

Schedule 21

Aerodrome Certification & Operation

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SUBPART A: GENERAL**21.001 APPLICABILITY**

- (a) This Schedule prescribes the requirements of the Commonwealth of The Bahamas for certification of aerodromes and the operations and operators of these aerodromes.
- (b) This Schedule is applicable to persons and organizations that operate aerodromes within the Bahamas and the persons performing duties on their behalf.
- (c) The requirement for airport certification shall apply to—
 - (1) Airports that serve scheduled and unscheduled air carrier aircraft with more than 30 seats;
 - (2) Airports that serve scheduled air carrier operations in aircraft with more than 9 seats but less than 31 seats; and
 - (3) Any other aerodrome, where the Minister is of the opinion that it is in the public interest for that aerodrome to meet the requirements necessary for the issuance of an airport certificate.
- (d) The requirement for airport certification shall not apply to aerodromes at which air carrier passenger operations are conducted only because the airport has been designated as an alternate airport.
- (e) Aerodromes exempt from the requirement for certification are aerodromes for which—
 - (1) The Minister has written an exemption; and
 - (2) An equivalent level of safety is defined.
- (f) The certification and operating requirements described in this Schedule shall—
 - (1) Reflect the Standards and Recommended Practices of ICAO Annex 14;
 - (2) Volume 1, Aerodromes, ICAO Document 9774, Manual on Certification of Aerodromes; and
 - (3) Form the basis for a judgment on the potential suitability of the aerodrome to be licensed and operated, taking into account the scale and scope of the flying activity which is to take place there.

21.005 DEFINITIONS

- (a) For the purpose of this Schedule, the following definitions apply—

Accuracy. A degree of conformance between the estimated or measured value and the true value.

(Note: For measured positional data, the accuracy is normally expressed in terms of a distance from a stated position within which there is a defined confidence of the true position falling);

Aerodrome. A means a defined area on land or water, including any building, installations and equipment, intended to be used either wholly or in part for the arrival, departure, and surface movement of aircraft.

Aerodrome beacon. An aeronautical beacon ground light visible at all azimuths, either continuously or intermittently, to designate a particular point on the surface of the aerodrome.

Aerodrome certificate. The certificate to operate an aerodrome issued by the Authority subsequent to the approval of the Aerodrome Manual (AM).

Aerodrome facilities and equipment. Facilities and equipment, inside or around the boundaries of an aerodrome, that is constructed or installed and maintained for the arrival, departure, and surface movement of aircraft.

Aerodrome elevation. The elevation of the highest point of the landing area.

Aerodrome Manual. The manual that forms part of the application for an aerodrome certificate pursuant to this Schedule, including any amendments thereto accepted and approved by the Authority.

Aerodrome operator. The owner or provider of an aerodrome that is certified for operations by the Authority;

Aerodrome reference code. A number and letter which is selected for aerodrome planning purposes.

Aerodrome Reference Point. The designated geographical location of an aerodrome.

Aeronautical Information Publication. A publication issued by or with the authority of the BCAD and containing aeronautical information of a lasting character essential to air navigation.

Aeronautical Information Service. A service established within The Bahamas responsible for the provision of aeronautical information and or data necessary for the safety, regularity and efficiency of air navigation.

Aeronautical study. A study of an aeronautical problem to identify possible solutions and select a solution that is acceptable without degrading safety.

Aircraft Classification Number. A number expressing the relative effect of an aircraft on a pavement for a specified standard subgrade category.

(Note: The ACN is calculated with respect to the centre of gravity (CG) position which yields the critical loading on the critical gear. Normally the aft most CG position appropriate to the maximum gross apron (ramp) mass is used to calculate the ACN. In exceptional cases the forward most CG position may result in the nose gear loading being more critical).

Aircraft stand. A designated area on an apron intended to be used for parking an aircraft.

Apron. A defined area on an aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance.

Apron management service. A service provided to regulate the activities and the movement of aircraft and vehicles on an apron.

Certified aerodrome. Aerodrome whose operator has been granted an aerodrome certificate by the Authority.

Declared distances—

- (i) **Take-off run available (TORA).** The length of runway declared available and suitable for the ground run of an aeroplane taking off.
- (ii) **Take-off distance available (TODA).** The length of the take-off run available plus the length of the clearway, if provided.
- (iii) **Accelerate-stop distance available (ASDA).** The length of the take-off run available plus the length of the stopway, if provided.
- (iv) **Landing distance available (LDA).** The length of runway which is declared available and suitable for the ground run of an aeroplane landing.

Frangible object. An object of low mass designed to break, distort, or yield on impact so as to present the minimum hazard to aircraft.

Geoid. The equipotential surface in the gravity field of the earth which coincides with the undisturbed mean sea level (MSL) extended continuously through the continents.

(Note: The geoid is irregular in shape because of local gravitational disturbances (wind, tides, salinity, current, etc.) and the direction of gravity is perpendicular to the geoid at every point);

Geoid undulation. The distance of the geoid above (positive) or below (negative) the mathematical reference ellipsoid.

(Note: In respect to the World Geodetic System C 1984 (WGS-84) defined ellipsoid, the difference between the WGS-84 ellipsoidal height and orthometric height represents WGS-84 geoid undulation);

International aerodrome. Any aerodrome designated by the Commonwealth of The Bahamas as an aerodrome of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out.

Landing area. The part of a movement area intended for the landing or take-off of aircraft.

Lighting system reliability. The probability that the complete lighting installation operates within the specified tolerances and that the system is operationally usable.

- Maneuvering area.** That part of an aerodrome to be used for the take-off, landing, and taxiing of aircraft, excluding aprons.
- Marker.** An object displayed above ground level in order to indicate an obstacle or delineate a boundary.
- Marking.** A symbol or group of symbols displayed on the surface of the movement area in order to convey aeronautical information.
- Movement area.** That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).
- Notices to Airmen.** A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.
- Obstacle.** All fixed, whether temporary or permanent, and mobile objects that are located on an area intended for the surface movement of aircraft or that are extended above a defined surface intended to protect aircraft in flight.
- Obstacle limitation surfaces.** A series of surfaces that define the volume of airspace at and around an aerodrome to be kept free of obstacles in order to permit the intended aircraft operations to be conducted safely and to prevent the aerodrome from becoming unusable by the growth of obstacles around the aerodrome.
- Pavement Classification Number.** A number expressing the bearing strength of a pavement for unrestricted operations.
- Rescue and Fire Fighting Service(s).** Rescue and fire-fighting services provided at the aerodrome.
- Runway.** A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.
- Runway End Safety Area.** An area symmetrical about the extended runway center line and adjacent to the end of the runway strip primarily intended to reduce the risk of damage to an aeroplane undershooting or overshooting the runway.
- Runway strip.** A defined area including the runway and stopway, intended to—
- (i) Reduce the risk of damage to aircraft running off a runway; and
 - (ii) Protect aircraft flying over it during take-off or landing operations.
- Safety.** The state in which the possibility of harm to persons or damage to property is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and risk management.
- Safety Management System.** A system for the management of safety at aerodromes, including the organization structure, responsibilities, procedures, processes and provisions for the implementation of aerodrome safety policies by an aerodrome operator, which provides for the control of safety at, and the safe use of, the aerodrome.
- Shoulder.** An area adjacent to the edge of a pavement so prepared as to provide a transition between the pavement and the adjacent surface.
- Signage.** Fixed or variable message signs provided to convey mandatory instructions, information on a specific location or destination on the movement area, or other information.
- Taxiway strip.** An area including a taxiway intended to protect an aircraft operating on a taxiway and to reduce the risk of damage to an aircraft accidentally running off the taxiway,
- Unserviceable area.** A part of the movement area that is unfit and unavailable for use by aircraft.
- Wildlife hazard.** A potential for damage to aircraft through collision with birds or animals on or near an aerodrome.

21.010 ACRONYMS & ABBREVIATIONS

- ARC – Aerodrome Reference Code
ARP – Aerodrome Reference Point
AIP – Aeronautical Information Publication

AIS – Aeronautical Information Service
ACN – Aircraft Classification Number
BCAD – Bahamas Civil Aviation Department
NOTAM – Notice to Airmen
PCN – Pavement Classification Number
RESA – Runway End Safety Area
RFFS – Rescue and Fire Fighting Service
SMS – Safety Management System

21.015 CERTIFICATION OF AERODROMES

- (a) Subject to paragraph (b), no person shall operate without airport certification—
- (1) An international aerodrome serving scheduled and unscheduled air carrier aircraft with more than 30 seats;
 - (2) An international aerodrome serving scheduled air carrier operations in aircraft with more than 9 seats but less than 31 seats; and
 - (3) Any other aerodrome, where the Minister is of the opinion that it is in the public interest for that aerodrome to meet the requirements necessary for the issuance of an airport certificate.
- (b) Paragraph (a) does not apply to—
- (1) An airport designated as an alternate airport; and
 - (2) Exempted aerodromes.

21.020 RESTRICTIONS

- (a) The Authority may impose restrictions as to the use of an aerodrome and may limit or totally prohibit the operation of any aircraft—
- (1) Not equipped with radio equipment; or
 - (2) Where the radio equipment is not compatible with the radio equipment installed for the control of air traffic at such aerodrome, if the Authority is satisfied that such restriction, limitation, or prohibition is necessary in the interest of aviation safety.
- (b) The Authority may restrict or prohibit flights by night from or at any aerodrome—
- (1) At which adequate facilities for night flights are lacking; or
 - (2) Where the terrain or other objects in the vicinity of the aerodrome could cause a hazard to the operation of aircraft used in night flights.

21.025 PROHIBITIONS IN CERTIFIED AERODROMES

- (a) No aircraft operator shall, except with the approval of the aerodrome operator, park or abandon used or unused aircraft on the movement areas of the aerodrome.
- (b) No person shall, except with the approval of the certified aerodrome operator—
- (1) Drive a vehicle into restricted areas of the aerodrome or the terminal building; or
 - (2) Obstruct an entrance to or passage in the terminal building in such a manner as to inconvenience other aerodrome users.
- (c) No person shall, on a certified aerodrome—
- (1) Obstruct or interfere with the authorized use of the aerodrome;
 - (2) Obstruct any employee of the aerodrome operator acting in the execution of his or her duty in relation to the aerodrome;
 - (3) Throw, leave, or drop anything capable of causing injury to any person or damage to property;
 - (4) Dump any waste matter whatsoever elsewhere other than a place designated and approved for the purpose by the aerodrome operator;

- (5) Commit any nuisance, disorderly or indecent act, write, draw or affix any profane, obscene or abusive materials on an aerodrome;
 - (6) Spill or release substances capable of causing air, water, or soil pollution.
- (d) No person shall, except with permission of the aerodrome operator, interfere or tamper with any area of the aerodrome or any equipment associated with the operation of the aerodrome to—
- (1) Trespass or gain access through restricted structures;
 - (2) Carry out trade of any level and magnitude including foreign exchange;
 - (3) Advertise in the aerodrome;
 - (4) Handle passengers and baggage or confront passengers and aerodrome users for unsolicited service;
 - (5) Supply any fuel to any aircraft except at a place and in a manner approved by the aerodrome operator.
- (e) The aerodrome operator shall subject to any approval granted under paragraph (d) to compliance with such conditions as the aerodrome operator may impose in order to safeguard the safety of persons and property on the aerodrome.

21.030 OBSTACLE LIMITATION

- (a) A person shall notify the Authority of any proposed—
- (1) High-rise construction or alteration above the ground level at its site;
 - (2) Construction or alteration which extends above an obstacle limitation surface prescribed in ICAO Document 9184, Airport Planning Manual, and associate guidance material;
 - (3) Highway, railroad or other transverse way for mobile objects of which if adjusted upwards 4.8m for roads and highways, 5.4m for railroads or the height of the highest mobile object that would traverse the road, will not exceed a standard of this Schedule;
 - (4) Construction or alteration on any—
 - (i) Aerodrome or landing facility;
 - (ii) Aerodrome under construction that is subject of a notice or proposal on file with the Authority.
- (b) The Authority shall conduct an aeronautical study of any construction or alteration for which a notice is submitted under this regulation to determine the effect of the proposal upon the operation of air navigation facilities and the safe and efficient use of the navigable airspace.
- (c) The aeronautical study may include the physical and electromagnetic radiation effect the proposal may have on the operation of air navigation facility.
- (d) An aerodrome operator shall ensure that obstacle limitation surfaces are established for the aerodrome in accordance with the standards set out in ICAO Annex 14 Volume 1.
- (e) An aerodrome operator shall—
- (1) Take all reasonable measures to ensure that obstacles at, or within the vicinity of, the aerodrome are detected as quickly as possible;
 - (2) If the operator becomes aware of the presence of an obstacle—
 - (i) Report it to the NOTAM office immediately; and
 - (ii) Provide the NOTAM office details of the height and location of the obstacle and amended declared distances and gradients, if applicable.
 - (3) if the operator becomes aware of any development or proposed construction near the aerodrome that is likely to create an obstacle—
 - (i) Report it to the Authority as soon as practicable; and
 - (ii) Provide the Authority details of the likely obstacle.

- (f) A person who proposes to construct a building or structure the top of which will be 110 metres or more above ground level shall inform the Authority of such intention and the proposed height and location of the building or structure.
- (g) The Authority may determine, in writing, that—
 - (1) An obstacle, or any proposed development or other proposed construction that is likely to create an obstacle;
 - (2) A building or structure the top of which is 110 metres or more above ground level; or
 - (3) A proposed building or structure the top of which will be 110 metres or more above ground level, is, or will be, a hazardous object because of its location, height or lack of marking or lighting.
- (h) The Authority may determine, in writing, that a gaseous efflux having a velocity exceeding 4.3 metres per second is, or will be, a hazard to aircraft operations because of the velocity or location of the efflux.
- (i) The Authority shall, where it makes a determination under paragraphs (g) and (h)—
 - (1) Publish in the AIP or NOTAMS particulars of the hazardous object or gaseous efflux to which the determination relates; and
 - (2) Give written notice of the determination.
- (j) In the case of a hazardous object that is a proposed building or structure, the Authority shall give a copy of the notice under paragraph (i)(2)—
 - (1) To the person proposing to construct the building or structure;
 - (2) To the authority or, if applicable, one or more of the authorities whose approval is required for the construction; and
 - (3) In any other case, to the person who owns or is in occupation or control of the hazardous object, or owns or is in control of the installation that produces the gaseous efflux, if such person can reasonably be identified.

21.035 REGISTER OF CERTIFICATES

- (a) The Authority shall maintain a register of all aerodrome certificates issued under this Schedule.
- (b) The register shall contain the following details—
 - (1) the full name and, if any, the trade name of the holder of the certificate;
 - (2) the postal address of the holder of the certificate;
 - (3) the name and the location of the aerodrome for which the certificate is issued;
 - (4) the number of the certificate issued;
 - (5) the file reference number of the initial and each subsequent safety inspection record and audit report in respect of each aerodrome certified;
 - (6) the nationality of the holder of the certificate; and
 - (7) the list of aerodrome exemptions.
- (c) The details referred to in paragraph (2) shall be recorded in the register within seven days from the date on which the certificate was issued by the Authority and updated within seven days of any amendment.
- (d) The register shall be kept in a safe place at the Authority.
- (e) The Authority shall furnish a copy of the register to any person who requests a copy.

SUBPART B: AERODROME CERTIFICATION

21.040 GENERAL

- (a) Prior to the granting of an aerodrome certificate, the Authority inspectors shall visit the aerodrome and assess and determine the extent to which its facilities and its operational procedures meet the licensing requirements.

- (b) In making its assessment and determination the Authority shall adopt as flexible an approach as is consistent with the achievement and maintenance of a satisfactory level of safety and shall—
 - (1) assess the aerodrome's infrastructure;
 - (2) audit the aerodrome's management of safety; and
 - (3) assess the competence of those persons responsible for safety.
- (c) The Aerodrome Manual shall be a key document in the assessment process and the Authority shall assess the current level of flying at the aerodrome and any anticipated change in activity against the facilities provided in order to be satisfied that the aerodrome and the airspace within which its visual traffic pattern is contained are safe for use.
- (d) The Authority shall, as a result of the Authority audit, produce a report to the aerodrome operator which shall list non-compliance items and detail other issues that may affect safety at the aerodrome.

21.045 REQUIREMENT FOR AERODROME CERTIFICATE

- (a) In accordance with section 21.015, no person shall operate, except under the authority and pursuant to the provisions of an aerodrome certificate issued for that aerodrome under this Schedule—
 - (1) an international aerodrome serving scheduled and unscheduled air carrier aircraft with more than 30 seats;
 - (2) an international aerodrome serving scheduled air carrier operations in aircraft with more than 9 seats but less than 31 seats; and
 - (3) any other aerodrome, where the Minister is of the opinion that it is in the public interest for that aerodrome to meet the requirements necessary for the issuance of an airport certificate.
- (b) The operator of an aerodrome may, notwithstanding that an aerodrome certificate is not required for such aerodrome, apply for an aerodrome certificate and pay the prescribed fee.

21.050 APPLICATION FOR AERODROME CERTIFICATE

- (a) An application for the issuance of an aerodrome certificate or an amendment thereto, shall be made in the form and manner prescribed by the Authority, and accompanied by—
 - (1) the operator's Aerodrome Manual; (b) the plans of the aerodrome;
 - (2) an environment impact assessment report;
 - (3) proof that the applicant is financially capable of operating the aerodrome;
 - (4) details of proposed non-compliance with, or deviations from, the requirements prescribed in this Schedule; and
 - (5) the appropriate airspace classification requirements.
- (b) The fee prescribed for an application shall be submitted for processing as determined by the Authority.

21.055 GRANT OF AERODROME CERTIFICATE

- (a) The Authority shall grant an aerodrome certificate to an applicant if—
 - (1) the aerodrome facilities, services and equipment are in accordance with the standards specified in ICAO Annex 14 Volume I and this Schedule;
 - (2) the aerodrome operating procedures make satisfactory provision for the safety of aircraft;
 - (3) an aerodrome manual has been prepared for the aerodrome and contains all the relevant information;
 - (4) the applicant will, if the certificate is granted, be able to operate and maintain the aerodrome satisfactorily;
 - (5) an acceptable Safety Management System (SMS) is in place at the aerodrome; and

21.060 REFUSAL TO GRANT AERODROME CERTIFICATE

- (a) The Authority shall, where the Authority refuses to grant an aerodrome certificate to an applicant, give the applicant a written notice stating the reasons for the refusal not later than 14 days after the date of refusal.

21.065 DURATION OF AERODROME CERTIFICATE

- (a) An aerodrome certificate issued under this Schedule is effective until it is surrendered by the certificate holder or is suspended or revoked by the Authority.

21.070 CERTIFICATE ENFORCEMENT, SUSPENSION OR CANCELLATION

- (a) The Authority may, by written notice given to the aerodrome operator, modify, suspend or revoke a certificate if it reasonably determines that—
- (1) a condition to which the certificate is subject has been breached;
 - (2) the aerodrome facilities, operations or maintenance are not of the standard necessary in the interests of the safety of air navigation; or
 - (3) there are other conditions, actions or inactions that question the ability of the aerodrome operator to ensure safe aerodrome operations.
- (b) An order of suspension or revocation shall, except in an emergency requiring immediately effective action, be preceded by notice and an opportunity to be heard in accordance with the procedures in Schedule 1 and such notice shall—
- (1) set out the facts and circumstances that, in the opinion of the Authority, would justify the enforcement action, suspension or cancellation;
 - (2) invite the operator to show cause, in writing, within 14 days after the date of the notice, why enforcement action, suspension or cancellation should not take place; and
 - (3) take into account any written submission that the holder makes to the Authority within the time allowed.

21.075 TRANSFER OF AN AERODROME CERTIFICATE

- (a) An aerodrome certificate shall not be transferable.

21.080 SURRENDER OF AN AERODROME CERTIFICATE

- (a) An aerodrome operator desiring to surrender his certificate shall give the Authority not less than 30 days written notice of the date on which the certificate is to be surrendered in order that suitable promulgation action can be taken.
- (b) The Authority shall cancel the certificate on the date specified in the notice.

21.085 ENDORSEMENT OF CONDITIONS OF AERODROME CERTIFICATE

- (a) The Authority, when granting an aerodrome certificate, shall endorse the conditions for the type and use of the aerodrome and other details in the aerodrome certificate.

21.090 AMENDMENT OF AN AERODROME CERTIFICATE

- (a) Subject to the requirements of this Subpart, the Authority shall amend an aerodrome certificate when—
- (1) there is a change in—
 - (i) the ownership or management of the aerodrome;
 - (ii) the use or operation of the aerodrome;
 - (iii) the boundaries of the aerodromes; or
 - (2) the aerodrome operator requests an amendment to the aerodrome certificate.

SUBPART C: AERODROME MANUAL

21.095 PURPOSE AND SCOPE

- (a) The Aerodrome Manual shall be—
- (1) a fundamental requirement of the aerodrome certification process and all pertinent information concerning the aerodrome site, facilities, services, equipment, operating procedures, organization and management including the safety management system shall be included in the Aerodrome Manual;
 - (2) a reference document providing a check-list of aerodrome certification standards that must be maintained and the level of airside services at the aerodrome. Information provided in the Aerodrome Manual will enable the Authority to assess the suitability of the aerodrome for the aircraft operations proposed and to judge an applicant's fitness to safely operate the aerodrome;
 - (3) a basic reference guide for conducting site inspections for granting an aerodrome certificate and for subsequent safety inspections as it is a reference document agreed between the aerodrome operator and the Authority with respect to the standards, conditions and the level of service to be maintained at the aerodrome; and
 - (4) a living document, subject to amendment in order to ensure that it provides current and accurate information and the aerodrome operator shall be responsible for keeping it current and for obtaining approval by the Authority in respect of any proposed amendments.

21.100 PREPARATION OF THE AERODROME MANUAL

- (a) The operator of a certified aerodrome shall develop and maintain a document identified as the Aerodrome Manual, containing pertinent information about the aerodrome for easy reference and validation of aerodrome certification.
- (b) The Aerodrome Manual shall—
- (1) be typewritten and signed by the aerodrome operator;
 - (2) be in a format that is easy to revise;
 - (3) have a system for recording the accuracy of pages or amendments thereto, including a page for logging revisions; and
 - (4) be organized in a manner that will facilitate the preparation, review and acceptance and or approval process.

21.105 AERODROME MANUAL PROCEDURES

- (a) The operator of a certified aerodrome shall operate and maintain the aerodrome in accordance with the procedures set out in the Aerodrome Manual.
- (b) The Authority may direct the aerodrome operator to change the procedures set out in the Aerodrome Manual if the Authority considers it necessary in the interests of safety.

21.110 INFORMATION TO BE INCLUDED IN THE AERODROME MANUAL

- (a) The operator of a certificated aerodrome shall, to the extent applicable to the aerodrome; include the particulars set out in Appendix 1 through 5 to 21.110 in the Aerodrome Manual.
- (b) If a particular is not included in the Aerodrome Manual because it is not applicable to the aerodrome, the aerodrome operator shall disclose in the manual—
- (1) that the particular is not applicable; and
 - (2) the reason for its non-applicability.

21.115 LOCATION OF THE AERODROME MANUAL

- (a) The aerodrome operator shall provide the Authority a complete and current copy of the Aerodrome Manual.
- (b) The aerodrome operator—
- (1) shall keep at least one complete and current copy of the Aerodrome Manual at the aerodrome;

- (2) shall keep one copy at the operator's principal place of business, if other than the aerodrome; and
 - (3) may provide additional copies as needed throughout the aerodrome.
- (c) The aerodrome operator shall make a copy of the Aerodrome Manual available for inspection by the Authority.

21.120 AMENDMENT OF THE AERODROME MANUAL

- (a) To maintain the accuracy of the Aerodrome Manual, the Authority may issue a written directive to an aerodrome operator requiring the operator to alter or amend the Aerodrome Manual in accordance with the directive.
- (b) The aerodrome operator shall alter or amend the Aerodrome Manual, whenever necessary, in order to maintain the accuracy of the information in the Aerodrome Manual.
- (c) The operator shall submit in writing a proposed amendment to its Aerodrome Manual to Authority at least 30 days before the proposed effective date of the amendment or alteration, unless a shorter filing period is allowed by the Authority.
- (d) In the case of amendments initiated by the Authority—
 - (1) the Authority shall notify the aerodrome operator of the proposed amendment, in writing, fixing a reasonable period within which the operator may submit written information, views, and arguments on the amendment;
 - (2) after considering all relevant materials presented, the Authority shall notify the operator within 30 days of any amendment adopted or rescind the notice; and
 - (3) the amendment becomes effective not less than 30 days after the operator receives notice of it.
- (e) Notwithstanding the provisions of paragraph (d), the Authority may if the Authority finds there is an emergency requiring immediate action with respect to the safety of air transportation issue an amendment, effective without stay, on the date the operator receive notice of it and, in such a case, the Authority shall incorporate the findings of the emergency and a brief statement of the reason for the findings in the notice of the amendment.

21.125 ACCEPTANCE AND OR APPROVAL OF THE AERODROME MANUAL

- (a) The Authority shall accept and or approve an Aerodrome Manual and any amendments thereto where they meet the requirements of this Schedule.

21.130 AERODROME MANUAL CONTROLLER

- (a) The operator shall appoint a person to be the Aerodrome Manual controller, whose functions shall include—
 - (1) keeping a record of persons who hold copies of the whole or parts of the Aerodrome Manual; and
 - (2) updating of information in the copies of the Aerodrome Manual given to those persons referred to in sub-paragraph (1).

SUBPART D: OBLIGATIONS OF THE AERODROME OPERATOR

21.135 GENERAL

- (a) The aerodrome operator shall ensure that the aerodrome is operated and maintained with a reasonable degree of care and diligence.
- (b) The granting of an aerodrome certificate obliges the aerodrome operator—
 - (1) to ensure the safety, regularity and efficiency of operations at the aerodrome;
 - (2) to allow authorized inspectors of the Authority access to the aerodrome to carry out safety audits, inspections and testing; and

- (3) to be responsible for notifying and reporting information to the Authority as prescribed in this Schedule.

21.140 COMPLIANCE WITH STANDARDS AND RECOMMENDED PRACTICES

- (a) The aerodrome operator shall comply with the standards and recommended practices specified in ICAO Annex 14 Volume 1 and this Schedule and with any conditions specified in the aerodrome certificate.
- (b) The aerodrome operator shall calculate and report the Pavement Classification Number (PCN) to the Authority.

21.145 COMPETENCE OF OPERATIONAL AND MAINTENANCE PERSONNEL

- (a) The aerodrome operator shall employ an adequate number of qualified and skilled personnel to perform all critical activities for aerodrome operation and maintenance.
- (b) The aerodrome operator shall employ as qualified and skilled personnel only those persons possessing the competency certification required by the Authority for such personnel.
- (c) The aerodrome operator shall establish a training and qualification program for other safety related staff that do not require a certificate or license.
- (d) The aerodrome operator shall implement a program to upgrade and maintain the competency of the personnel referred to in paragraphs (b) and (c).

21.150 AERODROME OPERATION AND MAINTENANCE

- (a) Each aerodrome operator shall employ a maintenance program, including preventive maintenance where appropriate, to maintain the aerodrome facilities in a condition that does not impair the safety, security, regularity or efficiency of aircraft operations.
- (b) The certificate holder shall keep the surface of paved manoeuvring areas clear of any loose stones or other objects that might endanger aircraft operations.
- (c) The aerodrome operator shall maintain the surface of paved runways in a condition so as to provide good friction characteristics and low rolling resistance.
- (d) To ensure the safety of aircraft, the Authority may give written directives to an aerodrome operator to alter the procedures set out in the Aerodrome Manual.
- (e) The aerodrome operator shall coordinate with the air traffic service (ATS) provider to confirm that appropriate air traffic services are available to ensure the safety of aircraft in the airspace associated with the aerodrome and such coordination shall cover other areas related to safety such as—
 - (1) aeronautical information service;
 - (2) air traffic services;
 - (3) designated meteorological authorities;
 - (4) navigational equipment; and
 - (5) security.

21.155 AERODROME OPERATOR'S SAFETY MANAGEMENT SYSTEM (SMS)

- (a) The aerodrome operator shall establish a Safety Management System (SMS) for the aerodrome describing the structure of the organization, and the duties, powers and responsibilities of the officials in the organizational structure, with a view to ensuring that operations are carried out in a demonstrably controlled way and are improved where necessary.
- (b) The SMS shall comply with the requirements set out in this Schedule, ICAO Annex 14 Volume 1, Aerodromes, and ICAO Document 9859, Safety Management Manual.
- (c) The aerodrome operator shall keep under review its SMS and take such corrective action as is necessary to ensure that it operates properly.

- (d) The aerodrome operator shall require all users of the aerodrome, including fixed-base operators, ground-handling agencies, and other organizations that perform activities independently at the aerodrome in relation to flight or aircraft handling, to comply with the requirements specified by the aerodrome operator with regard to safety at the aerodrome and the aerodrome operator shall monitor such compliance.
- (e) The aerodrome operator shall require all users of the aerodrome, including fixed-base operators, ground-handling agencies, and other organizations referred to in this Schedule, to cooperate in the program to promote safety at, and the safe use of, the aerodrome by immediately reporting any accidents, incidents, defects and faults which have a bearing on safety.
- (f) The holder of an airport certificate shall—
 - (1) ensure that corrective actions are taken in respect of any findings resulting from the SMS;
 - (2) appoint a person to manage the SMS; and
 - (3) ensure that the person managing the SMS performs the duties required.
- (g) The person managing the SMS shall—
 - (1) establish and maintain a reporting system to ensure the timely collection of information related to hazards, incidents and accidents that may adversely affect safety;
 - (2) identify hazards and carry out risk management analyses of those hazards;
 - (3) investigate, analyze and identify the cause or probable cause of all hazards, incidents and accidents identified under the SMS;
 - (4) establish and maintain a safety data system, by either electronic or other means, to monitor and analyze trends in hazards, incidents and accidents;
 - (5) monitor and evaluate the results of corrective actions with respect to hazards, incidents and accidents;
 - (6) monitor the concerns of the civil aviation industry in respect of safety and their perceived effect on the holder of the airport certificate; and
 - (7) determine the adequacy of the training.
- (h) The person managing the SMS shall, if a finding resulting from the SMS is reported to such person—
 - (1) determine what, if any, corrective actions are required and carry out those actions;
 - (2) keep a record of any determination made under sub-paragraph (1) and the reason for it;
 - (3) notify the certificate holder of any systemic deficiency and of the corrective action taken.
- (i) The person managing the SMS may assign the management functions for the SMS to another person if the assignment and its scope are described in the Aerodrome Manual.
- (j) The responsibility of the accountable executive shall not be affected by the appointment of a person to manage the SMS or the assignment of management functions to another person.

21.160 AERODROME OPERATOR'S INTERNAL SAFETY AUDITS AND REPORTING

- (a) The aerodrome operator shall arrange for audits of the SMS, including inspections of the aerodrome facilities and equipment, and such audits—
 - (1) shall cover the aerodrome operator's own functions; and
 - (2) include an external audit and inspection program for evaluation of other users, including fixed-base operators and organizations working at the aerodrome.
- (b) The audits referred to in paragraph (a) shall be carried out over 12 months, or less, as agreed with the Authority.
- (c) The aerodrome operator shall ensure that the audit reports, including the report on the aerodrome facilities, services and equipment, are prepared by suitably qualified safety personnel.

- (d) The aerodrome operator shall retain a copy of the report(s) referred to in paragraph (c) for a period of 24 months and the Authority may request a copy of the report(s) for its review and reference.
- (e) The report(s) referred to in paragraph (c) shall be prepared and signed by the persons who carried out the audits and inspections.
- (f) The aerodrome operator shall ensure that deficiencies identified during audits are corrected in a timely manner as agreed upon with the auditors.

21.165 ACCESS TO THE AERODROME

- (a) Personnel authorized by the Authority may, for the purpose of ensuring compliance with safety requirements, before an aerodrome certificate is granted and at any time subsequent to a grant—
 - (1) inspect and carry out tests on the aerodrome facilities, services and equipment;
 - (2) inspect the aerodrome operator's documents and records; and
 - (3) verify the aerodrome operator's SMS.
- (b) An aerodrome operator shall, at the request of a person authorised pursuant to paragraph (a), allow access to any part of the aerodrome or any aerodrome facility including equipment, records, documents and operational personnel for the purpose referred to in paragraph (a).
- (c) The aerodrome operator shall cooperate in the conduct of the activities referred to in sub-paragraphs (1), (2) and (3) of paragraph (a).
- (d) The Authority shall give reasonable notice of any tests to be conducted to the operator and shall carry out the tests at a reasonable time.

21.170 NOTIFYING AND REPORTING

- (a) An aerodrome operator shall adhere to the requirement to notify and report safety critical information to the Authority, air traffic control and pilots within the specified time limits required by this Schedule.
- (b) An aerodrome operator shall—
 - (1) review on receipt all Aeronautical Information Publications (AIPs), AIP supplements, AIP amendments, Notices To Airmen (NOTAMs), pre-flight information bulletins and aeronautical information circulars issued by the Aeronautical Information Service (AIS); and
 - (2) immediately after such review, notify the AIS of any inaccurate information contained therein that pertains to the aerodrome.
- (c) An aerodrome operator shall notify the AIS and the Authority in writing at least 30 days before effecting any change to the aerodrome facility, 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 paragraph (b).
- (d) Subject to the requirements of paragraph (e), an aerodrome operator shall deliver to the AIS, and shall arrange for air traffic control and the flight operations unit to receive, immediate notice detailing any of the following circumstances of which the operator has knowledge—
 - (1) obstacles, obstructions and hazards including—
 - (i) any projections by an object through an obstacle limitation surface relating to the aerodrome;
 - (ii) the existence of any obstruction or hazardous condition affecting aviation safety at or near the aerodrome;
 - (2) a reduction in the level of service at the aerodrome as set out in any of the AIS publications referred to in paragraph (b);
 - (3) closure of any part of the movement area of the aerodrome; and
 - (4) any other condition that could affect aviation safety at the aerodrome and against which precautions are warranted.

- (e) An aerodrome operator shall, when it is not feasible to arrange for air traffic control and the flight operations unit to receive notice of a circumstance referred to in paragraph (d), give immediate notice of such circumstance direct to the pilots who may be affected by it.

21.175 SPECIAL INSPECTIONS

- (a) An aerodrome operator shall inspect an aerodrome, as circumstances require, to ensure aviation safety—
- (1) as soon as practicable after any aircraft accident or incident within the meaning of these terms as defined in ICAO Annex 13, Aircraft Accident and Incident Investigation;
 - (2) during any period of construction or repair of the aerodrome facilities or equipment that is critical to the safety of aircraft operation; and
 - (3) at any other time when there are conditions at the aerodrome that could affect aviation safety.

21.180 REMOVAL OF OBSTRUCTIONS FROM THE AERODROME SURFACE

- (a) An aerodrome operator shall remove from the aerodrome surface any vehicle or other obstruction that is likely to be hazardous.

21.185 WARNING NOTICES

- (a) The aerodrome operator shall, when low flying aircraft at or near an aerodrome or taxiing aircraft are likely to be hazardous to people or vehicular traffic—
- (1) post hazard warning notices on any public way that is adjacent to the manoeuvring area; or
 - (2) if any such public way is not controlled by the aerodrome operator, request the Authority to inform the agency responsible for posting the notices on the public way that there is hazard.

21.190 RETENTION OF RECORDS

- (a) The holder of an aerodrome certificate shall establish and retain personnel training and inspection records for a minimum of 24 months.

21.195 EXEMPTIONS

- (a) The Authority may exempt, in writing, an aerodrome operator from compliance with specific provisions of this Schedule as warranted in the public interest.
- (b) The Authority shall, before granting an exemption to the aerodrome operator, take into account all safety-related aspects.
- (c) An exemption shall be subject to the aerodrome operator complying with the conditions and procedures specified by the Authority in the aerodrome certificate as being necessary in the interest of safety.
- (d) Subject to this Schedule, when an aerodrome does not meet the requirements of a Standard or Recommended Practice (SARP) specified in ICAO Annex 14 Volume 1, this Schedule and other relevant documents, the Authority may determine, after carrying out aeronautical studies, such conditions and procedures that are necessary to ensure a level of safety equivalent to that established by this Schedule.
- (e) Deviations from this Schedule shall be set out in an endorsement in the aerodrome certificate or otherwise in writing and an exemption that is provided otherwise in writing shall be incorporated in the Aerodrome Manual.

SUBPART E: AERODROME DESIGN REQUIREMENTS

21.200 ARCHITECTURAL AND INFRASTRUCTURE-RELATED REQUIREMENTS

- (a) Measures shall, for the optimum implementation of international civil aviation security, be integrated into the design and construction of new facilities and alterations to existing facilities at an aerodrome.

21.205 AERODROME PLANNING

- (a) Aerodrome developers shall follow the guidance on all aspects of the planning of aerodromes, including security and environmental control considerations, contained in the ICAO Airport Planning Manual (Doc 9184), Parts 1 and 2.

21.210 AERODROME APPLICATION

- (a) An applicant for, or a holder of, an aerodrome certificate shall provide the Authority with the following information—
- (1) physical characteristics of the aerodrome;
 - (2) obstacle limitation surfaces on or around the aerodrome;
 - (3) visual aids for navigation, denoting obstacles and the restricted areas;
 - (4) equipment and installation; and
 - (5) an airspace classification appropriate to the characteristics of the aircraft the aerodrome intends to serve, the lowest meteorological minima for each runway, and the ambient light conditions expected during the operation of aircraft.

21.215 AERODROME DESIGN STANDARDS

- (a) The physical characteristics, obstacle limitation surfaces, visual aids, equipment and installation mentioned in section 21.105 through 21.110 shall comply with the aerodrome design standards in the Aerodrome Manual as approved by the Authority.

21.220 AERODROME REFERENCE CODE (ARC) CALCULATION

- (a) General
- (1) The intent of the Aerodrome Reference Code (ARC) is to provide a simple method for interrelating the numerous specifications concerning the characteristics of aerodromes so as to provide a series of aerodrome facilities that are suitable for the aircraft that are intended to operate at the aerodrome.
 - (2) The ARC is not intended to be used for determining runway length or pavement strength requirements.
 - (3) The ARC code is composed of two elements which are related to the aircraft performance characteristics and dimensions, being—
 - (i) element 1 which is a number based on the aircraft reference field length, and
 - (ii) element 2 which is a letter based on the aircraft wing span and outer main gear wheel span.
 - (4) A particular ARC specification is related to the more appropriate of the two elements of the code or to an appropriate combination of the two code elements.
 - (5) The code letter or number within an element selected for design purposes is related to the critical aircraft characteristics for which the facility is provided and, when applying this Schedule, the aircraft which the aerodrome is intended to serve are first identified and thereafter the two elements of the code.
- (b) Method of ARC calculation.
- (1) An aerodrome reference code, code number and letter selected for aerodrome planning purposes shall be determined in accordance with the characteristics of the aircraft for which an aerodrome facility is intended.
 - (2) The aerodrome reference code numbers and letters shall have the meanings assigned to them in ICAO Annex 14 Volume I, Aerodromes, in Table 1-1 of Section 1.7.
 - (3) The code number for element 1 shall be determined from Table 1-1, column 1, by selecting the code number corresponding to the highest value of the aircraft reference field lengths of the aircraft for which the runway is intended.

- (4) The code letter for element 2 shall be determined from Table 1-1, column 3, by selecting the code letter which corresponds to the greatest wing span, or the greatest outer main gear wheel span, whichever gives the more demanding code letter for the aircraft for which the facility is intended.
- (5) Guidance on planning for aircraft with wing spans greater than 80 metres is given in ICAO Document 9157, Parts 1 and 2, Aerodrome Design Manual.

21.225 RUNWAY END SAFETY AREAS (RESA)

- (a) A runway end safety area should be provided at each end of a runway strip where—
 - (1) the code number is 3 or 4; or
 - (2) the code number is 1 or 2 and the runway has an instrument approach.
- (b) A runway end safety area should extend from the end of a runway strip for as great a distance as practicable and for a minimum of 90 metres and the width of a runway end safety area should be at least twice that of the associated runway.
- (c) An object situated on a runway end safety area which may endanger airplanes should be regarded as an obstacle and, as far as practicable, be removed.
- (d) A runway end safety area should provide, in the event of an airplane undershooting or overrunning the runway, a cleared and graded area for airplanes which the runway is intended to serve.
- (e) The surface of the ground in the runway end safety area need not be prepared to the same quality as the runway strip.
- (f) The slopes of a runway end safety area should be such that no part of the runway end safety area penetrates the approach or take-off climb surface.
- (g) The longitudinal slopes of a runway end safety area should not exceed a downward slope of 5 per cent and longitudinal slope changes should be as gradual as practicable with abrupt changes or sudden reversals of slopes avoided.
- (h) The transverse slopes of a runway end safety area should not exceed an upward or downward slope of 5 per cent and transitions between differing slopes should be as gradual as practicable.
- (i) A runway end safety area should be so prepared or constructed as to reduce the risk of damage to an airplane undershooting or overrunning the runway and facilitate the movement of rescue and fire fighting vehicles.

SUBPART F: OPERATING REQUIREMENTS

21.230 AERODROME DATA

- (a) The aerodrome operator shall establish a procedure to notify the AIS of—
 - (1) the aerodrome data and information;
 - (2) any limitation established under this Schedule on the use of the aerodrome; and
 - (3) as soon as practicable, any change that affects the use of the aerodrome.

21.235 NOTIFYING AND REPORTING

- (a) Subject to this Schedule, an aerodrome operator shall adhere to the requirement to notify and report within the specified time limits required by this Schedule to the Authority, air traffic control and pilots.

21.240 VISUAL AIDS FOR NAVIGATION

- (a) The Aerodrome Manual shall list all aeronautical ground lights, inspection cycles and flight checks as needed to ensure correct operational capabilities and each aerodrome operator shall establish procedures to ensure that a system of preventive maintenance and checking of the aerodrome visual aids for navigation is employed in order to—

- (1) ensure that each visual aid for navigation provides reliable and accurate guidance to the user;
 - (2) establish a percentage of allowable unserviceable lights that will ensure continuity of guidance to the user; and
 - (3) restore any unserviceable or deteriorated items back into service without undue delay.
- (b) A Surface Movement Guidance and Control System (SMGCS) shall be provided at all certificated aerodromes that have aircraft operations when visibility is reported to be less than 1200 RVR and the design of a SMGCS should take into account the—
- (1) density of air traffic;
 - (2) visibility conditions under which operations are intended; (c) need for pilot orientation;
 - (3) complexity of the aerodrome layout; and
 - (4) movements of vehicles.
- (c) A SMGCS system consists of the provision of guidance to, and control or regulation of, all aircraft, ground vehicles and personnel on the movement area of an aerodrome and—
- (1) guidance relates to facilities, information and advice necessary to enable the pilots of aircraft or the drivers of ground vehicles to find their way on the aerodrome and to keep the aircraft or vehicles on the surfaces or within the areas intended for their use;
 - (2) control or regulation means the measures necessary to prevent collisions and to ensure that the traffic flows smooth and freely.
- (d) The SMGCS should be designed to assist in the prevention of inadvertent incursions of aircraft and vehicles onto an active runway.
- (e) For information regarding SMGCS, refer to ICAO Document 9476- AN927 Manual of Surface Movement Guidance and Control Systems (SMGCS)

21.245 NON-AERONAUTICAL GROUND LIGHTS

The aerodrome operator shall ensure that any non-aeronautical ground light near an aerodrome which might endanger the safety of aircraft shall be extinguished, screened or otherwise modified so as to eliminate the source of danger.

21.250 WORKS ON AERODROME

- (a) Each aerodrome operator shall establish procedures and take precautions to ensure that any works carried out on the aerodrome do not endanger aircraft operations.
- (b) Runways, taxiways, or portions thereof, that are closed to aircraft operations shall be marked by—
 - (1) a white X, 20 ft in length, if a runway; and
 - (2) a yellow X, 20 ft in length, if a taxiway.
- (c) All markers and markings except the X's shall, when a runway, taxiway or helicopter Final Approach and Takeoff (FATO) is permanently closed, be removed.
- (d) Where a closed runway, taxiway or portion thereof is intercepted by a usable runway or taxiway which is used at night, unserviceability lights shall, in addition to closed markings, be placed across the entrance to the closed area at intervals not exceeding 3 meters.
- (e) Unserviceable portions of the movement area, other than runways and taxiways, shall be delineated by markings such as marker boards, cones, or red flags and, where appropriate, a flag or suitable marker shall be placed near the centre of the unserviceable area.
- (f) Red flags should be used when the unserviceable portion of the movement area is sufficiently small for it to be by-passed by aircraft without affecting the safety of their operations.

21.255 AERODROME EMERGENCY PLAN

- (a) Each applicant for the grant of an aerodrome operating certificate shall develop and maintain an aerodrome emergency plan designed to minimize the possibility and extent of personal injury and property damage at, or in the vicinity of, their aerodrome in an emergency.
- (b) Subject to this Schedule, the operator of a certified aerodrome shall conduct a full scale emergency exercise at least once every 2 years to test—
 - (1) the co-ordination of the emergency service organizations referred to in the aerodrome's emergency plan; and
 - (2) the adequacy of the procedures and facilities provided for in the plan.
- (c) The operator may, if a real emergency occurs at the aerodrome within 6 months before an emergency exercise is due, request the Authority to extend the period within which the next emergency exercise shall be conducted.
- (d) The Authority may—
 - (1) grant a request to extend the period within which the next emergency exercise shall be conducted if it is satisfied that—
 - (i) all emergency service organizations referred to in the plan responded to the real emergency;
 - (ii) the real emergency adequately tested the plan; and
 - (2) in granting the request, extend the period until the end of 2 years after the real emergency occurred.
- (e) The aerodrome certificate holder shall notify the Authority 6 months in advance of a full scale exercise.
- (f) The operator of the aerodrome shall, as soon as practicable after an emergency exercise has been carried out at the aerodrome or after the emergency where a real emergency has occurred at the aerodrome, arrange to—
 - (1) review the effectiveness of the responses to the exercise or the emergency;
 - (2) assess the adequacy of the emergency plan to deal with emergencies at the aerodrome; and
 - (3) take such corrective action as is necessary to ensure that the plan operates properly.
- (g) The operator shall ensure that—
 - (1) records of each review of the emergency plan carried out under this Schedule are kept; and
 - (2) each record is retained for at least 3 years after the review to which the record relates was carried out.
- (h) The aerodrome emergency plan shall—
 - (1) include the types of emergencies planned for and identify the potential emergencies, including—
 - (i) an aircraft accident or incident—
 - (A) within the airport boundaries, and
 - (B) within a critical rescue and fire-fighting access area that extends 1000 metres beyond the ends of a runway and 150 metres at 90° outwards from the centreline of the runway, including any part of that area outside the airport boundaries;
 - (ii) an aircraft emergency declared by either air traffic services or a pilot;
 - (iii) a fuel spill that spreads at least 1.5 metres in any direction or exceeds 12 mm in depth;
 - (iv) a medical emergency;
 - (v) a fire in which airport operations or passenger safety is threatened;
 - (vi) an emergency that is related to a special aviation event and that might have an impact on airport operations;
 - (vii) a natural disaster;
 - (viii) any other emergency that is a threat or is likely to be a threat to the safety of persons or to the operation of the airport;

- (2) identify the organizations at the airport and the community organizations capable of providing assistance during an emergency at an airport or in its vicinity, provide the telephone numbers and other contact information for each organization and describe the type of assistance each can provide;
- (3) identify the other resources available at the airport and in the surrounding communities for use during emergency response or recovery operations and provide their telephone numbers and other contact information;
- (4) describe for emergency situations the lines of authority and the relationships between the organizations identified in the emergency plan and how actions will be coordinated among all, and within each, of the organizations;
- (5) identify for emergency situations the relevant supervisors and describe the responsibilities of each;
- (6) specify the positions occupied by the airport personnel who will respond to an emergency and the specific emergency response duties of each;
- (7) identify the on-scene controller and describe the controller's emergency response duties;
- (8) provide authorization for a person to act as an on-scene controller or a supervisor if they are not airport personnel;
- (9) set out the criteria to be used for positioning the on-scene controller within visual range of an emergency scene;
- (10) set out the measures to be taken to make the on-scene controller easily identifiable at all times by all persons responding to an emergency;
- (11) if initial on-scene control has been assumed by a person from a responding organization, describe the procedure for transferring control to the on-scene controller;
- (12) describe any training and qualifications required for the on-scene controller and the airport personnel identified in the emergency plan;
- (13) describe the method for recording any training provided to the on-scene controller and airport personnel;
- (14) describe the communication procedures and specify the radio frequencies to be used to link the operator of the airport with—
 - (i) the on-scene controller, and
 - (ii) the providers of ground traffic control services and air traffic control services at the airport;
- (15) describe the communication procedures allowing the on-scene controller to communicate with the organizations identified in the emergency plan;
- (16) identify the alerting procedures that -
 - (i) activate the emergency plan;
 - (ii) establish the necessary level of response;
 - (iii) allow immediate communication with the organizations identified in the emergency plan in accordance with the required level of response;
 - (iv) if applicable, confirm the dispatch of each responding organization;
 - (v) establish the use of standard terminology in communications; and
 - (vi) establish the use of the appropriate radio frequencies as set out in the emergency plan;
- (17) specify—
 - (i) the airport communication equipment testing procedures;
 - (ii) a schedule for the testing;
 - (iii) the method of keeping records of the tests;
 - (iv) the location of the emergency coordination center used to provide support to the on-scene controller;
- (18) describe—

- (i) the measures for dealing with adverse climatic conditions and darkness for each potential emergency set out in paragraph (1);
 - (ii) the procedures to assist persons who have been evacuated if their safety is threatened or airside operations are affected;
- (19) describe the procedures respecting the review and confirmation of items (i) to (vi) to permit the return of the airport to operational status after an emergency situation—
 - (i) emergency status reports;
 - (ii) coordination with the coroner and the investigator designated by the Accident Board regarding the accident site conditions;
 - (iii) disabled aircraft removal;
 - (iv) airside inspection results;
 - (v) accident or incident site conditions;
 - (vi) air traffic services and NOTAM coordination;
- (20) describe the procedures for controlling vehicular flow during an emergency to ensure the safety of vehicles, aircraft and persons;
- (21) specify the procedures for issuing a NOTAM in the event of—
 - (i) an emergency affecting the critical category for fire fighting; or
 - (ii) changes or restrictions in facilities or services at the airport during and after an emergency;
- (22) describe the procedures for preserving evidence as it relates to—
 - (i) aircraft or aircraft part removal;
 - (ii) the site of the accident or incident;
- (23) describe the procedures to be followed, after any exercise or activation of the emergency plan requiring a full emergency standby, for—
 - (i) a post-emergency debriefing session with all participating organizations;
 - (ii) the recording of the minutes of the debriefing session;
 - (iii) an evaluation of the effectiveness of the emergency plan to identify deficiencies;
 - (iv) changes, if any, to be made in the emergency plan;
 - (v) partial testing subsequent to the modification of an emergency plan;
- (24) describe—
 - (i) the process for an annual review and update of the emergency plan;
 - (ii) the administrative procedure for the distribution of copies of an updated version of the emergency plan to the airport personnel who require them and to the community organizations identified in the plan; and
- (25) describe the procedures to assist in locating an aircraft when the airport receives notification that an Emergency Locator Transmitter (ELT) has been activated.
- (i) The operator of an airport shall include in the emergency plan—
 - (1) a copy of the signed agreements, if any, between the airport operator and the community organizations that provide emergency response services to the airport;
 - (2) procedures for prompt response to the emergencies planned for;
 - (3) sufficient detail to provide adequate guidance to each person who shall carry out the plan;
 - (4) the agencies involved in the plan and the responsibility and role of each agency;
 - (5) for international aerodromes, provision for an adequately equipped emergency operations center and command post for each type of emergency;
 - (6) a description of available equipment, including medical equipment, and the location of the equipment;
 - (7) information on names and telephone numbers of offices and persons to be contacted in the case of a particular emergency; and
 - (8) a grid map of the aerodrome and its immediate vicinity.

- (j) The applicant for the grant of an aerodrome operating certificate shall—
 - (1) co-ordinate its aerodrome emergency plan with law enforcement agencies, security providers, rescue and fire fighting agencies, medical personnel and organizations, the principal tenants of the aerodrome, and all other persons who have responsibilities in the plan; and
 - (2) to the extent practicable, provide for participation by all agencies and personnel involved in the development of the aerodrome emergency plan.
- (k) The aerodrome operator shall establish an aerodrome Emergency Operations Center (EOC) and—
 - (1) the EOC shall include a representative from any fire, police or other emergency service that, having regard to the location of the aerodrome, would be likely to be asked to assist if there were an emergency at the aerodrome;
 - (2) the EOC members shall review the emergency plan at least once a year and make any changes that are necessary to ensure that it operates properly;
 - (3) the review of the emergency plan shall be carried out in consultation with the emergency service organizations referred to in the emergency plan;
 - (4) the EOC shall conduct periodic selected emergency training and exercises in order to retain competency and validate corrective measures identified from prior training; and
 - (5) all training and exercises shall be documented.
- (l) Aerodrome operators shall take into account human factor principles when developing the emergency plan.

21.260 RESCUE AND FIRE FIGHTING SERVICE(S) (RFFS)

- (a) As a signatory to the Chicago Convention, The Bahamas is obliged to require that certificated international aerodromes provide Rescue and Fire- Fighting Services (RFFS) of an adequate standard. (See generally section 9.2 of Chapter 9 of ICAO Annex 14 Volume 1.)
- (b) To satisfy The Bahamas' obligation, this Subpart requires operators of certificated aerodromes to provide the required RFFS and sets out the standards that apply to such services. Aerodromes that are not obliged to provide RFFS may choose to do so and this Subpart shall apply to a service so provided until the operator gives reasonable notice that it will no longer provide such a service.
- (c) General
 - (1) The principal objective of a RFFS shall be to save lives and, for this reason, the provision of means of dealing with an aircraft accident or incident occurring at, or in the immediate vicinity of, an aerodrome assumes primary importance as it is within this area that there exists the greatest opportunities of saving lives.
 - (2) A RFFS shall assume at all times the possibility of, and need for, extinguishing a fire which may occur either immediately following an aircraft accident or incident or at any time during rescue operations.
 - (3) The most important factors bearing on effective rescue in a survivable aircraft accident are the training received, the effectiveness of the equipment, and the speed with which personnel and equipment designated for RFFS purposes can be put into use. Requirements to combat building and fuel farm fires, or to deal with foaming of runways, are not taken into account.
- (d) Functions
 - (1) The aerodrome operator shall provide RFFS in accordance with this Subpart.
 - (2) The functions of RFFS for an aerodrome are—
 - (i) to rescue persons and property from an aircraft that has crashed or caught fire during landing or take-off; and
 - (ii) to control and extinguish, and to protect persons and property threatened by, a fire on the aerodrome, whether or not in an aircraft.

- (3) Nothing in subsection (2) shall prevent the RFFS provider for an aerodrome from performing fire control services or rescue services elsewhere than on an aerodrome but the provider shall give priority to operations mentioned in subsection (2).
- (e) RFFS Category Determination
- (1) Each applicant for the grant of an aerodrome operating certificate shall determine the RFFS category of the aerodrome, which shall be according to the largest aircraft type regularly using the aerodrome as provided in ICAO Annex 14 Volume I, Table 9-1 in Section 9.2.
 - (2) The level of protection available at an aerodrome shall, during anticipated periods of reduced activity, be no less than that needed for the highest category of aircraft planned to use the aerodrome during such time, irrespective of the number of aircraft movements.
- (f) RFFS Extinguishing Agents and Vehicles
- (1) Each applicant for the grant of an aerodrome operating certificate shall have the minimum—
 - (i) extinguishing agents required for the category determined under section 21.097, as provided in ICAO Annex 14 Volume I, Table 9-2 in Section 9.2; and
 - (ii) RFFS vehicles for the category determined under section 21.097, as provided in ICAO Annex 14 Volume I, Section 9.2.33.
 - (2) Guidance on the minimum characteristics of RFFS vehicles is given in ICAO Document 9137, Airport Services Manual, Part 1).
 - (3) Subject to subsection (i), each vehicle referred to in paragraph (2) of subsection (f) shall be equipped for two-way voice radio communications with—
 - (i) every other required RFFS vehicle required for the aerodrome;
 - (ii) the aerodrome control service or aerodrome flight information service serving the aerodrome; and
 - (iii) other stations as specified in the applicant's aerodrome emergency plan.
 - (4) Where only one vehicle is required by paragraph (2) of subsection (f), the vehicle need not be equipped for two-way voice radio communications if—
 - (i) there is no aerodrome control service or aerodrome flight information service for the aerodrome; and
 - (ii) the aerodrome emergency plan does not provide for contact with other stations.
 - (5) Each vehicle required by paragraph (2) of subsection (f) shall—
 - (i) be in good working order;
 - (ii) have a full complement of equipment and fire fighting agent;
 - (iii) have a flashing or rotating beacon; and
 - (iv) be marked in a single conspicuous colour of red or yellowish green.
 - (6) The RFFS provider shall keep maintenance instructions for each vehicle and each piece of the equipment, including all the information necessary to permit an appropriately qualified and technically competent person to carry out maintenance, performance monitoring, defect reporting, fault reporting and record-keeping on or for the vehicle or equipment.
- (g) RFFS Personnel Requirements
- (1) All RFFS personnel shall be properly trained to perform their duties in an efficient manner and shall participate in live fire drills commensurate with the types of aircraft and type of RFFS equipment in use at their aerodrome, including pressure-fed fuel fires; and such training shall comply with ICAO Annex 14 Volume I, Aerodromes, Section 9.2.34;
 - (2) A training program shall be established to document qualification and competency of the fire fighting personnel.
 - (3) Guidance to assist the aerodrome operator in providing proper training is given in ICAO Document 9137, Airport Services Manual, Part 1.

- (4) Fires associated with fuel discharged under very high pressure from a ruptured fuel tank are known as pressure-fed fuel fires.
 - (5) Each applicant for the grant of an aerodrome operating certificate shall establish a procedure to ensure that all RFFS personnel at their aerodrome are—
 - (i) quipped with adequate protective clothing and the rescue equipment required to perform their duties;
 - (ii) trained, medically and physically fit, and competent in the use of the RFFS equipment;
 - (iii) receiving recurrent training and regular practices to maintain their competency;
 - (iv) sufficient in number and readily available to operate the RFFS vehicle or vehicles and the equipment at maximum capacity; and
 - (v) alerted by siren, alarm, or other means to any existing or impending emergency requiring their assistance.
 - (6) The RFFS personnel training program shall include training in human performance, including team coordination.
 - (7) Guidance material to design training programs on human performance and team coordination are found in ICAO Doc 9683 Human Factors Training Manual.
 - (8) Personnel shall be stationed at places that allow the RFFS to respond to an emergency at least as quickly as required by the applicable standards and requirements.
 - (9) Sufficient trained personnel shall, during flight operations, be—
 - (i) detailed and readily available to ride the RFFS vehicles and to operate the equipment at maximum capacity;
 - (ii) deployed in a way that ensures that minimum response times can be achieved and that continuous agent application at the appropriate rate can be fully maintained.
 - (10) Consideration shall also be given for personnel, during flight operations, to use hand lines, ladders and other RFFS equipment normally associated with aircraft RFFS operations.
- (h) Other Vehicles and Equipment
- (1) Requirements for other vehicles and equipment include the following—
 - (i) there shall be at the aerodrome enough vehicles and equipment, other than vehicles and equipment for delivering extinguishing agent onto a fire, to provide the RFFS in accordance with the applicable standards and requirements;
 - (ii) the performance of the vehicles and equipment shall be in accordance with applicable standards and requirements;
 - (iii) the vehicles shall carry ancillary equipment in accordance with the applicable standards and requirements;
 - (iv) the RFFS provider shall keep maintenance instructions for each piece of the provider's equipment, including all the information necessary to permit a technically competent person to carry out
 - (v) the vehicles, boats and equipment shall be in at least the numbers and quantity required by the applicable standards and requirements; and
 - (vi) the vehicles and boats shall be of a colour required or permitted by the applicable standards and requirements.
- (i) Commissioning of Equipment
- (1) A RFFS provider shall not begin to use a piece of operational equipment for the purpose of RFFS unless the equipment has been approved by the Authority as conforming to specifications and any applicable standards in accordance with—
 - (i) the operator's Aerodrome Manual; and
 - (ii) any applicable standards or requirements in this Subpart and ICAO Annex 14 Volume 1.

(j) RFFS Response Capability

- (1) Each applicant for the grant of an aerodrome operating certificate shall, when required by the Authority, demonstrate the following RFFS response capability in optimum conditions of visibility and surface conditions—
 - (i) within 3 minutes of the time of the alarm, the RFFS vehicles and personnel needed to discharge foam at a rate of at least 50 percent of the discharge rate specified in section 21.097 for the aerodrome category shall reach the furthest point of the movement area from their assigned posts and be in position at that point to apply that amount of foam; and
 - (ii) within one minute after the arrival of the first responding vehicle or vehicles and personnel, all other vehicles required for the aerodrome category by section 21.097 and all the necessary personnel shall be in position to apply continuous foam application at the discharge rate specified in section 21.097 for the aerodrome category.

(k) Buildings and Emergency Facilities

- (1) The RFFS provider for an aerodrome shall ensure that buildings and emergency facilities comply with the following requirements—
 - (i) all the necessary buildings and facilities for the RFFS are at the aerodrome, including the following—
 - (A) a fire station;
 - (B) communications facilities;
 - (C) facilities for the maintenance of vehicles and equipment;
 - (D) training facilities;
 - (E) storage facilities;
 - (F) if there is a body of water within 1 000 metres of a runway threshold, a boat ramp and boat launching facilities;
 - (ii) all the necessary buildings and facilities comply with any applicable requirements, including requirements as to location, in this Subpart and ICAO Annex 14 Volume 1;
 - (iii) there is a facility, in accordance with the requirements of this Subpart, for replenishing the water supply of a fire fighting vehicle;
 - (iv) there are the appropriate emergency roads on the aerodrome in accordance with the requirements of this Subpart.

(l) Notice of Service Availability

- (1) A RFFS provider shall provide notice about times service is available and shall—
 - (i) ensure that notice is published in the AIP of the hours during which the service is available;
 - (ii) if for some reason, such as an emergency on the aerodrome, it becomes temporarily impossible to provide a RFFS to the standard required by this Subpart, tell the Bahamas NOTAM office —
 - (A) of the reduction in the service; and
 - (B) how long it is likely to be before the full service is restored;
 - (iii) tell the Authority in writing of any proposed reduction in the standard of service that—
 - (A) will last longer than 24 hours; or
 - (B) reduces the standard of the RFFS provided at the aerodrome concerned to a greater extent than is permissible under Chapter 9 of ICAO Annex 14 Volume 1.

(m) Communications

- (1) Requirements for communications at an aerodrome include the following—
 - (i) there shall be on the aerodrome sufficient communications equipment available to provide communication during a RFFS operation;
 - (ii) the vehicles used for the RFFS shall carry suitable communications equipment;

- (iii) a person who is required to operate RFFS equipment shall hold an approved license or certificate for the type of equipment; and
 - (iv) the RFFS equipment shall not interfere, when in use, with communications equipment used by the air traffic service at the aerodrome.
- (n) Test and Maintenance Equipment
- (1) The RFFS provider shall—
 - (i) have the necessary equipment and tools, in accordance with the applicable standards and requirements, to test and maintain the equipment used to provide the RFFS; and
 - (ii) if the applicable standards and or maintenance requirements identify particular test or maintenance equipment, particular kinds of test or maintenance equipment, or particular numbers or quantities of a particular type of test or maintenance equipment, have that equipment or that number or quantity of that type of equipment.
- (o) Commissioning of New Vehicles and Equipment
- (1) The RFFS provider shall not put a new vehicle, or a new item of equipment that affects the quality or rate of discharge of a extinguishing agent, into service unless—
 - (i) the vehicle or equipment has been approved by the Authority for conformity to specification and the applicable standards and requirements in accordance with the provider's operations manual; and
 - (ii) the Authority has acknowledged that the vehicle or equipment meets the applicable standards and requirements; and, in addition, any necessary training of personnel has been completed.

21.265 APRON CONTROL AND MANAGEMENT SERVICES

- (a) Each aerodrome operator certificate shall ensure that, when the volume of traffic and operating conditions at the aerodrome warrants it, the aerodrome shall be provided with an appropriate apron management service.
- (b) The holder of an aerodrome operator certificate shall facilitate the transition of aircraft between the apron management service and the aerodrome control service where—
 - (1) an aerodrome control service is in operation at the aerodrome and the aerodrome also has an apron management service; and
 - (2) the aerodrome control service does not participate in the apron management service.

21.270 GROUND VEHICLE AND PEDESTRIANS

- (a) Each holder of an aerodrome operating certificate shall—
 - (1) limit access to the aerodrome operational area to those ground vehicles that are necessary for aerodrome and aircraft operations;
 - (2) when an aerodrome control service is in operation at the aerodrome, provide adequate procedures for the safe and orderly access to, and operation on the aerodrome operational area of, ground vehicles and ensure that the procedures provided mandate that -
 - (i) each ground vehicle operating on the aerodrome operational area is controlled by two-way radio communications between the vehicle and the aerodrome control service;
 - (ii) if a ground vehicle has no radio, it is accompanied by an escort vehicle with two-way communications with the aerodrome control service; or
 - (iii) if it is not practical to have two-way radio communications or an escort vehicle, adequate measures such as signs, signals or guards for controlling the vehicle are taken.
 - (3) when an aerodrome control service is not in operation at the aerodrome, provide adequate procedures to ensure that ground vehicles operating on the aerodrome operational area are controlled by signs or prearranged signals;

- (4) ensure that each employee, tenant, or contractor who operates a ground vehicle on any portion of the aerodrome which has access to the aerodrome operational area is familiar and complies with the certificate holder's rules and procedures for the operation of ground vehicles; and
- (5) ensure that each employee, tenant or contractor who operates on the aerodrome manoeuvring area has training related to the safety precautions to prevent runway incursions.

21.275 PROTECTION OF NAVIGATIONAL AIDS

- (a) Each holder of an aerodrome operating certificate shall—
 - (1) 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 facility on the aerodrome;
 - (2) prevent, as far as it is within the certificate holder's authority, any interruption of visual or electronic signals of navigation aids; and
 - (3) report to the Authority any locations or operations that have resulted in an interruption of visual or electronic signals of navigational aids.

21.280 AERODROME SERVICEABILITY AND TECHNICAL INSPECTIONS PROGRAM

- (a) An aerodrome serviceability safety inspection is an inspection of the aerodrome to ensure that it is safe for aircraft operations.
- (b) The aerodrome serviceability safety inspection shall include—
 - (1) an inspection—
 - (i) of the movement area to check its surface condition;
 - (ii) of aerodrome markings, lighting, wind direction indicators and ground signals;
 - (iii) for any obstacles infringing the take-off, approach and transitional surfaces;
 - (iv) for any birds or animals on or near the movement area;
 - (v) of any measures to control the inadvertent entry of persons or animals into the movement area, including aerodrome fencing;
 - (vi) of the aerodrome's frequency confirmation system, if any;
 - (2) an empirical assessment of—
 - (i) the bearing strength of unrated runway pavements;
 - (ii) the runway strip or each runway strip where the runway concerned is not marked and the whole runway strip may be used for aircraft operations; and
 - (3) a check of whether any NOTAMS for the aerodrome are current and accurate.
- (c) The aerodrome operator shall—
 - (1) conduct an aerodrome serviceability inspection—
 - (i) either on each day on which an airline service operates at the aerodrome; or
 - (ii) at a minimum of twice weekly; and
 - (2) ensure that the aerodrome maintenance and safety inspection staff have appropriate technical reference material to perform their tasks.
- (d) An aerodrome technical safety inspection is an inspection of aerodrome facilities for an aerodrome to ensure that—
 - (1) any deterioration that could make a facility unsafe for aircraft operations is detected; and
 - (2) mitigation of the deficiency is provided.
- (e) The aerodrome technical safety inspection shall include an—
 - (1) instrument survey of the approach, take-off and transitional surfaces;
 - (2) inspection and testing of the aerodrome lighting and electrical reticulation systems, including the visual approach slope indicator;

- (3) electrical testing of any earthing points at the aerodrome;
- (4) inspection and assessment of the movement area pavements and drainage;
- (5) inspection of signs on the movement area;
- (6) inspection of facilities at the aerodrome used for any one of the following—
 - (i) aerodrome emergencies;
 - (ii) handling of hazardous materials;
 - (iii) bird and animal hazard management;
 - (iv) stand-by and emergency aerodrome lighting;
 - (v) inspection of airside vehicle control arrangements, if any;
 - (vi) a check of the currency and accuracy of: aerodrome information published in the AIP and of aerodrome operating procedures specified in the Aerodrome Manual for the aerodrome.
- (f) Subject to subsection (7), aerodrome technical inspections shall be conducted at intervals of not more than 12 months.
- (g) The operator may elect to have a part or parts of an aerodrome technical inspection conducted at different times from the other parts and, in case of such election, each facility for the aerodrome to be inspected shall be inspected at intervals of not more than 12 months.
- (h) The operator shall, where it appears from an aerodrome serviceability inspection that a particular facility at the aerodrome requires an aerodrome technical inspection, ensure that the necessary technical inspection of the facility is conducted as soon as practicable.
- (i) The operator shall—
 - (1) where the operator has elected to have a part or parts of an aerodrome technical inspection conducted at different times—
 - (i) keep records of each part of each inspection;
 - (ii) retain each record for at least 3 years after the part of the inspection to which the record relates was conducted; and
 - (2) in any other case—
 - (i) keep records of each inspection; and
 - (ii) retain each record for at least 3 years after the inspection to which the record relates was conducted.
- (j) The operator of a certified aerodrome shall ensure that an aerodrome technical inspection is conducted by a person or persons with appropriate technical qualifications and experience and, in particular, that—
 - (1) Management System (SMS) committee, ensure that identified deficiencies are analysed, prioritized and
 - (2) mitigations established in order to provide the greatest impact in resolving risk and safety efficiencies.

21.285 PUBLIC PROTECTION

- (a) Each applicant for the grant of an aerodrome operating certificate shall provide at the aerodrome—
 - (1) safeguards—
 - (i) to prevent inadvertent entry of animals to the movement area;
 - (ii) to deter the entry of unauthorised persons or vehicles to the aerodrome operational area; and
 - (2) reasonable protection of persons and property from aircraft blast.
- (b) The safeguards required under paragraph (1)(a) shall—
 - (1) in areas adjacent to the aerodrome operational area to which the public has direct vehicle or pedestrian access—
 - (i) be continuous barriers that may include existing structures, gates and doors with secured or controlled access;

- (ii) be at least 1200 millimetres in height; and
- (2) in other areas, be of a construction and height appropriate to prevent incursion by animals likely to endanger aircraft operations.

21.290 AERODROME SECURITY

The holder of an aerodrome certificate shall provide, or ensure provision of, aerodrome security in accordance with this Schedule and other applicable laws and regulations.

21.295 AERONAUTICAL STUDIES

The holder of an aerodrome certificate shall conduct an aeronautical study in accordance with Subpart G to—

- (1) assess the impact of deviations from the aerodrome standards specified in ICAO Annex 14 Volume 1 and this Subpart;
- (2) present alternative means of ensuring the safety of aircraft operations;
- (3) estimate the effectiveness of each alternative presented pursuant to paragraph (2); and
- (4) recommend procedures to compensate for any deviation assessed.

21.300 WILDLIFE HAZARD REDUCTION

(a) Each applicant for an aerodrome operating certificate shall, where any wildlife presents a hazard to aircraft operations at the aerodrome, establish in areas within their authority an environmental management program to minimize or eliminate such wildlife hazard which—

- (1) identifies and describes the risks associated with all wildlife hazards at or near the airport that might affect the safe operation of aircraft, including the proximity of any waste disposal facility or migration route affecting wildlife populations near the airport;
- (2) specifies the particular measures that are used by the operator of the airport to manage or mitigate the risks;
- (3) identifies and describes the actions that are used by the operator of the airport to satisfy the requirements in respect of firearm certificates and permits, wildlife control permits, wildlife strikes, wildlife management logs, and evaluations of habitats, land uses and food sources at or near the airport;
- (4) sets out a policy for the management of airport habitats that might attract wildlife;
- (5) sets out a policy that prohibits the feeding of wildlife and the exposure of food wastes;
- (6) sets out a procedure to ensure that all endangered or protected wildlife at the airport are inventoried;
- (7) identifies the role of the personnel and agencies involved in wildlife management issues and provides the contact numbers for each; and
- (8) provides details of any wildlife hazard awareness program.

(b) The operator of an airport shall—

- (1) provide relevant training at least once every five years for each person who has assigned duties in respect of the airport wildlife management plan;
- (2) ensure that each person who has assigned duties in respect of the airport wildlife management plan holds any applicable firearm permit; and
- (3) maintain a record of each person's training for a period of five years and provide the Authority with a copy of any record, if requested.

(c) The operator of an airport shall establish a communication and alerting procedure for wildlife management personnel to alert pilots as soon as possible of the wildlife hazards at the airport and the risks associated with such hazards.

(d) Aerodrome operators shall make an assessment of the bird strike hazard and submit bird strike reports to ICAO for inclusion in the ICAO Bird Strike Information System (IBIS).

21.305 PAVEMENT STRENGTH AND OVERLOAD OPERATIONS

- (a) The aerodrome operator shall—
- (1) regulate overload operations in accordance with this Subpart and ICAO Annex 14;
 - (2) establish a program to ensure the runway, taxiway and apron pavement are maintained at high quality so as not to damage aircraft or personnel in their vicinity; and
 - (3) provide a method for determining use of pavement by an aircraft with an Aircraft Classification Number (ACN) higher than the Pavement Classification Number (PCN).

21.310 SAFETY MANAGEMENT SYSTEM (SMS)

- (a) The aerodrome operator shall—
- (1) in order to obtain an aerodrome certificate, establish a Safety Management System (SMS) for the aerodrome describing the structure of the organization and the duties, powers and responsibilities of the officials in the organizational structure with a view to ensuring that operations are carried out in a demonstrably controlled way and are improved where necessary;
 - (2) require all the users of the aerodrome, including fixed-base operators and those performing activities independently at the aerodrome in relation to flight or aircraft handling, to comply with the requirements of the aerodrome operator with regard to safety and order at the aerodrome and shall monitor such compliance;
 - (3) The aerodrome's SMS strategy and planning shall include—
 - (i) setting safety performance targets;
 - (ii) allocating priority for implementing safety initiatives;
 - (iii) providing a framework for controlling safety risks to a level as low as reasonably practicable having regard to the requirements of the Standards and Recommended Practices in ICAO Annex 14 Volume 1 and applicable regulations, standards, or other guidance material; and
 - (iv) methods for promulgating information and ensuring competence within the SMS.
 - (4) oblige all the users of the aerodrome, including fixed-base operators and organizations referred to in paragraph (2), to cooperate in the program to promote safety and order at, and the safe use of, the aerodrome by immediately informing it of the accidents, incidents, defects and faults which have a bearing on safety.

21.315 AERODROME INTERNAL QUALITY ASSURANCE

- (a) Each applicant for the grant of an aerodrome operating certificate shall establish internal quality assurance procedures to ensure compliance with, and the adequacy of, the procedures, plans, systems and programs, required by this Schedule.
- (b) The senior person who has the responsibility for internal quality assurance shall have direct access to the Chief Executive on matters affecting the safety of aircraft operations and the performance of the aerodrome services and facilities.

SUBPART G: AERONAUTICAL STUDIES**21.320 PURPOSE**

- (a) The aerodrome operator shall conduct an aeronautical study to assess the impact of deviations from the aerodrome standards specified in ICAO Annex 14 Volume 1, and in this Subpart, in order to—
- (1) present alternative means of ensuring the safety of aircraft operations;
 - (2) estimate the effectiveness of each alternative; and
 - (3) recommend procedures to compensate for the deviation.

21.325 APPLICABILITY

- (a) Subject to subsection (2), an aeronautical study shall be carried out when the aerodrome standards specified in ICAO Annex 14 Volume 1, and in this Schedule, cannot be met and such a study shall be most frequently undertaken during—
- (1) the planning of a new aerodrome;
 - (2) the certification of an existing aerodrome; or
 - (3) expansion of an existing aerodrome.
- (b) An aeronautical study may not be carried out in a case of deviation from the standards referred to in subsection (1) where a study in respect of such deviation is not specifically recommended in ICAO Annex 14 Volume 1.

21.330 TECHNICAL ANALYSIS

- (a) Technical analysis shall be done to provide justification for a deviation on the grounds that an equivalent level of safety can be attained by other means and such analysis is generally applicable in situations where the cost of correcting a problem that violates a standard is excessive but the unsafe effects of the problem can be overcome by some procedural means which offers both practical and reasonable solutions.
- (b) Aerodromes and the Authority shall, when conducting a technical analysis, draw upon their practical experience and specialized knowledge and other specialists, in relevant areas, may also be consulted to assist in the technical analysis.
- (c) The aerodrome operator shall, when considering alternative procedures in the deviation approval process, bear in mind the safety objective of this Subpart and the applicable ICAO Standards and Recommended Practices (SARPS) so that the intent of this Schedule is not circumvented.

21.335 APPROVAL OF DEVIATIONS

- (a) The Authority, in situations where the Authority determines that the only reasonable means of providing an equivalent level of safety is to adopt suitable procedures, shall—
- (1) require the aerodrome operator as a condition of certification to submit to the Authority cautionary advice; and
 - (2) publish such cautionary advice in the appropriate AIS publications.
- (b) The determination by the Authority to require caution shall be primarily dependent on consideration of—
- (1) a pilot's need to be made aware of potentially hazardous conditions in order to take appropriate precautions; and
 - (2) the responsibility of the Authority to publish deviations from standards that would otherwise be assumed under certificate status.

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APPENDICES

APPENDIX 1 TO 21.100: SCHEDULE OF AERODROME CERTIFICATION PARTICULARS TO BE INCLUDED IN AN AERODROME MANUAL

- (a) Particulars shall include the following general information—
- (1) purpose and scope of the Aerodrome Manual (AM);
 - (2) legal requirements for all aerodrome certificates and the Aerodrome Manual as prescribed in the national regulations;
 - (3) conditions for use of the aerodrome comprising a statement to indicate that the aerodrome shall at all time be available to all persons, on equal terms and conditions, when the aerodrome is available for the take-offs and landings of aircraft;
 - (4) the system of aeronautical information available and the procedure for their promulgation;
 - (5) the system for recording aircraft movement; and
 - (6) obligations of the aerodrome operator.

APPENDIX 2 TO 21.100: PARTICULARS OF THE AERODROME SITE

- (a) Particulars shall include the following general information—
- (1) a plan of the aerodrome showing the main aerodrome facilities for the operation of the aerodrome including, particularly, the location of each runway, taxiway, apron, and other facilities of interest to pilots including the wind direction indicator;
 - (2) a plan of the aerodrome showing the aerodrome boundaries;
 - (3) a plan showing the distance of the aerodrome from the nearest city, town or other populous area, and the location of any aerodrome facilities and equipment outside the boundaries of the aerodrome; and
 - (4) particulars of the title of the aerodrome site and, 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.

APPENDIX 3 TO 21.100: PARTICULARS OF THE AERODROME REQUIRED TO BE REPORTED TO THE AERONAUTICAL INFORMATION SERVICE (AIS)

- (a) Particulars shall include the following general information—
- (1) the name of the aerodrome;
 - (2) the location of the aerodrome;
 - (3) the geographical co-ordinates of the Aerodrome Reference Point (ARP) determined in terms of World Geodetic System - 1984 (WGS - 84) reference datum;
 - (4) aerodrome elevation and geoid undulation;
 - (5) the elevation of each threshold and geoid undulation, the elevation of the runway end and any significant high and low points along the runway, and the highest elevation of the touchdown zone of a precision approach runway;
 - (6) aerodrome reference temperature;
 - (7) details of the aerodrome beacon; and
 - (8) name of the aerodrome operator and the address and telephone numbers at which the aerodrome operator may be contacted at all times.
- (b) Particulars of the Aerodrome dimensions and related information shall include details of—
- (1) runways, including 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;
 - (2) length, width and surface type of strip, Runway End Safety Areas (RESA), stopways;
 - (3) length, width and surface type of taxiways;

- (4) apron surface type and aircraft stands;
- (5) clearway length and ground profile;
- (6) 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 of lighting;
- (7) location and radio frequency of VOR aerodrome checkpoint;
- (8) location and designation of standard taxi-routes;
- (9) the geographical coordinates of each threshold;
- (10) the geographical coordinates of appropriate taxiway centre line points;
- (11) the geographical coordinates of each aircraft stand;
- (12) 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 on International Civil Aviation);
- (13) pavement surface type and bearing strength using Aircraft Classification Number - Pavement Classification Number (ACN - PCN) method;
- (14) one or more pre-flight altimeter check locations established on an apron and their elevation. The elevation of a pre-flight altimeter check location shall be given as the average elevation, rounded to the nearest meter or foot of the area on which it is located. The elevation of any portion of a pre-flight altimeter check location shall be within 3m (10 ft) of the average elevation for that location;
- (15) declared distances; take-off run available (TORA); take-off distance available (TODA); accelerate-stop distance available (ASDA); landing distance available (LDA);
- (16) disabled aircraft removal plan: the telephone/telex/facsimile numbers; e- mail address, of the aerodrome coordinator for the removal of an aircraft disabled on or adjacent to the movement area; information on the capability to remove a disabled aircraft - expressed in terms of the aircraft which the aerodrome is equipped to remove; procedures for protection of evidence in compliance with ICAO Annex 13 Accident Investigation; and
- (17) rescue and fire fighting (RFF): level of protection provided, expressed in terms of the category of the RFF services which should be in accordance with the longest aircraft normally using the aerodrome and the type and amounts of extinguishing agents normally available at the aerodrome.

(Note: Accuracy of the information in this Part is critical to aircraft safety. Information requiring engineering survey and assessment should be gathered or verified by qualified technical personnel.)

APPENDIX 4 TO 25.100: PARTICULARS OF THE AERODROME OPERATING PROCEDURES AND SAFETY MEASURES

- (a) **Aerodrome Reporting.** Particulars of the procedures for reporting any changes to the aerodrome information set out in the AIP and procedures for issuing NOTAMS shall include—
 - (1) arrangements for reporting any changes to the BCAD, and recording the reporting of changes, during and outside the normal hours of aerodrome operations; and
 - (2) the names and roles of persons responsible for notifying their telephone number during and outside the normal hours of aerodrome operations and the location and telephone numbers, as provided by the BCAD, of the place at which changes are to be reported to the BCAD.
- (b) **Access to aerodrome movement area.** Particulars of the procedure developed and to followed, in coordination with the agency responsible to prevent unlawful interference in civil aviation at the aerodrome,

for prevention of unauthorized entry of persons, vehicles, equipment, animals or other things, into the movement area shall include—

- (1) the role of aerodrome operator, aircraft operator, aerodrome fixed- base operators, passengers and aircraft services, aerodrome security entity, the BCAD and other government departments, as applicable; and
- (2) the names and role of the personnel responsible for controlling access to the aerodrome and the telephone numbers for contacting those personnel during and after working hours.

(c) **Aerodrome emergency plan.** Details of the aerodrome emergency plan shall include—

- (1) plans for dealing with emergencies occurring at the aerodrome or in its vicinity including—
 - (i) malfunction of aircraft in flight;
 - (ii) structural fires;
 - (iii) sabotage, including bomb threats to aircraft or structure; (iv)unlawful seizure of aircraft; and
 - (iv) incidents on the aerodrome covering "during the emergency" and "after the emergency" considerations;
- (2) details of tests for aerodrome facilities and equipment to be used in emergencies, including the frequency of such tests;
- (3) details of exercises to test emergency plans, including the frequency of such exercises;
- (4) arrangements for reviewing the frequency of exercises to test emergency plans;
- (5) list of organizations, agencies, and persons of authority, both on- and off-aerodrome for site roles; their telephone numbers, fax and e-mail address directory, Societe Inetrnational de Telocommunications (SITA) code directory and radio frequencies of offices;
- (6) establishment of an aerodrome emergency committee to prepare for emergencies;
- (7) appointment of an on-scene commander of an overall emergency operation; and
- (8) a grid map of the aerodrome and its immediate vicinity.

(d) **Rescue and Fire-Fighting (RFF).** Particulars shall include details of the facilities, equipment, personnel and procedures, for meeting the RFF requirements including the names and roles of the persons responsible for dealing with the RFF services at the aerodrome.

(Note: This subject is covered in appropriate detail in the Aerodrome Emergency Plan).

(e) **Aerodrome movement area and obstacle limitation surface inspection by the aerodrome operator.** Details of the procedures for the inspection of the aerodrome movement area and obstacle limitation surfaces shall include—

- (1) arrangement for carrying out inspections, including runway friction and water depth measurement on runways and taxiways, during and outside the normal hours of aerodrome operations;
- (2) arrangement and means of communicating with the Air Traffic Control (ATC) during an inspection;
- (3) arrangement for keeping an inspection logbook and the location of the logbook;
- (4) details of inspection intervals and times; (e)inspection checklist;
- (5) arrangement for reporting the results of the inspection and for taking prompt follow-up actions to ensure correction of unsafe conditions; and
- (6) the names and roles of persons responsible for carrying out inspections and their telephone numbers during and after working hours.

(f) **Visual aids and aerodrome electrical system.** Particulars of the procedures for the inspection and maintenance of the aeronautical lights including obstacle lighting, signs, markers and aerodrome electrical system shall include—

- (1) arrangement for carrying out inspections during and outside the normal hours of aerodrome operation and the checklist for inspections;

- (2) arrangement for recording the result of inspection and for taking follow-up action to correct deficiencies;
 - (3) arrangement for carrying out routine maintenance and emergency maintenances;
 - (4) arrangement for secondary power supplies, if any; and, if applicable, particulars of any other method of dealing with partial or total system failure; and
 - (5) the names and roles of the persons responsible for inspection and maintenance of the lighting and the telephone numbers for contacting such persons during and after working hours.
- (g) Movement area maintenance.
- (1) Particulars of the facilities and procedures for the maintenance of the movement area shall include—
 - (i) arrangements for maintaining the—
 - (A) paved areas;
 - (B) unpaved runways and taxiways;
 - (C) runway and taxiway strips;
 - (D) aerodrome drainage; and
 - (ii) runway overlay specifications.
 - (2) The condition of the movement area and the operational status of related facilities shall be monitored and reports on matters of operational significance or affecting aircraft performance shall be given, particularly in respect of—
 - (i) construction or maintenance work;
 - (ii) rough or broken surfaces on a runway, a taxiway or an apron;
 - (iii) standing water on a runway, a taxiway or an apron;
 - (iv) other temporary hazards, including parked aircraft;
 - (v) failure or irregular operation of part or all of the aerodrome visual aids; and
 - (vi) failure of the normal or secondary power supply.
- (h) **Aerodrome works safety.** Particulars of the procedures for planning and carrying out works safely, including works which may have to be carried out at short notice, on or in the vicinity of the movement area that may extend above an obstacle limitation surface shall include—
- (1) arrangement for communicating with Air Traffic Control (ATC) during the progress of such works;
 - (2) names, telephone numbers and roles of the persons and organizations responsible for planning and carrying out the works and the arrangement for contacting such persons and organizations at all times;
 - (3) names of the aerodrome fixed-base operators and aircraft operators who are to be notified of the work and their telephone numbers during and after working hours; and
 - (4) distribution list for work plans, if required.
- (i) **Apron control management.** Particulars of the apron management procedures shall include—
- (1) arrangement between air traffic control and the apron management unit;
 - (2) arrangement for allocating aircraft parking positions;
 - (3) arrangement for initiating engine start and ensuring clearance of aircraft push-back;
 - (4) marshalling and other service; and
 - (5) leader (van) service.
- (j) **Apron safety management.** Procedures to ensure apron safety shall include—
- (1) protection from jet blasts;
 - (2) enforcement of safety precautions during aircraft refuelling operations;
 - (3) apron sweeping;
 - (4) apron cleaning and the removal of foreign objects;
 - (5) arrangements for reporting incidents and or accidents on an apron; and

- (6) arrangements for auditing the safety compliance by all personnel working on the apron.
- (k) **Airside vehicle control.** Particulars of the procedure for the control of surface vehicles operating on, or in the vicinity of, the movement area shall include—
- (1) details of the applicable traffic rules, including speed limits and the means of enforcement of the rules; and
 - (2) the method of issuing driving permits for operating vehicles in the movement area.
- (l) **Wildlife Hazard Management.** Particulars of the procedure to deal with danger to aircraft operations caused by the presence of birds or mammals in the aerodrome flight pattern or movement area, including the following—
- (1) arrangement for assessing any wildlife hazard;
 - (2) arrangement for implementing wildlife control programs; and
 - (3) names and roles of the persons responsible: for dealing with wildlife hazards, and their telephone numbers during and after working hour.
- (m) **Obstacle control.** Particulars shall set out the procedures for—
- (1) monitoring for obstacles the obstacle limitation surface and Type A Chart, as identified in ICAO Annex 4, Aeronautical Charts, take-off surface;
 - (2) controlling obstacles within the authority of the operator;
 - (3) monitoring buildings or structure development in relation to their height within the boundaries of the obstacle limitation surface;
 - (4) the control of new developments in the vicinity of aerodromes; and
 - (5) notifying the BCAD of—
 - (i) the nature and location of obstacles;
 - (ii) any subsequent addition or removal of obstacles; and
 - (iii) any necessary amendment of AIS publications to reflect changes in or occasioned by (i) and (ii).
- (n) **Disabled aircraft removal plan and procedure.** Particulars of the procedures for removing an aircraft which is disabled on or adjacent to the movement area shall include the -
- (1) roles of the aerodrome operator and the holder of the aircraft certificate of registration;
 - (2) arrangements for notifying the holder of the aircraft certificate of registration;
 - (3) arrangements for liaising with the air traffic control;
 - (4) arrangements for obtaining equipment and persons to remove the disabled aircraft;
 - (5) names and roles of persons responsible for arrangement of the removal of disabled aircraft and their telephone numbers; and
 - (6) arrangements for the protection of evidence in compliance with Schedule 19 and ICAO Annex 13 Accident Investigation.
- (o) **Handling of hazardous material.**
- (1) Particulars of the procedures for the safe handling and storage of hazardous material on the aerodrome shall include the—
 - (i) the arrangements for special areas on the aerodrome to be set-up for the storage of inflammable li
 - (ii) liquids, including aviation fuels, and any other hazardous materials; and
 - (iii) the method to be followed for the delivery, storage, dispensing and handling of hazardous materials.
 - (2) Hazardous materials include—
 - (i) inflammable liquids;
 - (ii) solid, corrosive liquids;
 - (iii) compressed gases; and

- (iv) magnetized or radioactive materials.
- (3) The arrangement to deal with an accidental spillage of hazardous material should be included in the aerodrome emergency plan and in accordance with ICAO Annex 18, The Safe Transportation of Dangerous Goods by Air.
- (p) **Low visibility operations.**
 - (1) The aerodrome operator shall establish procedures for low visibility operations of the aerodrome, particulars of which shall include the—
 - (i) measurement and reporting of runway visual range, as and when required; and
 - (ii) name and telephone numbers during and after working hours of the persons responsible for measuring the runway visual range.
 - (2) The aerodrome operator shall, where applicable—
 - (i) provide a plan for the safe movement of aircraft during periods of darkness or reduced visibility, such as smoke or heavy rain;
 - (ii) ensure the plan referred to in paragraph (1) provides for clear marking, lighting and signage of aircraft movement routes and demarcation of hazards and unserviceable areas; and
 - (iii) limit vehicle and pedestrian movements to those movements essential to flight safety.
- (q) **Protection of radar and navigational sites.**
 - (1) Procedures shall be established for the protection of radar and radio navigational aids located on the aerodrome to ensure that their performance is not degraded, particulars of which shall include the—
 - (i) arrangements for the control of activities in the vicinity of radar and navigational aids installations;
 - (ii) arrangements for ground maintenance in the vicinity of radar and navigational aids installations; and
 - (iii) supply and installations of signs warning of hazardous microwave radiation.
 - (2) The procedures established in relation to paragraphs (i), (ii) and (iii) of subsection (1) shall include clear and precise information on—
 - (i) when, or in what circumstances, an operating procedure is to be activated;
 - (ii) how an operating procedure is activated;
 - (iii) actions to be taken and the person or persons to carry out the actions required by the procedure; and
 - (iv) the equipment, and access to such equipment, necessary for carrying out the actions required by the procedure.
 - (3) The reason shall be given where any of the procedures in relation to paragraphs (i), (ii) and (iii) of subsection (1) is not relevant or applicable.

APPENDIX 5 TO 21.100: AERODROME ADMINISTRATION AND SAFETY MANAGEMENT SYSTEM

- (a) Particulars of the aerodrome administration shall include the—
 - (1) aerodrome organization structure chart showing the names and positions of key personnel, including their responsibilities;
 - (2) name, position and telephone numbers of the person who has overall responsibility for aerodrome safety; and
 - (3) members of aerodrome committees, responsibilities of each committee and methods of contacting its members.
- (b) **Safety Management System (SMS).**
 - (1) A Safety Management System (SMS) shall be established—
 - (i) to ensure compliance with all safety requirements; and
 - (ii) to achieve continuous improvement in safety performance.

- (2) The essential features of the SMS shall be the—
 - (i) safety policy, insofar as applicable, on the process of hazard identification and safety management and its relation to the operational and maintenance process;
 - (ii) structure or organization of the SMS including—
 - (A) designation of the accountable executive;
 - (B) staffing; and
 - (C) assignment of individual and group responsibilities for remedial action and resolution of safety issues;
- (3) SMS strategy and planning including—
 - (i) setting safety performance targets;
 - (ii) allocating priority for implementing safety initiatives; and
 - (iii) providing a framework for controlling the risks to a level as low as reasonably practicable with reference to the requirements of the Standards and Recommended Practices in ICAO Annex 14 Volume 1, BASR 21, and any other applicable standards, rules or orders;
- (4) SMS implementation including facilities, methods and procedures for the effective communication of safety messages and enforcement of safety requirements;
- (5) system for the implementation of, and action on, critical safety areas which require a higher level of safety management integrity;
- (6) measures for—
 - (i) safety promotion;
 - (ii) accident prevention;
 - (iii) a system for risk control, involving analysis and handling of accidents, incidents, complaints, defects, faults, discrepancies and failures;
 - (iv) continuing safety monitoring;
- (7) internal safety audit and review system, detailing the continuous monitoring systems and programs for quality control on safety;
- (8) audits referred to in paragraph (7) which shall be carried out every 12 months;
- (9) system for the documentation of all safety related aerodrome facilities and aerodrome operational and maintenance records, including information on the design and construction of aeroplane pavements and aerodrome lighting, and such system should enable easy retrieval of records including charts;
- (10) training and competency of staff including review and evaluation of
 - (i) the adequacy of training provided on safety related duties;
 - (ii) the certification system for testing staff competency; and
- (11) incorporation of safety related clauses in the contracts for work at the aerodrome and the enforcement of such clauses.

End of BASR Schedule 21

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