c) arrangements for carrying out routine maintenance and emergency maintenance ;
- (d) arrangements for secondary power supplies, if any, and, if applicable, the particulars of any other method of dealing with partial or total system failure ; and
- (e) the names and roles of the persons responsible for the inspection and maintenance of the lighting, and the telephone numbers for contacting those persons during and after working hours.
- (f) sign plan and surface movement guidance and control systems (SMGCS) plan approved by NCAA.
- (g) procedure to prevent aircraft from entering permanently closed runways and taxiways.

MAINTENANCE OF THE MOVEMENT AREA

Particulars of the facilities and procedures for the maintenance of the movement area, including :

- (a) arrangements for maintaining the paved areas ;
- (b) arrangements for maintaining the unpaved runways and taxiways ;
- (c) arrangements for maintaining the runway and taxiway strips ; and
- (d) arrangements for the maintenance of Aerodrome drainage.

AERODROME WORKS SAFETY

11. Particulars of the procedures for planning and carrying out construction and maintenance work safely (including work that may have to be carried out at short notice) on or in the vicinity of the movement area which may extend above an obstacle limitation surface, including the following :

- (a) arrangements for communicating with the Aerodrome air traffic control unit during the progress of such work ;
- (b) the names, telephone numbers and roles of the persons and organizations responsible for planning and carrying out the work, and arrangements for contacting those persons and organizations at all times ;
- (c) the names and telephone numbers, during and after working hours, of the Aerodrome fixed-based operators, ground handling agents and aircraft operators who are to be notified of the work.
- (d) a distribution list for work plans, if required.
- (e) procedure to return a runway to operational status after pavement overlay.

B 1444

APRON MANAGEMENT

Particulars of the apron management procedures, including the following :

- (a) arrangements between air traffic control and the apron management units ;
- (b) arrangements for allocating aircraft parking positions ;
- (c) arrangements for initiating engine start and ensuring clearance of aircraft push-back ; and
- (d) marshalling service.

APRON SAFETY MANAGEMENT

Procedures to ensure apron safety, including :

- (a) protection from jet blasts ;
- (b) enforcement of safety precautions during aircraft refuelling operations ;
- (c) apron sweeping ;
- (d) apron cleaning ;
- (e) arrangements for reporting incidents and accidents on an apron ; and
- (f) arrangements for auditing the safety compliance of all personnel working on the apron.

AIRSIDE VEHICLE CONTROL

Particulars of the procedure for the control of surface vehicles on or in the vicinity of the movement area, including the following :

- (a) details of the application traffic rules (including speed limits and the means of enforcing the rules) ; and
- (b) the method of issuing driving permits for operating vehicles in the movement area.

WILDLIFE HAZARD MANAGEMENT

Particulars of the procedures to deal with the danger posed to aircraft operations by the presence of bird or mammals in the Aerodrome flight pattern or movement area, including the following :

- (a) arrangements for assessing wildlife hazards ;
- (b) arrangements for implementing wildlife control programmes ; and
- (c) the names and roles of the persons responsible for dealing with wildlife hazards, and their telephone numbers during and after working hours.

OBSTACLE CONTROL

Particulars setting out the procedures for :

- (a) monitoring the obstacle limitation surfaces and Type A Chart for obstacle in the take-off surface ;
- (b) controlling obstacles within the authority of the operator ;
- (c) monitoring the height of buildings or structures within the boundaries of the obstacle limitation surfaces ;

- (d) controlling new developments in the vicinity of Aerodromes ; and
- (e) notifying the CAA of the nature and location of obstacles and any
- (f) subsequent addition or removal of obstacles for action as necessary,
- (g) including amendment of the AIS publications.

REMOVAL OF DISABLED AIRCRAFT

Particulars of the procedures for removing a disabled aircraft on or adjacent to the movement area, including the following :

- (a) the roles of the Aerodrome operator and the holder of the aircraft certificate of registration ;
- (b) arrangements for notifying the holder of the certificate of registration ;
- (c) arrangements for liaising with the Aerodrome air traffic control unit ;
- (d) arrangements for obtaining equipment and personnel to remove the disabled aircraft ; and
- (e) the names, role and telephone numbers of persons responsible for arranging for the removal of disabled aircraft.

HANDLING OF HAZARDOUS MATERIALS

Particulars of the procedures for the safe handling and storage of hazardous material on the Aerodrome, including the following :

- (a) arrangements for special areas on the Aerodrome to be set up for the storage of inflammable liquids (including aviation fuels) and any other hazardous materials ; and
- (b) the method to be followed for the delivery, storage, dispensing and handling of hazardous materials.

Note : Hazardous materials include inflammable liquids and solid, corrosive liquids, compressed gases and magnetized or radioactive materials.

Arrangements for dealing with the accidental spillage of hazardous materials should be included in the Aerodrome emergency plan.

LOW-VISIBILITY OPERATIONS

Particulars of procedures to be introduced for low-visibility operations, including the measurement and reporting of runway visual range as and when required, and the names and telephone numbers, during and after working hours, of the persons responsible for measuring the runway visual range.

PROTECTION OF SITES FOR RADAR AND NAVIGATIONAL AIDS

Particulars of the procedures for the protection of sites for radar and radio navigational aids located on the Aerodrome to ensure that their performance will not be degraded, including the following :

- (a) arrangements for the control of activities in the vicinity of radar and nav aids installations ;
 - (b) arrangements for ground maintenance in the vicinity of these installations ;
- and

B 1446

(c) arrangements for the supply and installation of signs warning hazardous microwave radiation.

Note 1 : In writing the procedures for each category, clear and precise information should be included on :

when, or in what circumstances, an operating procedure is to be activated ; how an operating procedure is to be activated ; actions to be taken ; the persons who are to carry out the actions ; and the equipment necessary for carrying out the actions, and access to such equipment.

Note 2 : If any of the procedures specified above are not relevant or applicable, the reason should be given.

5. DETAILS OF THE AERODROME ADMINISTRATION AND SAFETY MANAGEMENT SYSTEM

Aerodrome Administration

Particulars of the Aerodrome administration, including the following :

(a) an Aerodrome organizational chart showing the names and positions of key personnel, including their responsibilities ;

(b) the name, position and telephone number of the person who has overall responsibility for Aerodrome safety ;

(c) airport committees ; and

(d) particulars of staff training and competency, including the specifications of staff qualifications and experience, training and programme for upgrading of skills provided to staff on safety-related duties, and where necessary, the certification system for testing their competency.

Safety Management System (Sms)

Particulars of the safety management system established for ensuring compliance with all safety requirements and achieving continuous improvement in safety performance, the essential features being :

(a) the safety policy, insofar as applicable, on the safety management process and its relation to the operational and maintenance process ;

(b) the structure or organization of the SMS, including staffing and the assignment of individual and group responsibilities for safety issues ;

(c) SMS strategy and planning, such as setting safety performance target, allocating priorities for implementing safety initiatives and providing a framework for controlling the risks to as low a level as is reasonably practicable keeping always in view the requirements of the Standards and Recommended Practices in Volume I of Annex 14 to the Convention on International Civil Aviation, and the national regulations, standards, rules or orders.

(d) SMS implementation, including facilities, methods and procedures for the effective communication of safety messages and the enforcement of safety requirements ;

(e) a system for the implementation of, and action on, critical safety areas which require a higher level of safety management integrity (safety measures programmes) ;

(f) measures for safety promotion and accident prevention and a system for risk control involving analysis and handling of accidents, incidents, complaints, defects, faults, discrepancies and failures, and continuing safety monitoring ;

(g) the internal safety audit and review system detailing the systems and programmes for quality control of safety ;

(h) the system for documenting all safety-related airport facilities as well airport operational and maintenance records, including information on the design and construction of aircraft pavements and Aerodrome lighting. The system should enable easy retrieval of record including charts,

(i) the incorporation and enforcement of safety-related clauses in the contracts for construction work at the Aerodrome. Any additional information in respect of paragraphs 1-22 which may from time to time be included in the Aerodrome Standards manual.

AERODROME OPERATING REQUIREMENTS—PART 12 S.11

1. *Aerodrome Data*—The holder of an Aerodrome certificate, in determining and reporting Aerodrome data shall

(a) Ensure adherence to accuracy, integrity and protection requirements set forth in Aerodrome Standards Manual

(b) Maintain the integrity of aeronautical data and avoidance and corruption of data at all times

(c) Ensure that data are measured or described appropriately as prescribed in the Aerodrome standards manual

2. *Notifying and Reporting*

(a) *Notification of inaccuracies in Aeronautical Information Service (AIS) publications*—An Aerodrome operator shall review all Aeronautical Information Publications (AIPs), AIP Supplements, AIP Amendments, Notices to Airmen (NOTAMs), Pre-flight Information Bulletins and Aeronautical Information Circulars issued by the AIS on receipt thereof and immediately after such reviews shall notify the Authority of any inaccurate information contained therein that pertains to the Aerodrome.

(b) *Notification of changes to the Aerodrome facilities, equipment and level of service planned in advance*—An Aerodrome operator shall notify the Authority, in writing, at least 30 days before effecting any change to the Aerodrome facility or equipment or the level of service at the Aerodrome that has been planned in advance and which is likely to affect the accuracy of the information contained in any AIS publication referred to in Regulation 2a above.

(c) *Issues requiring immediate notification*— Subject to the Regulation 2(d) an Aerodrome operator shall arrange for air traffic control and the Authority to receive immediate notice detailing any of the following circumstances of which the operator has knowledge :

B 1448

(i) Obstacles, Obstructions and Hazards :

(aa) any projections by an object through an obstacle limitation surface relating to the Aerodrome ; and

(bb) the existence of any obstruction or hazardous condition affecting aviation safety at or near the Aerodrome ;

(ii) level of service :— Reduction in the level of service at the Aerodrome as set out in any of the AIS publications referred to in Regulation (2a) above

*(iii) Movement area—*Closure of any part of the movement area of the Aerodrome ; and

(iv). Any other condition that could affect aviation safety at the Aerodrome and against which precautions are warranted.

(d) Immediate notification to pilots :

When it is not feasible for an Aerodrome operator to arrange for the air traffic control unit and the Authority to receive notice of a circumstance referred to in 2(c) above in accordance with that regulation, the operator must give immediate notice direct to the pilots who may be affected by that circumstance.

*3. Visual aids for Navigation—*The holder of an Aerodrome certificate shall ;

(a) establish procedures to ensure that a system of preventive maintenance and checking of the Aerodrome visual aids for navigation is in place.

(b) ensure that each visual aid for navigation provides reliable and accurate guidance to the user.

(c) establish a percentage of allowable serviceable lights that will ensure continuity of guidance to the user.

(d) restore any unserviceable or deteriorated items back into service without undue delay.

(e) provide and maintain visual aids at the Aerodrome as prescribed in the Aerodrome standards manual and related guidance material.

*4. Works on Aerodrome—*The holder of an Aerodrome certificate shall ;

(a) establish procedures and take precautions to ensure that works carried out on the Aerodrome do not endanger aircraft operations.

(b) appoint one or more trained works safety officers to ensure full compliance with the procedures and precautions in paragraph (a) above.

(c) coordinate work and ensure compliance with safety requirements and standards for routine maintenance, minor construction or maintenance work or major construction or maintenance work at its Aerodrome as prescribed in the Aerodrome standards manual and related guidance material.

(d) provide liaison between any maintenance team or contractor, ATC and safety works officer so as to ensure compliance with safety rules in the areas of :

(i) R/T procedures to be used

(ii) Isolation of work areas

(iii) General working rules

- (iv) Hazards to personnel working on the Aerodrome
- (v) Marking and Lighting on cranes or equipment that is likely to penetrate the obstacle clearance zone.
- (vi) Effect on navigational aids (ILS, radar) and other electronic landing aids.
- (vii) Paved area cleanliness after work
- (e) Carry out works on Aerodrome as prescribed in Aerodrome standards manual and associated guidance material

5. *Aerodrome Emergency Plan*—The holder of Aerodrome certificate shall establish an Aerodrome Emergency Plan to :

- (a) ensure that all Aerodrome personnel having duties and Aerodrome emergency responsibilities under the holder's Aerodrome emergency plan are familiar with their assignments and are properly trained.
- (b) test the Aerodrome emergency plan by requiring full-scale Aerodrome emergency exercises at intervals not exceeding two years.
- (c) require special emergency exercises in the intervening year to ensure that any deficiencies found during the full-scale Aerodrome emergency exercise have been corrected
- (d) review the plan after each of the exercise specified in paragraphs (b) and (c) or after an actual emergency, to correct any deficiencies found.
- (e) ensures the Aerodrome Emergency Plan document includes at least the following :
 - (i) Types of emergency planned for ;
 - (ii) List of emergencies involved in the plan ;
 - (iii) Responsibility and role of each agency, the crisis management centre and the command post, for each type of emergency ;
 - (iv) information on names and telephone numbers of officers or people to be contacted in the case of a particular emergency ; and
 - (v) a map of the Aerodrome and its immediate vicinity.
- (f) establish procedures for coordinating with other entities involved in the provision of emergency services and the development of the plan.
- (g) establish and implement the Aerodrome emergency plan as prescribed in the Aerodrome standards manual and associated guidance material.

6. *Rescue and Fire Fighting*—The holder of an Aerodrome certificate shall :

- (a) determine the rescue and fire fighting category of the Aerodrome, minimum extinguishing agents required for the category and minimum rescue and fire fighting vehicles for the category.
- (b) establish a procedure to ensure that all rescue and fire fighting personnel are trained, equipped, and sufficient in number to respond to any emergency situation.

B 1450

(c) when required by the Authority, demonstrate rescue and fire fighting response capability.

(d) in the event that an increase in aircraft movements, or a change in the sizes of aircraft using the Aerodrome results in an increase in the category of Aerodrome, the holder of an Aerodrome certificate shall increase his or her rescue and fire fighting capability to the minimum required for that higher category as prescribed by the Authority.

(e) not reduce its rescue and fire fighting capability except with the approval of the Authority, and the reduction shall not be implemented unless the information is forwarded to the Aeronautical Information Services (AIS) for immediate publication.

(f) employ a system of preventive maintenance of its rescue and fire fighting vehicles to ensure effectiveness of the equipment and compliance with the required response time throughout the life of each vehicle.

(g) with the rescue and fire fighting equipment, and the number of trained personnel which will assure an effective operation, respond promptly to each emergency situation in its Aerodrome.

(h) equip its Rescue and Fire Fighting outfit with trained personnel, serviceable vehicles, principal and complementary agents and equipment meeting the category of its Aerodrome with the operating objective and target of :

(i) Meeting the response time of three minutes, to get to the end of each runway, as well as to any other part of the movement area in optimum conditions of visibility and surface condition.

(ii) Discharging foam solution, within the three minutes response time at a rate of at least fifty percent (50%) of the discharge rate as specified by operators' Aerodrome category.

(iii) Responding to each emergency situation at his or her Aerodrome as promptly as possible.

(iv) Provide rescue and fire fighting services as prescribed in the Aerodrome standards manual and associated guidance material.

7. Apron Control and Management Services—The holder of an Aerodrome certificate shall :

(i) ensure that the Aerodrome control service and the apron control service work in harmony to facilitate safe transition of aircraft between apron control and Aerodrome control.

(ii) ensure close liaison and co-operation between the Apron Control Unit and ATS units through radio communication and monitoring devices.

(iii) keep an accurate record of movement information including aircraft arrival times, landings and take-offs.

(iv) provide marshalling and leader van services and aircraft stand allocation.

(v) provide serviceable aviobridges and docking devices where passenger loading is done through bridges.

(vi) control apron movements by ground vehicles using the Aerodrome operator's apron safety rules as stipulated in approved Aerodrome manual.

(vii) provide blast fences to protect personnel and vehicles from jet blast and propeller slipstreams.

(viii) ensure that aircraft operators and fuel companies adhere strictly to the holder's procedures during the fuelling of aircraft.

(ix) ensure that apron is swept clean and de-greased regularly and when necessary.

(x) keep records of activities and dissemination of same to appropriate establishments when necessary.

(xi) provide apron control and management services as prescribed in the Aerodrome standards manual and associated guidance material.

8. *Ground Vehicles and Pedestrians.*—The holder of Aerodrome certificate shall :

(a) limit access to movement areas and safety areas only to those ground vehicles and pedestrians necessary for Aerodrome and aircraft operations.

(b) provide adequate procedures for the safe and orderly access to, and operation on the Aerodrome operational areas, by ground vehicles and pedestrians.

(c) establish and implement provisions identifying the consequences of non-compliance with the procedures in (b) by an employee, tenant, or contractor.

(d) when an air traffic control service is in operation, ensure that each ground vehicle or pedestrian in movement areas or safety areas is controlled by :

(i) two-way radio communications between each ground vehicle or pedestrian and the control tower ;

(ii) an escort vehicle with two-way communication with the control tower ;
or

(iii) adequate measures authorised by the Authority for controlling ground vehicles and pedestrians, such as markings, signs, signals or guards, when it is not operationally practicable to have two-way radio communications between the tower and the ground vehicle, escort, or pedestrian.

(e) ensure that each employee, tenant, or contractor is trained on the procedures required in this Part "Ground vehicles and pedestrians" prior to moving on foot, or in a ground vehicle, in the movement areas or safety areas of the Aerodrome.

(f) maintain the following records :

(i) a description and date of training for personnel and use of ground vehicles on movement areas and safety areas.

(ii) a record for each vehicle and individual access to movement areas.

(iii) a description and date of any accident or incident in the movement areas involving aircraft and ground vehicle, or aircraft and aircraft, or aircraft and pedestrians.

B 1452

(g) ensure ground vehicles and pedestrian operations as prescribed in the Aerodrome standards manual and associated guidance material.

9. *Protection of Navigational Aids*—The holder of an Aerodrome certificate shall :

(a) prevent the construction of facilities on the Aerodrome that would adversely affect the operation of any electronic or visual navigation aid or air traffic service.

(b) prevent, as far as it is within the certificate holder's authority, an interruption of the visual or electronic signals of navigation aids.

(c) provide protection of navigational aids as prescribed in the Aerodrome standards manual and associated guidance material.

10. *Aerodrome Inspection Programme*—The holder of an Aerodrome certificate shall :

(a) carry out special inspections :

(i) as soon as practicable after an aircraft accident or incident within the meaning of the requirements specified in ICAO *Annex 13*.

(ii) during any period of construction or repair of the Aerodrome facilities or equipment that is critical to the safety of aircraft operations.

(iii) at any time when there are conditions at Aerodrome such as strong winds and rain, that could affect aviation safety.

(iv) after construction, repair, or maintenance works have been carried out on Aerodrome facilities and equipment.

(b) carry out daily serviceability inspections.

(c) carry out Aerodrome technical inspections.

(d) An Aerodrome technical inspection which ensures that any deterioration that could make any facility unsafe for aircraft operations is detected shall be carried out by the holder of Aerodrome certificate at least once in a year. The technical inspection shall include the following :

(i) An instrument survey of the approach, take-off and transition surfaces.

(ii) An inspection and testing of the Aerodrome lighting and electrical reticulation systems, including the visual approach slope indicators. (VASIS or PAPIS).

(iii) An electrical testing of any earthing points at the Aerodrome.

(iv) An inspection and assessment of the movement area pavements and drainage.

(v) An inspection of signs on the movement areas.

(vi) An inspection of terminal building facilities.

(vii) An inspection of facilities for Aerodrome emergency.

(viii) An inspection of rescue and fire fighting facilities.

(ix) Assessment of hauling of hazardous materials.

- (x) Assessment of measures to control and reduce birds and animal hazards.
- (xi) An inspection of airside vehicles and movement control arrangements.
- (xii) A check of the currency and accuracy of Aerodrome information published in AIP.
- (xiii) A check of Aerodrome operating procedures as contained in the holder's Aerodrome manual.
- (xiv) A check of movement areas, grassed areas, and visual aids.
- (xv) A check of the installations, equipment, and terminal building facilities.

11. *Public Protection*—The holder of Aerodrome certificate shall provide :

- (a) safeguards to prevent inadvertent entry to the movement areas by unauthorised persons or vehicles.
- (b) reasonable protection of persons and property from aircraft blast.
- (c) an Aerodrome perimeter fence, perimeter road, barriers and doors with controlled access to prevent incursion of animals or human beings likely to endanger aircraft operation.

12. *Aerodrome Security*—The holder of an Aerodrome certificate shall, in addition to the Requirements of sub-section 11 :

- (a) ensure that personnel engaged, employed, or contracted by the certificate holder undergo a security awareness programme, and that each person required to carry out specific security tasks is trained for those tasks and ;
- (b) designate an isolated aircraft parking position with adequate lighting facility in his or her Aerodrome for the parking of an aircraft that is known or believed to be the subject of unlawful interference, or which for other security reason needs isolation from normal Aerodrome activities ; and
- (c) provide the following areas at his or her Aerodrome terminal building for the screening of passengers, crew and baggage :
 - (i) areas for the screening of international passengers, crew, and baggage, prior to aircraft boarding.
 - (ii) sterile areas where international passengers and crew are prevented from having access to unauthorised articles or contact with unscreened persons.
 - (iii) areas for the separation of arriving passengers and crew from departing passengers and crew during deplaning to prevent arriving, transit, and transfer passengers and crew having contact with any person who has been subject to screening, and
- (d) ensure that concession areas at Aerodrome terminal buildings are designed in such a way that they provide access control measures sufficient to prevent delivery of any firearm, or any offensive weapon or instrument, or ammunition, or explosive substance, or banned drugs and articles, to any screened person.

B 1454

(e) design all areas required in paragraphs (c) and (d) in such a way that they provide access control measures sufficient to prevent any unauthorised persons from entering the area and

(f) provide designated areas for the separation of international passengers from domestic passengers.

(g) establish a system for crowd control and vehicle movements in the land side and public areas of the Aerodrome.

(h) establish procedures for identifying Aerodrome users, methods of dealing with breaches in any security procedures, as well as reporting same to the Authority.

(i) make provision for the security of services including emergency supplies, communications, sewage and water supply in order to guard against the risk of such services being sabotaged or criminally put out of service.

(j) demarcate, warn, alert and affix signs and prohibition notices at the perimeter of security areas within the Aerodrome.

13. *Aeronautical Studies*—An applicant for or holder of Aerodrome certificate shall :

(a) carry out an aeronautical study to assess the impact of deviations from the Aerodrome standards in order to ;

(b) provide justification for a deviation from Aerodrome standards on the grounds that an equivalent level of safety shall be attained by other means.

(c) present alternative means of ensuring the safety of aircraft operations, and

(d) estimate the effectiveness of each alternative.

(e) recommend procedures to compensate for the deviation.

(f) publish approval of any deviation in AIP and seek and obtain approval of the Authority on (a) to (e) so as to maintain the currency of his or her Aerodrome certificate.

(g) engage inspectors with practical experience and specialised knowledge in relevant areas in the conduct of technical analysis.

(h) notify promptly pilots, AIS and the Authority, in compliance the Regulations, where the only reasonable means of providing an equivalent level of safety is to adopt suitable procedures with cautionary advice.

(i) carry out aeronautical studies as prescribed in the Aerodrome standards manual and associated guidance material.

14. *Bird Hazard Reduction*—The holder of Aerodrome certificate, when organising an Aerodrome bird strike control programme shall :

(a) ensure all parties involved in Aerodrome use are well informed of the operations of the programme and the hazardous effects of allowing the presence of birds at the Aerodrome.

(b) seek the co-operation of the air traffic control unit, Aerodrome maintenance, planning, finance, marketing as well as aircraft operators and constitute an effective bird hazard reduction committee.

(c) employ or engage bird control field personnel headed by an expert.

(d) discourage farming with crops that attract birds and disapprove agricultural activities in and around the vicinity of the Aerodrome.

(e) pay attention to grass management, the presence of pools of water around the airfield, refuse disposal and collection techniques, so as to make the Aerodrome unattractive to birds.

(f) ensure there is adequate budget for continuous bird and wildlife control programmes and their implementation.

(g) carry out effective bird scaring exercises and constantly discourage and destroy bird' habitats around the Aerodrome and its vicinity.

(h) report bird strike incidents using ICAO "IBIS" reporting format and impress upon on aircraft operators to report bird strike incidents whenever they occur promptly to appropriate department for action.

(i) keep accurate record of bird strike incidents and notify the Authority promptly.

(k) carry out bird hazard assessment and implement bird hazard management plans as prescribed in the Aerodrome standards manual and the associated guidance material.

(l) The holder of an Aerodrome certificate shall carry out the activities of bird hazard reduction programmes in compliance with Aerodrome Standards Manual and related guidance on bird control and reduction.

15. *Pavement Strength and Overload Operations*— The holder of Aerodrome certificate shall not permit overloading of pavements beyond the design capacity particularly when it is observed that the pavements are exhibiting signs of distress or failure. However occasional minor overload on serviceable pavements is acceptable provided the following specifications are adhered to :

(a) for flexible pavements, occasional movements by aircraft with Aircraft Classification Number (ACN) not exceeding 10 percent above the reported Pavement Classification Number (PCN) should not adversely affect the pavement.

(b) for rigid and composite pavements, in which a rigid pavement layer provides a primary element of the structure, occasional movements by aircraft with ACN not exceeding 5 per cent above the reported PCN should not adversely affect the pavement.

(c) if the pavement structure is unknown, the 5 percent limitation should apply, and

(d) the annual number of overload movements should not exceed approximately 5 per cent of the total annual aircraft movements.

16. *Aerodrome Operator's Safety Management System*—The Aerodrome operator shall :

(a) establish a safety management system for the Aerodrome describing the structure of the organisation and the duties, powers and responsibilities of the

B 1456

officials in the organisational structure, with a view to ensuring that operations are carried out in a demonstrably controlled way and are improved where necessary.

(b) oblige all users of the Aerodrome, including fixed-based operators, ground-handling agencies and other organisations that perform activities independently at the Aerodrome in relation to flight or, aircraft handling, to comply with the requirements laid down by the Aerodrome operator with regard to safety at the Aerodrome. The Aerodrome operator shall monitor such compliance.

(c) require all users of the Aerodrome, including fixed-base operators, ground handling agencies and other organisations referred to in Regulation 10 to co-operate in the programme to promote safety at ; and the safe use of the Aerodrome by immediately informing it of any accidents, incidents, defects and faults which have a bearing on safety.

(d) The Aerodrome operator shall also arrange for an external audit and inspection programme for evaluating other users, including fixed-based operators, ground handling agencies and other organisations working at the Aerodrome.

17. Quality Programme

(a) The holder of Aerodrome certificate shall implement a quality programme as prescribed in the Aerodrome standards manual.

(b) The quality system shall include :

(i) the maintenance of Aerodrome installations, equipment and terminal building facilities ;

(ii) the delivery of quality service to passengers and aircraft operators and

(iii) the measurement of the quality of service.

(c) The holder of Aerodrome certificate shall pay attention to :

(i) departing and arriving passengers and baggage clearing time,

(ii) the provision of flight information to Aerodrome users,

(iii) sanitation,

(iv) directional signs,

(v) lighting and ambient temperature conditions, and

(vi) treatment of Aerodrome users' complaints.

18. Environmental Protection—The Aerodrome certificate holder shall establish an environment protection programme. The programme shall include :

(a) measures for wildlife control and the handling of all types of wastes, spills, and pollution of air, water, and soil.

(b) ensuring compliance with the Regulations and extant environmental protection laws and regulations, guide lines and directives by relevant Government Agencies.

19. Removal of Disabled Aircraft—The holder of an Aerodrome certificate shall

:

(a) establish and implement a disabled aircraft removal plan as prescribed in Aerodrome standards manual.

(b) designate an experienced and competent officer representing the Aerodrome operator to co-ordinate and liaise with ATS, the Accident Investigation Bureau, the Authority, the aircraft operator, Customs and Immigration Departments if the aircraft is involved in international operation, and note that the aircraft is the property of the aircraft operator and his or her insurers and that the task of moving the aircraft is the responsibility of the aircraft operator or owner.

(c) provide the capability of removing the disabled aircraft by following his or her plan for supplying of equipment, nominated agents acting on behalf of each operator at the Aerodrome and local contractors capable of facilitating the aircraft removal operations.

(d) make available a mobile office for the aircraft removal operation with communication links with ATS.

(e) secure the scene of the incident or accident with security personnel.

(f) keep records of all events, and photographs of the scene.

INFORMATION TO BE INCLUDED IN HELIPORT OPERATOR'S MANUAL—PART 12 S.16(3)

1. GENERAL INFORMATION :

(a) purpose, and scope of the heliport manual

(b) conditions for use of the heliport

(c) the available aeronautical information system and procedures for its promulgation.

(d) the system for recording helicopter movements.

(e) obligations of the heliport operator.

2. PARTICULARS OF HELIPORTS SITE :

(a) a plan of the heliport showing the main heliport facilities and heliport boundaries.

(b) a plan showing distance of heliport from the nearest city and airport.

(c) particulars of the title of the heliport site.

3. PARTICULARS OF THE HELIPORT REQUIRED TO BE REPORTED TO THE AERONAUTICAL INFORMATION SERVICE (AIS) :

(a) the name of the heliport ;

(b) the location of the heliport ;

(c) the geographical co-ordinates of the heliport reference point determined by reference to the World Geodetic System 1984 (WGS -84) reference datum ;

(d) the heliport dimensions and related information ;

(e) the declared distances ;

B 1458

(f) information about visual aids systems. ;

(g) the operational status of associated facilities services, navigational aids, and heliport conditions.

4. Heliport operating procedures and safety measures

(a) heliport administration ;

(b) heliport emergency plan ;

(c) heliport lighting including inspection and maintenance ;

(d) heliport reporting system ;

(e) procedures for preventing unauthorized entry to heliport ;

(f) safety management system for the heliport ;

(g) heliport serviceability inspections ;

(h) vehicle and movement control ;

(i) obstacle control measures ;

(j) measures to protect navigational aids within the heliport.

5. Particulars of Quality Systems with emphasis on operations, maintenance quality of service delivery to helicopter operators and heliport users

6. Heliport rescue and fire fighting :

(a) particulars of the category,

(b) vehicles,

(c) extinguishing agents,

(d) equipment,

7. Particulars of environmental protection.

8. Programme for the heliport ATS

Provision for air traffic services and airspace category, where applicable.

9. The procedures to control, amend and distribute the heliport manuals

HELIPORT OPERATIONS REQUIREMENTS (PART 12 S.18)

1. *Heliport Data*— The holder of the heliport certificate shall ensure the accuracy of the determination and reporting of heliport related aeronautical data with emphasis on the following areas :

(a) Adherence to accuracy and integrity requirements set forth in the Aerodrome Standards Manual.

(b) Maintenance of integrity of aeronautical data and avoidance of corruption of data at all times.

(c) Ensuring that data are measured or described as appropriate and should cover heliport reference point, elevation, final approach and take-off area (FATO) touchdown and lift-off area (TLOF) and declared distances.

2. *Notifying and Reporting*— A heliport certificate holder shall adhere to the requirement to notify and report appropriately to the Authority, the air traffic service provider, and pilots any condition that may affect aviation safety, within the specified time limits required by the Regulations.

3. *Physical Characteristics*— The holder of the heliport certificate shall provide at least one final approach and take-off area (FATO), one touchdown and lift-off area (TLOF), helicopter clearway where necessary, safety areas, helicopter ground taxiways, air taxiways, air transit routes and apron with particular attention to the following :

- (a) class of helicopters the heliport can serve ;
- (b) local conditions such as elevation, temperature and visual/general meteorological conditions ; and
- (c) the need to adhere to standards and specifications in the Aerodrome Standards Manual.

4. *Visual Aid*—The holder of the heliport certificate shall provide, at least one wind direction indicator, markings and markers including heliport identification marking, heliport beacon, heliport light including approach lightings where desirable and practicable, obstacle protection surface (HAPI and PAPI) aiming point lights, taxiway lights, and floodlighting of obstacles in accordance with the Aerodrome Standards Manual.

5. *Maintenance of Heliport Facilities*—The Holder of the heliport certificate shall :

- (a) carry out checks, preventive maintenance, and repairs on the heliport facilities, using a maintenance programme developed in strict compliance with the Aerodrome Standards Manual.
- (b) co-ordinate work and ensure compliance with safety requirements for routine maintenance, minor construction or maintenance work or major construction or maintenance work at the heliport in line with the procedures in the Aerodrome Standards Manual and related guidance material.

6. *Heliport Operator's Safety Management System*—The holder of the heliport certificate shall :

- (a) oblige all users of the heliport, including fixed-base operators, handling agencies, and other organisations that perform activities independently at the heliport in relation to helicopter operations, to comply with the requirements laid down by the heliport operator with regard to safety at the heliport ;
- (b) engage, employ, or contract a competent manager to head a team of qualified personnel as shown in the organisation structure of the heliport safety management department, to handle all matters affecting the aviation safety programme.
- (c) require all users of the heliport to co-operate in the programme to promote safety at, and the safe use of the heliport by immediately informing it of any accidents, incidents, defects and fault which have bearing on safety.

7. *Protection of Navigational Aids*—The holder of the heliport certificate shall :

B 1460

(a) prevent any construction of facilities on the heliport which may adversely affect the operation of any electronic or visual navigation aid or traffic servicesability on such heliport.

(b) prevent, as far as it is within the authority of such holder, any interruption of the visual or electronic signals of navigational aids.

8. *Quality Systems*—The holder of the heliport certificate shall :

(a) ensure the maintenance of heliport installations, equipment and terminal building facilities ;

(b) the Delivery of quality services to passengers, helicopter operators, and other heliport users ; and

(c) measure the quality of service taking cognizance of the requirements of the Aerodrome Standards Manual and the Regulations.

9. *Heliport Rescue and Fire Fighting*—The holder of the heliport certificate shall :

(a) determine the level of protection to be provided for rescue and fire fighting based on the over-all size of the largest helicopter that uses the heliport in accordance with heliport fire fighting category ;

(b) provide principal extinguishing agents (foam compound) meeting the minimum performance level B ;

(c) provide complimentary agents preferably dry chemical powder and halons ;

(d) provide vehicles with a discharge rate of foam compound as prescribed in the Aerodrome standards ;

(e) provide rescue equipment commensurate with the level of helicopter operations ;

(f) equip the fire fighting unit with trained personnel, vehicles, and equipment to achieve a response time not exceeding two minutes in optimum conditions of visibility and surface conditions ;

(g) provide rescue and fire fighting services as prescribed in the Aerodrome Standards Manual and associated guidance material.

10. *Environmental Protection*—The holder of the heliport certificate shall :

(a) develop an environmental protection programme covering bird hazard reduction and the handling of all types of waste, spills and pollutions of air water and soil.

(b) ensure compliance with the Regulations and extant environmental protection laws and regulations, guide lines and directives by relevant Government Agencies.

11. *Heliport Emergency Management Systems*—The holder of heliport certificate shall :

(a) establish procedures to ensure that all participants in any heliport emergency with allocated duties are familiar with and are properly trained for their assignments ;

(b) test the effectiveness of the emergency management system through periodic exercise including a full-scale heliport emergency exercise annually ;

(c) correct any deficiencies identified during any full-scale exercise and review his or her system with the aim of achieving improved efficiency and safety.

12. *Public Protection and Heliport Security*—The holder of the heliport certificate shall provide public protection and heliport security in accordance with the National Civil Aviation Security Regulations.

13. *Aeronautical Studies*—The holder of the heliport certificate shall carry out aeronautical studies where necessary under the conditions, procedures and technical guidelines given in the Aerodrome Standards Manual and the Regulations.

B 1461

INTENTIONALLY LEFT BLANK