



# **Part 101**

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# **MANNED**

# **PASSENGER**

# **CARRYING**

# **BALLOON**

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**SUBPART A**  
**General****101.1 Applicability**

- (a) This subpart prescribes rules governing:
- (1) The operations of each person who holds or is required to hold an operating certificate under Part 101; and EAC 101-1
  - (2) Each person employed or used by an operating certificate holder conducting operations under this Part including the maintenance, preventative maintenance and alteration of a hot air balloon;
  - (3) Sightseeing flights conducted in hot air balloons for compensation or hire; and
  - (4) Any other balloon operation of any type within the Arab Republic of Egypt, except moored balloons, unmanned balloons, and unmanned rockets under subpart D of this Part.
- (b) For purposes of this Part:
- (1) A captive gas balloon is a balloon that derives its lift from a captive lighter-than-air gas;
  - (2) A hot air balloon is a balloon that derives its lift from heated air;
  - (3) The envelope is the enclosure in which the lifting means is contained;
  - (4) The basket is the container, suspended beneath the envelope, for the balloon occupants;
  - (5) The trapeze is a harness or is a seat consisting of a horizontal bar or platform suspended beneath the envelope for the balloon occupants; and
  - (6) The design maximum weight is the maximum total weight of the balloon, less the lifting gas or air.

**101.2 Waivers.**

No person may conduct operations that require a deviation from this part except under a certificate of waiver issued by ECCA.

**101.3 Rules applicable to operations subjected to this Part**

Each person operating a balloon in operations under this Part shall operate only inside the Arab Republic of Egypt and in designated areas, and shall comply with the applicable Egyptian rules.

**101.5 Duration of operating certificate or permit**

- (a) An operating certificate or permit is valid for a period of 12 calendar months and is effective until surrendered, suspended or revoked. The holder of an operating certificate or permit that is suspended or revoked shall return it to the ECAA.
- (b) The holder of an operating certificate that expires shall return it to the ECAA.

**101.7 Application and issue of operating certificate or permit**

- (a) An application for an operating certificate or permit is made on a form and in a manner prescribed by the ECAA.
- (b) An applicant who meets the requirements of this Part is entitled to:
- (1) For the carriage of passengers for compensation or hire, an operating certificate containing all business names under which the operating certificate holder may conduct operations and the address of each business office used by the operating certificate holder; and
  - (2) A permit to operate for purposes other than (b)(1) of this paragraph.

**101.9 Eligibility for operating certificate or permit**

- (a) To be eligible for a commercial operating certificate or permit, a person must:
- (1) Except for the issuance of a permit for private or recreational purposes, be a citizen of the Arab Republic of Egypt, a partnership of which each member is a citizen of the Arab Republic of Egypt, or a corporation or association created or organized under the laws of the Arab Republic of Egypt;
  - (2) Show, to the satisfaction of the ECAA, that the person is able to conduct each kind of operation for which the person seeks authorization in compliance with applicable regulations;

- (3) Hold any economic authority that may be required by the Ministry of Civil Aviation ;and
- (4) Furnish proof of liability insurance to cover passengers and third parties.
- (b) The ECAA may deny any applicant an operating certificate or permit under this Part if the ECAA finds:
  - (1) That an operating certificate or permit under this Part previously issued to the applicant was revoked; and
  - (2) The ECAA finds that the applicant has not timely submitted all pertinent information required for the issuance of a certificate or permit in a form and manner as required by the ECAA.
- (c) Variation Of An AOC
  - (1) If the holder of an AOC requires to apply for the variation of a Certificate an application on the appropriate must be made to the ECAA Chairman giving at least 30 working days before the change is required to become effective.
  - (2) On receipt of an application for variation, the assigned Inspector(s) will normally be directed to carry out an investigation, which may include a requirement to accompany or observe a proving flight.
- (d) Change Of The Company Name, Holder's Name Or Business Name
  - (1) The AOC holder must provide documentary evidence supporting the proposed change of names.
  - (2) Where limited companies are involved, the company number must be quoted.
  - (3) No trading name that is the same as, or is so similar to an existing business name that it, in the opinion of the ECAA, may lead to future confusion, will be accepted by the ECAA.
  - (4) The company Operations Manual will need to be amended to include amended headers and footers.

#### **101.11 Manuals requirements**

- (a) Each operating certificate holder shall prepare and keep current manuals setting forth the operating certificate holder's procedures and policies acceptable to the ECAA ( Company Operations Manual, General Maintenance Manual, Training Manual, Balloon Flight Manual, Balloon Maintenance Manual,..... etc.).
- (b) The operating certificate holder's flight, ground, and maintenance personnel in conducting its operations must use these manuals.
- (c) Each operating certificate holder required to have a manual shall maintain at least one copy of the manuals at its principal base of operations and at other operations stations.
- (d) The manuals must not be contrary to any applicable ECAA regulations, or the operating certificate holder's operating certificate.
- (e) A copy of the manuals, or appropriate portions of the manual (and changes and additions) shall be made available to maintenance and ground operations personnel by the operating certificate holder and furnished to:
  - (1) Its pilots
  - (2) ECAA.
- (f) Each employee of the operating certificate holder to whom a manual or appropriate portions of it are furnished shall keep it up to date with the changes and additions furnished to them.

#### **101.13 Company Operations Manual**

- (a) The manual shall have the date of the last revision on each revised page.
- (b) The manual must include the name and title of each person authorized to exercise operational control.
- (c) The manual shall at least contain:
  - (1) Procedures as acceptable to the ECAA, to ensure that the operational and emergency equipment necessary for an intended flight is serviceable; and that the Certificate of Airworthiness of each balloon they operate remain valid.
  - (2) The procedures for monitoring, accessing and reporting operational experience;
  - (3) Balloons types and models to which the manual applies;
  - (4) The procedures for advising the ECAA of significant in-service occurrences.

- (5) procedures for ensuring that the balloon is operated within approved limits of mass and center of gravity;
- (6) Balloon handling procedures;
- (7) Procedures for complying with accident notification requirements;
- (8) Procedures for ensuring that the pilot knows that the required airworthiness inspections have been made and that the balloon has been approved for return to service in compliance with applicable maintenance requirements;
- (9) Procedures for reporting and recording mechanical irregularities that come to the attention of the pilot in before, during, and after completion of a flight;
- (10) Procedures to be followed by the pilot for determining that mechanical irregularities or defects reported for previous flights have been corrected or that correction has been deferred;
- (11) Procedure for pre-flight briefing of ground crew;
- (12) Procedure for briefing of passengers on emergency procedures and equipment, including (where appropriate) suitable clothing, lifejackets, protective head gear and passenger landing position blocks;
- (13) The responsibility for supervising refueling and for ensuring that tanks and hoses are secured and free of leaks;
- (14) The responsibility for checking the condition and security of fire, safety, and medical equipment;
- (15) The responsibility for ensuring the correct completion of the Technical Log, both before and after flight;
- (16) The responsibility for supervising the loading and unloading of the balloon;
- (17) Company policy on the carriage of children and aged or infirm or Handicapped passengers should be stated
- (18) Provisions and use of oxygen and associated equipment
- (19) Instructions on restricting operating altitudes must be included if oxygen is not carried, or if a balloon is not correctly equipped either temporarily or permanently.
- (20) Procedures for normal, abnormal or emergency conditions must be listed in the Manual.
- (21) Procedures on altimeter setting, particularly the use of QFE and QNH. This policy must be clearly described in Operations Manuals to cover all phases of flight.
- (22) Procedures for the evacuation of a balloon and for the care of passengers following a hard landing, ditching, power line contact or other emergency are to be specified.
- (23) Other procedures and policy instructions regarding the operating certificate holder's operations, which are issued by the operating certificate holder, and
- (24) Any other information and instructions related to the certificate holder's safety program.

### **101.15 General Maintenance Manual:**

- (a) The operator shall provide the ECAA with a copy of its general maintenance manual, together with all amendments and / or revisions to it and shall incorporate in such mandatory material the ECAA may require. The general maintenance manual shall contain :
  - (1) A description of the following procedures as acceptable to the ECAA, to ensure that:
    - (i) Each balloon operated is maintained in an airworthy condition.
    - (ii) The operational and emergency equipment necessary for intended flight are serviceable; and
    - (iii) The Certificate of Airworthiness of each balloon they operate remains valid.
  - (2) The administrative arrangements between the operator and all approved maintenance organizations;
  - (3) Names and duties of the person required to ensure that all maintenance is carried out in accordance with the maintenance control manual;
  - (4) A reference to the maintenance program provided by the operator, for the use and guidance of maintenance and operational personnel concerned, approved by the ECAA, with human factors principles observed in its design,

- (5) Instructions and procedures for maintenance, preventive maintenance and servicing;
- (6) The procedures for accessing continuing airworthiness information and implementing any resulting actions;
- (7) The procedures for implementing action resulting from mandatory continuing airworthiness information;
- (8) Establishing and maintaining a system of analysis and continued monitoring of the performance and efficiency of the maintenance program, in order to correct any deficiency in that program;
- (9) The methods used for the completion and retention of the operator's maintenance records;
- (10) Maintenance training program, curriculums, instructors, procedures and description of training system and facilities;
- (11) Procedures for charging Gas-Bottles;
- (12) Fire precaution procedures during charging Gas-Bottles;
- (13) Procedures for storage, labeling/tagging and release of balloon components and material to Balloon maintenance;
- (14) Procedures for safe handling Gas-Bottles;
- (15) A description of the procedure for receiving, amending and distributing within the organization all necessary airworthiness data from the type certificate holder or type design organization; and
- (16) A description of the maintenance procedures and the procedures for completing and signing a maintenance release when maintenance is based on a system other than that of an approved maintenance organization
- (17) Quality control procedure.

#### **101.17 Training Manual**

- (a) Training Manual is regarded by the ECAA as the primary indication of the standard of training and testing likely to be achieved by an applicant for, or holder of, an AOC. One copy must be submitted to ECAA, preferably with the initial application for an AOC.  
For balloon operations the Training Manual may be a part of the Operations Manual.
- (b) In addition to the more general matters of company training policy, the following in particular, must be included in the Manual:
  - (1) The name of the person responsible for the supervision of aircrew training and testing; and the name of the authorized company type rating examiner;
  - (2) Minimum standards of recent experience and of initial and periodic training to be met by pilots for each type of balloon used by the Operator;
  - (3) Specimen record forms in respect of all training and testing;
- (c) On line emergency and survival equipment training and testing
  - (1) As part of the Line check, company pilots have to practice the carrying out of the relevant drills and procedures required in the case of an emergency occurring to the balloon. The following equipment must be included in the training if carried on board:
    - (i) Sufficient, adequate and suitable first-aid kits and their contents;
    - (ii) Sufficient, adequate and suitable fire extinguishers;
    - (iii) Pyrotechnics; and
  - (2) Company personnel should be given every opportunity to familiarize themselves with all equipment on a regular basis.
  - (3) Minimum syllabus items for emergency and survival equipment training exist in ECATSH
- (d) Company personnel shall have a adequate training on fire fighting .

#### **101. 19 Balloon requirements**

- (a) No operating certificate or permit holder may operate a balloon under this Part unless that balloons:
  - (1) Is registered in the Egyptian lighter-than-air aircraft register and carries an appropriate and current airworthiness operating certificate; and
  - (2) Is in an airworthy condition and meets all applicable airworthiness requirements, including those relating to identification and equipment.

- (3) Is type certificated according to ECAR Part 31.
- (b) An operating certificate or permit holder may operate a balloon if it is registered in a country, which is a party to the Convention on International Civil Aviation if:
- (1) The balloon carries an appropriate airworthiness certificate issued by the country of registration and meets the registration and identification requirements of that country;
  - (2) The balloon is operated by a properly certificated airman as determined by the ECAA; and
- (c) The ECAA approves the operation.

### 101.21 Management personnel

- (a) Each operating certificate holder must have enough qualified management personnel in the following or equivalent positions to ensure safety in its operations . the certificate holder must have qualified personnel serving full-time the following or equivalent positions :
- (1) Accountable Executive
  - (2) Operations Manager;
  - (3) Chief Pilot
  - (4) Maintenance Manager,
  - (5) Safety Manager, and
  - (6) Chief inspector (as appropriate)
- (b) Upon application by the operating certificate holder, the ECAA may approve different positions or numbers of positions than those listed in paragraph (a) of this section for a particular operation if the operating certificate holder shows that it can perform its operations safely under the direction of fewer or different categories of management personnel.
- (c) Each operating certificate holder shall:
- (1) Set forth the duties, responsibilities, and authority of the personnel required by this section in the manual required by this Part;
  - (2) List in the manual required by this Part the name of the person or persons assigned to those positions; and
  - (3) Within 10 working days, notify the ECAA of any change made in the assignment of persons to the listed positions.

### 101.22 Management personnel: qualifications

- (a) To serve as Accountable Executive under 101.21, a person must have managerial experience and understanding of how to establish and manage safety, and have a complete knowledge of AOC operational requirements, and acquire training courses in ECARs and safety management system as a minimum.
- (b) To serve as Director of Operations under this part a person must:
- (1) Hold or has hold a commercial pilot license Balloon or Aero plane with Balloon Category rating.
  - (2) Have at least 1 years supervisory or managerial experience in a position to exercise operations of balloons or aero planes.
- (c) To serve as Chief Pilot under this part a person must :
- (1) Hold a valid commercial pilot license Balloon or Aero plane with Balloon Category rating.
  - (2) Hold a valid commercial pilot license balloon for at least last three years on the largest company balloon group .
- (d) To serve as Director of Safety and Quality Assurance under this Part a person must:
- (1) Have an overall understanding of how to establish and manage a comprehensive safety, quality assurance and accident prevention program and have a complete knowledge of all AOC operational requirements, manuals, Egyptian Civil Aviation Regulations and training programs;
  - (2) Hold or has hold a Balloon pilot license, Aeroplane with Balloon Category rating or Balloon maintenance license with Balloon category rating.
  - (3) Have five years experience in a comparable position or technical experience with a military branch of service or civil aviation field.
  - (4) Conduct an SMS training as a Line management and risk assessment training.
- Or



- (5) Have five years experience in a supervisory position with an Egyptian Governmental department, board or agency that is directly responsible for aviation issues.
- (e) To serve as chief inspector under this part a person must :
- (1) Hold or has held a Balloon maintenance license with Balloon category rating ;
  - (2) Have one year experience from the last three years in maintenance of Balloon;
  - (3) Has an appropriate training / experience in quality system ;
- (f) To serve as Director of maintenance under this part a person must :
- (1) Hold or has held a Balloon maintenance licence with balloon category rating ;
  - (2) Have one year experience from the last three years in maintenance of Balloon ;
  - (3) Have one year of experience in a position responsible for returning Balloon to service ;
- (g) A certificate holder may request a deviation to employ a person who does not meet the appropriate airman, managerial, or supervisory experience requirements of this section if the ECAA finds that the person has comparable experience, and can effectively perform the functions associated with the position in accordance with the Egyptian Civil Aviation Regulations and the procedures outlined in the certificate holder's manual. Grants of deviation under this paragraph may be granted after consideration of the size and scope of the operation and the qualifications of the intended personnel. The ECAA may, at any time, terminate any grant of deviation authority issued under this paragraph

### **101.23. Adequacy and Supervision of Staff**

- (a) Pilots
- (1) It will be necessary for Operators to satisfy the ECAA that they have a sufficient number of pilots for the operations to be undertaken.
  - (2) Pilots must be aware of their individual responsibilities in relation to the legality and currency of any Flight Crew Licenses and associated ratings and certificates held. Flying with an applicable element of a license out of date is illegal and may invalidate insurance cover.
  - (3) The employment of part-time or 'freelance' pilots is acceptable. Irrespective of other pilots are part-time or full-time employees, tests carried out to establish their competence for flight.
  - (4) Tests conducted on behalf of another Operator may be accepted under arrangements set out in the company's Training Manual. These arrangements must ensure that the pilot is competent to perform all the duties and responsibilities laid upon him by the Operator.
- (b) Chief Pilot
- (1) Arrangements must be made for the supervision of pilots by a person having the experience and qualities necessary to ensure the maintenance professional standards. This will necessitate the appointment of a Chief Pilot.
  - (2) The duties and responsibilities of the Chief Pilot must be carefully defined. ECAA will require verification that arrangements for the professional supervision of balloon pilots are properly related to the size and nature of the Operator's.
- (c) Certifying Staff: Appropriately certificated maintenance personnel or other person approved by the ECAA according to ECAR Part 65.
- (d) Ground Staff:
- (1) The number of ground staff needed will depend primarily upon the nature and the scale of operations; the ECAA will take full account of an Operator's particular circumstances.
  - (2) Operations staff must be suitably trained personnel who have a complete understanding of the nature of their duties and responsibilities.
  - (3) Retrieve crews must be trained for, and experienced in, all aspects of normal and emergency operations. Responsibility for the training and supervision of ground staff rests with the company Operations Manager.

### **101.24 Safety Management System:**

Each certificate holder shall establish, implement, maintain and adhere to a safety and quality assurance management system that is appropriate to the size, nature and

complexity of all activities authorized to be conducted under the certificate and in accordance with EAC 00-11.

### 101.25 Facilities

- (a) The nature and scale of office services required - clerical staff and equipment - should be related to the number of other staff employed.
- (b) It is particularly important that office services are sufficient to ensure that operational instructions and information of all kinds are produced and circulated to all concerned without delay. Telephones must be manned or recorded while operations are in progress.
- (c) Office space at the operating base must be sufficient to provide a suitable working environment for the staff employed and for the use of crews between flights. Adequate provision must be made for operational planning, for the storage and display of essential records and for flight planning.
- (d) Storage facilities must be provided for parts, equipment, tools and material. Storage conditions must be such as to provide security for serviceable parts, segregation of serviceable from unserviceable parts, and prevent deterioration of and damage to stored items. Fuel gas cylinders store should be separated from other stores.

### 101.27 ECAA Inspection Authority

- (a) Each person holds a certificate under this part (or applied for such certificate) shall grant unrestricted and unlimited access for ECAA inspectors to inspect his personnel, facilities, equipment, documents and records to determine:
  - (1) Eligibility to continue to hold his certificate.
  - (2) Compliance with this ECAR part
- (b) Failure to comply with paragraph (a) above shall be a basis to suspend, withdraw or revoke any certificate issued under this part.

### 101.29 Operation Library

- (a) At the operating base, the Operator must maintain an adequate library of maps, charts, flight guides, Operations Manuals and other documents needed for reference and planning purposes and for use in flight.
- (b) The library must be kept in an orderly fashion with responsibility for its maintenance clearly defined.
- (c) Aeronautical charts and appropriate flight guides will normally be required for the area over which the Operator is certificated to fly.
- (d) Arrangements must be made for the amendment of manuals, flight guides etc. and for bringing the amendments to the notice of pilots and other operating staff. A record should be kept of the distribution of manuals and amendments.

### 101.30 Occurrence Reports

- (a) Responsibility for making occurrence reports, must be assigned to a suitably qualified safety officer appointed for the purpose.
- (b) Reports should be made to the ECAA through this official Occurrence Report Form (Ref. ECAR 39).
  - (1) Where appropriate, the circumstance of an incident should be made generally known within the Operator's company.
  - (2) Particular care is to be taken to ensure that originators of occurrence reports are informed of the outcome of any subsequent investigations. To this end, full use should be made of the facilities provided for the exchange of information on occurrences and accidents by the ECAA's.
  - (3) Operators must report to the ECAA any occurrence interpreted as being
  - (4) within the guidance in The Mandatory Occurrence Reporting Form.

## **SUBPART B** **Flight Operations**

### **101.31 Recordkeeping requirements**

Each operating certificate holder shall keep at its principal business office or at other places approved by the ECAA, and shall make available for inspection by the ECAA the following:

- (a) The operating certificate holder's operating certificate;
- (b) An individual record of each pilot used in operations under this Part, including the following information:
  - (1) The full name of the pilot;
  - (2) The pilot operating certificate (by type and number) and ratings that the pilot holds;
  - (3) The pilot's aeronautical experience in sufficient detail to determine the pilot's qualifications to pilot balloons in operations under this Part;
  - (4) The effective date and class of the medical certificate that the pilot holds;
  - (5) Any action taken concerning the pilot's release from employment for physical or professional disqualification;
  - (6) The training required by 101.27(c); and
  - (7) Each operating certificate holder must keep each record required by this section for at least 24 months.

### **101.32 Airmen: Limitations on use of services**

No operating certificate holder may use the services of any person as an airman unless the person performing those services:

- (a) Holds an appropriate and current airman certificate with at least a commercial balloon license and appropriate medical certification;
- (b) Is qualified, under Part 61, for the operation for which the person is to be used; and
- (c) Has received sufficient ground and flight training to be familiar with the operator's policies and procedures, area of operation and local weather conditions. Familiarization flight training shall consist of at least two flights at the operator's area of operation. The operator shall record, for ground training, the subject and time in hours of that training, and for flight training, the hours and number of flights in that airman's training record. The training record must also state that the operator considers the airman competent to perform the duties to which assigned and the date of assignment to those duties.

### **101.33 Airworthiness checks**

The pilot in command shall not begin a flight unless the pilot determines that all required airworthiness inspections have been made and that the balloon is in condition for safe flight with all required instruments and equipment in working order.

### **101.34 Minimum altitudes**

Except when necessary for takeoff and landing, no person may operate a balloon at an altitude less than 300 feet above the surface, or at a higher altitude over any area that would require a higher altitude to effect an emergency landing without undue hazards to the passengers or persons or property on the surface.

### **101.35 Operating limitations**

- (a) The operation shall be conducted from a suitable, level launching area free of obstacles that may cause damage to the balloon fabric. The operator shall provide an area for occupants and spectators located at least 20 meters from the location of balloon inflation and launching. Occupants must be briefed to board the basket only when directed to do so by the pilot and that they must remain in their places during flight pilots shall be assigned to direct this activity in addition to taking necessary

precautions during refueling such as prevention of smoking and prevention of static electricity in the area of fueling.

- (b) The pilot shall be responsible for obtaining all information necessary for the safety of the flight, including the suitability of weather and wind conditions for the operation, emergency procedures and alternate landing area in case of diversion.
- (c) Restraint Harnesses :

All pilots shall use a pilot restraint harnesses fitted to all public transport balloons. The harness must be worn and attached before the balloon restraint is released, worn throughout the flight and not released until the end of the flight and the balloon has come to a complete and final stop.

### **101.36 Performance: Climb**

Each balloon must be capable of climbing at least 300 feet in the first minute after takeoff with a steady rate of climb. Compliance with the requirements of this section must be shown by performance charts or graphs at each altitude and ambient temperature for which the balloon will be operated.

### **101.37 Conspicuity**

The exterior surface of the envelope must be of a contrasting color or colors so that it will be conspicuous during operation. However, multicolored banners or streamers are acceptable if it can be shown that they are large enough, and there are enough of them of contrasting color, to make the balloon conspicuous during flight.

### **101.39 Instruments and equipment**

In addition to any additional equipment required by the ECAA or the manufacturer for a specific type of operation, the following equipment is required:

- (a) An altimeter;
- (b) A rate-of-climb indicator;
- (c) For hot air balloons, a fuel quantity gauge or other means which indicate the remaining fuel quantity; and
- (d) Envelope temperature indicators, which may be of the continuous reading type or a type which, give a warning signal.
- (e) Appropriate means of VHF communications between the balloon and the Air traffic controller.
- (f) One fire extinguisher;
- (g) One first aid kit; and
- (h) A means of two way communications between the balloon and the following truck

### **101.40 Weather reporting facilities**

- (a) Each balloon operator must show that enough weather reporting services are available to ensure weather reports and forecasts necessary for the operation at launching area.
- (b) Each balloon operator shall adopt and put into use an approved system for obtaining weather reports and forecasts.

## **SUBPART C** **Maintenance Requirements**

### **101.41 Requirements for maintenance, inspections and appropriately rated personnel**

- (a) All maintenance and inspections performed on any balloon within the Arab Republic of Egypt shall be conducted by an appropriately certificated maintenance personnel according to ECAR Part 65.
- (b) All inspections shall be conducted in accordance with the manufacturer's published maintenance and inspection schedule and in accordance with either the manufacturer's recommended procedures, or those approved by the ECAA.
- (c) All major repairs and/or modifications shall be conducted by an approved repair station or by the balloon manufacturer.
- (d) Repairs and/or modifications not contained in the manufacturer's maintenance manual shall be considered major and require approval by the ECAA prior to those repairs and/or modifications being performed.
- (e) The applicant shall provide two copies of the balloon manufacturer's maintenance and inspection schedule to the ECAA, and furnish the ECAA with any amendments or changes to the subject manual.

### **101.42 Responsibility for airworthiness:**

- (a) Each certificate holder is primarily responsible for:
  - (1) The airworthiness of its balloons; and
  - (2) The performance of the maintenance, preventive maintenance, and alteration of its balloons, including appliances, emergency equipment, and parts thereof, in accordance with its manual and the regulations of this chapter.
- (b) A certificate holder may make arrangements with another person for the performance of any maintenance, preventive maintenance, or alterations. However, this does not relieve the certificate holder of the responsibility specified in paragraph (a) of this section.

### **101.43 Maintenance Support Arrangements**

- (a) It is the responsibility of the Operator to satisfy the ECAA that his maintenance are to a satisfactory standard.
- (b) The Operator may contract-out his maintenance in full or part to another company approved by ECAA.
- (c) The Operator remains responsible for the safe operation of his balloon when maintenance is contracted out and must therefore be satisfied with the standards of airworthiness achieved by the contractor. The Operator must monitor the contractor's response to the provisions of the maintenance agreement, employing such technical resources as are necessary to achieve this task.

### **101.44 Operator's Responsibilities**

- (a) The Operator must establish procedures to ensure:
  - (1) that all appropriate Maintenance Manuals, Service Bulletins, ECAA or foreign mandatory inspections/modifications publications and any other supporting information necessary for the maintenance of a particular balloon are available to personnel working on the balloon; and
  - (2) that all such publications are kept up-to-date and that the Approved Maintenance Schedule is regularly reviewed to reflect the maintenance needs of the balloon; and

- (3) that all manufacturer's service information is evaluated and appropriate action taken as considered necessary; and
  - (4) that all required scheduled maintenance, mandatory inspection modifications and defect rectification are carried out; and
  - (5) that all technical documentation such as log books, work sheets etc., are maintained in a complete and up-to-date manner; and
  - (6) that defects are rectified before the next flight endorsed in the Technical Log; and,
  - (7) that the organisation responsible for type certification of each balloon type (usually the manufacturer) receive adequate reports of all airworthiness occurrences to that type, to enable the issue of appropriate service instructions and recommendations to all operators.
- (b) A procedure acceptable to the ECAA to ensure that:
- (1) all routine servicing / maintenance is carried out including pre-flight checks; and;
  - (2) the defects affecting airworthiness or safe operation of the balloon are recorded on the appropriate Sector Record Page of the Technical Log; and
  - (3) defects are rectified before flight by appropriately qualified persons.
- (c) The Operator must establish procedures to ensure that the approved maintenance program is reviewed periodically with the object of ensuring that the schedule requirements continue to have practical applicability in the light of experience, utilisation and age and adequately meet the maintenance needs to the balloon if continuing airworthiness is to be ensured.

#### **101.45 Contracted-Out Maintenance**

- (a) Contracted arrangements for engineering support and maintenance do not absolve an Operator from the overall responsibility for ensuring the safe operation and continuing airworthiness of the balloon.
- (b) There must be in force an agreement between the Operator and the nominated outstanding maintenance company giving full details of the division of responsibilities for maintenance control.
- (c) An Operator must nominate a person for engineering liaison purposes. This person will be responsible to the Operator; for planning the timely presentation of the balloon to the maintenance organisation for all contracted maintenance; for liaison on all matters relating to the maintenance agreement and for airworthiness matters affecting the safe operation of the balloon.
- (d) In order to be able to discharge its responsibilities for continued airworthiness and to issue Certificates of Release to Service the nominated maintenance organisation must be able to satisfy themselves on a continuing basis that the requirements of the approved maintenance program are being complied with.
- (e) Responsibilities for the assessment and incorporation of manufacturer's Service Information and for compliance with mandatory requirements must be clearly defined in the agreement.
- (f) In its assessment of the overall engineering support arrangements provided by the Operator, the ECAA will require to examine and may require to hold copies of all agreements, including sideletters and addenda, between the parties concerned.
- (g) Any proposal to change the maintenance arrangements, must be notified to the ECAA at least 30 days prior to the proposed date of implementation.
- (h) Arrangements other than in accordance with this chapter will need to be specifically agreed with the ECAA.
- (i) The Operator must ensure that the nominated maintenance company competently discharges its responsibilities under the agreement to his satisfaction, and is also responsible for satisfying the ECAA that the maintenance organisation meets its responsibilities, insofar as they relate to the contracted work.

- (j) Whenever a balloon is presented for scheduled or unscheduled maintenance it is essential that a precise indication is given of the inspections required, all defects known to exist on the balloon plus any additional work required to be carried out.
- (k) In exercising its responsibilities for the overall control of maintenance the nominated maintenance organisation must be satisfied with the completion and certification of all tasks performed by the Operator or by other organisations.
- (l) There should be a procedure to ensure that the necessary components or parts are made available or ordered on a priority basis, and that they are fitted on the balloon before next flight.

#### **101.46 Technical Record**

- (a) The Operator must ensure the completion of the balloon technical records:
  - (1) Such that it is his responsibility to ensure that the hours of service or elapsed times quoted in the approved maintenance program are not exceeded as regards components and structural assemblies, and that scheduled maintenance periods are adhered to; and
  - (2) To record the number of hours or flights, when this information is specified in the approved maintenance program or manufacturer's manuals as a basis for inspection or other necessary action; and
  - (3) To process the foregoing information into the appropriate log books or equivalent records, to maintain the records and documents concerning overhaul and repair work, component changes, mandatory modifications and inspections.
    - (i) A computer may be used as part of a technical records system with the agreement of the ECAA. In this case procedures should be instituted which will ensure that the computerised record will provide storage, preservation and retrieval to the same level as would have been achieved by hard copy records. ECAA acceptance of computerised recording does not exempt the operator or his contracted maintenance company from the keeping and retention of records.

#### **101.47 Airworthiness Directives And Manufacturers' Technical Information**

- (a) The Operator must have procedures to ensure that Airworthiness Directives (AD's) are complied with as required. It must be quite clear that the responsibility lies for compliance with Directives on the operator.
- (b) When manufacturer's service information is received an immediate assessment must be made to establish the applicability. Matters of significant airworthiness importance must be responded to promptly.
- (c) A record of all Airworthiness Directives and non-mandatory modifications should be kept. The record should list all AD's generally applicable to the type, including those not specifically applicable to the individual balloon, including reason for non-applicability.
- (d) The Operators must ensure that the relevant balloon manufacturer is aware that they are users of his balloon so that all relevant service information, details of in-service experience of the balloon and amendments to manuals, including the Flight Manual, are received and embodied in a timely manner. This is especially important where the Operator is not the original owner of the balloon, or it has been leased from the owner.
- (e) The Operator must hold and make available to personnel concerned the necessary technical data, e.g. ECAR, manufacturer's manuals, any relevant service information, any other related literature appropriate to the balloon types covered by the AOC and copies of appropriate company manuals, procedures and instructions. A person must be appointed to be responsible for the technical library.

- (f) Arrangements must be made for the supply of amendments, so that all publications are kept up-to-date, and of any additional technical information relevant to the work undertaken.
- (g) Arrangements must be made for manuals or sections of manuals, schedules, service information, etc., appropriate to the work undertaken, to be made available and a suitable procedure maintained to ensure that such information is kept up to date.

#### **101.48 Preparation Of Balloon For Flight**

- (a) The pre-flight check should be done by the ECAA certified personnel according to part 65 J . In respect of the maintenance of Balloon The operator must have procedures to:
  - (1) Ensure that the operations manual and maintenance program contain a ECAA approved pre-flight inspection to be completed by a certified personnel, with which to verify that the balloon continues to be serviceable. Details of this inspection should also be accomplished with the technical log;
  - (2) provide information, preferably, in the Technical Log, to advise the commander when the next Scheduled Maintenance Inspection (SMI) is due, by flying hours and calendar time.
  - (3) ensure that a procedure acceptable to the ECAA exists for the control of maintenance actions necessary between Scheduled Maintenance Inspections where it may not be practicable to include full details in the Technical Log. In such cases it should be possible for flight crew to verify that no maintenance task is due or will become due before the end of the intended flight;
  - (4) provide any other information to the crew concerning the balloon and its systems, including changes resulting from modifications, which may affect the operation of the balloon; and
  - (5) have procedures which will ensure that:
    - (i) fuel uplifted prior to flight is free from contamination;
    - (ii) refuelling of the balloon is carried out in a controlled manner taking into account essential safety measures for fire prevention and that refueling is carried out far away from storage area ;
    - (iii) proper attention is given to the rectification of recorded defects, and;
    - (iv) the balloon is serviced and inspected as required by the approved maintenance schedule; and
    - (v) all emergency and survival equipment within the balloon is serviced and inspected as required by the approved maintenance schedule.

#### **101.49 The Technical Log, The Sector Record Page**

- (a) A Technical Log is required to be kept for any balloon with a Certificate of Airworthiness in the and at the end of every flight.
- (b) The balloon commander must enter the following details:
  - (1) the times when the balloon took off and landed; and
  - (2) particulars of any defect known to him if it affects the airworthiness or safe operation of the balloon, (if there are no defects the balloon commander must make an entry to this effect); and
  - (3) any other particulars required by the ECAA; and
  - (4) commander signature and the date.
  - (5) The Technical Log may contain maintenance control and Flight Crew advisory information for use during the routine operation of the balloon between scheduled maintenance inputs.
  - (6) It is normal practice for AOC (Balloon) Operators to use a single form (intriplicate) to fulfil the functions of the Technical Log, Sector Records Page, Loadsheets and Passenger Manifest.



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- (c) Each sector record page must include provision to record:
    - (1) The balloon type and registration; and
    - (2) The date, place and times of take-off and landing; and
    - (3) The name and address of the Operator (the address may be omitted if it is printed on the title page to the log); and
    - (4) Particulars of defects and rectification action taken; and
    - (5) The completion of the pre-flight inspection; and
    - (6) The fuel state at departure; and
    - (7) A pre-printed Certificate of Release to Service (CRS), with provision for a CRS signature, date and authority for issue, in such a position as to be readily identifiable with the defect entry to which it relates; and
    - (8) The running total of flying hours so that the flying hours remaining to the next inspection can be readily determined, and the date of such inspection; and
    - (9) The post-flight signature of the balloon commander and the date.
  - (d) The Sector Record Page layout should be divided to show clearly what is required to be completed after flight and what is required to be completed in preparation for the next flight.

#### **101.50 Retention Of Records**

- (a) All entries made on a Technical Log book Sector Record Page must be made in triplicate with provision for one copy of each entry to be removed from the Technical Log and retained on the ground before the next flight commences.
- (b) In the case of a balloon, it is not reasonably practicable for the Technical Log to be carried on the flight. As such the Technical Log should be carried within the recovery vehicle.
- (c) Arrangements must be made to extract information recorded in the Sector Record Page for use by the maintenance crew. Additional copies of the page may be necessary for this purpose.
- (d) All entries made on a Technical Log Book must be retained by the Operator for a period of not less than two years after the particular balloon has been destroyed or permanently withdrawn from service except that the ECAA may consider a different retention period in a particular case.
- (e) If the Operator ceases to be the Operator of the balloon, he remains responsible for transferring the records, to any other person who becomes the Operator.

## **SUBPART D**

### **Moored Balloons, Unmanned Balloons and Unmanned Rockets**

#### **101.51 Applicability**

This Part prescribes rules governing the operation in the Arab Republic of Egypt, of the following:

- (a) Any balloon that is moored to the surface of the earth or an object thereon and that has a diameter of more than 6 feet or a gas capacity of more than 115 cubic feet;
- (b) Except as provided for in 101.7, any unmanned free balloon that:
  - (1) Carries a payload package that weighs more than four pounds and has a weight/size ratio of more than three ounces per square inch on any surface of the package, determined by dividing the total weight in ounces of the payload package by the area in square inches of its smallest surface;
  - (2) Carries a payload package that weighs more than six pounds;
  - (3) Carries a payload, of two or more packages, that weighs more than 12 pounds;  
or
  - (4) Uses a rope or other device for suspension of the payload that requires an impact force of more than 50 pounds to separate the suspended payload from the balloon.

#### **101.53 Waivers**

No person may conduct operations that require a deviation from this Part except under a certificate of waiver issued by the ECAA.

#### **101.55 Operations in prohibited or restricted areas**

No person may operate a moored balloon, kite, unmanned rocket, or unmanned free balloon in a prohibited or restricted area unless he has permission from the using or controlling agency, as appropriate.

#### **101.57 Hazardous operations**

- (a) No person may operate any moored balloon, unmanned rocket, or unmanned free balloon in a manner that creates a hazard to other persons, or their property.
- (b) No person operating any moored balloon, unmanned rocket, or unmanned free balloon may allow an object to be dropped therefrom, if such action creates a hazard to other persons or their property.

## **SUBPART E** **Moored Balloons**

### **101.61 Applicability**

This subpart applies to the operation of moored balloons. However, a person operating a moored balloon or kite within a restricted area must comply only with 101.19 and with additional limitations imposed by the using or controlling agency, as appropriate.

### **101.63 Operating limitations**

- (a) Except as provided in paragraph (b) of this section, no person may operate a moored balloon:
  - (1) Less than 500 feet from the base of any cloud;
  - (2) More than 500 feet above the surface of the earth;
  - (3) From an area where the ground visibility is less than three miles; or
  - (4) Within five miles of the boundary of any airport.
- (b) Paragraph (a) of this section does not apply to the operation of a balloon below the top of any structure and within 250 feet of it, if that shielded operation does not obscure any lighting on the structure.

### **101.65 Notice requirements**

No person may operate an unshielded moored balloon more than 150 feet above the surface of the earth unless, at least 24 hours before beginning the operation, he gives the following information to the ATC facility that is nearest to the place of intended operation:

- (a) The names and addresses of the owners and operators;
- (b) The size of the balloon;
- (c) The location of the operation;
- (d) The height above the surface of the earth at which the balloon or kite is to be operated; and
- (e) The date, time and duration of the operation.

### **101.67 Lighting and marking requirements**

- (a) No person may operate a moored balloon or kite, between sunset and sunrise unless the balloon or kite, and its mooring lines, are lighted so as to give a visual warning equal to that required for obstructions to air navigation by the ECAA.
- (b) No person may operate a moored balloon or kite between sunrise and sunset unless its mooring lines have colored pennants or streamers attached at not more than 50 foot intervals beginning at 150 feet above the surface of the earth and visible for at least one mile.

### **101.69 Rapid deflation device**

No person may operate a moored balloon unless it has a device that will automatically and rapidly deflate the balloon if it escapes from its moorings. If the device does not function properly, the operator shall immediately notify the nearest ATC facility of the location and time of the escape and the estimated flight path of the balloon.

## **SUBPART F** **Unmanned Rockets**

### **101.71 Applicability**

This subpart applies to the operation of unmanned rockets. However, a person operating an unmanned rocket within a restricted area must comply only with limitations imposed by the using or controlling agency, as appropriate.

### **101.73 Operating limitations**

No person may operate an unmanned rocket:

- (a) In a manner that creates a collision hazard with other aircraft;
- (b) In controlled airspace;
- (c) Within five miles of the boundary of any airport;
- (d) At any altitude where clouds or obscuring phenomena of more than five-tenths coverage prevails;
- (e) At any altitude where the horizontal visibility is less than five miles;
- (f) Into any cloud;
- (g) Within 1,500 feet of any person or property that is not associated with the operations;  
or
- (h) Between sunset and sunrise.

### **101.75 Notice requirements**

No person may operate an unmanned rocket unless that person gives the following information to the ATC facility nearest to the place of intended operation no less than 24 hours prior to and no more than 48 hours prior to beginning the operation:

- (a) The names and addresses of the operators; except when there are multiple participants at a single event, the name and address of the person so designated as the event launch coordinator, whose duties include coordination of the required launch data estimates and coordinating the launch event;
- (b) The estimated number of rockets to be operated;
- (c) The estimated size and the estimated weight of each rocket;
- (d) The estimated highest altitude or flight level to which each rocket will be operated.
- (e) The location of the operation;
- (f) The date, time, and duration of the operation; and
- (g) Any other pertinent information requested by the ATC facility.

## **SUBPART G** **Unmanned Free Balloons**

### **101.81 Applicability**

This subpart applies to the operation of unmanned free balloons. However, a person operating an unmanned free balloon within a restricted area must comply only with limitations that are imposed by the using or controlling agency, as appropriate.

### **101.83 Operating limitations**

No person may operate an unmanned free balloon:

- (a) Unless otherwise authorized by ATC, below 2,000 feet above the surface within the lateral boundaries of the surface areas of airspace designated for an airport;
- (b) At any altitude where there are clouds or obscuring phenomena of more than five-tenths coverage;
- (c) At any altitude below 60,000 feet standard pressure altitude where the horizontal visibility is less than five miles;
- (d) During the first 1,000 feet of ascent, over a congested area of a city, town, or settlement or an open air assembly of persons not associated with the operation; or
- (e) In such a manner that impact of the balloon, or part thereof including its payload, with the surface creates a hazard to persons or property not associated with the operation.

### **101.85 Equipment and marking requirements**

- (a) No person may operate an unmanned free balloon unless:
  - (1) It is equipped with at least two payload cut down systems or devices that operate independently of each other;
  - (2) At least two methods, systems, devices, or combinations thereof, that function independently of each other, are employed for terminating the flight of the balloon envelope; and
  - (3) The balloon envelope is equipped with a radar reflective device(s) or material that will present an echo to surface radar operating in the 200 MHz to 2700 MHz frequency range. The operator shall activate the appropriate devices required by paragraphs (a) (1) and (2) of this section when weather conditions are less than those prescribed for operation under this subpart, or if a malfunction or any other reason makes the further operation hazardous to other air traffic or to persons and property on the surface.
- (b) No person may operate an unmanned free balloon below 60,000 feet standard pressure altitude between sunset and sunrise (as corrected to the altitude of operation) unless the balloon and its attachments and payload, whether or not they become separated during the operation, are equipped with lights that are visible for at least 5 miles and have a flash frequency of at least 40, and not more than 100, cycles per minute;
- (c) No person may operate an unmanned free balloon that is equipped with a trailing antenna that requires an impact force of more than 50 pounds to break it at any point, unless the antenna has colored pennants or streamers that are attached at not more than 50 foot intervals and that are visible for at least one mile; and
- (d) No person may operate between sunrise and sunset an unmanned free balloon that is equipped with a suspension device (other than a highly conspicuously colored open parachute) more than 50 feet along, unless the suspension device is colored in alternate bands of high conspicuity colors or has colored pennants or streamers attached which are visible for at least one mile.

### **101.87 Notice requirements**

- (a) Prelaunch notice: Except as provided in paragraph (b) of this section, no person may operate an unmanned free balloon unless, within 6 to 24 hours before beginning the operation, he gives the following information to the ATC facility that is nearest to the place of intended operation:
  - (1) The balloon identification;

- (2) The estimated date and time of launching amended as necessary to remain within plus or minus 30 minutes;
  - (3) The location of the launching site;
  - (4) The cruising altitude;
  - (5) The forecast trajectory and estimated time to cruising altitude or 60,000 feet standard pressure altitude, whichever is lower;
  - (6) The length and diameter of the balloon, length of the suspension device, weight of the payload, and length of the trailing antenna;
  - (7) The duration of flight; and
  - (8) The forecast time and location of impact with the surface of the earth.
- (b) For solar or cosmic disturbance investigations involving a critical time element, the information in paragraph (a) of this section shall be given within 30 minutes to 24 hours before beginning the operation.
- (c) Cancellation notice: If the operation is canceled, the person who intended to conduct the operation shall immediately notify the nearest ATC facility.
- (d) Launch notice: Each person operating an unmanned free balloon shall notify the nearest ECAA or military ATC facility of the launch time immediately after the balloon is launched.

### **101.89 Balloon position reports**

- (a) Each person operating an unmanned free balloon shall:
- (1) Unless ATC requires otherwise, monitor the course of the balloon and record its position at least every two hours;
  - (2) Forward any balloon position reports requested by ATC.
- (b) One hour before beginning descent, each person operating an unmanned free balloon shall forward to the nearest ATC facility the following information regarding the balloon:
- (1) The current geographical position;
  - (2) The altitude;
  - (3) The forecast time of penetration of 60,000 feet standard pressure altitude (if applicable);
  - (4) The forecast trajectory for the balance of the flight; and
  - (5) The forecast time and location of impact with the surface of the earth.
- (c) If a balloon position report is not recorded for any two-hour period of flight, the person operating an unmanned free balloon shall immediately notify the nearest ATC facility. The notice shall include the last recorded position and any revision of the forecast trajectory. The nearest ATC facility shall be notified immediately when tracking of the balloon is reestablished; and
- (d) Each person operating an unmanned free balloon shall notify the nearest ATC facility when the operation is ended.